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Business Plan - Launch of a Kiwi Company

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Master's in Applied Management

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January, 2022



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Glossary

AVP: *Associação Vegetariana Portuguesa*

CAGR: Compound Annual Growth Rate

DGS: *Direcção Geral de Saúde*

DGADR: *Direcção-Geral de Agricultura e Desenvolvimento Rural*

EBIT: Earnings Before Interests and Taxes

EBITDA: Earnings Before Interests, Taxes, Depreciations and Amortizations

EU: European Union

F&V: Fruits and Vegetables

GDP: Gross Domestic Product

GPP: *Gabinete de Planeamento, Políticas e Administração Geral*

Ha: Hectares

IRR: Internal Rate of Return

NPV: Net Present Value

OF: Organic Farming

PESTEL: Political, Economic, Technologic, Sociocultural, Environmental and Legal

R&D: Research and Development

RHS: Royal Horticultural Society

SWOT: Strengths, Weaknesses, Opportunities, Threats

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Summary

The main goal of this project is to develop a business plan of an Organic Kiwi farming company, located in *Castanheira de Pera*, Portugal.

The Kiwi industry is a growing industry worldwide, that grows every year. Portugal has shown to have specific areas where Kiwi trees adapt easily and produce kiwis without high investment and care.

To evaluate if this would be an interesting business, a literature review was made, to evaluate not only the agricultural businesses in general but also how Kiwi is consumed and produced in Portugal and around the world. A questionnaire was also made, to evaluate how fruit is perceived in Portuguese households, and how Kiwis fit in the daily eating habits. Despite most of the interviewed sample has said that eats fruit daily, Kiwi is none of the inquiries favourite fruit.

A marketing plan was designed to better develop the brand and create an impact in Portugal with the Portuguese Organic Kiwi.

In 9 years, a production of 170 tons of kiwi is predicted to be produced, and with presence in the main Portuguese retailers. It is a financially viable business, and the profitability index is 1,15.

Key Words:

- Business Plan
- Kiwi
- Organic
- Portuguese Farming

JEL Codes:

- Economic Development: Agriculture O13
- New Firms M13

Sumário

O principal objectivo deste projecto era desenvolver um Plano de Negócio para um projecto de Agricultura Orgânica de Kiwis, em Castanheira de Pera, Portugal.

A indústria do Kiwi é uma indústria em crescimento mundialmente, que tem crescido anualmente. Portugal tem zonas de produção de Kiwi onde as suas árvores têm grandes produções sem grande investimento e cuidados especiais.

Para avaliar o interesse deste projecto, uma revisão literária foi realizada, para perceber o estado da agricultura em Portugal, mas também para perceber como o Kiwi é consumido e produzido em Portugal e no resto do Mundo. Foi feito um questionário, para apurar o consumo de fruta nos lares portugueses, e como o Kiwi entra nesses hábitos. Apesar da esmagadora maioria consumir fruta diariamente, o Kiwi não foi seleccionado como a fruta preferida de nenhum dos inquiridos.

Foi também elaborado um plano de marketing, de modo a desenvolver a marca e criar impacto em Portugal com o Kiwi Orgânico Português.

Em 9 anos, está previsto que a produção chegue às 170 toneladas de Kiwi, e que a marca esteja presente nos principais retalhistas. O projecto mostrou ser financeiramente viável, apresentando um Índice de Rentabilidade de 1,15.

Palavras Chave:

- Plano de Negócio
- Kiwi
- Orgânico
- Agricultura em Portugal

Códigos JEL:

- Economic Development: Agriculture O13
- New Firms M13

1. Literature Review

1.1. Food trends and changing habits

Living in the 21st century has brought several changes to the world, being one of them food habits. Vegan and vegetarian diets are becoming more common around the world (Bourassa, 2022). Vegan diets imply no animal derived food of any kind, as a vegetarian diet allows milk derivatives as cheese, cream, yogurt, and eggs. Gluten free diets avoid food that contains gluten as bread, cereal, cookies, any food that wheat, barley, rye, among others. (Coceliac, n.d)

According to the Portuguese Vegetarian Association, the vegetarian food market (stores and restaurants) has increased 514% between 2008 and 2018 and there are approximately 60 000 vegetarians and 60 000 vegans in Portugal (AVP, 2020). In Great Britain, in 2016 there was an estimate of 150000 vegans, and in 2018 that number had risen to 542000. (Brouwer, 2021)

The EU Agricultural Markets Briefs has concluded that organic farming comprised 7% of the total farmland in 2017 and Europe's consumption of organic food summed 34.3 billion euros in 2017, and 3.3 tons of imported products in 2018. It concluded as well that 29% of the total organic area for permanent crop is for organic fruits, being the major countries Spain, France, and Italy. (European Commission, 2019)

These different types of eating are becoming more popular as they are associated with more sustainable lifestyles (Nogueral , 2021). It is estimated that 18% of all greenhouse gas emissions are due to animal agriculture. Water consumption per kg of fruit is estimated to be 962 L, for vegetables 322, and for meat in general over 4000 liters. The impact in natural resources of animal consumption is driving these changes. (Bourassa, 2022)

The Portuguese Health System (DGS) recommends following a Food Wheel, with specific percentages to have a balanced and healthy food intake, and it is divided in 5 categories: Fruit, Vegetables, Oils, Fats and Sweets, Dairy, Meat, Fish and Eggs, Grains and Carbohydrates (bread, cereals, potatoes). Each category recommended daily intake is represented by the size of the wheel it has, as can be seen in the figure below:



Figure 1.1 - Food Wheel, Source: DGS, 2021

Fruit and vegetables represent 20% and 23% of the total wheel, being followed by carbohydrates (28%) and then dairy (18%), being the remaining one's minorities in the daily intake recommendations. Fruit and vegetables (F&V) sum 43% of the recommended intake of what is recommended to be eaten daily, both 3 to 5 portions a day. (DGS, n.d.)

