

**BUSINESS PLAN:**

**QUINTA DA FORTALEZA ORGANIC ASPARAGUS  
PRODUCTION**

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## **RESUMO**

Segundo Eça de Queiroz, “*A agricultura aqui (em Portugal) é a arte de assistir impassível a trabalho da natureza*”. Assim sendo, Portugal é um país com uma ligação profunda à agricultura, em termos de atividade e também a nível cultural. A agricultura faz parte da génese dos portugueses e esta ligação pode ser encontrada nos mais básicos elos da cultura portuguesa, por exemplo, na gastronomia, na música e até mesmo na religião.

Este sector tem-se desenvolvido com o passar dos anos, devido à mudança de gostos e costumes do consumidor. O consumidor de hoje em dia é mais consciencializado e atento a questões como o ambiente e a saúde. Este facto alinhado à evolução do agricultor e respetivas preocupações ambientais, abriu novas oportunidades de mercado, nomeadamente na agricultura biológica.

Através deste Plano de Negócios pretende-se demonstrar que ainda existe uma falta de oferta no que toca a produtos biológicos, concretamente de espargos biológicos. Deste modo, será desenvolvida uma produção de espargos biológicos, inserida num terreno de família situado em Elvas, património mundial da humanidade.

O projeto visa a implementação de uma plantação 100% biológica de espargos verdes, com uma utilização ótima dos recursos de forma a oferecer ao mercado um produto saboroso e ao mesmo tempo saudável.

Concluindo, a Quinta da Fortaleza tenciona iniciar a produção de um produto de qualidade superior, com alto valor nutritivo, sem adição de químicos, e tenciona ainda dinamizar a economia do interior alentejano, que tanto tem sofrido com a centralização de produtos e serviços.

**Palavras-Chave:** Agricultura Biológica; Produção Portuguesa; Espargos Verdes; Quinta da Fortaleza.

### **Classificação JEL**

M13 – Novas Empresas; Startups

Q00 – Agricultura e Recursos naturais; Ambiente e Ecologia; Geral

## **ABSTRACT**

According to Eça de Queiroz, <sup>1</sup>"*A agricultura aqui (em Portugal) é a arte de assistir impassível ao trabalho da natureza*". Thus, Portugal is a country with a deep connection to agriculture, in terms of activity and in terms of culture. Agriculture is part of the Portuguese genesis and this connection can be found in the most basic links of Portuguese culture, for example, in gastronomy, music and even in religion. The agricultural sector has been developing, caused by changes in consumer tastes and customs. Today's consumer is more conscientious and aware of issues such as environmental and health. This variation aligned with the farmer's development and environmental concerns, created new market opportunities, namely on organic farming.

This Business Plan intends to demonstrate that there is still a lack of supply in the market of organic products, specifically Organic Asparagus. Hence, a production of organic asparagus will be developed, located in a family land in Elvas, a World Heritage of Humanity.

The project aims to implement a 100% organic plantation of green asparagus, with an optimal use of resources in order to offer to the market a tasty and healthy product at the same time.

In conclusion, Quinta da Fortaleza intends to produce a product with superior quality, high nutritional value, without the addition of chemicals, and also intends to boost the economy of the interior of Alentejo, which has suffered so much from centralization of products and services.

**Keywords:** Organic farming; Portuguese production; Green Asparagus; Quinta da Fortaleza.

### **JEL Classification**

M13 – New Business; New Firms, Startups

Q00 – Agricultural and Natural Resource Economics; Environmental and Ecological Economics; Genral

<sup>1</sup>"*Agriculture here (in Portugal) is the art of watching impassively the work of nature*" Eça de Queiroz

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## **GLOSSARY**

APV – Adjusted Present Value  
B2B – Business to Business  
B2C – Business to Consumer  
CAP – Common Agricultural Policy  
CAPM - Capital Asset Pricing Model  
CEA – Economics Account of Agriculture  
CEO – Chief Executive Officer  
CGD – Caixa Geral de Depósitos  
DGADR – Direção geral de Agricultura e Desenvolvimento Rural  
EAR - Effective Annual Rate  
EC – European Commission  
ECB – European Central Bank  
EU – European Union  
FAO – Food and Agriculture Organization  
FBCF - Gross Fixed Capital Formation  
FCFE – Free Cash Flow For the Equity  
FCFF – Free Cash Flow For the Firm  
FiBL – Research Institute of Organic Agriculture  
GDP – Gross Domestic Product  
GDP – Gross Domestic Products  
GVA – Gross Value Added  
IFOAM – International Federation of Organic Agriculture Movement  
INE – National Statistical Institute  
IRR – Internal Rate of Return  
MAFDR - Ministry of Agriculture, Forestry and Rural Development  
MFF – Multiannual Financial Framework  
NPV- Net Present Value  
OAA – Organic Agricultural Area  
PEST – Political, Economical, Social, Technological  
POEM – Paid, Owned, Earned and Media  
PP – Payback Period  
ROE – Return On Equity

ROI – Return On Investment

ROIC – Return On Invested Capital

SWOT – Strength , Weakness, Opportunities, Theats

UNESCO – United Nations Educational, Scientific and Cultural  
Organizations

USDA – United States Department of Agriculture

VAT – Value-Added Tax

WACC - Weighted Average Cost of Capital

WC – Working Capital

WHO – World Health Organization

## **EXECUTIVE SUMMARY**

Quinta da Fortaleza project aims the creation of an organic production of asparagus in the fields of the Santana Marques' family. This business plan is aligned with the growth of population healthy lifestyle, combined with change on mindset regarding environmental issues and with the bigger preoccupation with local producers and their products.

Organic products are becoming a consumption trend among the Portuguese population, especially in the food sector. Quinta da Fortaleza Organic Asparagus stems to fulfill the high demand for products on this market niche by offering a high-quality product in terms of flavor, nutritional quality and premium location.

Regarding the target niche, Quinta da Fortaleza communicates mainly to the final consumer (B2C). Business to Consumers' public could be divided into Passionate and Casual consumers. The Passionate customer is from an upper-middle-class and be aged 35 - 44 years old. Organic products are part of their basket with some frequency and they are considered pro-active purchasers of organic food. They are actively concerned about sustainability and they believe that organic products taste better and are better for their lives. Casuals consumers are younger, aged between 25-34, urban citizens, and usually are considered middle-class. This segment tends to be more skeptical about the organic concept, thus, usually buy less compared with Passionate consumers.

Although the focus of Quinta da Fortaleza is the final consumer, there is a willingness to target in Business to Business (B2B) consumers, more specifically, with high-end restaurants.

A differentiation strategy focus was implemented to make the product attractive and unique in comparison to the competitors. The differentiation focus relies on a set of variations, such as the location which is considered a Premium production location with the stamp of UNESCO to World Heritage, as well, the fact that it is a 100% Portuguese and 100% organic product. These factors result in a high-quality product in terms of flavor and nutritional quality.

A financial analysis was also conducted where several main conclusions were obtained, and every single one pointed out the same result, a sustainable and viable project that worth it to be transported and implemented in the Portuguese economy.



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# **1. INTRODUCTION**

## **1.1. Motivation**

In the last years, organic agriculture has been increasing significantly, induced by the new health trends and also by the growing concern with environmental issues. Specifically, between 2012 and 2016, Portugal recorded an increase of 45 thousand hectares of organic area, the total area of Portugal where exists organic production. This increase represents a growth of 22% of the organic area in this period of time (Eurostat, 2017).

Through this expansion can be concluded that organic products are increasingly having a greater weight on the diet of the Portuguese people. Thus, it is easy to predict that this sector has plenty of opportunities that might be explored. Notwithstanding, the aim of this project is to develop a business plan for an organic production of asparagus. Hence, the beginning of a new era on the food sector is the main motivation of this project, aligned with the support given by the Portuguese state in order to promote young farmers and the development of rural areas.

## **1.2. Objectives**

As mentioned before, being the organic products a market in expansion, the focus of this study is to demonstrate that in fact there is a gap to be fulfilled in this market, by delivering asparagus characterized by their high standards of quality, freshness, organic features, and its premium production location, making it a unique product.

## **1.3. Structure**

The concept idea of this production came from a true necessity to find a way to use all the potential from a family land, that until the moment was totally unused and abandoned. The primary idea, which remained until today, was an organic production of asparagus based on all the pillars that this type of production is based on.

Before the implementation of strategies, there is a need to better understand the organic agriculture ideology, as well as, crucial concepts, ideas and the market of these products, in order to have an overview of the topics that could help in all the process of developing Quinta da Fortaleza Asparagus project.

Along these lines, books, scientific articles, reports, and magazines will be in charge to have an overview on the crucial topics of this study, such as agriculture management theories, organic farming, chain value in an organic production, asparagus, and customer profile. Moreover, all this research will culminate on definitions, opportunities, trends, consumers behaviors, and industry rules. In this matter, the literature review will be performed, which is an essential first step to better align and develop the strategic approaches for the next steps.

The following stage is market analysis, which consists in analyzing the agricultural sector, the organic farming sector, the producers themselves and the commercialization of organic products. Furthermore, PEST Analysis and Five Forces of Porter's Analysis will be applied to get insights into Portugal context and to identify factors of attractiveness in this industry, respectively.

As a view to having a complete analysis of the market analysis, the competitors will be also evaluated, with the aim to better understand which are the best and the most used practices through benchmark analyses.

After performing a market analysis, it is necessary to study in detail all essential resources for Quinta da Fortaleza organic asparagus production, namely, organization legal requisites, facilities, suppliers, basic materials, required technology, agriculture methodology approaches, and its respective costs analysis. Subsequently, brand definition and the marketing-mix will be settled, taking into account the previous studies and findings.

Finally, the financial plan of Quinta da Fortaleza will be conducted, with the aim to verify the feasibility, profitability, and sustainability of the Business Plan.

## 2. IDENTIFICATION OF THE INNOVATIVE PROPOSAL

The business concept idea on which this Business Plan is based on, organic production of asparagus, will be implemented by the author of this dissertation, the owner of the land where the production will take place. The emergence of this product idea can be identified and defined in a Portuguese saying that says <sup>1</sup>“*A necessidade aguça o engenho*”, as were recognized a combo of necessities, such as, recuperation and utilization of personal patrimony, the willingness of the consumers to buy organic products and the enhancement of Alentejo region. In addition to the academic purpose, this project will be applied in practice in 2019. Therefore, all the decisions behind this business plan will serve as support to the first year of Quinta da Fortaleza asparagus production.

As a result, the innovative proposal consists on the creation of a 100% organic and 100% national production of asparagus, having an enhancer of the brand the fact that the production is made on soils that make part of the UNESCO world heritage center.

The study regarding the implementation of the project started in the early days of January 2018, located in Santana Marques lands, named Quinta da Fortaleza. The main goal of the project was to give continuity to the family heritage with a profitable project.

Beyond everything that was mentioned, one of the Quinta da Fortaleza milestones was adding a combo of unique characteristics, by offering a fresh, tasty and healthy product, with the combination of family values and premium location. All these objectives and milestones have as support the funds created by the European Commission and distributed by Portuguese state, on the figure of the Ministry of Agriculture. One of those funds is the “*Jovem Agricultor*”, that provides support to young farmers who are settling for the first time on the agricultural project.

Therefore, taking into account this support by “*Jovem Agricultor*” fund, the profitability of this project will be bigger and, subsequently, with a lower financial risk associated.

Summarizing, the implementation of a project by a new generation in the agriculture industry it is by itself an innovative approach. New ideas and different points of view will be in charge and will lead to the creation of different methodologies and approaches in the production and commercialization process. Furthermore, being an organic production also brings in some way innovative factors for this business plan.

<sup>1</sup> “*Need sharpens the mill*”

### 3. LITERATURE REVIEW

#### 3.1 Farm Management

All agri-business should start with the producer decision on where the business has to be inserted and what kind of management theories can be followed and applied. For small agriculture productions, there are two frameworks that should be considered, the *farm-system theory* and the *theory of management by objectives* (Kast & Rosenzweig, 1974), explained in detail next.

##### 3.1.1 Farm-system theory

Farm-system theory sets the plantation as the main tool to achieve the main goal, that is to generate revenue for the producers, logically through the production that it is the plantation outcome. This framework argues that the strength of any farm comes from its human and social participation, that allows the farm to adapt goals in consonance with the external environment (Dillon, 1992). The differentiation points of any plantation are ensured by the geographical location, the past of that farm, and the human resources. These differentiation points lead those general principles of this framework, which are applicable to any plantation, to different decisions taken by the producers that naturally lead to different outcomes.

This framework claims that there are five major subsystems, described below and represented in figure 1:

**Technical subsystem:** includes all the knowledge, methods and technology that can be applied in the plantation;

**Organizational subsystem:** despite small plantations do not have a complex organizational subsystem it is crucial to have it structured, in order to have a good line of communication;

**Informal subsystem:** consists of all social aspects that surround the plantation (e.g. family of the personnel and the farmer family, neighbors, restaurants, local stores, local organizations, and cooperatives, etc.) This subsystem interferes in how the business is managed because of all the aspects that compound this subsystem interfere in what is the judgment of managerial decisions;

**Goals and values subsystem:** as the name indicates is the subsystem that contains the goals and values aimed by the producer.



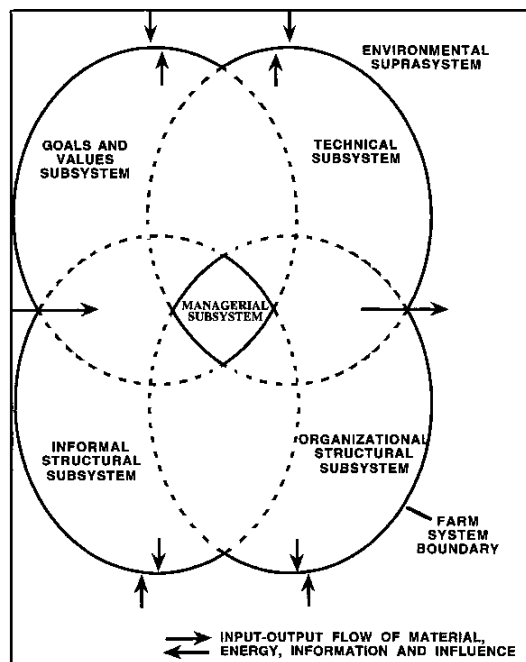


Figure 1 - Generalized Schematic Representation of the Farm System

Source: (FAO, 2001)

**Managerial subsystem:** the subsystem where the remaining four meet each other. This symbiosis of subsystems makes the plantation managerial way of being (Dillon, 1992).

### 3.1.2 Theory of management by objectives

All the farmers aim to have the best production with the less costs and the less workforce, thus, in order to follow a path to achieve these goals, it is necessary to plan, organize and control the farm-system goals. Hence, the farm-system goals, in this specific strategy, must be established by the farm family and by the head of the family, that usually is the manager of the plantation in small farms (Nix & Barnard, 1976).

Within this strategy there are four possible paths that the farm can choose in relation to the farm-system goals, which are, survival, profit, growth and resource conservation. Having a managerial way of act through objectives, makes necessary to differentiate the short medium and long-term objectives. Longer the objective, bigger is the risk of not accomplish it, and for consequence greater is the necessity for managerial goals which makes harder the effective application of the objectives.

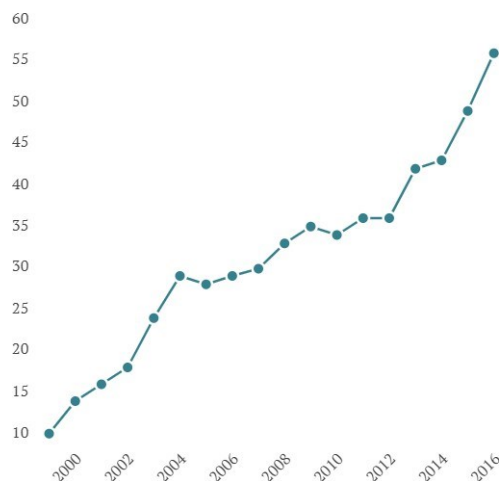
In this sector, planning consist of answering three simple questions; **What to produce? ; How to produce? ; How much to produce?** (Rae, 1994). Consequently, when the farmer answers to these three questions the annual production plan is in place. However, as a view to complement and better perform the annual production plan there is need to define other sets of plans (e.g. if the farmer is inserted on a state incentive program to production, the farmer has to draw a plan that complies with established rules on that program). Trustily, the questions regarding planning must be based on, at least, the basic rules of production economics, meaning, the plan has to have into account at least the indicators that show the production viability (NPV; IRR; PP) (Rae, 1994).

Regarding organizing phase, it happens when the analytical and the decision-making processes are left behind and the administrative functions come to action. The organizational function is to make sure that what was planned it is well implemented.

Lastly, controlling is the procedure that ensures the proper implementation of the project and, also is the activity that allows the farmer to be able to adapt the plan to the environmental factors. One example of controlling activities can be the recording and analysis of data (Nix & Barnard, 1976).

### **3.2. Organic versus Conventional Agriculture**

According to data released by FiBL (2018), the organic food market reached 80 billion euros of market capitalization in 2016, what makes organic products a global trend. This trend can be easily observed in the 178 countries that have certified organic productions, which leads to 2.7 million producers of organic products in the sector and, approximately, 57.8 million hectares of land for that purpose, that are represented in the graphic below (FiBL, 2018).



Graph 1 - Growth of the organic cultural land 1999-2016

Source: FiBL-IFOAM-SOAL-Surveys 1999-2018

The existence of this trend and having as base the forecast made by FiBL (2018) regard organic agriculture continuous grow (Carlson & Jaenicke, 2016), obliges to compare what is a so-called conventional agriculture whit organic agriculture.

Reported by the United States Department of Agriculture (USDA), conventional farming consists on the use of seeds that were genetically transformed and, with the use of several breeding traditional techniques which not includes the biotechnology methods, thus, automatically, this type of farming excludes the certified organic productions.

However some of those traditional techniques have been applied since the Neolithic period, there are some improvements that allow productions to have plants with a more rapid growth, resulting on bigger yields and, consequently, bigger resistance to pest and diseases. Despite the facts presented above, what allows the productions to have this type of characteristics is the aid of synthetic pesticides and chemical fertilizers (USDA, 2015).

On the other hand, there is the organic production, that consists in “*a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity*” (FAO & WHO, 1999). Along these lines, organic farming it is a type of production that conglomerate the best environmental methods with high levels of biodiversity and with the preservation of natural resources. As well, this production method simultaneously realizes the needs of the market and contributes to the environment protection and to the rural development (European Commision, 2008).

### **3.2.1 What it is Organic?**

The organic farming thought was born as a way to criticize the industrialized food system, between the 20s and the 50s. Although, was just in the 80s where the health concerns and the green way of thinking regarding all the synthetic pesticides, chemical fertilizers, and hormones, start to explode because the organic producers claimed that the organic products were healthier, natural and tastier (Confortd, 2001 ; Fromartz, 2007 ; Vogt, 2007).

Sales of organic products have grown significantly, what provoked a search for legislation and a legally recognized label by producers and consumers, what led to the construction of the global standards of organic productions. Through this variation, it is clear that this movement was a success (Padel, Röcklinsberg, & Schmid, 2009).

More specifically, in Europe, the first broad legislation regarding organic production was built in 1991, that came to replace all the legislation established by the countries since the “boom” of the organic production in the 80s (Lampkin, Foster, Padel, & Midmore, 1999).

The organic movement does not have one and only source of truth, meaning that, there is not a global standardized and harmonized rule towards this concept. The willingness to search and define which practices must be associated with this concept, as well, discover what is the correct definition of organic among all countries is essential, in order to facilitate the trade of organic products internationally. With the aim to unify efforts to define and establish the organic standards there are three organizations, which are the International Federation of Organic Agriculture Movement (IFOAM), the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

Organic farming is a symbiosis of process, methods and rules that makes this type of agricultural production the most legislated in the world (Rigby & Cáceres, 2001), as a result of the organic products be considered products where its production is made without using pesticides and chemical fertilizers (Allen & Albala, 2007). Therefore all the products that have the label of organic (Figure 1), the most known food label in the world, ensure the consumer that their purchases and consumption are under the organic concepts and rules.

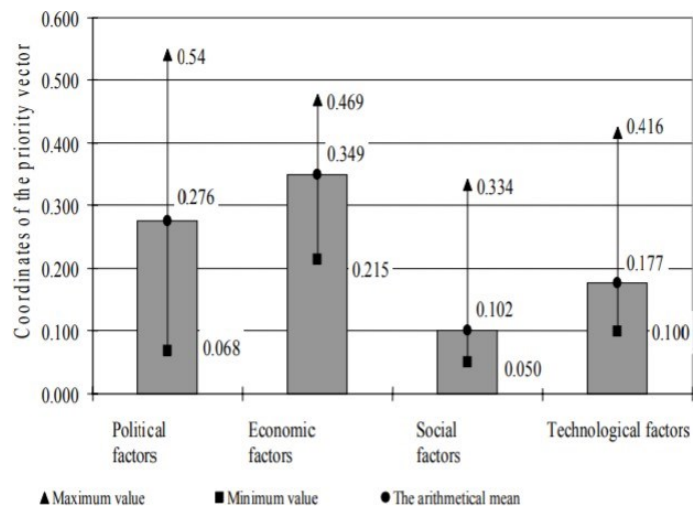


Figure 2 - EU organic farming stamp  
Source: European Commission

### 3.3. Market of organic products

#### 3.3.1. An overview

The development of the organic market is dependent on the external environment analysis, which means that Political, Economic, Social and Technological factors (PEST analysis) must be considered when developing strategies for this market. Moreover, a previous study pointed out that the external factors that most weights in the organic market are the Political and Economic factors, as represented in the graph below (Baraskina & Rivza, 2010). However, all the factors must be having into consideration before the formulation of strategies.