The importance of fruit and vegetables in a healthy diet as how organic products differ from conventional agriculture will be further discussed in the following subchapters.

1.1.1. The role of fruit and vegetables in healthy eating

According to Harvard's School of Public Health, studies have shown innumerable benefits in having a constant intake of F&V daily, can not only reduce the odds of developing heart disease, diabetes, high blood pressure, but also might help preventing some types of cancer. (Harvard Education, n.d.) (Duyn, 2000)

In addition, F&V provide vitamins and mineral needed to have a healthy functioning gut. The British National Health System suggest 5 servings a day as a minimum intake of F&V together, adding 400gr per day as a minimum, contrasting with the Portuguese Health Department (DGS) who recommend 3 to 5 portions of each. (NHS, n.d.)

Kiwis have a significant role as a power fruit, with different benefits with only about 35 calories per individual fruit (without the peeling). Moreover, it is rich in vitamin C as one kiwi averagely supplies the daily recommended dose, but also vitamin E, folic acid, potassium, and calcium. It is also rich on fibre and antioxidants promoting digestive health and skin renewal. (Shubrook, n.d.)

All these vitamins provide benefits such as boosting the immune system, preventing diseases, protect DNA from damage (Collins, 2001) manage blood pressure (Klemsdal, 2015), and reducing blood clotting (Duttaroy, 2004).

1.1.2. Organic Farming

According to the Portuguese Guide for Organic Farming (OF) (DGADR, 2017), this implies farm sustainability, preserving natural resources, enhancing biodiversity, and respecting nature's natural balance. Four basic principles need to be followed:

- *health* – ensuring soil quality and plant, animals, human beings and planet health;
- *ecology* – organic farming should be based in the ecologic systems and its cycles, working with them;
- *justice* – organic farming should base itself in fair relationships regarding the general environment and life opportunities;
- *precaution* – must be managed with responsibility and cautiously, minding environmental protection, health, and finally current and future generations wellbeing.

According to the issue 13 of March 2019 of magazine EU Agricultural Markets Briefs, the European Union (EU) OF area increased 70% since 2009 and Europe was the second biggest consumer of organic food in the world. In 2021, OF represents 8.5% of the total EU farmland and the EU has set a goal for 2030 of increasing this area to 25%. The countries with bigger organic farming areas are Austria, Estonia, and Sweden. (European Commission, n.d.)

Marketwise, consumers are getting more conscious about what they eat and how its farming affects their health, and consequently organic food market is expected to reach 380.84\$ billion in 2025 (at a compound annual growth rate (CAGR) of 14,5%), growing 47%, from a total amount of 201.77\$ billion in 2021 (at a CAGR of 9,4%). In Portugal, OF has tripled from 2009 to 2019. (The Business Research Company ,2021)

1.2. Agricultural Industry - Europe and Portugal

European farms have been decreasing in quantity since 2005, mainly small farms. According to Eurostat, in 2020 agriculture contributed to 1.3% of the EU's Gross Domestic Profit (GDP). As can be seen in the figure below, crops represent 52.8% where fruits sum a 7.2% share of the of the total agricultural industry output. (Eurostat ,2021)

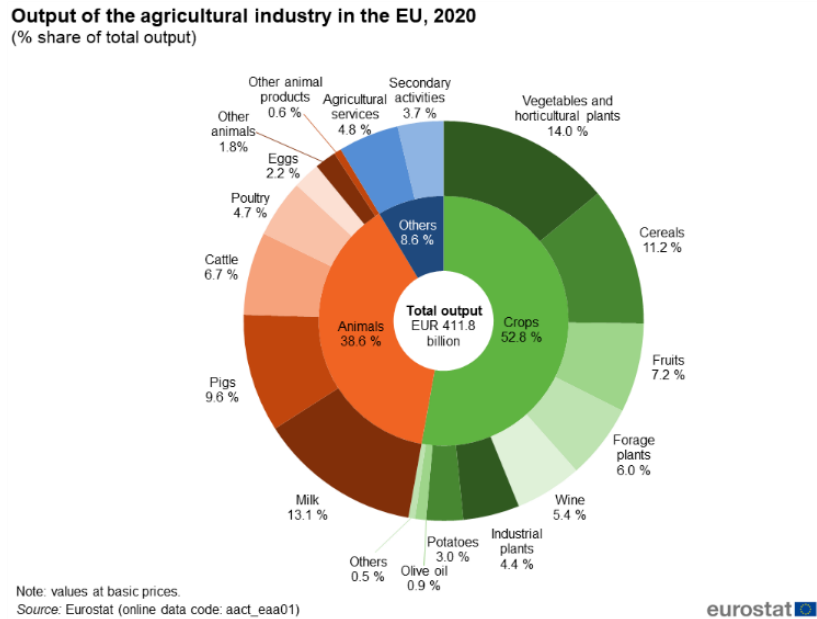


Figure 1.2 – EU’s Output of the agricultural industry, 2020, Source: Eurostat, 2020

Despite declining by 1.4% in 2020, only 2019 had a bigger output value than 2020 since 2007. The bigger contributors for these results are France, Germany, Italy, and Spain. (Eurostat, 2021). In 2018, the EU was the biggest milk producer in the world, and there were 4 million jobs directly dependent on animal farming (Guyomard, 2021).

One of the challenges in this sector is finding proper labour, and availability to work in agriculture. Even with mechanisation, that significantly reduced the need for human labour, there is still a shorter workforce than needed across whole Europe.

The Statistical Factsheet issued in 2021 by the EU, (European Commission, 2021), regarding Portuguese Farming Industry shows that agriculture represented 3.2% of the total employment and fruits agriculture represents 21.5% of the total agricultural output in the country. Economic wise, agriculture represents 3,2% of Portugal’s GDP.

Portuguese total exports in 2020 were up to an amount of 72 797 million euros, where 6620 million euros correspond to agricultural goods, 9%. Portugal agricultural products exports increased 5% since 2011 to EU countries and decreased 5% in the same period for non-EU countries. (European Commission, 2021)

In the last 10 years the agricultural sector has decreased in number of producers, 4.9%, but has increased in the average area per producer. Moreover, agricultural income decreased 3.4% from 2019 to 2020. To target this issue the Portuguese government created a financial support to help agricultures starting and sustaining their businesses. (Portal dos Incentivos, 2020)

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1.2.1. Kiwis - Market projection and derived products

According to Index box, the Kiwi market has been growing for the past 10 years, summing 6.9 billion dollars in 2019. The biggest consumers per capita in 2019 were China, Greece and Italy, being the first two also the two biggest producers, followed by New Zealand. An estimate of 4,3 million tons of kiwis were produced in 2019, where the biggest importers were Belgium, Spain, and China, at an average price of 2024\$ per ton. Kiwi consumption increased 4.1% per year since 2007 up to 2019. (IndexBox, 2020)

Portugal was, in 2019, the second country in Europe that ate more fruit per capita, after Italy, although it is not clear how Kiwi fits in the Portuguese fruit intake (Agência Lusa, 2017). Moreover, from 2019 to 2020 the average fresh fruit intake per capita was 88.4 kg/person. (INE, 2017-18)

1.3. Fruit and Vegetables Marketing

1.3.1. Segmentation and Targeting

To evaluate market segments there is a need to segment size and growth, structural attractiveness, and company's objectives & resources. To do so, market strategies can be undifferentiated, differentiated, or concentrated.

Segmenting markets allows identification of the proper customer to a specific product and define a better strategy to enhance how the product is presented, aiming for a common need of the chosen target group. Identifying the most lucrative groups fit in the segmentation of the product, to assure its potential for growth. Segmentation will depend on demography, geography, psychographic, behaviour and product related factors. (Camilleri, 2018)

A differentiated marketing strategy defines the different segments to target and each segment has its own marketing plan. [0]

Agriculture specialist Don Hofstrand from Iowa State University defends that to create a differentiated product in agriculture, differentiation must be created from the commodity: a kiwi will be a kiwi no matter who produces it. Hence, the products differentiation consists of the *"specific value of your product"*, in which the product you sell has a specific and clear difference from others that may seem similar at first sight. (Hofstrand ,2019)

1.3.2. Farmer to Consumer

Fruit and vegetables Marketing can be directly attached to the producer and can define the rough amount to aim for. According to The University of Tennessee, n.d, Direct Marketing Guide for

Producers of Fruits, Vegetables and Other Specialty Products, *“marketing does not begin after a crop is produced, Instead, marketing alternatives need to be considered well before production takes place”*.

For small farmers, direct marketing has the advantage of being able to sell products not accepted in commercial standards, due to ripeness, appearance, size, smaller shelf life, among others. This allows farmers to manage how they approach the market, product wise, time wise and even price wise as they have fresher products avoiding the middleman.

This marketing guide stands out several direct marketing methods, suitable for producers, namely:

- Pick your own: each consumer goes to the farm and picks their own food – offers saving to producers as there is no crop and transport cost and allows a different outdoor family activity that can easily be made even more attractive with some extra activities like bird watching, horse riding, flower picking... and the storage cost is reduced. On the other hand, it is hard to control and has a high risk of getting too confusing and with too many people;
- Farmers’ markets: direct to consumer markets that usually imply the payment of a fee regarding the occupied space. Usually attract a considerable amount of people, and are not necessarily open every day;
- Peddling: ideal to sell the excess of product to retail stores, restaurants, and door-to-door;
- Rent-a-tree: the renter provides the keeping of the tree and does the harvesting, while the grower produces and supplies the equipment for harvesting;
- Gift baskets and mail order: suitable for products that are not easily perishable and that can look attractive;
- Roadside stands and markets: strategically located to attract more customers, are usually linked to fresher and tastier fruit and vegetables. Need advertising and have significant maintenance costs between parking, insurance, possibly hired labour and suchlike.

Defining a target is mandatory to develop a promotion and advertising plan. Although, basic market information must be acquired, as targets, objectives, alternatives, defining budgets and strategies and evaluate the predicted sales versus the advertising costs. (The University of Tennessee, n.d.)