Graph 2- Experts' evaluation towards organic production regarding PEST criteria

Source: Irena Baraskina and Baiba Rivza 2010

As an internal perspective, one of the main problems in this market is the lack of consumers' knowledge of organic products, thus, more collaboration between companies, such as campaigns to enlighten costumers regarding organic products, will result on better financial indicators and will help to increase involvement with the category itself, improving the lack of organic food knowledge (Chrysochoidis, 2000).

Additionally, one of the weakness in the agriculture market relies on the fact that every new producer who enters in the market struggles to find and create a unique value through their products. Although, the organic products are an exception in the agricultural sector, because it is possible to have a unique product due to the difficulty to penetrate the market by new producers, which leads to a point in favor of this products.

Regarding the opportunities and challenges in this market, a framework (Figure 3) was established to better identify them for small-scale farmers.

Summarizing, the capability to associate the product to premium price due to product excellence is one of the main opportunities and, the extra labor that this type of productions requires, one of the main challenges (Zeynab, et al., 2017).

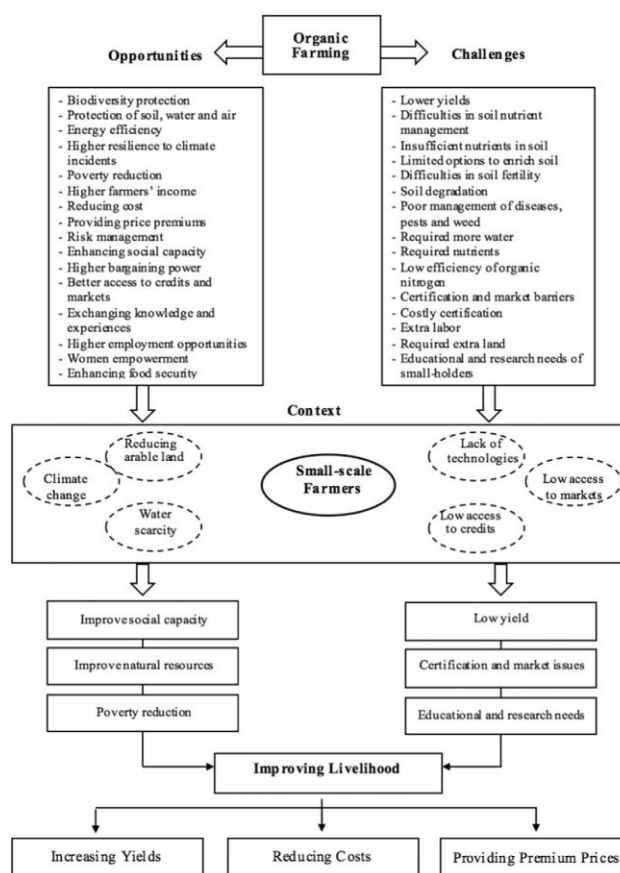


Figure 3 - A framework to analyze the potential challenges and opportunities of organic farming for small-scale farmers

Source: Z. Jouzi et al. / Ecological Economics 132 (2017) 144–154

### 3.3.2. Strategies in the organic market

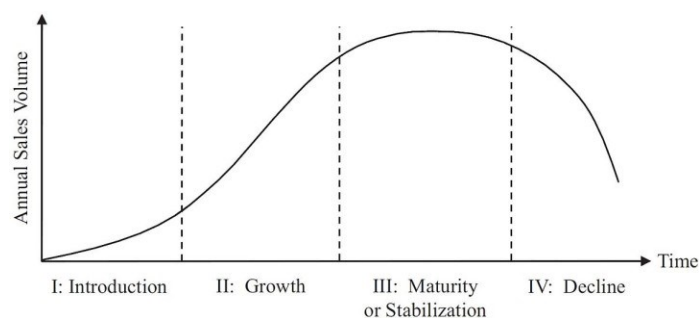
Having in mind the overview of the organic market, the approach that better suits this market it is a “win-win” approach. This approach is a strategy where both sides (both producers) win,

therefore, it is considered a collaborative strategy and works as a conflict resolution process that aims to accommodate all participants (Weymes, 2000). Hence, the producers of organic products should not use their resources to fight among each other's to win market share.

Additionally, the best strategy to apply when producing organic products is a differentiation strategy, a strategy that strives to develop unique products for a specific customer target (Tanwar, 2013).

The differentiation strategy should be complemented with the focusing strategy because it is a suitable strategy for small productions. Small farmers know their production limits, therefore, they are not focused on increasing the produced quantity, rather, they want to improve the way how the product is produced, increasing the performance and quality in the market (Baraskina & Rivza, 2010).

As a view to better defines the strategy, there is also a need to do an analysis in the concept of Life-Cycle within the organic market, represented in figure 3. According to which stage the market is on the Life-Cycle, different strategies must be applied in order to face the specific challenges (Porter, 1985) . As mentioned before, the organic market is in the growth stage, thus, challenges such as, increasing competition, lower prices, and different marketing approach are issues that the producers must be aware (Day, 1981).



**Figure 4 - The Product Life-Cycle Stages**

Source: (Day, 1981)

Furthermore, all the agricultural businesses have in common a low profitability per product unit, because the costs of production are almost similar to the value of selling, what results in irrelevant profit per unit. So, as a trend in the agribusiness, this market use economies of scale to enhance profit and achieve competitive advantage through the value chain (Bryceson, 2006).

In addition, the value creation process of agribusiness is composed of production itself and the supply of the product to the market, consequently, the farmers have to implement the best process possible with the aim to increase the profit margin.

### 3.4. Organic asparagus benefits

The Department of Agriculture and Water Resources of Australia Government suggests that the production of organic asparagus must be adequate to the local climate and, of course, it must be raised organically (Neesson, 2004). In favor of the organic production, asparagus it is considered a vegetable that can be easily cropped in an organic way because it is not so receptive to pests or disease problems.

New studies have stated that organic asparagus has anti-cancer properties. *Shatavarins* it is the name of the compounds that were tested by the researchers. After all the tests, the results showed that *Shatavarins* had potent toxicity against cancer cells, a symbolic reduction in tumor volume and tumor cell count (Mitra, Prakash, & Sundaram, 2012)

Additionally, asparagus in huge quantities was found to have a positive effect on insulin output by the pancreas (Iqbal, et al., 2017). Compelling the facts above and the results of the British Medical Journal (2006), that argues that the vegetable triggered an 81 percent increase in glucose uptake by body tissues, the researcher found that organic asparagus can help diabetes. More specifically, organic asparagus stimulates an increased production of insulin and enables to absorb more glucose. (Hafizur, Kabir, & Chishti, 2012)

Another added value by this vegetable is related to cardiovascular benefits. *Rutin* is the name of the asparagus' compound that facilitates the prevention of deadly blood clots. Furthermore, the vegetable is an exceptional source of folic acid, that is a nutrient that helps counter the bad effects of homocysteine, an amino acid in the blood connected to increased cardiovascular risk (Lu, 2013).

In conclusion, adding to the fact that organic agriculture brings a plenty of benefits for the human health, the organic asparagus in specific is a vegetable that combines a set of added values in different levels for the consumers.



### **3.5. Organic Consumer Profile**

Consumer dissatisfaction with conventional food and trend topics such as sustainability, health issues, and food safety, are crucial factors when analyzing the gaps and opportunities in the food market nowadays.

Organic food consumer is driven by societal and individualistic inputs that are key drivers when making a purchase decision. Intuitively the organic food consumer it is a specific target in the food market, which leads to a small slice of the market.

Although the organic consumers already have knowledge about the organic concept, the potential consumers face a lack of information in this field. Moreover, it was proved that the growth of the organic market is negatively affected by the lack of information (Sangkumchaliang & Huang, 2012). No awareness regarding the potential benefits of sustainable food consumption and the claimed need for organic products advertisements (approximately 90% of surveyed) are obstacles in the organic market. Hence, trust and organic food purchase intentions can be strongly influenced (Hughner, McDonagh, & Prothero, 2007). As a view to improving, marketing efforts could help to fulfil this gap in the market.

Additionally, the information is a need in order for the companies to justify the premium price through sustainable gains of organic consumption. Topics such as quality of organic, trust and cooking skills/methods are crucial to stimulate consumers to buy (Padel & Foster, 2005).

The production process, environmentally friendly, healthier, superior quality and taste better are considered in the literature the drivers that more engage the customer to buy organic food. More specifically, health benefits identified to have more importance in determining organic food preference and purchase intentions compared to ecologic benefits (Chen, 2009). Regarding the values that are drivers of organic purchase intentions, security, hedonism, stimulation, universalism, self-direction, benevolence, conformity and power are the values that belong to organic consumers (Aertsens, Verbeke, Mondelaers, & Huylenbroeck, 2009).

Some characteristics of the consumer profile were defined in diverse studies. Highly educated consumers and consumers with a science background have a positive attitude and strong correlation with sustainable organic consumption (Magnusson, Arvola, Hursh, Aberg, & Sjoden, 2001; Fotopoulos & Krystallis, 2002). In addition, the income it is a predictor of purchase behavior for organic products, as in general, these products support a premium price.

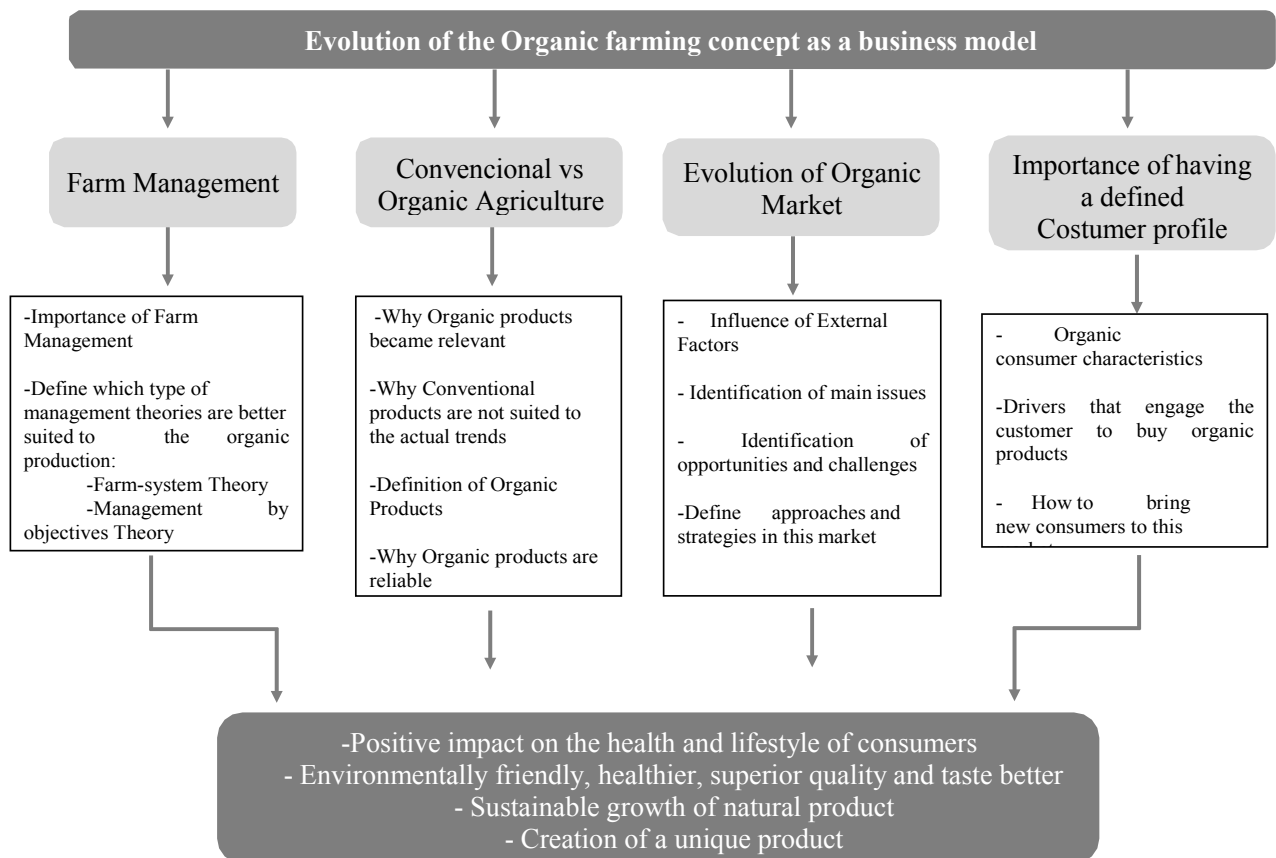
In regard to the gender and age, because of health and environmental aspects, older women are more willing to purchase natural food when compared with men (Gracia & de Magistris, 2008; Krystallis, 2005).

Therefore, there is a tendency for females and older persons to have more purchase intentions for organic products. Nevertheless, when the topic is price sensitivity it was proved that men have a greater willingness to pay for organic product purchase (Urenã, Bernabeu, & Olmeda, 2007).

#### 4. REFERENCE FRAMEWORK

The secondary data collected from the analysis of books, journal articles, reports, specialized magazines, and other sources, was essential to structure and align the aim of this thesis. In such a way, insights into farm management theories, organic agriculture, the evolution of the organic market and the customer profile associated with this type of market served as a basis to perform the literature review chapter and to define strategies in the next steps regarding the development of the Quinta da Fortaleza Business Plan.

Bellow can be founded a reference framework, as a view to better synthesize the secondary data.



## 5. MARKET ANALYSIS

Before focus on an internal analysis regarding Quinta da Fortaleza, an analysis of the market seems imperative. To do so, the market analysis chapter serve to have an overview about the Portuguese agricultural sector with emphasis on the organic farming, the external and internal factors that influence this market, and, finally, the customer profile and the competitors that are associated with it.

### 5.1. Portuguese Agricultural Sector

#### 5.1.1. Introduction

Since always, agriculture in Portugal is considered a traditional activity, with little technologic advances. However, this situation has been suffering some changes on last few years.

The adoption and investment on new technologies in all strands have been improved on this sector, mainly on the watering strand, on soil mobilization, on the fertilization and on pest and diseases control.

Moreover, these alterations allowed the sector to have an increase on the productivity and, therefore, allowed a more efficient resource utilization enhancing the competitiveness of the agricultural explorations.

Nowadays, Portuguese agriculture is more innovative, more professional, more productive and more market oriented.

Nevertheless, the renewal of the agriculture human resources is fundamental, having in mind that half of the Portuguese farmers are above 65 years old (Aveiro, 2014). For that reason, conditions must be created to attract young farmers.

Example of one step taken towards the creation of conditions to agriculture to be an attractive market to the young generations, it is the program that is funded by the European Union and distributed by the Portuguese state, called “*Jovem Agricultor*”. This program aims to increase the attractiveness of the sector to young investors, by supporting the first installation in the agricultural activity, promoting investment, organizing production and transferring knowledge (Pdr-2020, 2018).

### **5.1.2. Agricultural sector**

The agricultural sector is included in the Agri-food Industry, which also includes the food sector. This industry has a fundamental weight on the Portuguese economy, generating 3,6% of the total gross value added (GVA) and 12,5% of the employment on the Portuguese economy (Banco de Portugal, 2016).

In 2015, the agricultural sector represented 9% of the companies in Portugal, what symbolized 35 thousand companies, meaning 14% of business volume and 6% of employed people in Portugal. From all companies acting in the agricultural sector, 85% are considered as micro companies.

Compared with data of 2011, there was an increase on the sector weight in 1% regarding the number of companies and, consequently, an increase of 0,40% on the number of employed people on the agricultural sector.

In comparison with data of 2014, the year of 2015 registered a growth of 3,7% in terms of the number of companies in activity on the agricultural sector, meaning 2,5 % above the total number of companies in Portugal (Annex 1).

By each one agricultural company that had cease activity in the market, 1,7 companies were created. Therefore, the Birth-Death Ratio was 0,5% above the value of the total number of companies.

Portugal was considered the 41<sup>o</sup> world exporter on the agri-food industry, in 2015, with a 0,46% market share.

The National Statistical Institute (INE) launched in December of 2017 the first estimate regarding Economics Accounts of Agriculture, “*Contas Económicas da Agricultura*” (CEA). According to the report released by INE, the gross agricultural product grown up 7,1%, in volume, compared with the previous year. These values demonstrate a great contrast when compared with the negative variations registered in 2016, respectively -9,2% based on the comparison between 2015 and 2016 data. Even though, when we look at the numbers registered in 2015 (9,2% growth), the values are significantly better than in 2017 (7,1% growth).

Having into account the last three years, the evolution resulted in a positive rate of the Average Annual Growth, plus 2% (Annex 2) (Instituto Nacional de Estatística, 2016).

### **5.1.3. Organic Farming**

The organic farming approach, it is quite recent in Portugal, where the first official registers were made in 1994, with an Organic Agricultural Area (OAA) of 7.183 hectares.

In 2015, the OAA reached 239.864 hectares, which corresponds to an increase of 12% when compared with 2014. This increase reflects the consolidation of organic production in the agricultural sector and a positive response from farmers in order to find competitive advantages for their products through organic productions.

This consolidation of organic farming represents an increase of 3,8% of the total weight of organic farming in all agricultural area on the Portuguese mainland. Moreover, it is important to highlight that this increase was transversal in all the regions of Portugal, as can be proved by the Annex 3 (Ministério da Agricultura, 2017).

The Organic Agricultural Area (OAA) of 239.864 hectares registered in 2015 is compounded by 78% of pasture areas and by the most representative crops olive groves with 9%, nuts (4%) and arable crops (3%).

There is also a diverse set of other cultures that, although with less expression on the territorial level, are economically relevant. Fruticulture (1,5%), vineyards (1,1%) and horticulture with 0,6% of the national agricultural area are the ones that have a higher impact Annex 4 (Ministério da Agricultura, 2017).

#### ***Average Size of Organic Farming's***

After analyzing the organic farming in general, it is essential to understand the impact of this sector in terms of farms and business. The average size of all organic farms in Portugal mainland is 63 hectares (ha), which demonstrates that the organic productions are mainly productions of extensive nature, namely pasture and forage crops. Despite the mentioned size average, there is huge variation from region to region, for example, on Alentejo the average OAA it is of 160 ha, with a different register on Algarve, where the average size of an organic exploration is 28 ha. (Annex 5)

In the year 2015, the number of organic farmers reached 3.840, which correspond to the highest existing number in Portugal since the beginning of the registers, in 1994.

The majority of organic farmers, in 2004, were producers of olive trees, pasture, arable crops, nuts, and fruticulture. In 2015 the biggest alteration on the organic farmer profile lies on fruticulture and nuts sectors. Hence, olive groves and pasture still the main production types,

followed by the gaining relative weight of fruticulture and nuts producers. Despite the information above, since 2004, horticulture and forage farmers are considered the production types with the biggest increased and development. (Annex 6)

### ***Juridical Nature of Producers***

Through the Agricultural Census realized in 2009 by the National Statistical Institute, could be conclude that there is no difference between the juridical nature of producers, whether they are organic farmers or conventional farmers.

The juridical nature that is most present in agriculture is “Single Producer”, in detriment of “Societies” and “Other types” of Juridical Nature. In a depth view, in 2009 were accounted 882 (76,23%) “Single Producers”, 255 (22,04%) “Societies” and 20 (1,73%) “Other Types” of juridical nature (Instituto Nacional de Estatística, 2011).

### ***Other operators on the organic production***

Like all business, the organic production involves a production chain, which is composed of primary production, transformation/preparation, distribution and retailer/vendor. On the year 2014, were registered almost 3.700 operators on organic productions, subsequently, those, 91% made part of the primary production. The numbers registered in 2015 were the same in terms of percentage of primary production, 91%, the only difference lies in the total number of operators, that rose to 4.531 (Ministério da Agricultura, 2017).

### ***Commercialization of Organic Products***

The analysis of organic products commercialization is penalized by the lack of data. Thus, allows to reach the conclusion that the commercialization of organic products is mainly done through physical stores, with complementation of home delivery and online sales, where the collection and storage of information is not done.

Nevertheless, organic products have a great demand, which had been even more accentuated in the last few years. This enlargement of demand caused an increase in the presence of organic products in the big retailers and, of course, an increase of organic stores in Portugal.

Taking into to account the trends in the market, organic producers have also created some channels to sell directly to the final customer. The requirements to participate in these markets are, to be certificated as an organic producer and possess a product that has a label with an identified location. These markets are called Organic Producers Markets and, usually, its

creation happens for two main reasons, the lack of acceptance of organic products by the big retailers that operate on the Portuguese Market and the cut of intermediaries in the sale to the consumer.