2. Methodology

To be able to do a proper Business Plan, considering the highest number of variables possible, a specific methodology will be followed.

Then, the fruit consumption and market will be analysed and evaluated, as will be regarding the Kiwi market only. This analysis will be done for the Portuguese market specifically and for international markets.

First, the Porter's PESTEL analysis will be done, for the general conjuncture in fruit agriculture to be considered. This will allow a broad impression of the topicality regarding politics, economics, technology, sociocultural facts, environmental and legal. This will also include a technical analysis on the specific Kiwi plant, its planting conditions and development environment.

To gain awareness to how the consumer feels about the product, the sensitivity to price, the preference on organic production, and availability to try different derived products, a questionnaire will be applied to our target audience.

Moreover, a marketing plan and its implementation will be created, following the conclusions of the questionnaire and market analysis. Then, it will be possible to create a dedicated Segmentation, Targeting and Positioning on the Kiwi Brand.

Finally, the financial validation will be needed, to evaluate when the investment will reach the breakeven, and will start to generate profit and what is the project Internal Rate of Return.

3. Market Analysis

3.1. Portuguese Kiwi Market

In 2004, the Portuguese Kiwi Association was formed, to enhance the Portuguese production, and created an organized group to make use of the fruit agriculture best practices. It represents 80% of kiwi productions. Until 2009, the Portuguese production was around 11 tons, increasing 59% in that year, due to public investments and improvement of agriculture techniques. In 2018, more than half of the Portuguese Kiwi production was exported. The area of kiwi plantations has grown 63,5% from 2010 to 2016, summing up to a total of 2598 ha and 70% is in the north of the country, *Douro*, and 29% in the northwest, *Beira Litoral*. (Agronegócios, 2020)

The Official Cabinet for Planning, Politics and General Administrations, (GPP), has published information on production area evolution, imports and exports and degrees of supply. (GPP, 2020)

Regarding production area and effective production, the following graph was provided by GPP:

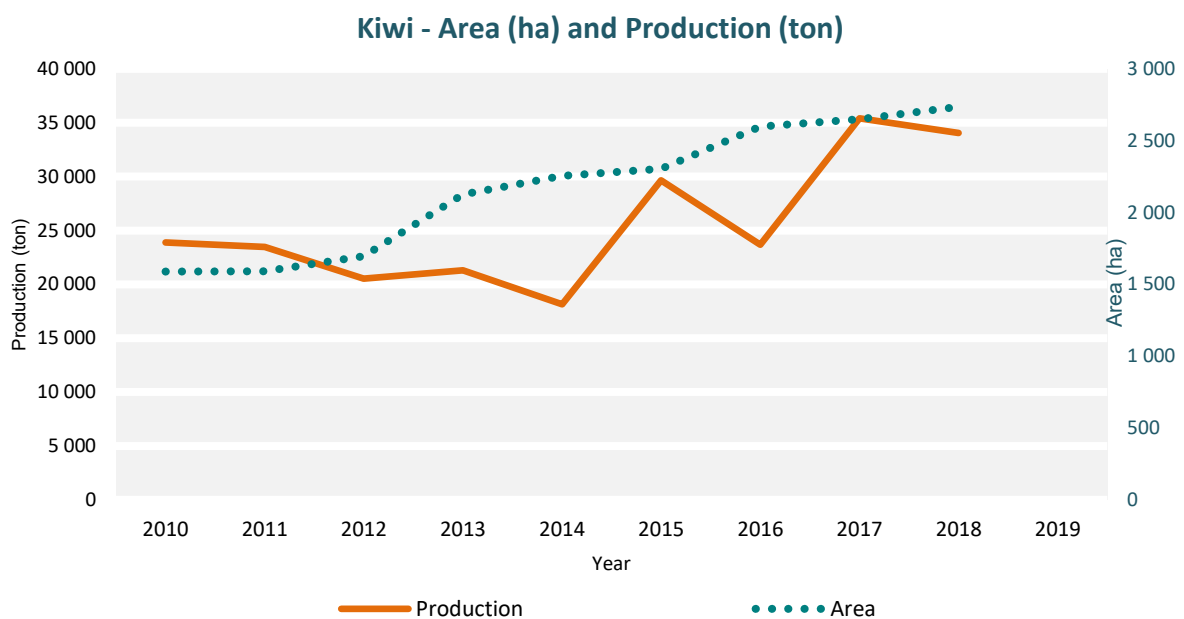


Figure 3.1 – Kiwi Portuguese effective production versus production area, Source: GPP, 2020

Since 2010, production has increased 30%, whereas production area increased 40%. This non proportionality is due to technical particularities of the Kiwi plant, and a specific bacterial disease, PSA.

The following graph on Kiwi production, export, import and the apparent consumption¹:

¹ Apparent consumption = Production + Import – Export [0]

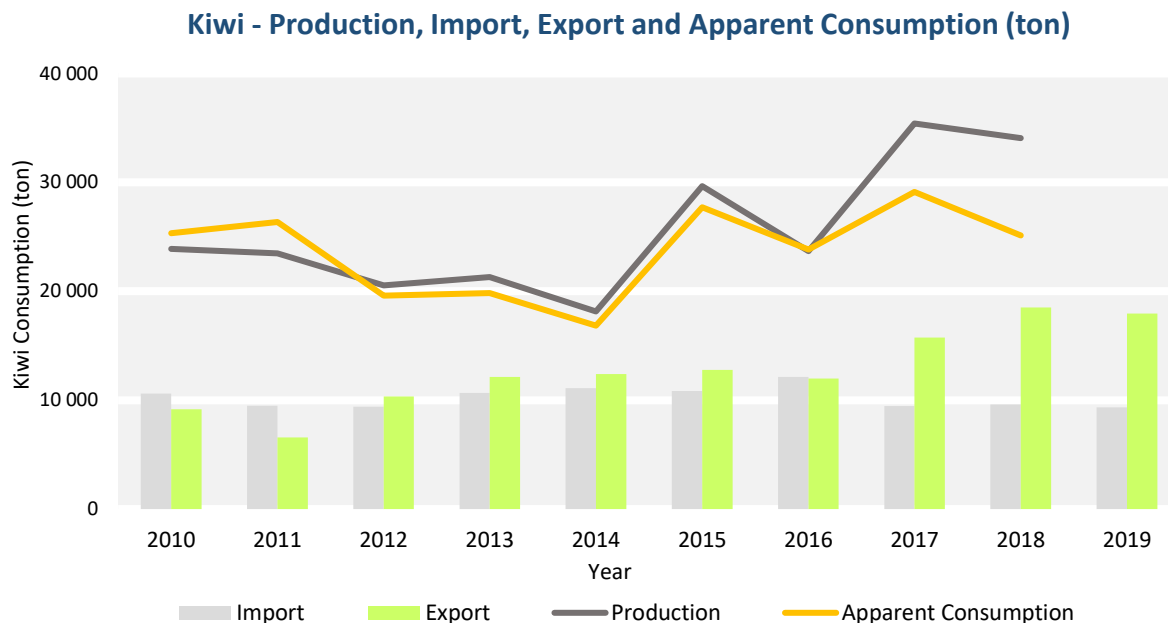
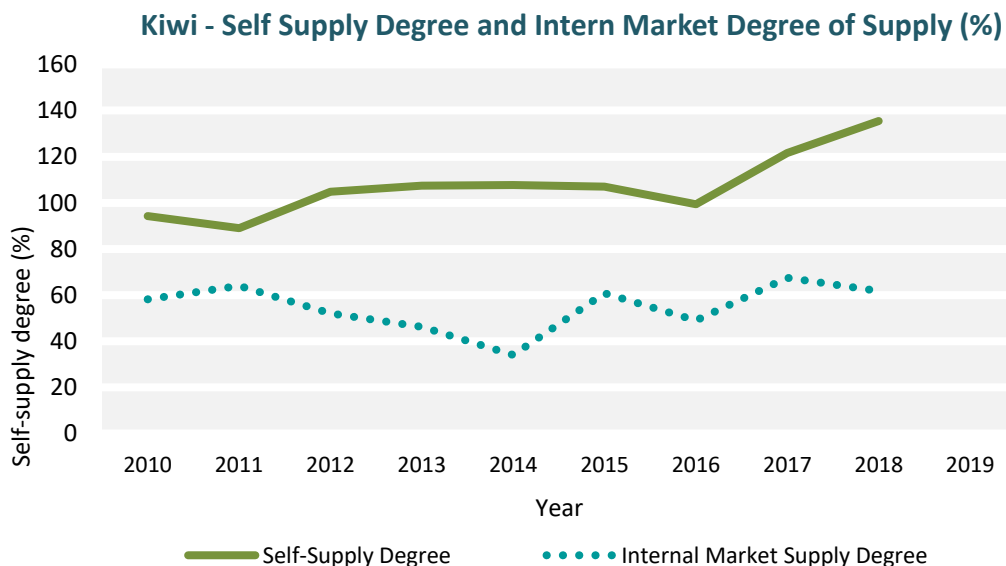


Figure 3.2 – Portuguese Kiwi Production, Import, Export and Apparent Consumption from 2010 to 2019. Source: GPP, 2020

There has been a significant increase in production as previously mentioned, and imports have decreased since 2017. From 2012 onwards, Portuguese Kiwi agriculture has been sufficient to provide the country’s needs. Nevertheless, the exports increased, and the following graph translates the self-supply degree² and the internal market degree of supply³.



² Self-supply degree = Apparent consumption / Production x 100 [0]

³ Internal Market Supply Degree = (Production – Export)/ Apparent consumption x 100 [0]

Figure 3.3 – Portuguese Kiwi Market - Self Supply Degree and Internal Market Supply Degree. Source: GPP, 2020

As shown in the graph, Portugal in 2018 produced around 40% more than the internal consumption, but only supplied 62% of the total Portuguese market. The main destinations of the export were Spain, France and Poland, as the main suppliers were Spain, Belgium and Greece.