Despite the lack of information, it is possible to reach to some conclusions based on the data collected by the Inspection and Certification Committee of Portugal (Ministério da Agricultura, 2017). The size of the sample is quite small, 29 organic producers, but it is possible to identify some patterns such as:

- ⇒ The organic products sector is mainly constituted by small and micro-companies. From the 29 producers, 23 have less than 10 paid employees, what prefaces 78% of the companies;
- ⇒ The product categories that are commercialized by 97% of the producers are the horticulture and the fruticulture;
- ⇒ Organic producers in 88% of the cases are exclusively organic products producers. This interlink is related to the size of the producers because when talking about large producers the tendency is to not produce exclusively organic products.
- ⇒ Only one-quarter of producers sell to all the Portuguese mainland, the majority sells to the neighboring counties.
- ⇒ The commercialization is done mainly through Organic Products Stores (42%) and Organic Markets (39%)
- ⇒ The value of sales in the year 2015, for 60% of the producers, was situated between 10.000€ and 50.000€.
- ⇒ The horticultural products were organic products with higher sales. One-third of the producers sold 50.000€.
- ⇒ The majority of the producers (80%) realized communication activities with the goal of promoting their organic products. Although, 60% of producers considered quite or none significant in terms of sales this type of activities.
- ⇒ According to the organic products producers, the demand for this type of products has been increasing in a significant way, in the last three years. When related to the demand and the supply, can be concluded that the bigger producers had a bigger increase in the demand when compared with supply.



⇒ The producers believe that the tendency of the last three years will remain in the next three years. The expectations are that the growth will be moderated with a positive highlight to the horticulture products.

## **5.2. Business Environmental Analysis**

### **5.2.1. PEST Analysis**

Pest is a framework of macro-environmental factors that might influence the success of one organization or industry and, as well, change management decisions in a specific business environment (Buchanan & Gibb, 1998). Hence, PEST can be used to analyze the position of a particular organization or industry (Vrontis & Vignali, 2001) in a specific business environment and to understand the viability of management solutions in a business environment.

In such a way, the objective of this analysis towards organic asparagus production is to have an overview of the external factors that might expose the business to opportunities and threats.

On the literature review chapter was possible to observe that a study pointed as major external influencers the Political and Economic factors (Baraskina & Rivza, 2010), although all the factors must be having into consideration before the formulation of strategies.

#### ***Political-Legal context***

When talking about the political-legal context, it is inseparable to speak about farmers income and not talk about subsidies. This connection and inseparability happen because of the income level of farmers. The income level of farmers in UE, already having in account the subsidies, is below the average wage in all countries, with exception to the Czech Republic and Estonia (Annex 7).

Having in mind the information above seems crucial to speak about European Funds. At the time, this dissertation is being written, it is being discussed and aligned the Multiannual financial framework, which has as goal to shape EU expenditure (Agriculture and Rural Development, 2018).

The multiannual financial framework (MFF) defines the limits for the annual budgets of the European Union and also sets how much it will be destined to the several areas of activity and how much will be invested in which country. The period of operation in regard MFF, normally,

varies between 5 and 7 years. The next period of action of MFF it will be from 2021 and 2027. Moreover, the MFF is essential to Portugal, because currently, 70% of the Portuguese public investment has as origin EU Funds (European Parliament, 2015).

Before speaking about the new MFF (2021-2027), it is necessary to speak about the one that is currently in action, the MFF 2014-2020. As well, there is a need to talk about the funds that are related to agriculture, the Cohesion Fund and the common agricultural policy (CAP).

During a hard-economic period, Portugal granted 30 thousand million euros for the period of 2014-2020 under Pedro Passos Coelho administration. That 30 thousand million euros were composed by, 22.159 million euros for the Cohesion Fund and 8.1 thousand million euros regarding CAP. The CAP was divided into two pillars, the first one brought to the Portuguese agriculture 4.1 thousand million euros on investments that had as main objective the direct payment to the farmers for their projects, and the second pillar brought 4.082 thousand million euros with the objective of rural development.

Is already known by the general public that the European Commission proposed to the Portuguese Government, led by António Costa and having Luís Capoulas Santos as the responsible by the Ministry of Agriculture, Forestry and Rural Development (MAFDR). The proposal was an amount of about 7.6 thousand million euros in the MFF 2021-2027, at current prices, below the 8.1 billion of the previous budget, with a slight increase in direct payments and cuts in rural development. For MFF 2021-2027, at current prices, a sum of 4.2 thousand million euros is held for the first pillar and 3.4 thousand million euros for the second pillar.

The Portuguese Executive considered this initial EC proposal a good offer for the Portuguese farmers, because have as a target a distribution of 280 million euros for the agricultural sector. When compared with the last MFF, despite the value given by the EU being smaller, the Portuguese state will have to co-finance 30% of the value given by EU (on the MFF 2014-2020 the Portuguese state just had to co-finance 15%). On the other hand, the Portuguese government is unsatisfied because it will overload the Portuguese State Budget, once the co-financing will pass from the 700 million euros to 1.400 thousand million euros. The ministry of agriculture claims that will strive to consolidate and, if possible, increase gains in the first pillar (Direct payment to farmers) and will do everything to reduce the notational financial effort but maintaining the same amount of support for the Portuguese farmers.

### ***Economical Context***

According to the Bank of Portugal, the projections for Portuguese economy on the period of 2018-2020 reflect a continuation of growth pace, that is in consonance with the European Central Bank (ECB) projections for the Euro Zone. The Bank of Portugal predicts that the gross domestic product (GDP) will grow 2,3% in 2018, 1,9% in 2019, and 1,7% in 2020. The Portuguese economy will continue to benefit of the positive macroeconomic environment (Banco de Portugal, 2018). (Annex 8)

After the environment of the recession that affected Portugal, and other southern countries on Europe, the economic activity is still recovering, and all the projections point to an end of the negative gap between the current GDP and the projected GDP at the end of 2018. The projections are sustained by the strong and positive performance of exportations goods and services, by the dynamism of the Gross Fixed Capital Formation (GFCF), also by the growth on the private consumption, that in average, will be slightly lower than the GDP growth.

This positive pace has allowed Portugal to decrease its budget deficit significantly. There is more employment, that increased at a faster rhythm than unemployment reduction, so can be concluded that the Portuguese economy is incorporating, simultaneously, new entrants and unemployed persons.

Regarding the agricultural sector, as told before it is not the most advanced when compared with the other sectors in Portugal, represents 2,2% of Portugal's GDP and employs 6% of the population. The principal productions include cereals, fruits, vegetables, and wine. Portugal has several natural resources, where tin and copper represents 6% of Portugal's GDP. Moreover, Portugal is also one of the largest marble collectors and one of the bigger cork suppliers in the world.

The industrial sector has an employment rate of 24,8% and represents 22,2% of Portugal's GDP. The main sectors of industrial activity are metallurgy, mechanical engineering, textiles, and construction. Portugal is also known for the excellence and know-how on mold industry. The services sector represents 75,6% of GDP and employs 69,2% of Portuguese active population. On the services sector, it is mandatory to highlight tourism, which plays a predominant role in the Portuguese economy (Annex 9) (World Bank, 2018).

### ***Social Context***

Accordingly with the national census, made in 2011 by the Statistic Institute, the population employed on the agricultural sector was about 3% of the employed population in Portugal, which represented about 120.230 people employed on the agricultural sector. Comparing with the national census, made in 2001, the employment on agriculture fell 44,2% which meant a reduction of 53.141 jobs between census. This job reduction is a good indicator, that how much the persons who were dependent on agriculture suffered during the years of crisis.

Proportionally, the majority of the employed persons on agriculture are situated on Alentejo, followed by the autonomous region of the Azores.

This sector is very well divided concerning the gender distribution, which means that from the total number of employed persons, 55% are male and 45% female (Instituto Nacional de Estatística, 2001; Instituto Nacional de Estatística, 2011).

### ***Technological context***

In the last decades, the technological model followed by the Portuguese Agriculture has been a trendy topic, mainly when speaking about the development of the Agricultural Sector.

Currently, the technological model used is the Chemical-Mechanical model, which is considered a model that have negative environmental and social consequences. Thus, there is a consensus in this area that the technological model followed by Portuguese agriculture is not the right one.

As a view to improving this situation, the technological context is changing, involving investments in technologic investigations, experimental developments and knowledge acquisition.

Through these investments, it is expected by the farmers the capability to respond consistently, identify and implement technological solutions with the aim to create a greater efficiency, both economically and environmentally.

According to specialists, in the coming decades, this will be one of the greatest challenges to overcome by the agricultural sector in Portugal (Avillez, 2015).

### **5.2.2. Five Porter's Forces**

Porter's Five Forces is a model that analyses a business through the observation of five forces, explaining how should be measured by the competition intensity, attractiveness, and profitability of the specific industry (Porter, 1979). Threat of new entrants; power of

competitors; power of suppliers; power of costumers and threat of substitutes are the five forces used by the model. By applying a scale (1-5) to measure each force, will be possible to define the attractiveness level of Organic Asparagus Industry, where he higher the number, more attractive is the industry. At the end will be presented a consolidation grid, where the power of each force is considered, and it is made the final score of the industry attractiveness.

### ***Threat of new entrants' force***

Despite the existence of investment funds that helps a farmer to start and establish a business, it is not easy to access them. There are plenty of requisites and rules. Even harder it is to get this type of funds before entering the respective industry.

Another factor that difficult a lot the entrance of new entrants, it is based on the obtainment of the stamp that proves that the product is organic, which is a legal requirement for the firm in order to be able to sell the product as organic in the market. This stamp takes two years to be obtained because the soil where the production is made needs this range time without chemicals to be considered as an organic soil. Evidently, the non-use of chemicals on the soil has to be proved by access to laboratory tests made by an independent and certificated entity, during the two years of approval.

Additionally, the seeding of the plants and their productivity can be considered as an issue for new entrants in the asparagus market. It takes one year, at least, until the producer is able to take some residual value from the asparagus production, as well, it takes three years to get the maximum yield of the plantation.

In summary, there are strong arguments and issues that make harder and difficult to enter in the asparagus industry. Therefore, the grade that it is associated with this force has to be low (2,2), as the potential for new entrances in this market is also low.

### ***Power of Competitors force***

The organic asparagus industry has a significant number of competitors, but their majority are small producers. For that reason, their distribution power it is low, what restricts their actuation and commercial power to places near to their production. This gives a margin for the small number of medium/big producers to act in all the Portuguese territory.

Another important aspect that influences the power of competitors is the existence of a huge demand, in some products, higher than the supply of the product. With that in mind, each producer is not influenced by the power of its competitors. In conclusion, the force power is

valued in 2,6, what represents medium/low power of competitors, which can lead to a positive factor regarding the attractiveness of organic asparagus industry.

### ***Power of suppliers' force***

Power of suppliers is one of the forces that most contribute for the attractiveness of asparagus industry. The only major supplier that this production is highly dependent is the plant supplier to begin the production. Bearing this in mind can be concluded that the threat of being dependent on suppliers is very low, thus contributing positively to the attractiveness of organic asparagus industry. If the general power of suppliers is low the scale also has to be low, 1,5, contributing to the attractiveness of organic asparagus Industry.

### ***Power of Customers force***

Organic products have been more and more presents in the Portuguese families' diet. One example of the assiduous presence of organic products on the Portuguese families diet can be the article published by VIDA RURAL magazine "*Asparagus: the more there was, the more it would sell!*". Also, as a result of the article, can be concluded that the power of costumers in this Industry is quite low. The demand is higher than the offer, which leads to a low costumers' bargain power. Accordingly, this power contributes positively to the attractiveness of organic asparagus industry, which represents a 2,2 grade.

### ***Threat of Substitutes force***

Indisputably, this is the force that contributes most negatively to the attractiveness of the organic asparagus industry. Those that look for organic asparagus might easily replace their willingness to buy organic asparagus by choosing another type of vegetables, organic or non-organic. This threat is even bigger when some consumers do not have a preference for an organic product, so just search for asparagus in general, without restrictions. In that occasion, the variety of vegetables that can be considered substitutes of organic asparagus is even higher. In summary, this force power is very high, 3,8, which means that the threat of substitutes is negatively influencing the industry attractiveness.

### **Main conclusion**

Despite most of the forces contribute positively to the attractiveness of the organic asparagus industry, the threat of substitutes has a very big weight on pulling down the attractiveness to values that almost make an unattractive industry. Nevertheless, Quinta da Fortaleza has everything to thrive on this specific Industry.

Forces	Power	Attractiveness
<b>Threat of New Entrants/ Exit Barriers</b>	2,2	2,8
<b>Competitors</b>	2,6	2,4
<b>Power of suppliers</b>	1,5	3,5
<b>Power of customers</b>	2,2	2,8
<b>Substitutes</b>	3,8	1,2
Average result	<b>2,46</b>	<b>2,54</b>

Table 1 - Porter's 5 Forces Grid

Source: Author, 2017

### **5.3. Costumer Profile**

To identify market opportunities requires the definition of the consumer profile in this market. To do so, it is important to analyze the needs, wants and benefits perceived by the consumers regarding Quinta da Fortaleza Asparagus, thus, this analysis will allow to identify Quinta da Fortaleza asparagus segment into the definition of implementation policies chapter. As well, as different consumers have different interpretations, consumers' behavior it is an important measure to develop a marketing mix effectively. Secondary data about organic consumers profile was used as base to define some characteristics of the asparagus consumers (Darnhofer & Lindenthal, 2009; Kranjac, Vapa-Tankosic & Knezevic, 2017; Magnusson, Arvola, Hursti, Albert & Sjoden, 2001; Chinnici, D'amico, Pecorino, 2002).

The production of asparagus could be intended for the final consumer (B2C) and/or to business firms (B2B), for that reason it is necessary to establish the profile of both segments separately. Even though, the main focus is the business to consumer segment (B2C), since is the most profitable one, less costly and that allows an unstandardized asparagus delivery. To do so, the following analysis will be decomposed in segmentation variables for consumer and business markets, such as, geographic, demographic, psychographics, behavioral and benefits sought variables.

#### **5.3.1. Business to consumer (B2C):**

### ***Demographics***

This variable includes statistics that measure observable aspects of a population, like age, income, gender, generation, marital status, family size, occupation, education, ethnicity and religion.

The measure that most weights when it is necessary to differentiate buyers and non-buyers of organic products, and consequently organic asparagus, it is indisputably the socio-economic background. The profile of organic purchasers is mainly upper/middle class, once the price stipulated organic products is a premium price. Regarding the other measures, the consumer is characterized to be aged between 25 – 34 years old or 35 – 44 years old, mainly females, at least with an education level of bachelor's degree and usually the family size is small (maximum 4 members).

### ***Geographics***

Usually the high percentage of organic asparagus happens in urban areas and this aligns with the age range established on the demographic variable. Additionally, the big cities in Portugal, as Lisbon and Porto, are the cities where this type of consumer is usually located.

### ***Psychographics***

Lifestyle, personality, activities, interest, and opinions are essential measures to analyze in depth the consumers' attitudes.

Consumers of organic asparagus are aware and worried about the health and well-being of themselves and their families. Thus, when purchasing they look for healthy choices, which leads to a higher purchase basket of organic products. When purchasing they opt to buy directly to the producer and they don't buy just for themselves but also for the whole family. Sports, active live and nature passion it is part of their daily life.

### ***Behavioral***

Consumer behaviors and the purchase decisions are reflected through usage rate, loyalty, product knowledge, involvement, purchase occasions and buying states.

Considering the limited production of this product, the purchase timing is situated between winter and springtime. Asparagus could be considered a utilitarian product, as there is an active and rational search of information and evaluation of alternatives when choosing the best option. Hence, the buying stage it is somehow rational in the beginning, but if the consumer is already



familiar with the product the process became natural and without a need to use the rational side. This fact it is proved by the recurrent usage rate of the product, which transform the high involvement of an initial consumer, in a process that requires less involvement when the desired product knowledge is achieved.

In general, when the consumer it is satisfied with the product, he always returns to buy. When this level of loyalty it is achieved the consumers' sticks with the brand and even recommends to their beloved ones.

### ***Benefits Sought***

Consumers of organic asparagus are considered to take care of themselves and known as the ones that choose the best options for their lives. With that in mind, there are some statuses related to the consumption of the biologic product, especially for sports people. Moreover, organic asparagus is considered a premium product that people are willing to pay more money in exchange for benefits, such as, health, quality, flavor, tenderness, and freshness.

### **5.3.2. Business to Business (B2B):**

#### ***Geographics***

Similar to B2C, Quinta da Fortaleza partners are located mainly in urban areas. Considering the geographical location of the production, Portugal and Spain are the main countries to do partnerships.

#### ***“Firmographics”***

Regarding the retailing industry, traditional and convenience retailers are the main partners aligned with the concept of organic asparagus. Respectively, their size is considered small/medium and they are present in all Portugal territory, mainly in business centres of cities. These characteristics are chosen based on the positioning of the brand and the amount of production harvested by Quinta da Fortaleza.

Asparagus is perceived as a product that it is used in high *cuisine*, which leads to business opportunities for Quinta da Fortaleza, mainly with high-end restaurants.

#### ***Behavioural***

Quinta da Fortaleza partners usually require orders with some frequency, mainly weekly frequency, as the time of production is limited, and the freshness of the asparagus is one of the major competitive advantages. Thus, implies that the partners value urgency and loyalty when answering to their needs. Moreover, they are averse to risk, as they preserve the commitment and the close relationship of the partner without flaws. They prefer fast and flawless responses with good service rather than volume.

### **Benefits Sought**

Considering the “firmographics” characteristics presented above, by default, the partners' relations are more connected to each other, which can bring some benefits, such as fast response, fresh products, customized service and products (e.g. special packaging). Moreover, the partners are more quality-oriented and not focused on the price. They intend to have a high service quality and a closer relationship in order to fulfill the needs of their consumers.

### **5.3.3. Consumers perceptions of Organic**

The spontaneous association connected with the term organic is mostly the word “expensive”. Besides the price, there are positive levels of awareness of what organic means, being the most common definition “free from chemicals and pesticides and therefore healthier”. As well, terms such as healthy, natural and sustainable are more likely to be linked with organic product.

## **5.4. Competitors**

### **5.4.1. Direct Competitors**

Direct competitors are brands who sell their organic and non-organic asparagus to the specific market that Quinta da Fortaleza is competing on. This type of companies usually follows a similar business plan and similar basic strategies; hence, the consumer target will be in some aspects very similar.

Brand	Characteristics	Product	Target	Price	Promotion
<b>Villabosque</b>	The Company VILLABOSQUE - Produtos Agrícolas, Lda was founded in 2015 in the heart of the Ribatejo region, with an initial area of about 5.5 hectares. As the development of a project of production and commercialization of Asparagus Greens,	Non-organic Asparagus	Their target are big retailers with the objective to sell through the retailers their product	2,99€/250g	Online presence, simultaneous on a website and with a Facebook page, but their promotion is mainly made by the retailers

Business Plan: Quinta da Fortaleza Organic Asparagus Production

	reaching in 2017 an area of 11 hectares of plantation, they intend to reach in 2018 a total area of 14 hectares				
<b>BioCheers</b>	Biocheers is located in the geographical area of Penafiel where it has installed a specialized team for the packaging as well as cold logistic structure for the transportation of its products. With around 10ha certified for organic farming, Biocheers has intensified collaboration with small local organic farmers. Biocheers also has exclusive partnerships with other organic producers as well as strategic partnerships with organic farmers from other countries to fill the periods of national non-production.	Organic Asparagus and other Organic Vegetables	Their target are retailers and also final consumers, they adopt the strategy of doing partnerships with other farmers in order to have a bigger power of negotiation with the retailers	3,99€/250g	Facebook Page but their promotion is made mainly by the big retailers
<b>NatureFoods</b>	NatureFoods is a brand of Dietimport. Dietimport The company Dietimport was formed in 1990 and came up with the know-how of its founders, aiming to import and distribute healthy products from various areas. From products for diabetics and celiac, biological and vegetarian, food supplements and even natural cosmetics, orthopedic products, etc., distributing to the whole country.	Healthy products from various areas. Products for diabetics and celiac, biological and vegetarian, food supplements	Their target are organic products lovers, vegetarians and all the persons who are related with the sustainable way of living	6,80€/280g	They resell their products to retailers
<b>Grow it</b>	With over 2 decades of experience in organic farming growit.pt appears. A normal evolution for the modern farmer who searches the internet for the maximum information to plan their crops. Growit.ie offers you a wide selection of high-quality seeds, in addition to seeds we offer you other products related to agriculture with always in mind a sustainable agriculture.	Organic Asparagus and other Organic Vegetables	Their target are the organic lovers	2,5€/250g	They sell their products through a online store
<b>Terras de Felgueiras</b>	Sixty years ago, a group of winemakers dreamed of taking their wines further and beyond. They knew that together they would be stronger, and so the Adegas Cooperativas de Felgueiras was born. They adopted this strategy aslo for the organic vegetables, so Terras de Felgueiras was born	Wine and organic vegetables	Organic Lovers	2,5€/250g	They export to the Spanish market

<b>Garccia Mateo &amp; Sinova</b>	They have more than 23 years of experience in the production and distribution of fruit and vegetable products for off-season. They are one of the largest importers in Europe of fresh green asparagus; product that we commercialize uninterruptedly during the 12 months of the year. They have our own cultivation fields in Peru, Ecuador and Argentina.	They sell vegetables and fruits	Big Retailers	4,5€/250g Asparagus and 4,95€/200g of heads asparagus	They sell for all Europe and Latin American

Table 2 - Quinta da Fortaleza Direct Competitors  
Source: Author, 2018

### 5.4.2. Indirect Competitors

Indirect competition is considered competition between companies that make slightly different products but with the aim to target the same type of customers. Apart from targeting the same segments, they also pretend to satisfy the same needs and consumer wants. For example, a company that produces organic and non-organic leek is considered an indirect competitor of Quinta da Fortaleza. This happens because the client profile is similar and the needs that the products satisfy are closely related or in some situations considered as substitutes. Hence, even knowing that these types of competitors don't affect the brand directly, it is important to have them into account in order to identify barriers and opportunities for Quinta da Fortaleza.

Indirect Competitors of Quinta da Fortaleza examples:

LEGUMETEJO – It is a company that produces several types of vegetables and sells them on the Portuguese and European markets.

NUTRIGREEN – It is a producer of several fruits and vegetables that acts on the Portuguese markets.

Despite both companies do not sell asparagus, Quinta da Fortaleza must have them into account, as its products are considered as substitutable of asparagus.

## 6. INTERNAL ANALYSIS

After a depth external analysis, the SWOT presented next aims to identify internal strengths, internal weakness, external opportunities, and external threats. Thus, this analysis will help to develop a precise linkage between internal and external environment and business management (Houben, Lenie, & Vanhoof, 1999).

### SWOT

#### STRENGTHS

- ⇒ A production that is harmonious with the environment and with the surrounding habitats thanks to sustainable method of production.
- ⇒ Considered a type of product with recognized interest to society.
- ⇒ A style of production highly compatible with the climacterics conditions of Portugal.
- ⇒ High connection between what is organically produced and the Mediterranean diet.
- ⇒ The Producer is younger than the regular farmer, with higher scholarship level and with well-defined goals to their agricultural campaigns.
- ⇒ Good application of community funds, with a positive impact on society.
- ⇒ Premium Location
- ⇒ Quinta da Fortaleza Value Chain

#### WEAKNESSES

- ⇒ Demand of Organic Products bigger than Supply
- ⇒ Lack of supplements to production (seeds, fertilizers, etc...) and when they exist, are extremely costly.
- ⇒ Lack of organization among producers that leads to a weak power of negotiation with the wholesalers and retailers
- ⇒ The growth of the Organic Productions is limited by the lack of knowledge and know-how on this field.
- ⇒ Few investments on marketing
- ⇒ Lack of data and information in order to take the right approach
- ⇒ Low profit Margin per unit

#### OPPORTUNITIES

- ⇒ The existence of Market niche at the national and at European level.
- ⇒ Crescent demand for organic products.
- ⇒ Bigger personal concern regarding food quality and safety.
- ⇒ Distrust of the population in relation to conventional agricultural products.
- ⇒ Greater consciousness about the necessity of consuming National, sustainable, healthier and high-end products.
- ⇒ The population more aware of the benefits of organic meals, this awareness is developed by the school, canteens, healthcare services, and even the restaurants
- ⇒ PDR2020 measures to support organic production.
- ⇒ High selling Prices

#### THREATS

- ⇒ Due to macroeconomic and financial moment is very hard to get financing from private and state-owned entities
- ⇒ Lack of Knowledge
- ⇒ High competition for the funds mainly coming from the conventional agriculture
- ⇒ High market competition by the conventional agricultural products, through aggressive market campaigns
- ⇒ High selling Prices
- ⇒ Substitute products

## 7. PLAN OBJECTIVES

One of the theories studied in the literature review chapter was the theory of management by objectives, which basically consists on setting and performing managerial tasks (planning, organizing and controlling) to achieve the defined goals. Indubitably, for a clear establishment of the managerial task is needed to set the quantitative and qualitative goals. So, Quinta da Fortaleza established objectives can be observed below:

### **Qualitative objectives:**

- Rejuvenation of the agricultural sector.
- Increase the attractiveness of organic products.
- Spread the benefits of organic products.
- Creation of alliances with other local producers.
- Promote more activities that will bring new costumers to the organic market.
- To be one of the market references when speaking about organic asparagus in Portugal.
- Change the buying experience of organic products.
- Promote rural development.
- Promote sustainable ways of agricultural productions
- Promote healthier and sustainable ways of living through the consumption of organic products

### **Quantitative objectives:**

- To have a maximum production capacity of 6500 kg per hectare.
- Achieve 35% of the total pretended production in the second year of the project.
- Achieve 70% of the total pretended production in the third year of the project.
- Be able to drain all stock each year.
- To have an average price of selling 6€ per kg.
- To get a financial autonomy higher than 80% on the fifth year of production.
- Cover the initial investment in less than 3 years.
- Overcoming 100.000€ of annual turnover, before the sixth year of operation.

## 8. DEVELOPMENT STRATEGY

### 8.1. Strategy Definition

The differentiation strategy focuses on make the product attractive and unique in comparison with the competitors. Hence, Quinta da Fortaleza location of asparagus production is the main differentiator factor. But, differentiation strategy will be complemented by a focus strategy to attract a niche market throughout the product. To follow this strategy, there is the necessity to understand deeply the needs of the costumer, in order to meet the respective needs and to provide something extra that the customer cannot get anywhere else.

So, both strategies will be adopted, as a view to drain all the production at the best price possible. Moreover, the conjunction of two strategies is the best way to gain competitive edge over the competitors. So, based on Michael Porter Generic strategies model was possible to define the strategy that will lead this project to success. To reach to this conclusion, SWOT Analysis, 5 Porter Forces Analysis were compared between each other's.

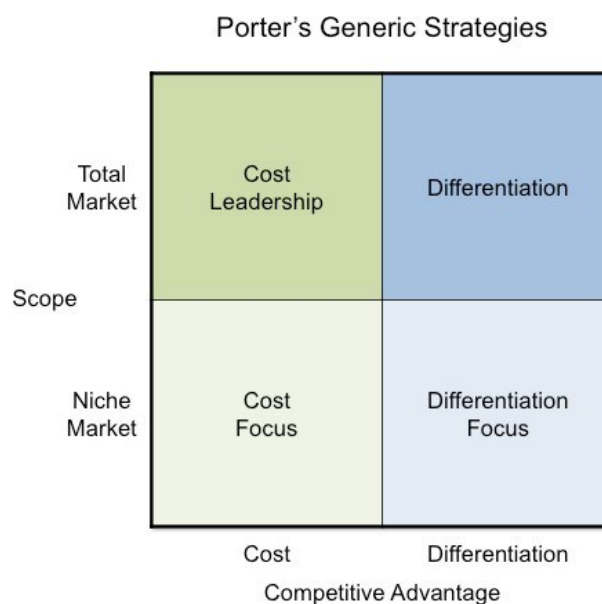


Figure 5 - Porter's Generic Competitive Strategies

Source: Adapted from Porter,1980

The differentiation focus lies on the following competitive advantages:

- ⇒ Premium production location with the stamp of UNESCO to World Heritage site.
- ⇒ A product 100% Portuguese
- ⇒ A product 100% Biological
- ⇒ Qualified staff

⇒ High quality product in terms of flavour and in terms of nutritional quality

## 8.2. Vision, Mission and Core Values

Vision, Mission and Core Values allow companies to know where business is going (vision), the plan to get there (mission) and the standards (values) on how to operate business. Paraphrasing Tallant (2009), “*without the individual foundations of strong values illustrated by a vision to be undertaken by a mission, an organization cannot become an overly successful organization*”.

### ***Vision***

To be recognized as the best organic asparagus and to be the first choice for epicureans all this in a sustainable way, inserting in the market a healthy product and to be a socially-responsible company.

### ***Mission***

Provide a unique flavor journey through 100% Portuguese and organic product that simultaneously is a sustainable and healthy product.

### ***Core Values***

Sustainability - To be environmentally responsible, applying the best practices in order to be ecological and environment-friendly

Organic - All the production is produced on a 100% organic way

Education - Encourage informed choices and demonstrate the impact on personal health and the health of the planet

Family - Quinta da Fortaleza will be managed having as basis all the Santana Marques beliefs, attitudes and convictions. In the core value Family can also be included the pride by the roots and by the place where the product comes.

## 8.3. Critical success factors



The principle of identifying critical success factors as a basis for determining the strategy that companies should adopt was created by Ronald Daniel of McKinsey & Company in 1961 and the method was refined into critical success factors by Bullen and Rockart in 1981. Additionally, identifying critical success factors is important because allows companies to focus their efforts on building their capabilities, in order to meet critical success factors that were outlined. Some of the critical factors required for ensuring the success of an organic production are identified below:

Critical Success Factors	Description
<b>Farm production plan</b>	Defining the optimal amount of land and the right amount of seeds that should be planted
<b>Sufficient volume</b>	Defining the right amount of seeds to have a return on the investment
<b>Good farming practice</b>	Knowledge, balanced ecosystem, plant nutrients, pest management
<b>Harvest only edible pieces</b>	Defining quality standards during harvest
<b>Postharvest control</b>	Defining quality standards during the preparation process
<b>Quality of supply</b>	Logistics very well defined
<b>Simultaneous and collaborate system</b>	To be part of several organizations and cooperatives in order to have power of negotiation with the big retailers
<b>Direct supply from farm to pack houses</b>	Everything in the same location
<b>Minimizing waste (approaching zero)</b>	By utilizing the production that not reach to the standards requires
<b>On-time payment</b>	Stablish this policy is vital to all operation
<b>Direct access to market</b>	Have several partnerships to allow this critical success factor

Table 3 - Quinta da Fortaleza Critical Success Factors  
Source: Author, 2018

#### 8.4. Partnerships

As stated in the literature review the best strategy that an organic producer can adopt is doing partnerships with other producers, in order to enlighten the consumer regarding the benefits of organic products. The main reason for consumers not to buy organic products is the lack of knowledge about organic products and the lack of knowledge about how to use them when cooking. To reverse this lack of awareness about organic products campaigns, workshops, promotions, cooking shows and another kind of activities must be performed.

Partnerships should also be made with high-end restaurants and specialized organic retailers in order to obtain a direct channel to drain the product at a competitive price. On another hand, normal wholesalers should be avoided due to the specifications and requisites that require, such as product standardization, a low price of purchase, deferred payments, and each wholesaler has its own type of packaging requirements.

## 9. DEFINITION OF IMPLEMENTATION POLICIES

### 9.1. Brand

A product is anything that can be offered to the market for attention, acquisition, use or consumption that might satisfy a need or a want (American Marketing Association, 1995). A brand is a “name, term, sign, symbol, or design (or combination of them) which is intended to identify the goods/services of one seller (or group of sellers) and to differentiate them from those of competition.

The branding strategy reflects the number and nature of common or distinctive brand elements applied to the products sold by the firm. The primary brand elements include the brand name, logotype, sub-brand or product/feature naming and main colors.

Quinta da Fortaleza is the brand name that identifies this organic production of asparagus. Behind Quinta da Fortaleza brand there is a family story that continues to be feed by new the generations. This name aims to convey to the consumer's a sign of quality level and as means of endowing unique associations, such as family, organic, nationality, healthy, premium brand level and be known to give special attention to the final consumer. When creating the name, the main goal was to capture the key values of the brand, make something easily recognized, meaningful and likable. Moreover, Quinta da Fortaleza it is a name that serves as an identifier and communicator to the final consumer.

A rustic design with the initial letters of the Santana Marques Family in the center, it is part of the logo. The cross that involves the initials of Santana Marques Family is a symbol that had been used in times to identify the cattle. Hence, the concept of the logo is based on the "ferro" used in the past to identify the cattle and the Family in general. Identification of Quinta da Fortaleza and the region, Elvas, it is also part of the major elements, as it is where the asparagus production is made and where the brand was born, enhancing the differentiation point.

The logo tries to convey the origin, ownership and the brand associations with a simple and clean image. Additionally, the combination of the old stories and the freshness of the new generations it is easily perceived through the design presented by the logo, represented in figure 6.



Figure 6 – Quinta da Fortaleza Logotype  
Source: Author, 2018

## 9.2. Segmentation, Targeting and Positioning

### *Segmentation*

Market segmentation is the process of dividing consumers into groups. The segmentation process must fulfill specific requirements, such as be homogenous, measurable, substantial, accessible, practical, and responsive. The firms need to be able to implement a distinctive marketing-mix for each market segment and each market segment should respond better to a distinct marketing mix, rather than generic offering.

The segmentation criteria could be applied through demographic influences, geographic, social and economic, lifestyle influences, psychological and usage behaviours.

Regarding the market itself, the segmentation process was divided between two main groups of consumers.

The production of asparagus could be intended for the final consumer or to business firms. In order to communicate effectively with these distinctive segments and follow the information available in the customer profile sector, the following analysis will be divided into business to business's segment and business to consumer's segment.

#### Business to Consumer:

Bearing in mind the defined B2C customer profile, two distinct segments of final consumers stand out, the passionate and the casual consumers. Some standards of these segments were defined previously from an organic consumer research study, whereby it was chosen the ones with characteristics more aligned with the intended segments for this project (Bord Bia, 2014).

**Passionate** - In general, *passionate* customer is more likely to be female, from an upper-middle-class, and be aged 35 - 44 years old. This segment purchases organic products with some frequency and they are considered pro-active purchasers of organic food. They have the habit of planning their purchase process, by defining in advance the purchase basket. During the purchase process, this type of consumer looks for a clear identification of organic products in the store, to facilitate their shopping experience.

**Casual** - Casuals consumers are younger, aged between 25 and 34, urban citizens, and usually are considered middle-class.

Their purchase frequency tends to be less compared with the Passionate consumers. This type of consumer tends to be more sceptical about the organic concept, hence, they are more selective in what they buy. Casuals are not overly concerned with sustainability.

#### Business to Business:

In the Business to Business segment the consumer/partner were defined as **traditional**.

They are not price sensitive and value high quality. Traditional and convenience retailers located in urban areas are the most aligned with this business concept. As well, high-end restaurants collide with positioning of Quinta da Fortaleza Asparagus. Regarding their small/medium size, this type of partnerships appreciates loyalty, commitment, and good service rather than volume and standardization approaches. Thus, high service quality, closer relationship and flawless responses are values that traditional consumers require in their daily business.

#### **Targeting**

Targeting it is the process of identifying what makes an attractive segment to target. General criterion, such as size and growth, structural characteristics and product-market fit are in need to analyze to better select the optimal target.

#### *Size and Growth*

Based on the Market Analysis section, the current organic asparagus market, even with strong potential to grow, still is a smaller percentage in the agriculture sector. Consequently, the market potential it is huge and the growth forecasts in this business have been increasing in the past 3 years.

### *Structural Characteristics*

Regarding the structural characteristics, it is important to have into account the competition, segment saturation, and the environmental risks.

Through the Five forces of Porter analysis made in chapter 5.2.2., it is clear that there are strong barriers to entry in this type of market and the demand of organic asparagus is higher than the supply, which leads to a lower retaliation between competitors because there is enough space for each producer.

The segment saturation can be affected by gaps in the market, such as the low familiarity, low knowledge, and usage by the consumers of organic products; even if in the past years this concept has been more popular there still a huge slice to fulfil in the market. Moreover, asparagus is a product that is difficult to differentiate by itself and it can be easily substitutable. When it comes to the topic of environmental risks, it is crucial to mention economic, political and technological changes that can influence the market. As a brief overview of this topic, considering that this market it is many times supported by European funds, it is always dependent on the decisions made by these entities, which leads to a political-economical risk. Organic asparagus market and in the agricultural industry in general, there is a big path to be covered in terms of the use of technology. Meanwhile, with the renewal of the generations this path is already presenting some changes.

### *Product-Market Fit*

The company fit and the profitability are fundamental criterions to measure product-market fit. Quinta da Fortaleza Asparagus looks to be consistent regarding the consumers' expectations and the actual company performance, trying to not create gaps in the brand image.

In terms of profitability, huge entry costs and time-consuming are negative factors when talking about profitability. Nevertheless, in long-term, and if supported by the European funds, it is a type of production that will lead to high-profit-margin and a very positive Return on Investment.

After the above depth analysis in terms of segmentation and targeting methods, the optimal approach to target effectively the selected segment it is the Concentrated Targeting Strategy. To do so, the message is designed to communicate the benefits desired by a single specific segment, better saying, the message it is conveyed for a niche of the market and not to everyone.

## ***Positioning***

Positioning it is the perception about a brand that is created in the minds of the consumers of the target market. Yet, positioning it is not necessarily what the brand does with its products, but what the brand does in the mind of the prospective consumers, influencing both perceptions and leveraging on preferences (Ries & Trout, 2000).

As a tool of positioning, the BrandKey model will be used. This model can be applied to position any brand and it also allows the brands to establish the areas that in need to improve and develop a more effective strategy (BecauseBrandind, 2016).

Through the Quinta da Fortaleza Asparagus BrandKey model, it is perceptible that this model has nine stages that can lead to differentiating and relevant brand positioning. Furthermore, the BrandKey model allows for the distinction between the current situation of a brand and its future. The integration of the model is based on external (Root Strengths, Competitive Environment, Target, Insight) and internal factors (Benefits, Values, Beliefs & Personality, Reasons to Believe, Discriminator and Essence) influencing a brand.

Each stage will be explained below (BecauseBrandind, 2016), as well the Quinta da Fortaleza Asparagus Brand Key model.

### **1. Root Strengths**

The first step of the BrandKey model looks at the basic/original attributes and values/benefits that the brand is built on and known for.

### **2. Competitive Environment**

The competitive environment respects to the market and alternative choices as seen by the consumer and the relative brand offers in the market. The choices available to the consumer which Quinta da Fortaleza competes.

### **3. Target**

Target stage describes the chooser of the brand, the person for which the brand is always the first choice. Chooser should be defined in terms of attitudes, behavior and values as well social-economics.

### **4. (Consumer) Insight**

Insight represents the element that all know about the target consumer and their needs. Latent needs, purchase motives and so on.

#### *5. Benefits*

The fifth stage is composed by Functional and Emotional benefits that help consumers solve their problems or improves a situation.

Functional benefits are based on a product attribute that provides functional utility to the consumer. Emotional benefits give the positive feeling, add richness and depth to the experience of using Quinta da Fortaleza Asparagus products.

#### *6. Values, Beliefs & Personality*

The brand values, what the brand stands for, what the brand believes in and its personality make part of the sixth stage.

#### *7. Reasons to Believe*

Reasons to believe are the proof that the brand delivers the benefits that it promises and that the benefits are true and credible. Arguments why Quinta da Fortaleza Asparagus is the best option for the target group.

#### *8. Discriminator / USP*

The single most compelling reason the consumer chooses a brand is mentioned in the discriminator stage.

#### *9. Essence / Brand Idea*

The brand's genetic code into one clear thought. The brand essence is the heart and soul of the brand as it guides all brand actions.



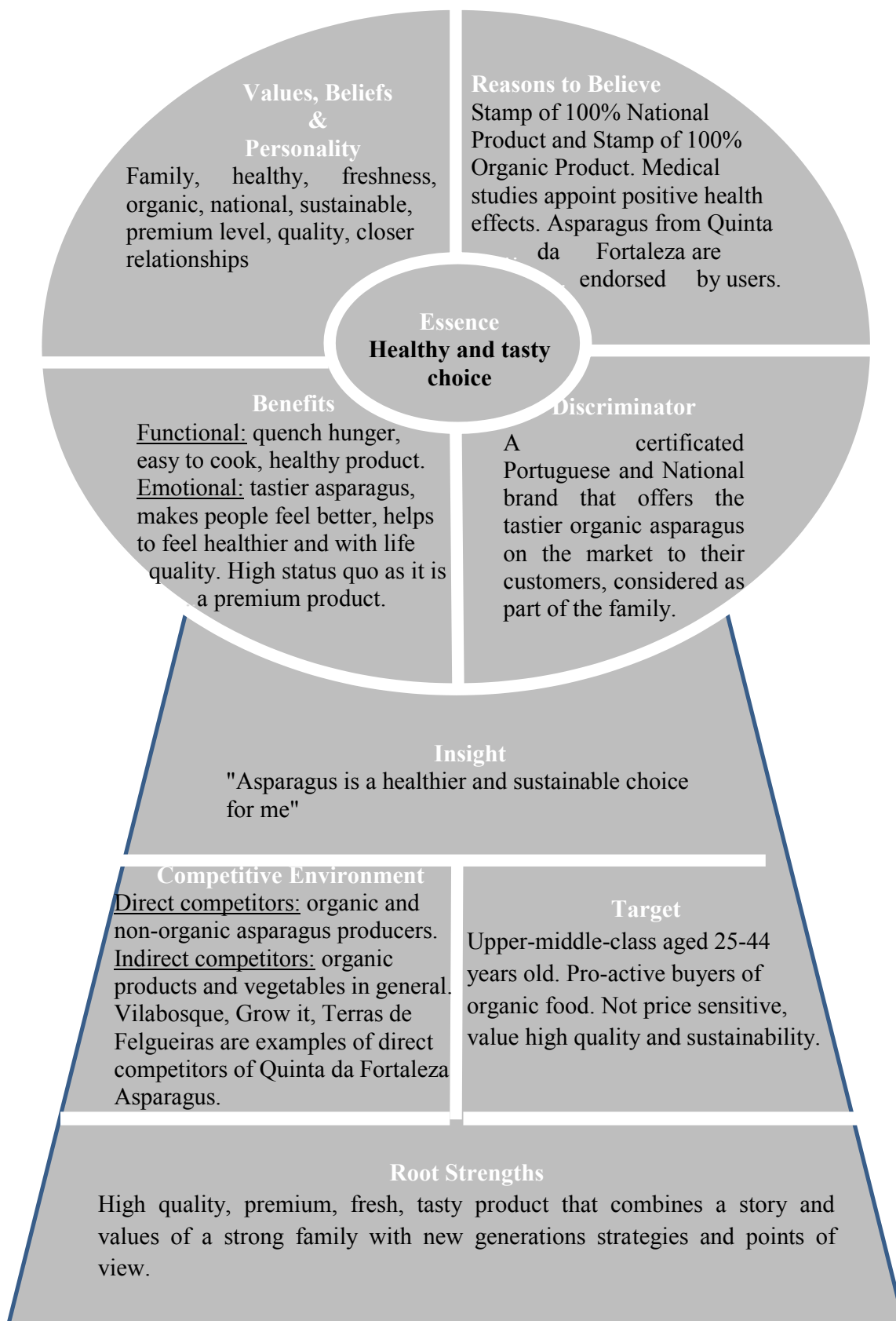


Figure 7 - Quinta da Fortaleza Asparagus Brand Key model

Source: Author, 2018

After BrandKey model application, all the information is gathered to fill the brand positioning statement. With statement form, as followed below, it is clear and easy to understand the position of Quinta da Fortaleza Asparagus.