The average import and export price vary in 32 cents. To import Kiwis in 2019, the average price was 1,50€/kg, but to export the selling price was 1,18€/kg. The evolution can be seen below. (GPP, 2020)

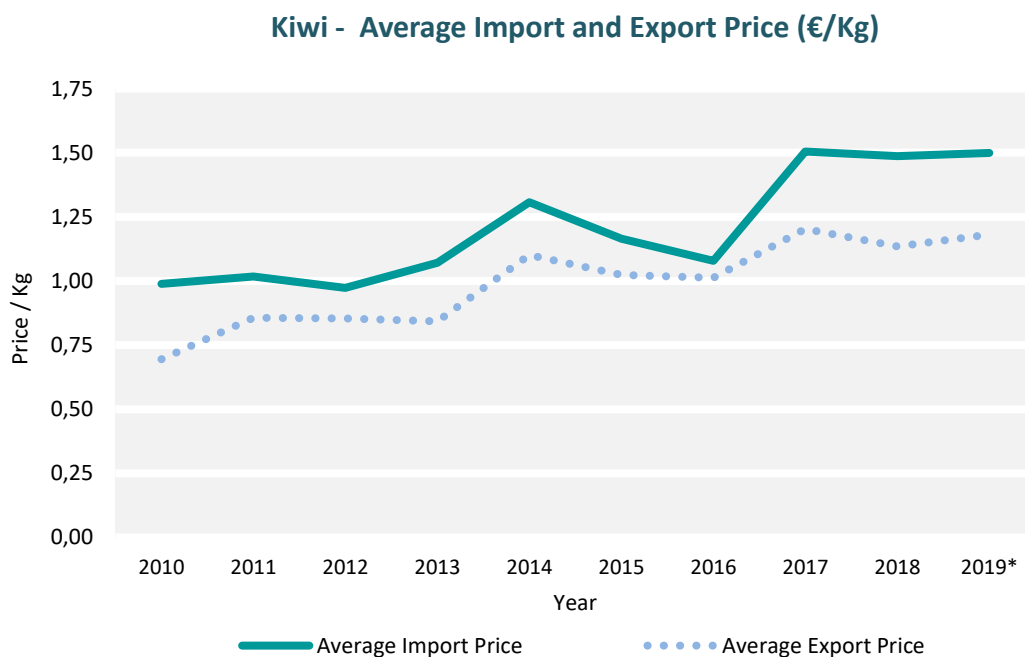


Figure 3.4 - Kiwi Price Comparison – Import Vs Export. Source: GPP, 2020

This can be explained due to the power of other international suppliers. If they practice a lower price, the Portuguese Kiwi exportation price has either to match or be lower than competition. Other reason is seasonality. Big retailers need significant product quantities, and in Portugal there is not Kiwi available to buy all year round. This means that at a specific part of the year, the product is not available in Portugal. Moreover, retailers need to have good relationships with several suppliers. To depend only in Portuguese suppliers, which are likely to be all sensible to the same issues (bad weather for production, bugs) is risky.

3.2. PESTEL Analysis

A PESTEL (Political, Economic, Technologic, Sociocultural, Environmental and Legal) analysis will be performed to know in what reality the Kiwi business will be competing. A perspective over Portugal and Europe will be adopted.

- **Political** – Portuguese politics have been stable throughout the years since the end of the dictatorship in 1974. The main political power changes between two main parties, socialists, and democrats. It is unlikely to change in the following years, albeit some extra conservative parties are gaining visibility. In the present time, the government is formed by the Socialist Party and the President is originally from the Democratic party. There will be elections in 2022 and 2024 respectively.

The European Union's politics allows not only people but goods to move freely, mainly to create the most beneficial economic market for all the members. The EU values stand for human dignity, freedom, democracy, equality, rule of law and human rights. Members are obliged to follow specific politics, regarding justice, security, health, external relations, among others. (European Union, n.d.)

- **Economic** – Three economic fundamental parameters need to be assessed: GDP, inflation, and internal consumption.

In 2020, due to the Covid-19 pandemic, the Portuguese economy presented an 8,4% decreasing value of GDP, compared to the previous year, whereas the UE decreased 5,9%.

The evolution of the Portuguese and European GDP in the past 5 years can be seen in the graph below. (Eurostat Data Browser, 2022)

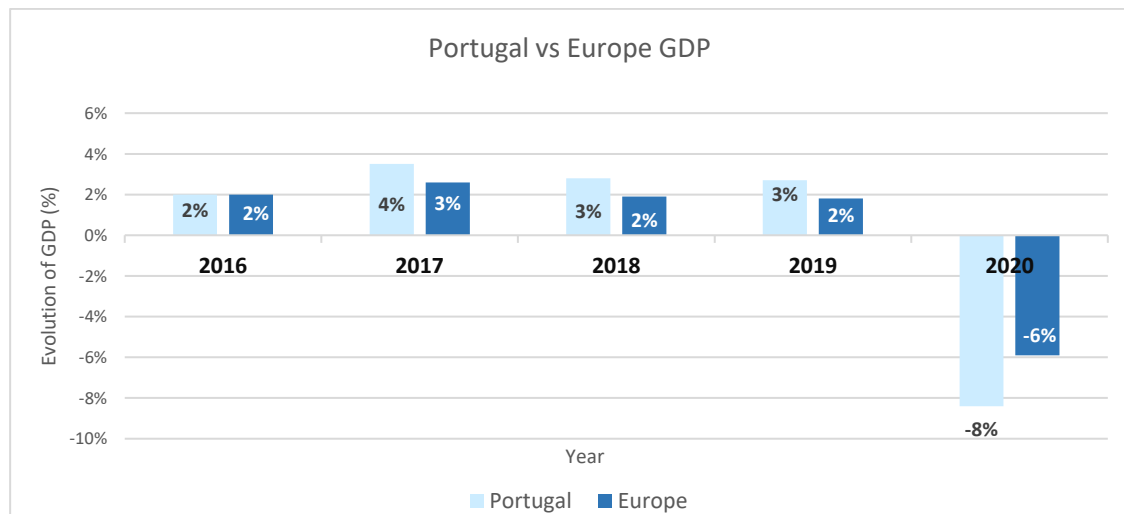


Figure 3.5 – Comparison between the Portuguese GDP and the average EU GDP. Source: Eurostat, 2022

As this GDP decrease was a global issue, the EU approved a non-refundable fund to be distributed fairly to the EU members. The Portuguese government created a plan to apply these funds where they were most needed: Climate Transitions, Resilience (funding innovation and companies going through difficulties due to the pandemic) and Digital Transition. The main goals are to help companies to become more competitive and invest in new technologies,

having in mind climate issues, digital transformation and exporting goods and services, and therefore increase the GDP.