*Brand positioning statement*

**To** \_\_\_\_\_, **is the brand of**  
(Target group, users/need) (Brand name)  
 \_\_\_\_\_ **that** \_\_\_\_\_,  
(Competitive framework) (Point of differentiation benefit)  
**because** \_\_\_\_\_.  
(Reason why)  
**The brand character is** \_\_\_\_\_.  
(Brand character)

Figure 8 - Quinta da Fortaleza posting statement

Source: Author, 2018

**To** pro-active consumers of organic food that believe in high quality, that organic products taste better, are healthier and have a positive impact in their lives, Quinta da Fortaleza, **is the brand of** organic asparagus **that** produces the tastier national asparagus on the market, **because** it is a certificated organic production, produces on UNESCO World Heritage Centre aligned with the perfect conditions to the production.

**The brand character is** family, healthy, freshness, organic, national, sustainable, premium level, premium location, quality and closer relationships with the customers.

### 9.3. Marketing Mix

**Product**

The project is about offers to a niche of market a high-quality product in terms of flavour and nutritional quality. Through the organic asparagus production from Quinta da Fortaleza, the consumers can access to a unique flavour journey with a 100% Portuguese product and sustainable at the same time.

Additionally, all the production process, described below, stands out the quality level of the product.

*Climate* - Asparagus is a plant that has an easy adaptation in a wide range of soils and under various climatic conditions. Although, when it grows in fertile well-drained soils in moist temperate regions that have long growing seasons and sufficient light for maximum photosynthesis, the conditions are reunited to have a healthy and prosper production. Quinta da Fortaleza grant all the condition for the best growth of the asparagus, especially the natural light factor, that it is one of the most important elements in the developing process.

*Site Selection and Preparation* - Quinta da Fortaleza is composed of medium textured sandy loam soils. As asparagus can be productive for 13 years or more, which allows a huge rentability in a long-term perspective, there is important to pay special attention to site selection and preparation for this cop as Quinta da Fortaleza did. Usually the highest yields are obtained in the type of solos as Quinta da Fortaleza solos, which leads to a competitive advantage.

*Soil Fertility Requirements* - Soil tests were made to identify needs for lime, phosphorus, and potassium. Asparagus is not receptive to extreme acid soil conditions and grows best at a pH of 6.5-7.0. Quinta da Fortaleza has a pH of 7,9 but was corrected to be in line with the necessary requisites.

*Optimum production space and temperature* – One hectare corresponds to the size of Quinta da Fortaleza production, which is divided by 25 lines with an average length of 100 meters. Each line has two parallel lines, alternated with a space of 20 cm (e.g in 100 meters of a total of 1000 plants).

In terms of temperature, 500 hours a year of temperature below 10 degrees it is the necessary temperature for a healthy production, which usually corresponds to the Mediterranean climate.

*Plant typology* – The type of Asparagus seeded on Quinta da Fortaleza production was *Asparagus Officinalis De Paoli uc 115*. Will be planted 50.000 thousand seeds, with an age of eight months. Due to the optimal conditions of the field, the good weather and the previous preparation of the land, it is predicted that almost 95% of the plants will have a successful adaptation to the land.

*Packaging*

It is usually said "*people eat with their eyes before eating with their mouth*", hence as a food product Quinta da Fortaleza must look to stand out based on the good-looking and in the taste feelings that create in the mind of the consumers. Not just the aspect of the product itself, looking fresh, tender, greener, "head" closed, it is important to satisfy the consumers feedbacks, so the packaging should have a functional and emotional purpose.

The functional purpose must aim the protection of the asparagus during the distribution and when kept in the stores, keeping freshness, the good look, the tenderness that differentiates the product in the market. Regarding emotional function, Quinta da Fortaleza should stand out, be simple, trigger emotional engagement and create iconic access.

The product will be delivered differently according to the consumer segment.

#### *Business to Consumer packaging*

For the final consumer, the packaging must be easy to carry, appealing, customized and allow the consumer to see the product that they are buying, meaning the consumer has the possibility to check the product before buying it.

With that in mind, a simple black box, containing the name of the product, enhancing its 100% organic and 100% national feature, the logotype brand, the local of production, contacts of Quinta da Fortaleza (social media, email, phone and among others) and conservation methods are essential elements for the packaging.

To better target this consumer segment, some customized elements will be included, such as ideas for recipes to cook with asparagus and inspirational quotes for special dates (e.g. Easter, birthdays, and special dinners).

In terms of proportions, the box for individual customers will carry one kilogram, divided into four bits of two hundred and fifty grams. If the quantity ordered don't exceed five kilograms, individual boxes will be sent, otherwise, the boxes to considered will be the same used in business to business segment, explained as follows.



Figure 9 – Packaging Business to Consumer

Source: Gourmet trading company, 2017

### *Business to Business packaging*

Considering that this segment demands bigger quantities when compared with the final consumer, the packaging must be aligned with the segment needs. Moreover, it is important to have in mind that this type of segment at the end of the purchase stage will sell to the final consumers, meaning that the function of the packaging for this segment it is to transport easily individual portions for the final consumers.

Therefore, the same type of box used in business to consumer segment with larger size will be delivered, containing five kilograms divided by twenty bits of two hundred and fifty grams. The 20 bits will be separated and identified with a raffia wire and with a small label that contains the brand and product identity. Additionally, this type of box is transformable, meaning that allows the business to business consumer to convert into a display box for the final consumer.



Figure 10 – Packaging Business to Business

Source: Gourmet trading company, 2017

### *Payment process*

Usually, the payment process applied for the business to consumer segment it is the payment on time, meaning that the client pays on the delivery act. Quinta da Fortaleza it is flexible regarding the type of payment, such as cash, bank transfer, and MB way.

In terms of payments by business to the business segment, the only difference it is the payment time. Commonly, the payments are made with two or three months of delay relative to the time of delivery, following the same payment methods as the business to consumer segment.

**Price**

The customer of Quinta da Fortaleza usually is low price sensitive and believes that higher price means higher quality, which implies that, the premium price it is justified by the high levels of quality presented by the brand. The low-price sensitivity is justified by the high involvement and knowledge that the consumer has about organic asparagus when buying it, meaning that the price sensitivity is dependent on the knowledge that consumers have on the product category.

Quinta da Fortaleza consumers’ make the purchase and weight the benefit associated with buying the organic asparagus with the benefit associated with saving the money in long-term combined with healthy choices.

In summary, premium price policy and non-price competition will be the adoption policies that Quinta da Fortaleza will charge. The prices defined for each customer segment are represented in the table below.

Business to Consumer Segment	Business to Business Segment
6€/kg	4€/kg

**Table 4 – Average price per Segment**

Source: Author, 2018

According to the competitor’s analysis, the price of Quinta da Fortaleza Asparagus is aligned and in the same range of the market. The prices applied by the brand are situated in the middle compared with the competitors, it is not the cheapest and it is not the most expensive.

As a premium product, sales promotions are not defined in Quinta da Fortaleza strategy, however, depending on the client and business opportunity this tool can be applied in accordance with the necessities to close good deals.

## ***Place***

For the final consumer, B2C, the asparagus will be mostly marketed via Facebook, official website, phone and email orders. As well, organic products fairs' and deliver to companies' partnerships will allow the consumer to buy Quinta da Fortaleza organic asparagus.

The distribution process has four strategic points based on the resources available by the Santana Marques family. Elvas, as the production base, Castelo Branco, the family fiscal address and, finally, Coimbra and Lisbon which are zones where Quinta da Fortaleza have more contacts, hence, there are more potential customers.

The management of the distribution depends on the quantities ordered and if the destination of the product it is located or not on the usual route. In a view to the distribution process to be profitable, when the destination is part of the fixed route, there is a minimum order per client that corresponds to 1kg/8€ (VAT – 6%). When there is a need to deliver outside of the stipulated route, as predicted, the minimum orders its higher, 15kg/120€ (VAT – 6%).

Quinta da Fortaleza preferences when distributing to B2B segment lies on traditional retailers, convenience retailers, high-end restaurants, vegan/vegetarian restaurants, and restaurants that have in their concept organic food.

Along these lines, stores like Terra Bio, Celeiro, Bio&Natural, Go Natural, 4Bio, Sóbio, Bionio and organic food markets are the type of stores that are in line with Quinta da Fortaleza concept. As well, restaurants such as Basili (Torre de Palma Wine Hotel, Monforte), Pachamama, Suribachi, Organic Caffé, The Paleo Kitchen, Nomalism, Gioia Food Lab are examples of partnerships to have in mind.

As long the limited amount of producing as it is an initial project, the number of partners must be restricted to ensure the supply with the quality that brand promises. Considering that Quinta da Fortaleza initiate with five to six partners, 40kg/240€ (VAT – 6%) to 32kg/192€ (VAT – 6%) it is the minimum amount of asparagus that each partner should order weekly.

## Promotion

A brand image is built in every single contact with the consumers. Consequently, consistency through the marketing communication strategy it is one of the essential requisites to create a strong brand image (Sinek, 2009). The Golden circle presented by Simon Sinek (2009) argues that great brand focuses their entire marketing on the “WHY”. People don’t buy “WHAT” you do, they buy “WHY” you do it.

Quinta da Fortaleza Golder Circle is showed below, with the goal to define the WHY in order to use in a transversal way to communicate with the consumer.

### Quinta da Fortaleza Golden Circle

**WHY** – “We show to the consumer that what is Portuguese is good! Even better when combining health with sustainability. Be stick to your values!”

**HOW** – “We stick to our values by producing the healthier, tastier and tender organic asparagus in Quinta da Fortaleza fields.”

**WHAT** – “That just happens to lead us in producing the best organic asparagus. Do you want to buy one?”

**The Golden circle**  
Simon Sinek

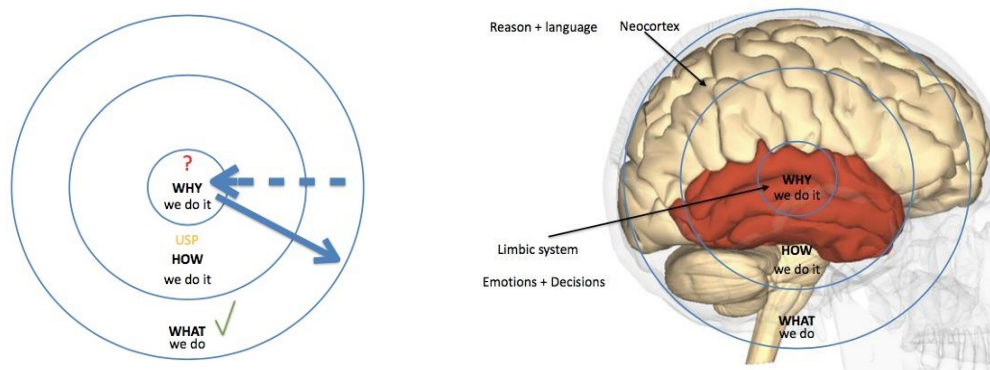


Figure 11 – The Golden Circle

Source: Sinek, 2009

The application of the Golden Circle approach can be combined with the human brain, more precisely connected with the neocortex and the limbic system. When the brands try to communicate through the “WHAT” they appeal to reason and language of the people. In contrast, when communicating through the “WHY” the brands appeal to the limbic system,



doing a call directly to the emotions and decisions, which leads to an easy way to achieve the goal of do business with people that believe in what the brand believes.

Summing up, Quinta da Fortaleza will communicate to its customers based on emotional side and with an aim to reach their touch points in terms of the customer profile.

### *Communication Message*

The purpose of the communication strategy will be, in addition to the high-quality and freshness of the product, to promote brand awareness and the identity of the brand.

The brand must be identified by the consumers based on its values, such as family, sustainability, biological and education. It is essential to fulfilling the promises that the consumers receive from Quinta da Fortaleza communication, with an aim to avoid overpromising and to collide with the trust and close relationship that the brand enhances on its message.

Portuguese, healthy, sustainable, 100%, organic, freshness, tastier, family and education are words that must be recurrently used in the communication strategy independent of the channel used, as well, the respective derivatives.

Despite the brand name and the logo of Quinta da Fortaleza transmit the core values of the brand, slogans are crucial to capture the essence of the Quinta da Fortaleza' promised consumer benefit in one short phrase. To do so, two main slogans will be in place: "Tasty and healthy, it is the Portuguese way!"; "Don't panic, it is organic".

Ad, content, and sales pitch are the three main ways for a brand to deliver a message to its consumers. Each method has a different goal, that is, respectively, to build perception, to create relationships and to persuade. Concerning the specific objectives of Quinta da Fortaleza, content and sales pitch are the most adequate techniques to use. Both methods evolve multi messages, high involvement, flexibility, interaction and contextualization which it is in line with the customers' profile of Quinta da Fortaleza Asparagus.

### *Communication Goals*

- ⇒ To share Quinta da Fortaleza purpose
- ⇒ Create awareness
- ⇒ Clearly show the level of quality, benefits and the premium positioning of Quinta da Fortaleza Asparagus

- ⇒ Educate Quinta da Fortaleza customers about the product
- ⇒ Grab the attention of the maximum number of potential customers
- ⇒ Retain and maintain customers
- ⇒ Get the target to make a purchase or take an action
- ⇒ Try to apply brand switching, persuading customers to leave their current brand and experiment Quinta da Fortaleza products

### Communication Channels

In view to defining what type of channels Quinta da Fortaleza must be present and the different options of investment that the brand has, POEM model was placed in practice (Alvino, Forcheri, Ierardi, Sarti, 2009).

POEM model is composed by Paid, Owned, and Earned Media marketing techniques as ways to find and retain customers. In Paid media the brand pays to leverage a channel, in Owned Media the brand owns and controls the channel and the Earned Media the brand reaches out and interacts through third-party channels.

The table below includes all the strategic places that Quinta da Fortaleza must have in place with the aim to communicate with the different segments defined before.

	MASS (large audiences; TV, radio, outdoors)	WEB (computers, tablets, smartphones)	REAL (physical spaces such as events, stores, street)
<b>PAID</b>		Facebook ads; Google Adwords	Agricultural Fairs; Organic and Vegan Events; Sales Force
<b>OWNED</b>		Facebook page; Instagram page; Official website	Quinta da Fortaleza events Packaging communication
<b>EARNED</b>	Public Relations	Instagram posts by users; Facebook reviews	Word of Mouth

Table 5– Quinta da Fortaleza POEM Model

Source: Author, 2018

Advertising on time - Journals, well-known bloggers, and influencers connected with the organic lifestyle or agricultural based will be invited to visit Quinta da Fortaleza with the aim to disseminate and publish opinion articles about it and recommending it.

### Official Website

The website must be innovative and appealing, with a web responsive design. The main goal it makes the consumers familiar with the brand and creates a feeling that they are part of the brand story. Hence, the website should present the information in a creative, clear and organized way, where visitors can search for the Quinta da Fortaleza story, the production process, the benefits of organic asparagus, the places where they can find the product and information about the product itself.

### *Social Media*

Pages on social media, namely Facebook and Instagram, promoting and creating a closer relationship with customers and potential customers, focusing on recurrent, interesting and appealing posts that arouse interest among consumers. Valuable content through written and/or image approach must be conducted, always align with the brand positioning. Facebook posts should focus on the content in a creative and, at the same time, informative way, as it is considered a more professional social network tool when compared with Instagram. Regarding Instagram actions, image content and proximity is crucial to grab consumers attention. Both the channels must be updated frequently in order to make people aware of brand actions.

### *Google AdWords*

This Google search engine is an easy way to advertise Quinta da Fortaleza Asparagus on the internet. People interested in organic products, specifically asparagus, can find more easily Quinta da Fortaleza website and its Facebook.

### *Public Relations*

Brochures, flyers and business cards must be distributed in places where the customer profile of Quinta da Fortaleza usually frequent, informing points of sell, Quinta da Fortaleza story brief and the benefits of the product.

### *Promotions*

Direct promotions are not a strategic approach by Quinta da Fortaleza. As a premium positioning and the limited time of production due to the type of product, the brand does not intend to make price discounts but rather reward or prized the consumers that have a closer relationship or that are strong potential clients for future business. This can be done by offering extras, such as customized packaging, fasts responses, outdoors and so on.

### *Sales Force*

Direct marketing it is crucial to reach potential customers and convert them into new customers.

- ⇒ High levels of customer attendance combine with the high quality of the product offer will encourage Word of Mouth, leading positive feedbacks and reviews on social media;
- ⇒ To maintain and feed the relationship with the current customers, ask for feedback and do direct marketing through customer data basis (email, Facebook, Instagram).
- ⇒ When present in events, physical communication and commercials must be in line with the concept of the event itself, to transmit effectively the message according to the Quinta da Fortaleza goals.

### *Events*

The brand must be aware of events that might bring some business contacts or event to make the brand spread its voice to the final consumers. Agricultural', organic', vegan', vegetarian', cooking' events are possible opportunities that Quinta da Fortaleza should try to be present with the purpose of creating awareness and increase the customer base. Additionally, Quinta da Fortaleza can create an event on their fields with the main customers, enhancing the relationship and the familiarity around the brand.

Workshops and educational events with innovative concepts and techniques that can be applied in the production process must be part of the Quinta da Fortaleza schedule.

All these activities can be shared with the customer through social media channels and the official website.

In general, the entire communication plan above can be applied to both the customer segments, B2C and B2B. Although, some different approaches must be considered when communicating in separately, namely, the sales force pitch, promotions, and type of events.

Despite that fact, all the communications actions will always have an impact in both the customers' segments, as all the message it is consistent among the channels.

## **9.4. Legal Framework**

When creating a new business is necessary to define the type of organization that better suits the business model. After that it is necessary to follow a set of legal procedures to be in accordance with the legislation.

The first step is to choose which type of organization Quinta da Fortaleza aims to be. Being Quinta da Fortaleza a business developed by only one person, the type of organization chosen is a business in individual name, which consists of a non-differentiation between personal goods and company goods.

For Quinta da Fortaleza to in accordance to the legalization in order to produce and sell organic asparagus, there is the necessity to open activity, with a respective CAE number of 01130 - CULTURA DE PRODUTOS HORTÍCULAS, RAÍZES. Furthermore, the registration of this process can be proved by the "Documento Comprovativo da Declaração de Início de Atividade" that is required by Autoridade Tributária e Aduaneira.

Another type of legal requirement necessary to sell organic products is the 100% organic stamp attributed by the European Union, that allows the producer to sell the products in the market as organic. The mandatory requisites that allow the stamp acquisition are legislated by an independent authority, in this case, being the production in Elvas this factor might be legislated by AGRICERT. This entity serves as intermediary of European Union to regulate and certify the organic production, that follows all the regulamentation present on the Reg. (CE) n°834/2007 (European Union law, 2007).

Additionally, Quinta da Fortaleza should be certified as a "Hortofruticola" producer, which might prevent the eventuality of some inspections made by DGADR - Direção Geral de Agricultura e Desenvolvimento Rural. This certification follows the rules of the article 10 of the Regulation (EU) n° 543/2011 (European Union law, 2011).

There is also a need to draw all the legal aspects, rights, and obligations, regarding the "*Jovem Agricultor*" program. Bellow can be found the conditions of acceptance, obligations and the amounts that the program provides to the farmers (Pdr-2020, 2018).

Conditions of acceptance:

- To be legally constituted;

*Business Plan: Quinta da Fortaleza Organic Asparagus Production*

- Meet in the category of micro or small businesses;
- Demonstrate ownership of the farm;
- Be enrolled in the tax authority with agricultural activity, up to the date of acceptance of the grant of support;
- Be enrolled in the paying agency as beneficiary;
- Present a 5-year business plan that presents technical, economic and financial coherence;
- Present an investment of more than € 55,000.00 per young farmer and less than € 3,000,000;
- The young farmer will not have obtained approval for any investment aid or received a premium for the first installation before the date of submission of the application;
- Not having received any production aid or agricultural activity under the single application.

Obligations of Beneficiaries:

- Exercise farming on the farm for at least 5 years after installation;
- Comply with the business plan and start it within 6 months from the date of acceptance of the support;
- Acquire the condition of the active farmer, within a period of twelve months from the date of acceptance of the grant of support;
- Have adequate agricultural training or, if the farmer does not possess the training, he should acquire and complete this training;
- Complete the execution of the investments foreseen in the business plan within a maximum period of 24 months from the date of acceptance of the granting of the support.

Amount of Support:

- Installation award 20.000€ and +5.000€ if the total investment is > 100.00€;
- If the young farmer belongs to producer's organization, he will receive +5.000€;
- 50% of the amount of the premium if the business plan includes, per young farmer, investments in the agricultural holding amounting to EUR 100,000 or more.

In conclusion, compared with other types of industry, organic asparagus industry does not require a lot of legal procedures. Although, when compared with agricultural production in general,

specifically non-organic vegetables, there are peculiar and demanding regulations that the firms must follow.

Moreover, aligned with the organic production legislation there is also a need to follow all the legal procedures related to “*Jovem Agricultor*” program, allowing Quinta da Fortaleza project to be running in accordance with the law.

### **9.5. Organizational Structure**

Quinta da Fortaleza is considered a small-size company, and as a beginner player in the market, the company structure is composed only by the CEO, which is the respective owner. Hence, the owner is responsible for the major functions of production, distribution, and commercialization.

Although, when needed the company hires external services.

The gross remuneration value attributed to the CEO will be around 650€ euros month.

## 10. IMPEMENTATION REQUISITS

The aim of this chapter is to have an overview of the duration of the project and the main activities timings that allows the project to be implemented. To do so, a Gant Diagram will be used as a map of the steps to fulfill.

Previous to the construction of Gant Diagram there is a need to find out the estimated duration for each activity. Hence, the table below summarizes all the project activities and their respective estimated duration.

Activities	Start Date	Estimated Duratio (Days)
<b>Realization of Studies</b>	20-11-2017	42
<b>Suplier Analysis, Negotiation,Decision (Asparagus Officinalis De Paoli uc 115)</b>	30-11-2017	366
<b>Investment Analysis</b>	01-01-2018	56
<b>Investment Decision</b>	26-02-2018	1
<b>Project Submision</b>	26-02-2018	1
<b>Buying Process (Asparagus Officinalis De Paoli uc 115)</b>	30-11-2018	55
<b>Stamp of 100% Organic product</b>	27-12-2018	730
<b>Aquisicion and instalation of Basic Equipment</b>	24-01-2019	127
<b>Assement of the Field</b>	01-03-2019	80
<b>(Asparagus Officinalis De Paoli uc 115) Delivery</b>	03-06-2019	2
<b>Planting</b>	05-06-2019	15
<b>Hortofruticola Producer</b>	01-10-2019	31
<b>Brand Registration</b>	03-12-2019	88
<b>Harvesting</b>	29-01-2020	98
<b>Communication and Promotion</b>	01-02-2020	600
<b>Reaching agreements with clients (Commercialization)</b>	01-02-2020	95

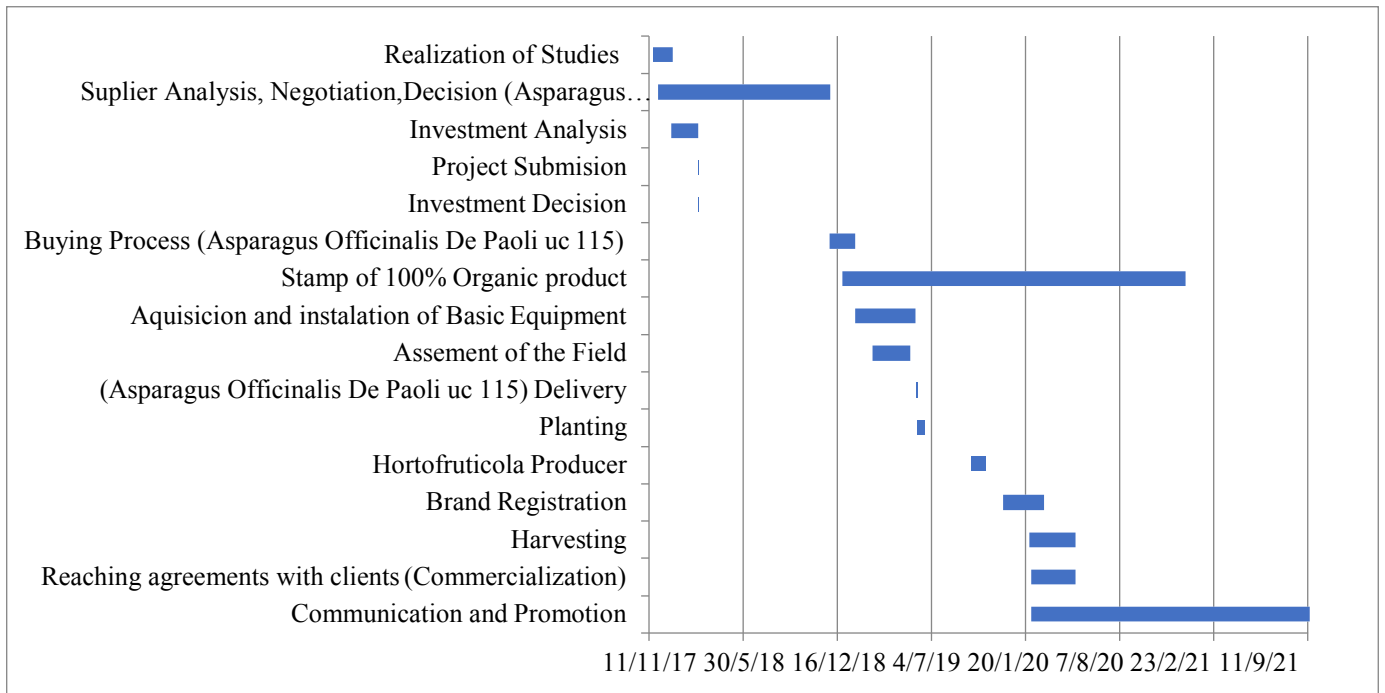
Table 6– Project Activities Duration

Source: Author, 2018

After all the structured data, Gantt Diagram was applied, and it is represented in the image below. Through this representation is easy to have a better understanding of the activities precedence.



Business Plan: Quinta da Fortaleza Organic Asparagus Production



Graph 3 – Gantt Diagram

Source: Author, 2018

As a summary, the project construction began on January 2018 and the first commercialization of the organic asparagus will start in February 2020.

## 11. ECONOMIC AND FINANCIAL EVALUATION

This chapter has as objective to study and to demonstrate the financial viability of the investment project. So, this chapter presents the financial analysis and the financial statements based on some assumptions that are detailed further on. Moreover, the obtained results are also explained and detailed next.

### 11.1 Main assumptions

- It was considered based on other farmers productions and on the biological capacity of the plant, that the production yields range between 5 and 8 tonnes per hectare;
  
- It was defined as a total production capacity of Quinta da Fortaleza the average of the yields range defined above (6.500kg/ha);
  
- On the implementation year (2019) there will be no harvesting of the production to have a proper adaptation of the plant to the terrain;
  
- It was considered a project lifetime of thirteen years, number of years that the asparagus plant can be harvested;
  
- It was assumed that the plants can be harvested after one year and will reach full capacity on the fourth year of production;
  
- On the first year of harvesting, it will be harvested 35% of the total production capacity;
  
- On the second production year will be harvested 70% of the total production capacity;
  
- On the third year will be harvested 85% of the total production capacity;
  
- From the fourth year until the end of the production, will be assumed that the production reached its full capacity;
  
- Was defined as full capacity 97% of the production, where the remaining 3% are considered production losses.

## 11.2 Sales forecast

To define a sales forecast some assumptions were considered and a study of market prices was conducted. As mentioned before, this project aims to target B2C and B2B consumers. However, and having into account that the main focus is on B2C (sell directly to the consumer) B2B was no taken into account for this financial analysis. Moreover, the reason for the exclusion of this target profile on the financial analysis is mainly due to the complex and expensive logistics operation behind this type of client, also due to the noncompetitive prices established by this industry and for the extremely product standardization that wholesalers require to buy the asparagus.

The harvesting season goes from January to May. In addition, between April and May is considered the low season for the producers because there is more offer so the average price on these months is lower than on the high season. Then, it was assumed an average price of 6€/kg plus 6% of the VAT. The conjugation of assumptions made before, price assumptions and production estimation, can be observed in table 7 - sales forecast.

	Sales forecast												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Estimated Production (%)	0%	35%	70%	85%	97%	97%	97%	97%	97%	97%	97%	97%	97%
Estimated Production (Kg)	0	2275	4550	5525	6305	6305	6305	6305	6305	6305	6305	6305	6305
Sales prediction (€)	0 €	13.650 €	27.300 €	33.150 €	37.830 €	37.830 €	37.830 €	37.830 €	37.830 €	37.830 €	37.830 €	37.830 €	37.830 €
Sales (With VAT 6%)	0 €	14.469 €	28.938 €	35.139 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €

Table 7 - Sales Forecast Map  
Source: Author, 2018

## 11.3 Investment

Besides the property land that does not make part of the investments, there are three main investments in this project. As a view to having an operating production, there is a need to invest in electric energy, plants and support shed, which are the most relevant investments. A cost of 12.652€ it is associated with electric energy investments and a cost of 7.500€ in the construction of a support shed. Regarding the plants, which have a unitarian price of 0,14€, pre-makes an investment of 6.825€. Although the property land is not considered an investment, it is valued on 211.880€.

The detailed list of investments can be observed on annex 11.

To meet these costs, it will be necessary to use a bank loan in the amount of 50k€. Those values were decided having into account that the value associated with tangible and intangible assets is 270k€ and Quinta da Fortaleza has a share capital of 210k€.

Working capital consist of the difference between company current assets and current liabilities, hence, Quinta da Fortaleza presents a positive WC of 11.597€ which represents an operational efficiency and also a short-term financial health.

Capital structure			
Investment	Value	Capital	Value
Tangible Assets	246.641 €	<b>Equity</b>	
Intangible Assets	1.500 €	Share Capital	209.691 €
Investment in assets	248.141 €		
		<b>Debt</b>	
Investment in WC	11.597 €	Bank Loan	56.923 €
<b>Total investment</b>	<b>259.737,54 €</b>	<b>Total of Resource</b>	<b>266.615 €</b>

Table 8 - Total investment and capital structure  
Source: Author, 2018

#### 11.4 Financing

In order to implement the project and be able to pay all the inherent costs, Quinta da Fortaleza will have to resort to a bank loan.

Being this project an Agricultural project, that will be submitted to the Young Farmers program, from the moment that the project is approved the banking institutions have as insurance that the project will continue and that the farmer is obliged by the pledged that he signed with the Portuguese state to fulfill all the obligations he has undertaken. Bearing this in mind, the interest rate that the banks offer is lower than that they offer to regular business, without state support.

The most attractive interest rate was offered by CGD (EAR 3,60%). The loan duration will be 7 years, with an amount of 50.000€. All the loan details can be observed in table 9.

Long-Term Financing	
<b>Bank</b>	CGD
<b>Financing Structure</b>	Product Family 301 - LONG-TERM MEDIUM LOAN Purpose of Loan 000601 - AGRICULTURE, FISHERIES AND LIVESTOCK
<b>Start Date</b>	2017
<b>Loan Amount</b>	50000
<b>Loan Duration</b>	7 years
<b>Grace Period</b>	1 year
<b>Stamp tax on interest - IS</b>	0,35%
<b>Comission</b>	3,13%
<b>Tax</b>	21%
<b>EAR (CGD)</b>	3,670%

Table 9 - Financing Structure and loan details  
Source: Author, 2018

### 11.5 Income statement analysis

In 2019 there is no prediction to sell asparagus, being the year of project implementation. Although, in case of approbation by the Portuguese state, regarding the “*Jovem Agricultor*” project, Quinta da Fortaleza will receive as implementation prize of 30k€, therefore, it will receive 75% of all investments made.

So, despite not having production in 2019, Quinta da Fortaleza will have a positive net income in the implementation year. There will be a reduction in the net income value in 2020 because Quinta da Fortaleza expects to receive the value of the investments made on a payment term of 10 months. Moreover, that delay combined with a residual production (35% of the total capacity) has a reducing effect on net income.

In 2023 and 2024, it is not expected to receive more subsidies form the Portuguese state. But in these two years, the interest payment is still present, which makes that net income on this period times is lower when compared with remaining years of the project. From 2025 until the end of the project, the net income value will stabilize. All the values presented in the income statement are in current prices, having into account the inflation predictions made by the Portuguese government.

Those values are explained and detailed on the annex 11. No results are distributed, 100% will be reinvested in the project.

*Business Plan: Quinta da Fortaleza Organic Asparagus Production*

Income Statement	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Sales	0 €	14.469 €	28.938 €	35.139 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €	40.100 €
Operating Subsidies	45.000 €	28.500 €	20.000 €	10.000 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Cost of goods sold and materials consumed	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €	3.498 €
<b>Gross Margin</b>	<b>41.502 €</b>	<b>39.471 €</b>	<b>45.440 €</b>	<b>41.641 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>	<b>36.602 €</b>
Supplies and external Services	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €	1.267 €
Personal Costs	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €	11.261 €
Other Expenses and losses	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
<b>EBITDA</b>	<b>28.973 €</b>	<b>26.942 €</b>	<b>32.911 €</b>	<b>29.112 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>	<b>24.073 €</b>
Expenses / Reversals of depreciation and amortizations	14.960 €	15.616 €	15.712 €	15.060 €	15.060 €	13.663 €	13.580 €	13.580 €	13.517 €	12.861 €	12.318 €	12.318 €	12.318 €
Impairment of depreciable / amortizable investments	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
<b>EBIT (Operational Result)</b>	<b>14.014 €</b>	<b>11.326 €</b>	<b>17.200 €</b>	<b>14.053 €</b>	<b>9.014 €</b>	<b>10.410 €</b>	<b>10.493 €</b>	<b>10.493 €</b>	<b>10.556 €</b>	<b>11.212 €</b>	<b>11.755 €</b>	<b>11.755 €</b>	<b>11.755 €</b>
Interest and similar income received	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Interest and similar expenses paid	10.031 €	9.722 €	9.414 €	9.105 €	8.796 €	8.488 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
<b>EBT</b>	<b>3.983 €</b>	<b>1.604 €</b>	<b>7.786 €</b>	<b>4.948 €</b>	<b>217 €</b>	<b>1.922 €</b>	<b>10.493 €</b>	<b>10.493 €</b>	<b>10.556 €</b>	<b>11.212 €</b>	<b>11.755 €</b>	<b>11.755 €</b>	<b>11.755 €</b>
IRC 17%	677 €	273 €	1.324 €	841 €	37 €	327 €	1.784 €	1.784 €	1.795 €	1.906 €	1.998 €	1.998 €	1.998 €
<b>Net Income</b>	<b>3.306 €</b>	<b>1.332 €</b>	<b>6.462 €</b>	<b>4.107 €</b>	<b>180 €</b>	<b>1.596 €</b>	<b>8.709 €</b>	<b>8.709 €</b>	<b>8.762 €</b>	<b>9.306 €</b>	<b>9.757 €</b>	<b>9.757 €</b>	<b>9.757 €</b>

Table 10 - Provisional Income Statement  
Source: Author, 2018

## 11.6 Balance Sheet

The goal of balance sheet, represented in table 11, is to give a snapshot of what the shareholders own and owe. On the non-current assets, can be observed the value of the assets with a lifetime bigger than one year. To observe in detail what composes the value of non-current assets, the annex 11 should be consulted.

In the current assets are understood the values regarding VAT receivable and the Quinta da Fortaleza cash and bank deposits policy. The cash flow policy consists of having 7000€ to be able to answer to unexpected operating costs.

Regarding equity, comprises the value of the property where the production is seeded, the retained results that correspond to 100% of the net income of the previous year and the value of the net income of the current year.

On the liability side it is included, the non-current liability that is the loan from CGD, that starts to be amortized already on the first year of the project and goes until the seventh year. On the current liability side, it is comprised all the taxes associated with the production VAT payable and IRC. For more detailed data, like the working capital map or the state map see the annex 11.

Business Plan: Quinta da Fortaleza Organic Asparagus Production

Assets	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Non-Current Assets</b>													
Fix Assets	248.140,54€	239.980,75€	226.860,71€	215.860,91€	201.051,38€	186.241,84€	172.828,56€	159.498,61€	146.168,66€	132.901,65€	120.290,89€	108.222,67€	96.154,44€
Financial Assets	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
<b>Total</b>	<b>248.140,54€</b>	<b>239.980,75€</b>	<b>226.860,71€</b>	<b>215.860,91€</b>	<b>201.051,38€</b>	<b>186.241,84€</b>	<b>172.828,56€</b>	<b>159.498,61€</b>	<b>146.168,66€</b>	<b>132.901,65€</b>	<b>120.290,89€</b>	<b>108.222,67€</b>	<b>96.154,44€</b>
<b>Current Assets</b>													
State	11.474,09€	1.146,77€	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Cash and bank deposits	7.000,00€	440,98€	7.000,00€	7.000,00€	7.000,00€	7.000,00€	7.000,00€	7.000,00€	7.000,00€	7.000,00€	7.852,06€	7.404,75€	8.878,97€
<b>Total</b>	<b>18.474,09€</b>	<b>1.587,75€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.000,00€</b>	<b>7.852,06€</b>	<b>7.404,75€</b>	<b>8.878,97€</b>
<b>Total Assets</b>	<b>266.614,63€</b>	<b>241.568,49€</b>	<b>233.860,71€</b>	<b>222.860,91€</b>	<b>208.051,38€</b>	<b>193.241,85€</b>	<b>179.828,56€</b>	<b>166.498,61€</b>	<b>153.168,66€</b>	<b>139.901,65€</b>	<b>128.142,95€</b>	<b>115.627,41€</b>	<b>105.033,41€</b>
<b>Equity and Debt</b>													
<b>Equity</b>													
Paid-up Capital	206.385,56€	189.044,51€	185.816,01€	181.131,51€	182.099,85€	177.535,15€	163.306,64€	142.904,64€	129.502,64€	115.440,64€	102.781,84€	89.816,00€	79.222,00€
Transferred results	- €	3.305,81€	1.331,54€	6.462,49€	4.106,85€	180,47€	1.595,51€	8.709,42€	8.709,42€	8.761,66€	9.306,35€	9.756,65€	9.756,65€
<b>Total</b>	<b>206.385,56€</b>	<b>192.350,32€</b>	<b>187.147,55€</b>	<b>187.594,00€</b>	<b>186.206,70€</b>	<b>177.715,62€</b>	<b>164.902,15€</b>	<b>151.614,06€</b>	<b>138.212,06€</b>	<b>124.202,30€</b>	<b>112.088,19€</b>	<b>99.572,65€</b>	<b>88.978,65€</b>
Net Income	3.305,81€	1.331,54€	6.462,49€	4.106,85€	180,47€	1.595,51€	8.709,42€	8.709,42€	8.761,66€	9.306,35€	9.756,65€	9.756,65€	9.756,65€
<b>Total Equity</b>	<b>209.691,37€</b>	<b>193.681,86€</b>	<b>193.610,05€</b>	<b>191.700,86€</b>	<b>186.387,17€</b>	<b>179.311,13€</b>	<b>173.611,57€</b>	<b>160.323,48€</b>	<b>146.973,73€</b>	<b>133.508,66€</b>	<b>121.844,85€</b>	<b>109.329,31€</b>	<b>98.735,31€</b>
<b>Debt</b>													
<b>Non-Current Liability</b>													
Long Term Obtained Financing	50.000,00€	41.666,67€	33.333,33€	25.000,00€	16.666,67€	8.333,33€	- €	- €	- €	- €	- €	- €	- €
Other costs to pay	45,98€	- €	11,94€	108,65€	118,83€	797,35€	133,38€	91,52€	100,62€	187,12€	- €	- €	- €
<b>Total</b>	<b>50.045,98€</b>	<b>41.666,67€</b>	<b>33.345,27€</b>	<b>25.108,65€</b>	<b>16.785,50€</b>	<b>9.130,68€</b>	<b>133,38€</b>	<b>91,52€</b>	<b>100,62€</b>	<b>187,12€</b>	<b>- €</b>	<b>- €</b>	<b>- €</b>
<b>Current Liability</b>													
State and other public sector institutions	4.976,84€	4.572,48€	5.623,39€	5.140,91€	4.336,71€	4.626,54€	6.083,61€	6.083,61€	6.094,31€	6.205,87€	6.298,10€	6.298,10€	6.298,10€
Short term Obtained Financing	1.900,44€	1.647,49€	1.281,99€	910,49€	541,99€	173,49€	- €	- €	- €	- €	- €	- €	- €
<b>Total</b>	<b>6.877,28€</b>	<b>6.219,97€</b>	<b>6.905,38€</b>	<b>6.051,40€</b>	<b>4.878,71€</b>	<b>4.800,03€</b>	<b>6.083,61€</b>	<b>6.083,61€</b>	<b>6.094,31€</b>	<b>6.205,87€</b>	<b>6.298,10€</b>	<b>6.298,10€</b>	<b>6.298,10€</b>
<b>Total Debt</b>	<b>56.923,27€</b>	<b>47.886,63€</b>	<b>40.250,66€</b>	<b>31.160,06€</b>	<b>21.664,21€</b>	<b>13.930,71€</b>	<b>6.216,98€</b>	<b>6.175,12€</b>	<b>6.194,93€</b>	<b>6.392,99€</b>	<b>6.298,10€</b>	<b>6.298,10€</b>	<b>6.298,10€</b>
<b>Total Equity and Debt</b>	<b>266.614,63€</b>	<b>241.568,49€</b>	<b>233.860,71€</b>	<b>222.860,91€</b>	<b>208.051,38€</b>	<b>193.241,85€</b>	<b>179.828,56€</b>	<b>166.498,61€</b>	<b>153.168,66€</b>	<b>139.901,65€</b>	<b>128.142,95€</b>	<b>115.627,41€</b>	<b>105.033,41€</b>

Table 11 – Provisional Balance Sheet  
Source: Author, 2018

## 11.7 Financial Indicators

Financial Indicators	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
ROE (Net income/ Equity)	1,58%	0,69%	3,34%	2,14%	0,10%	0,89%	5,02%	5,43%	5,96%	6,97%	8,01%	8,92%	9,88%
ROI (EBT/Assets)	1,49%	0,66%	3,33%	2,22%	0,10%	0,99%	5,84%	6,30%	6,89%	8,01%	9,17%	10,17%	11,19%
Financial Autonomy (Equity/Assets)	79%	80%	83%	86%	90%	93%	97%	96%	96%	95%	95%	95%	94%

Table 12 - Financial Indicators  
Source: Author, 2018

To obtain a concrete image of the project, its performance and its financial situation were performed some financial indicators, such as ROE, ROI and Financial autonomy (Table 12). The calculation of ROE aims to know how much revenue is generated through equity. So, in 2019, for each 100€ of capital, 1,58€ in profit it is generated, through the investments made by the shareholders.