In Portugal, the percentage of people working in the three different sectors primary, secondary and tertiary can be seen in the following table: (Eurostat Data Browser, 2021)

Table 3.1 - Portuguese working force percentage per sector, Source: Eurostat, 2022

Year	Primary	Secondary	Tertiary
2016	7%	24,5%	68,6%
2017	6%	24,7%	68,9%
2018	6%	24,8%	69,1%
2019	5%	24,7%	69,8%
2020	5%	24,8%	69,9%

The primary sector include agriculture, fishing, hunting, forestry, and the extracting industry, as the secondary includes all the transformation activities, as construction and energy production. The tertiary sector includes all services, like general commerce, tourism, transport, and financial activities. In the following graph, the evolution of the number of companies in the primary sector correspondent to agriculture, animal production, fishing, and forestry. (PorData, 2021)

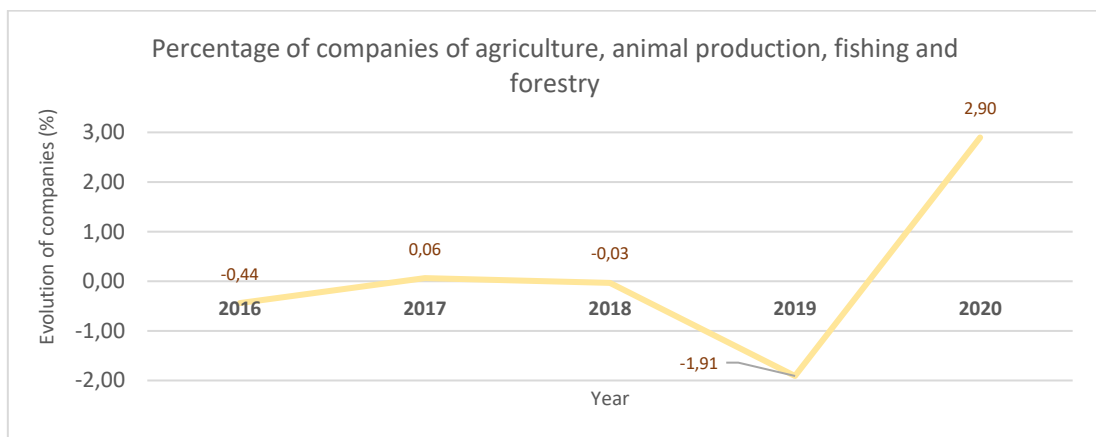


Figure 3.6 – Percentage of companies in the primary sector excluding the extracting industry. Source : PorData, 2021

Despite the decrease since 2016 of the primary sectors working force, the number of companies in part of the primary sector increased.

Regarding the consumption per household as a percentage of GDP, the internal consumption evolution from 2016 to 2020 decreased 3,6% of the total internal GDP. The evolution can be seen below: (PorData, 2021)

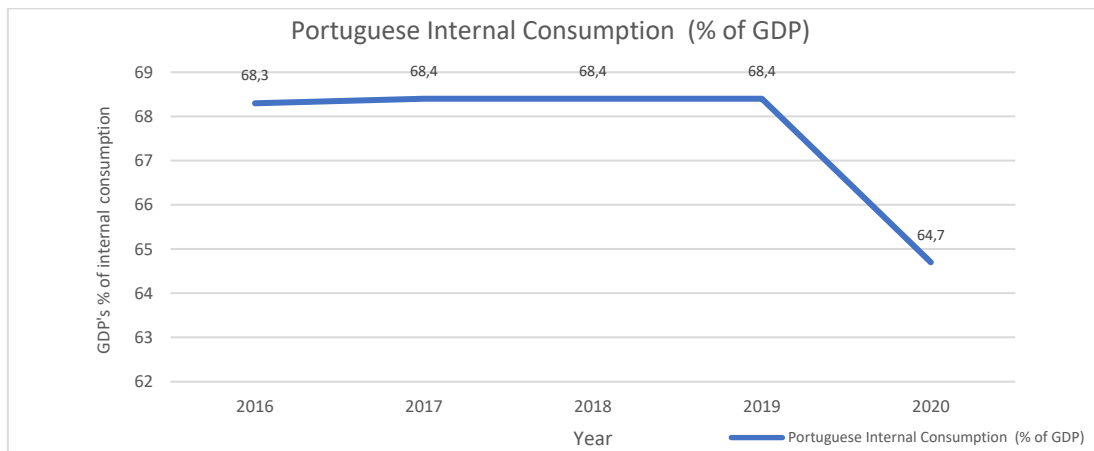


Figure 3.7 – Portuguese internal consumption from 2016 to 2020. Source : PorData, 2021