In relation to ROI, it calculates the efficiency of investments over the ratio between earnings before Taxes and Assets. Making the same observation as above, in 2019, for each 100€ invested in the operational activity, generates an operating profit of 1,49€.

Regarding financial autonomy, it shows that will increase among the project lifetime proving that Quinta da Fortaleza is a low-risk project and it will be, year by year, less dependent on liability to leverage the financial results of the project.

## 11.8 Project Evaluation – Feasibility Analysis

### Rate of Return

Business Plan: Quinta da Fortaleza Organic Asparagus Production

The capital asset pricing model describes the relationship between systematic risk and expected return for assets. The key idea of CAPM it is to compensate the Time Value Money and the project risk when calculating the equity cost (rE), in order to obtain an update cash flow values at the time of the project investment decision. To do so, it is necessary to determine the values of risk-free rate, risk premium, beta unlevered and beta levered. All these variants can be found on the table below (Table 13), values relating to 2019. More details regarding the calculation of each variant and for the details of each year of the project are presented in annex 11.

Weighted Average Cost Of Capital (WACC)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
rf (sector)	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%	1,89%
βu (sector)	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%
Risk Premium	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%	7,96%
rD (Project)	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%	3,64%
r0	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%
Equity (E)	209.691,37 €	193.681,86 €	193.610,05 €	191.700,86 €	186.387,17 €	179.311,13 €	173.611,57 €	160.323,48 €	146.973,73 €	133.508,66 €	121.844,85 €	109.329,31 €	98.735,31 €
Debt (D)	51.900,44 €	43.314,16 €	34.615,32 €	25.910,49 €	17.208,66 €	8.506,83 €	- €	- €	- €	- €	- €	- €	- €
<b>Total</b>	<b>261.591,81 €</b>	<b>236.996,02 €</b>	<b>228.225,37 €</b>	<b>217.611,35 €</b>	<b>203.595,83 €</b>	<b>187.817,96 €</b>	<b>173.611,57 €</b>	<b>160.323,48 €</b>	<b>146.973,73 €</b>	<b>133.508,66 €</b>	<b>121.844,85 €</b>	<b>109.329,31 €</b>	<b>98.735,31 €</b>
Equity (E)	80,16%	81,72%	84,83%	88,09%	91,55%	95,47%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
Debt (D)	19,84%	18,28%	15,17%	11,91%	8,45%	4,53%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Tax	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%	14,5%
D/E	24,75%	22,36%	17,88%	13,52%	9,23%	4,74%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
βL (project)	52,07%	52,07%	52,05%	52,04%	52,03%	52,01%	52,00%	52,00%	52,00%	52,00%	52,00%	52,00%	52,00%
βD (project)	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%	22,01%
rE	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%	6,03%
<b>WACC</b>	<b>5,45%</b>	<b>5,50%</b>	<b>5,59%</b>	<b>5,68%</b>	<b>5,78%</b>	<b>5,90%</b>	<b>6,03%</b>	<b>6,03%</b>	<b>6,03%</b>	<b>6,03%</b>	<b>6,03%</b>	<b>6,03%</b>	<b>6,03%</b>

Table 13 - Rate of Return  
Source: Author, 2018

Cash Flow Map

Project Cash Flows	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
ROIC (EBIT) x (1-IRC)	11.631,32 €	9.400,90 €	14.275,70 €	11.663,90 €	7.481,37 €	8.640,26 €	8.709,42 €	8.709,42 €	8.761,66 €	9.306,35 €	9.756,65 €	9.756,65 €	9.756,65 €
Depreciation and Amortization	14.959,79 €	15.616,04 €	15.711,79 €	15.059,53 €	15.059,53 €	13.663,28 €	13.579,95 €	13.579,95 €	13.517,01 €	12.860,76 €	12.318,23 €	12.318,23 €	12.318,23 €
Provisions	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
<b>Investment in Working Capital</b>	<b>11.596,81 €</b>	<b>- 4.632,22 €</b>	<b>94,62 €</b>	<b>948,60 €</b>	<b>2.121,29 €</b>	<b>2.199,97 €</b>	<b>916,39 €</b>	<b>916,39 €</b>	<b>905,69 €</b>	<b>794,13 €</b>	<b>1.553,96 €</b>	<b>1.106,64 €</b>	<b>2.580,87 €</b>
Working Capital	11.596,81 €	- 4.632,22 €	94,62 €	948,60 €	2.121,29 €	2.199,97 €	916,39 €	916,39 €	905,69 €	794,13 €	1.553,96 €	1.106,64 €	2.580,87 €
Δ Working Capital	11.596,81 €	- 6.964,59 €	7.059,21 €	8.007,80 €	10.129,10 €	12.329,06 €	13.245,45 €	14.161,85 €	15.067,54 €	15.861,67 €	17.415,63 €	18.522,27 €	21.103,14 €
<b>Cash Flow</b>	<b>38.187,92 €</b>	<b>20.384,73 €</b>	<b>30.082,11 €</b>	<b>27.672,03 €</b>	<b>24.662,20 €</b>	<b>24.503,51 €</b>	<b>23.205,77 €</b>	<b>23.205,77 €</b>	<b>23.184,37 €</b>	<b>22.961,24 €</b>	<b>23.628,84 €</b>	<b>23.181,52 €</b>	<b>24.655,75 €</b>
<b>Capex</b>													
Equity	-46.854,54 €	- 6.800,00 €	- 2.496,00 €	- 4.712,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €
Residual Value													79.158,00 €
<b>Free cash-flow</b>	<b>- 8.666,62 €</b>	<b>13.584,73 €</b>	<b>27.586,11 €</b>	<b>22.960,03 €</b>	<b>24.412,20 €</b>	<b>24.253,51 €</b>	<b>22.955,77 €</b>	<b>22.955,77 €</b>	<b>22.934,37 €</b>	<b>22.711,24 €</b>	<b>23.378,84 €</b>	<b>22.931,52 €</b>	<b>103.563,75 €</b>
<b>Accumulated Cash Flow</b>	<b>- 8.666,62 €</b>	<b>4.918,11 €</b>	<b>32.504,22 €</b>	<b>55.464,25 €</b>	<b>79.876,45 €</b>	<b>104.129,95 €</b>	<b>127.085,72 €</b>	<b>150.041,48 €</b>	<b>172.975,85 €</b>	<b>195.687,09 €</b>	<b>219.065,93 €</b>	<b>241.997,45 €</b>	<b>345.561,20 €</b>

Table 14 – Investor Cash Flow Map  
Source: Author, 2018

On the cash flow map (table 14), it can be observed the Return on invested capital (ROIC), that aims to demonstrate the profitability through the invested capital on the project. In 2019 the entire invested capital will generate 11.631,32 € in profit. On the implementation year there will be an investment in capital expenditure (CAPEX) and in working capital (WC), consequently, the free cash flow for the firm (FCFF) will be negative. Nevertheless, over the years, the free cash flow for the firm it will be always positive, meaning that the total



financial resources will be higher than the total financial needs. Therefore, this fact envisages a healthy financial structure of the project.

### Investment decision

With the objective of obtaining an investment decision, some models were calculated (table 15). Before any model had been calculated, the free cash flows to the firm were updated to the present value utilizing the update factor of WACC. Afterward, the present values were accumulated and through that accumulation, on the last year of the project, it is obtained the NPV. Regarding IRR, that embodies the maximum profitability rate of production, 31% that is bigger than the Required Rate of Return ((rE) 6,03%). Was also calculated the IRR rate utilizing the risk-free rate of the market, that means that is a less ambitious internal rate of return because the cash flow will be reinvested by using the risk-free rate of the market (1,89%).

In relation to the payback period of 1,64 years, it is much lower than the project lifetime, 13 years.

Investment decision	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capex	-46.854,54 €	- 6.800,00 €	- 2.496,00 €	- 4.712,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €	- 250,00 €
Free Cash Flow to Firm- 13 years	- 8.666,62 €	13.584,73 €	27.586,11 €	22.960,03 €	24.412,20 €	24.253,51 €	22.955,77 €	22.955,77 €	22.934,37 €	22.711,24 €	23.378,84 €	22.931,52 €	103.563,75 €
<b>Update factor</b>													
Updated (WACC)	1,0000	1,0083	1,0163	1,0169	1,0176	1,0196	1,0222	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
<b>Present Values - 13 years</b>	- 8.666,62 €	13.473,0225 €	27.142,4082 €	22.579,2011 €	23.990,5900 €	23.786,9629 €	22.457,0262 €	22.955,7658 €	22.934,3654 €	22.711,2404 €	23.378,8370 €	22.931,5249 €	103.563,7499 €
<b>Accumulated Presente Values - 13 years</b>	- 8.666,62 €	4.806,4041 €	31.948,8123 €	54.528,0134 €	78.518,6035 €	102.305,5664 €	124.762,5925 €	147.718,3584 €	170.652,7238 €	193.363,9641 €	216.742,8011 €	239.674,3260 €	343.238,0759 €
<b>Net Present Value (NPV) - 13 years</b>	343.265,34												
<b>IRR</b>													
Internal Rate of Return (IRR) - 13 years	31%												
<b>MIRR</b>													
Internal Rate of Return (Risk Free Rate) - 13 years	16%												
<b>Payback</b>	1,64												

Table 15 – Results of economic evaluation indicators  
Source: Author, 2018

## 11.9 Sensitivity Analysis

Agriculture is an industry that is very dependent on external factors, such as weeds and parasitic plants, insects-pests, climate, moisture, winds among others. The price and the supply will vary depending on how much these external factors affect production in a specific area. Bearing these variations in mind, it becomes mandatory to draw different scenarios (table 16).

Three scenarios were considered, such as the extremely pessimistic, the pessimistic and the realistic scenario.

The extremely pessimistic scenario foresees a variation of -50% on the production and on the selling price. Despite this drastic variation, the NPV remains positive, such as on the other different scenarios, which lead to conclude that in the most adverse scenario the production remains a good business plan idea.

Sensitivity Analysis	Extremely Pessimistic Scenario	Pessimistic Scenario	Realistic Scenario	Realistic Scenario
$\Delta$	-50%	-20%	-5%	+5%
$\Delta$ Production (Kg)	3250Kg	5200Kg	6175Kg	6825Kg
$\Delta$ Price (€)	3 €	5 €	5,70 €	6,30 €
NPV	92.126,21€	243.409,83€	315.859,19€	372.649,68€
IRR	6%	22%	29%	33%
MIRR (rE)	5%	13%	15%	17%
PP	3,28	1,85	1,67	1,603

Table 16 - Sensitivity Analysis  
Source: Author, 2018

## 12. CONCLUSION

This project was performed with the main goal of verifying the financial viability towards the implementation of an organic asparagus production, on a rural area that has been distinguished with a title of World Heritage Centre. This business plan now comes to an end, and there are several conclusions and findings that should be summarized and retained.

Agriculture, as it was said at the beginning of the project, plays a crucial role in the Portuguese economy, especially in rural areas, which have been fighting against desertification, crisis and the aging of the population.

The Portuguese Government with the support of the European Union has created an incentive program with the objective of revitalizing the agricultural sector, giving to the younger layers incentives to the installation of agricultural productions.

Besides the need of renewal on the agricultural sector and the incentives associated with it, there was another factor that instigated the creation of this project. The second factor that instigated this business plan was the crescent awareness and preoccupation of the Portuguese population regarding health, environment and sustainability topics. That crescent awareness brought new business opportunities, where among them were the organic products.

Due to the lack of offer regarding organic products and, on another hand, huge demand for them, Quinta da Fortaleza decided to study the viability of starting an organic production. The brand opted for asparagus due to its land specifications, to the lifetime of the plant and, also, due to the association of asparagus to a premium type product.

Quinta da Fortaleza intends to position itself as a seller of a premium product. The premium characteristics and differentiating factors are achieved through the optimum land physiognomies and to the production location, that was distinguished with the title of World Heritage Center.

Concerning the main limitations that can be associated with the business plan, price, product standardization, deadlines for product delivery and payment dates negotiation with the wholesalers are the main issues when developing the project. Quinta da Fortaleza will opt always to sell to B2C and when selling to B2B, will focus on high-end restaurants and on specialized organic retailers. If there is a need to drain the product the last resource will be the wholesalers that define the business conditions.

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Additionally, after the financial analysis it was possible to conclude that even on a more pessimistic scenario the production still is a viable investment. On the most pessimistic scenario, the obtained NPV is bigger than 0€ and the Payback Period is lower than the production lifetime.

This business plan is the living proof that a project in a desertified rural area, in a sector that has had difficulties on following the progress of other sectors, with a product that customer is not aware of, yet, made by a young entrepreneur is possible. The project must be put into practice and serve as an example for other entrepreneurs.

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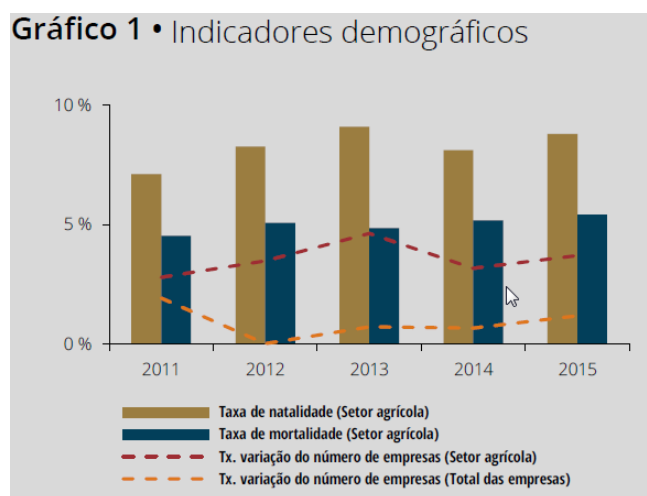
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## 14. ANNEXES

### Annex 1 - Demographic Indicators about Agricultural Companies



(Source: Banco de Portugal, 2016)

### Annex 2 - Evolution of Gross Agricultural Product and Agricultural Sector

Evolution of Gross Agricultural Product and Agricultural Sector Income between 2014 and 2017					
Gross Agricultural Product		Annual Variation (%)			
Year		2014-15	2015-16	2016-17	2014-17
<b>In Volume</b>	(1)	9,2	-9,2	7,1	2,0
<b>In Value</b>	(2)	5,2	-1,4	6,4	3,3

(1) Measured by the Agricultural value added on constant prices on the producer

(2) Measured by the Agricultural value added on current and nominal prices on the producer

(Source: INE, 2017)

### Annex 3 - Weight of OAA on AA (2009 and 2015)

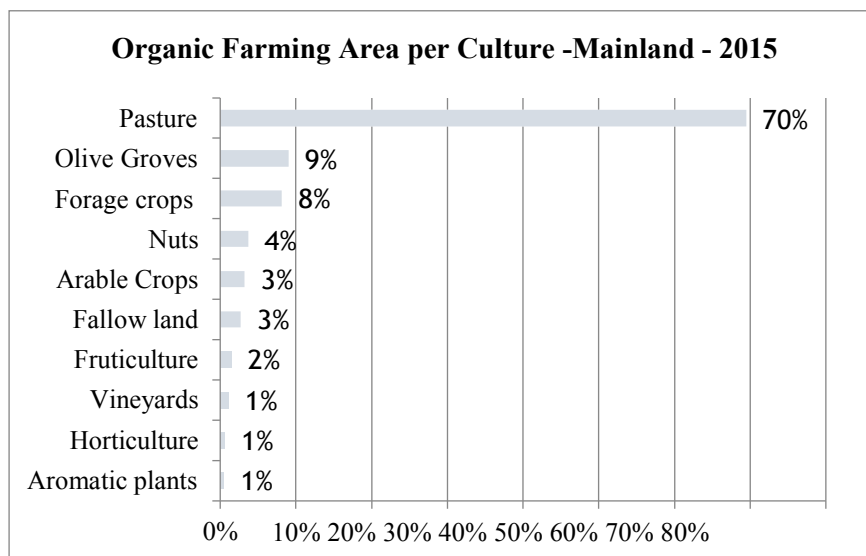
Regions	Agricultural Area (AA) per Region (2009)		Weight of OAA on the AA (2009)	OAA in 2015		Weight of OAA on the AA (2015)
	Area		Area	Area		Area
	Ha	%	%	Ha	%	%
<b>Portugal</b>	3.668.145,00	100,00	3,00	240.603,00	100,00	6,60
<b>Continente</b>	3.542.305,00	97,00	3,00	239.864,00	99,70	6,80
<b>Entre-Douro e Minho</b>	211.154,00	6,00	0,00	8.799,00	3,70	4,20
<b>Trás-os-Montes</b>	432.873,00	12,00	2,00	17.176,00	7,20	4,00
<b>Beira Litoral</b>	125.436,00	4,00	0,00	2.279,00	1,00	1,80
<b>Beira Interior</b>	337.031,00	10,00	8,00	44.547,00	18,60	13,20
<b>Ribatejo e Oeste</b>	391.006,00	11,00	1,00	11.276,00	4,70	2,90
<b>Alentejo</b>	1.956.505,00	55,00	3,00	152.969,00	63,80	7,80

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Algarve	88.297,00	2,00	1,00	2.818,00	1,20	3,20
Açores	120.412,00	3,00	0,00	588,00	0,20	0,50
Madeira	5.428,00	0,00	2,00	151,00	0,10	2,80

(Source: INE - RA 2009; DGADR – 2015)

Annex 4 - Organic Farming Area per Culture 2015



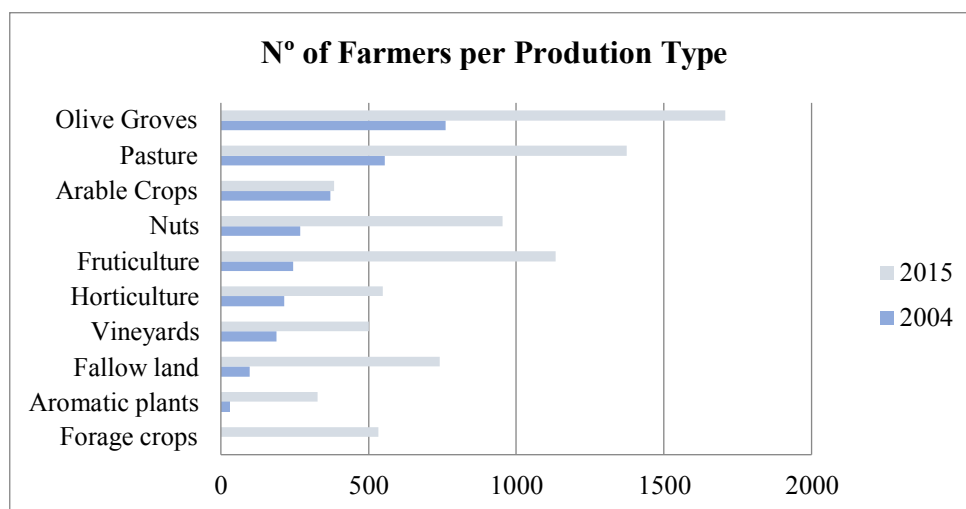
(Source: DGADR, 2015)

Annex 5 - Organic Agricultural Area per Region

Regions	OAA	Farmers	Average OAA
	Ha	n°	Ha
Continente	239.864,00	3.820,00	63,00
Entre-Douro e Minho	8.799,00	476,00	18,00
Trás-os-Montes	17.176,00	966,00	18,00
Beira Litoral	2.279,00	244,00	9,00
Beira Interior	44.547,00	716,00	62,00
Ribatejo e Oeste	11.276,00	360,00	31,00
Alentejo	152.969,00	959,00	160,00
Algarve	2.818,00	99,00	28,00

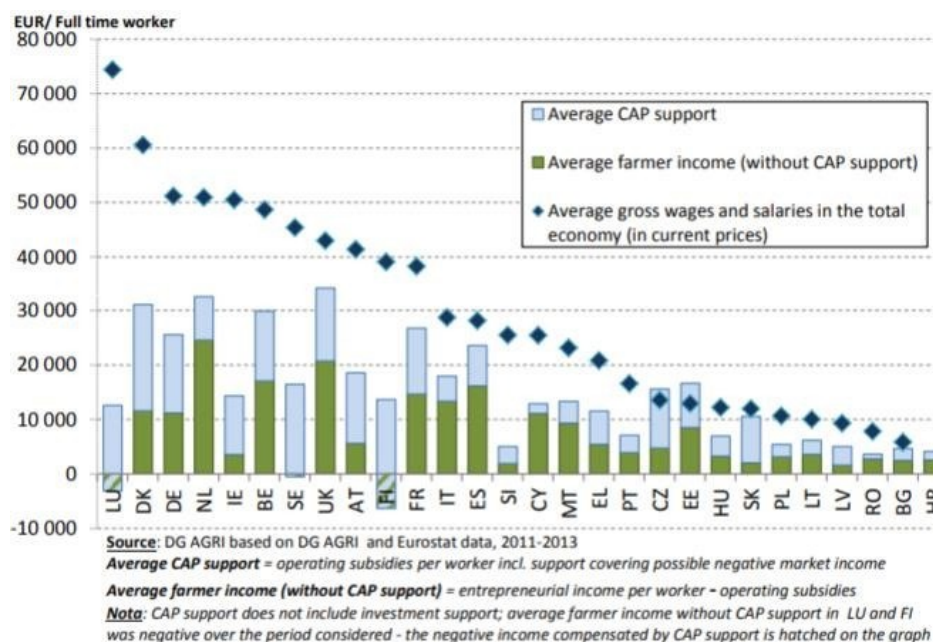
(Source: DGADR – 2015)

Annex 6 - Number of Farmers per Production Type



(Source: DGADR, 2015)

### Annex 8 - Average Farmer Income and Average Wages on EU countries



(Source: DG AGRI based on DG AGRI and Eurostat data, 2011-2013)

### Annex 9 - Economic Projections for Agriculture in Portugal

	Weights	March 2018 Projections				December 2017			
	2017	2017	2018 <sup>(p)</sup>	2019 <sup>(p)</sup>	2020 <sup>(p)</sup>	2017 <sup>(p)</sup>	2018 <sup>(p)</sup>	2019 <sup>(p)</sup>	2020 <sup>(p)</sup>
<b>Gross Domestic Product</b>	100,0	2,7	2,3	1,9	1,7	2,6	2,3	1,9	1,7
<b>Private Consumption</b>	65,0	2,2	2,1	1,9	1,7	2,2	2,1	1,8	1,7
<b>Public Consumption</b>	17,6	0,1	0,5	0,4	0,5	0,1	0,6	0,4	0,2
<b>Gross Fixed Capital Formation</b>	16,1	9,0	6,5	5,6	5,4	8,3	6,1	5,9	5,4
<b>Domestic Demand</b>	99,0	2,8	2,7	2,3	2,2	2,7	2,5	2,2	2,1

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<b>Exports</b>	43,1	7,9	7,2	4,8	4,2	7,7	6,5	5,0	4,1
<b>Imports</b>	42,1	7,9	7,7	5,4	5,0	7,5	6,7	5,5	4,8
<b>Contribution to GDP growth (in p.p)</b>									
<b>Domestic demand</b>		1,2	1,1	1,1	1,0	1,2	1,2	1,0	1,0
<b>Exports</b>		1,5	1,2	0,8	0,7	1,5	1,2	0,9	0,7
<b>Employment</b>		3,3	1,9	1,3	0,9	3,1	1,6	1,3	0,9
<b>Unemployment Rate</b>		8,9	7,3	6,3	5,6	8,9	7,8	6,7	6,1
<b>Current and capital account balance (%GDP)</b>		1,4	2,1	2,1	1,9	1,5	2,3	2,2	2,2
<b>Goods and services account balance (%GDP)</b>		1,8	1,5	1,6	1,3	1,8	1,6	1,6	1,5
<b>Harmonized Index of consumer Prices</b>		1,6	1,2	1,4	1,5	1,6	1,5	1,4	1,6

Note: (p) - projected. For each aggregate shows the projection corresponding to the most likely value conditional on the set of hypotheses considered

(Source: Bank of Portugal, 2017)

### Annex 10 - Breakdown of Economic Activity by Sector in Portugal

Breakdown of Economic Activity By Sector	Agriculture	Industry	Services
Employment By Sector ( <i>in % of Total Employment</i> )	6.0	24.8	69.2
Value Added ( <i>in % of GDP</i> )	2.2	22.2	75.6
Value Added ( <i>Annual % Change</i> )	-7.4	0.4	1.6

(Source: World Bank, 2018)

### Annex 11 – Financial and Economic Evaluation – Supporting Maps

(Source: Author, 2018)

#### Assumptions:

	Assumptions													
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
VAT Rate ( Asparagus )	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
TSU - Employer	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	23,75%	
TSU - Worker	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	11,00%	
Average IRS	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	12,50%	
IRC Rate	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	21,00%	
Expected Inflation														
Assumption for future years (Until 2021 based on Programa de estabilidade)	1,70%	1,90%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	

#### Investments maps / Depreciation and Amortization map:

	INVESTEMENTS												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Intangible Assets</b>													
Elaboration and Monitoring Project / Organic Production Stamp	1.550 €	1.550 €	1.550 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €
Depreciation Rate	100,00%												
Annual Depreciation	1.550 €	1.550 €	1.550 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €
Accumulated Depreciations	1.550 €	3.100 €	4.650 €	3.350 €	2.050 €	5.400 €	5.650 €	5.900 €	6.150 €	6.400 €	6.650 €	6.900 €	7.150 €
Investment/Reinvestment	1.550 €	1.550 €	1.550 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €
<b>Total Amortizations</b>	<b>1.550 €</b>	<b>1.550 €</b>	<b>1.550 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>
<b>Total Investments</b>	<b>1.550 €</b>	<b>1.550 €</b>	<b>1.550 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>	<b>250 €</b>



Business Plan: Quinta da Fortaleza Organic Asparagus Production

INVESTEMENTS													
Tangible Assets													
Support Shed (6x7 Mts - 42 Mts2)	7.500 €												
Depreciation Rate	5%												
Annual Depreciation	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €	375 €
Accumulated Depreciations	375 €	750 €	1.125 €	1.500 €	1.875 €	2.250 €	2.625 €	3.000 €	3.375 €	3.750 €	4.125 €	4.500 €	4.875 €
Investment/Reinvestment	7.500 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
EDP Distribution of Energy	11.150 €												
Depreciation Rate	5%												
Annual Depreciation	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €	558 €
Accumulated Depreciations	558 €	1.115 €	1.673 €	2.230 €	2.788 €	3.345 €	3.903 €	4.460 €	5.018 €	5.575 €	6.133 €	6.690 €	7.248 €
Investment/Reinvestment	11.150 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Electric Pull	1.502 €												
Depreciation Rate	5%												
Annual Depreciation	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €	75 €
Accumulated Depreciations	75 €	150 €	225 €	300 €	376 €	451 €	526 €	601 €	676 €	751 €	826 €	901 €	976 €
Investment/Reinvestment	1.502 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Backpack Brushcutter	504 €												
Depreciation Rate	12,5%												
Annual Depreciation	63 €	63 €	63 €	63 €	63 €	63 €	63 €	63 €	0 €	0 €	0 €	0 €	0 €
Accumulated Depreciations	63 €	126 €	189 €	252 €	315 €	378 €	441 €	504 €	504 €	504 €	504 €	504 €	504 €
Investment/Reinvestment	504 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Decimal Balance	250 €												
Depreciation Rate	12,5%												
Annual Depreciation	31 €	31 €	112 €	112 €	112 €	81 €	81 €	81 €	81 €	81 €	81 €	81 €	81 €
Accumulated Depreciations	31 €	63 €	175 €	287 €	399 €	479 €	560 €	641 €	722 €	802 €	883 €	964 €	1.045 €
Investment/Reinvestment	250 €	0 €	646 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Irrigation Equipment - Drop-by-Drop	6.230 €												
Depreciation Rate	5%												
Annual Depreciation	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €	312 €
Accumulated Depreciations	312 €	623 €	935 €	1.246 €	1.558 €	1.869 €	2.181 €	2.492 €	2.804 €	3.115 €	3.427 €	3.738 €	4.050 €
Investment/Reinvestment	6.230 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Piping	750 €												
Depreciation Rate	5%												
Annual Depreciation	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €	38 €
Accumulated Depreciations	38 €	75 €	113 €	150 €	188 €	225 €	263 €	300 €	338 €	375 €	413 €	450 €	488 €
Investment/Reinvestment	750 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Refrigerating Chamber	5.250 €												
Depreciation Rate	12,5%												
Annual Depreciation	0 €	656 €	656 €	656 €	656 €	656 €	656 €	656 €	656 €	0 €	0 €	0 €	0 €
Accumulated Depreciations	0 €	656 €	1.313 €	1.969 €	2.625 €	3.281 €	3.938 €	4.594 €	5.250 €	5.250 €	5.250 €	5.250 €	5.250 €
Investment/Reinvestment	0 €	5.250 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Hives Swarms And Material	250 €												
Depreciation Rate	33%												
Annual Depreciation	0 €	0 €	0 €	83 €	83 €	83 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Accumulated Depreciations	0 €	0 €	0 €	83 €	167 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €	250 €
Investment/Reinvestment	0 €	0 €	0 €	250 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Harvest Boxes	300 €												
Depreciation Rate	5%												
Annual Depreciation	0 €	0 €	15 €	15 €	15 €	15 €	15 €	15 €	15 €	15 €	15 €	15 €	15 €
Accumulated Depreciations	0 €	0 €	15 €	30 €	45 €	60 €	75 €	90 €	105 €	120 €	135 €	150 €	165 €
Investment/Reinvestment	0 €	0 €	300 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Stainless Steel Bench With Wash System	3.662 €												
Depreciation Rate	14,28%												
Annual Depreciation	0 €	0 €	0 €	543 €	543 €	543 €	543 €	543 €	543 €	543 €	0 €	0 €	0 €
Accumulated Depreciations	0 €	0 €	0 €	543 €	1.085 €	1.628 €	2.170 €	2.713 €	3.255 €	3.798 €	0 €	0 €	0 €
Investment/Reinvestment	0 €	0 €	0 €	3.662 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Cutting Guillotine	350 €												
Depreciation Rate	6,25%												
Annual Depreciation	0 €	0 €	0 €	22 €	22 €	22 €	22 €	22 €	22 €	22 €	22 €	22 €	22 €
Accumulated Depreciations	0 €	0 €	0 €	22 €	44 €	66 €	88 €	109 €	131 €	153 €	175 €	197 €	219 €
Investment/Reinvestment	0 €	0 €	0 €	350 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Asparagus Platation	6.825 €												
Depreciation Rate	20,00%												
Annual Depreciation	1.365 €	1.365 €	1.365 €	1.365 €	1.365 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Accumulated Depreciations	1.365 €	2.730 €	4.095 €	5.460 €	6.825 €	6.825 €	6.825 €	6.825 €	6.825 €	6.825 €	6.825 €	6.825 €	6.825 €
Investment/Reinvestment	6.825 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Property	211.880,00												
Depreciation Rate	5%												
Annual Depreciation	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €	10.594 €
Accumulated Depreciations	10.594 €	21.188 €	31.782 €	42.376 €	52.970 €	63.564 €	74.158 €	84.752 €	95.346 €	105.940 €	116.534 €	127.128 €	137.722 €
Investment/Reinvestment	211.880 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
	201.286 €	190.692 €	180.098 €	169.504 €	158.910 €	148.316 €	137.722 €	127.128 €	116.534 €	105.940 €	95.346 €	84.752 €	74.158 €
<b>Total Amortizations</b>	<b>13.410 €</b>	<b>14.066 €</b>	<b>14.162 €</b>	<b>14.810 €</b>	<b>14.810 €</b>	<b>13.413 €</b>	<b>13.330 €</b>	<b>13.330 €</b>	<b>13.267 €</b>	<b>12.611 €</b>	<b>12.068 €</b>	<b>12.068 €</b>	<b>12.068 €</b>
<b>Total Investments</b>	<b>246.591 €</b>	<b>5.250 €</b>	<b>946 €</b>	<b>4.462 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>
<b>Total Amortizations</b>	<b>14.959,79 €</b>	<b>15.616,04 €</b>	<b>15.711,79 €</b>	<b>15.059,53 €</b>	<b>15.059,53 €</b>	<b>13.663,28 €</b>	<b>13.579,95 €</b>	<b>13.579,95 €</b>	<b>13.517,01 €</b>	<b>12.860,76 €</b>	<b>12.318,23 €</b>	<b>12.318,23 €</b>	<b>12.318,23 €</b>
<b>Total Investments of Tangible/Intangible Assets</b>	<b>248.140,54 €</b>	<b>6.800,00 €</b>	<b>2.496,00 €</b>	<b>4.712,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>	<b>250,00 €</b>

Business Plan: Quinta da Fortaleza Organic Asparagus Production

Debt repayment maps:

Bank Loan								
Data	Evento	Valor Liquido	Capital Vincendo	Capital	Juros	Comissão	Imposto de selo	Date
17-03-2019	maturity of benefit	462,93	50.000,00	0,00	288,87	156,25	17,59	2019
17-06-2019	maturity of benefit	8.796,26	50.000,00	8.333,33	288,87	156,25	17,59	2019
17-09-2019	maturity of benefit	385,77	41.666,67	0,00	344,51	130,21	14,66	2019
17-12-2019	maturity of benefit	385,77	41.666,67	0,00	340,77	130,21	14,66	2019
17-03-2020	maturity of benefit	385,77	41.666,67	0,00	337,02	130,21	14,66	2020
17-06-2020	maturity of benefit	8.719,11	41.666,67	8.333,33	240,73	130,21	14,66	2020
17-09-2020	maturity of benefit	308,62	33.333,33	0,00	275,61	104,17	11,73	2020
17-12-2020	maturity of benefit	308,62	33.333,33	0,00	272,61	104,17	11,73	2020
17-03-2021	maturity of benefit	308,62	33.333,33	0,00	272,61	104,17	11,73	2021
17-06-2021	maturity of benefit	8.641,95	33.333,33	8.333,33	192,58	104,17	11,73	2021
17-09-2021	maturity of benefit	231,46	25.000,00	0,00	206,71	78,13	8,80	2021
17-12-2021	maturity of benefit	231,46	25.000,00	0,00	204,46	78,13	8,80	2021
17-03-2022	maturity of benefit	231,46	25.000,00	0,00	202,21	78,13	8,80	2022
17-06-2022	maturity of benefit	8.564,80	25.000,00	8.333,33	144,44	78,13	8,80	2022
17-09-2022	maturity of benefit	154,31	16.666,67	0,00	137,80	52,08	5,86	2022
17-12-2022	maturity of benefit	154,31	16.666,67	0,00	136,31	52,08	5,86	2022
17-03-2023	maturity of benefit	154,31	16.666,67	0,00	134,81	52,08	5,86	2023
17-06-2023	maturity of benefit	8.487,64	16.666,67	8.333,33	96,29	52,08	5,86	2023
17-09-2023	maturity of benefit	77,15	8.333,33	0,00	68,90	26,04	2,93	2023
17-12-2023	maturity of benefit	77,15	8.333,33	0,00	68,15	26,04	2,93	2023
17-03-2024	maturity of benefit	77,15	8.333,33	0,00	67,40	26,04	2,93	2024
17-06-2024	maturity of benefit	8.410,49	8.333,33	8.333,33	48,15	26,04	2,93	2024

Jovem agricultor	
Installation award	20.000,00
If the investment is > 100.000	5.000,00
Prize for belonging to the producer organization	5.000,00
50% of the total Investment	73.500,00

Supporting maps for income statement:

Operating Costs									
Item	VAT	Quantity	Measure	Quantity	Measure	Unit Price	Measure	Total cost	Total Vat
<b>Natural Fertiliser:</b>									
Organic Manure	0,06			2,00	Tonne/ha	40,00	€/tonne	80,00	4,80
Micro Nutrients	0,06			5,00	L/ha	5,50	€/L	27,50	1,65
<b>Fuel:</b>									
Land Preparation	0,06	10,00	L/hr	7,50	Hr/ha	0,80	€/L	60,00	3,60
Fertiliser Applications	0,06	11,00	L/hr	5,00	Hr/ha	0,80	€/L	44,00	2,64
Harvest	0,06	3,00	L/hr	10,00	Hr/ha	0,80	€/L	24,00	1,44
<b>Water</b>									
Drip to Drip irrigation (water from a hole)	0,00			11,00	ML/ha	0,00	€/ML	0,00	0,00
<b>Labour:</b>									
Tractor driving	0,06	1,00	person	17,83	Hr/ha	15,00	€/hr	267,45	16,05
Hand Harvest	-	1,00	person	650,00	boxes			11.261,25	-
Pick Up	-	1,00	person	650,00	boxes	wage		-	-
Packing (on farm)	-	1,00	person	6.500,00	boxes			-	-
<b>Electricity:</b>									
Irrigation Pumps	0,23			11,00	ML/ha	32,00	/ML	352,00	80,96
Shed/Cool Chamber	0,23	1,00		332,00	Hr/ha	1,20	/hr	398,40	91,63
<b>Packaging:</b>									
Package Materials	0,00			6.500,00	boxes	0,25	/box	1.625,00	0,00
Rubber Bands	0,00			26.000,00	Rubber bands	0,02	/rubber band	520,00	0,00
<b>Transportation:</b>									
Pick up	0,06	650,00	boxes/pick up	10,00	Number of trips	25,00	€/trip	250,00	15,00
<b>Accounting</b>									
								500,00	115,00
<b>Advertising</b>									
								300,00	69,00
<b>Total with VAT</b>								16.111,37	
<b>Total without VAT</b>								14.909,60	
<b>VAT</b>									1.201,77
<b>Operating Costs</b>		16.111,37							
<b>Gross Margin</b>		23.988,43							

Business Plan: Quinta da Fortaleza Organic Asparagus Production

Yield (Boxes)	Delivered Price (€/Box)					
	2,00 €	3,50 €	4,00 €	5,00 €	6,00 €	8,00 €
2275	4.550 €	7.963 €	9.100 €	11.375 €	13.650 €	18.200 €
4550	9.100 €	15.925 €	18.200 €	22.750 €	27.300 €	36.400 €
5525	11.050 €	19.338 €	22.100 €	27.625 €	33.150 €	44.200 €
6305	12.610 €	22.068 €	25.220 €	31.525 €	37.830 €	50.440 €
6500	13.000 €	22.750 €	26.000 €	32.500 €	39.000 €	52.000 €

<b>Break-even Price</b>	2,48 €	/Box	6500	Boxes/ha
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<b>Break-even Yield</b>	3222	Boxes/ha	5,00 €	/Box
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Personnel Expenses														
	Monthly	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
CEO	650,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00
<b>Total Gross Remuneration</b>	650,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00	9.100,00
IRS	0,13	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50	1.137,50
IRS Surcharge	0,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02	202,02
TSU Employee	0,11	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00	1.001,00
TSU Employer	0,24	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25	2.161,25
<b>Payment to the employee</b>		6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48	6.759,48
<b>Taxes payable to the state</b>		4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77	4.501,77
<b>Employees cost for the entity</b>		11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25	11.261,25

Supporting maps for balance sheet:

	STATE												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
VAT Calculation													
VAT PAYABLE													
Sales (6%)		0,00 €	819,00 €	1.638,00 €	1.989,00 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €
Total VAT PAYABLE		0,00 €	819,00 €	1.638,00 €	1.989,00 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €	2.269,80 €
Deductible VAT 23%													
Purchase of materials	11.072,32 €	1.564,00 €	574,08 €	1.083,76 €	57,50 €	57,50 €	57,50 €	57,50 €	57,50 €	57,50 €	57,50 €	57,50 €	57,50 €
Supplies and external services	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €	401,77 €
TOTAL DEDUCTIBLE VAT	11.474,09 €	1.965,77 €	975,85 €	1.485,53 €	459,27 €	459,27 €	459,27 €	459,27 €	459,27 €	459,27 €	459,27 €	459,27 €	459,27 €
VAT PAYABLE	0,00 €	0,00 €	662,15 €	503,47 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €	1.810,53 €
VAT RECEIVABLE	11.474,09 €	1.146,77 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €
SS Costs													
TSU - Employer		2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €	2.161,25 €
TSU - Employee		1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €	1.001,00 €
SS TOTAL		3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €	3.162,25 €
IRS Retention		1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €
IRS TOTAL		1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €	1.137,50 €
Income Tax													
IRC		677,09 €	272,73 €	1.323,64 €	841,16 €	36,96 €	326,79 €	1.783,86 €	1.783,86 €	1.794,56 €	1.906,12 €	1.998,35 €	1.998,35 €
TOTAL INCOME TAXES		677,09 €	272,73 €	1.323,64 €	841,16 €	36,96 €	326,79 €	1.783,86 €	1.783,86 €	1.794,56 €	1.906,12 €	1.998,35 €	1.998,35 €

Rate of Return References:

Variants	Values (2019)	Source	Formula
rf (sector)	1,89%	www.worldgovernmentbonds.com	-
$\beta_u$ (sector)	52,00%	Professor damodaran	-
Risk Premium	7,96%	Professor damodaran	-
rD (Project)	3,64%	CGD	-
r0	6,03%	Author	$r_0 = r_f + \beta_U \times (E(r_m) - r_f)$
Equity (E)	209691,3673	Author	-
Debt (D)	51900,4409	Author	-
Total	261591,8082	Author	-
Equity (E)	80,16%	Author	-
Debt (D)	19,84%	Author	-
Tax	14,50%	Tax Income (Portuguese Government)	-
D/E	24,75%	Author	D/E
$\beta_L$ (project)	52,07%	Author	$\beta_L = \beta_U + (\beta_U - \beta_D) \times (D/E) \times (1 - t)$
$\beta_D$ (project)	22,01%	Author	$r_D = r_f + \beta_D \times (E(r_m) - r_f)$
rE	6,03%	Author	$r_E = r_f + \beta_L \times (E(r_m) - r_f)$
WACC	5,45%	Author	$WACC = r_E \times (E/(E+D)) + r_D \times (D/(E+D)) \times (1 - t)$

(Source: Author, 2018)

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