The variation of the inflation rate from 2016 to 2020 can be seen in the graph below. Portugal has usually had less variation than the average of the EU (Eurostat Data Browser, 2022). However, the inflation rate in 2021 (up to November 2021 was 0,8% in Portugal, and is expected to reach 1,7% in 2022, while for the EU, it reached 2,4% in 2021 and is expected to lower to 2,2% in 2022. (Eurostat Data Browser, 2021)

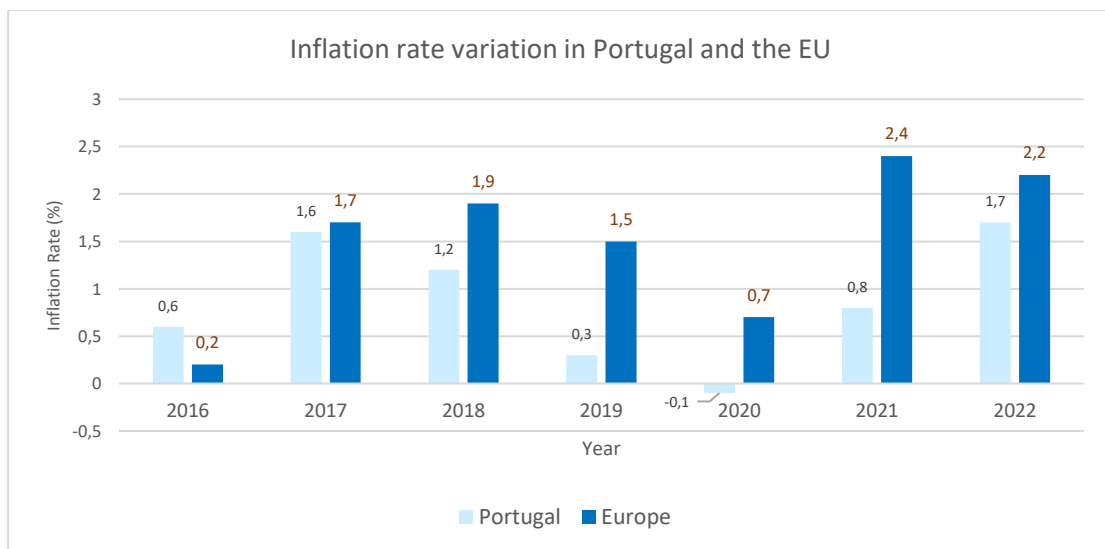


Figure 3.8 - Inflation rate variation in Portugal and the EU. Source: Eurostat, 2021 and European Commission, 2022

- Sociocultural** – Portugal has a population of 10.347.892 people, where 52% are women and 48% men (INE, 2021). The unemployment rate for the 2nd trimester of 2021 was of 6,7%. From 2015 to 2020, the unemployment rate in Portugal and Europe followed the pattern that can be seen in the graph below (OECD Data, 2021):

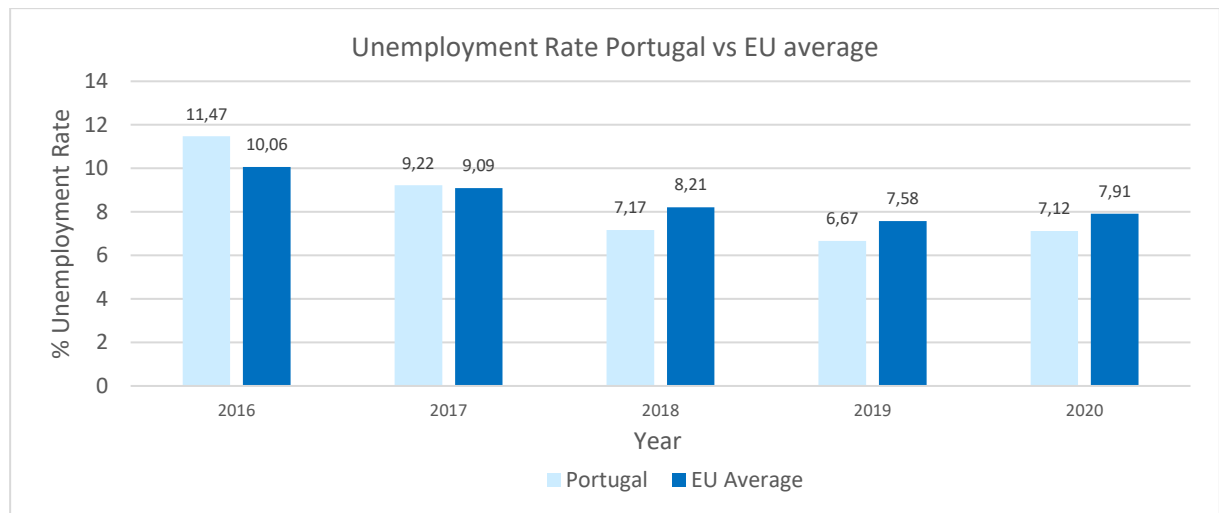


Figure 3.9 – Unemployment Rate Portugal vs EU average, Source: OCDE, 2021

Portugal lost 59% of people working in agriculture. In 2019, 52% of agricultures were over 65 years old, and only 10% were under 44, (Pordata, 2020).

The population living in great Lisbon and Great Oporto, are 45% of the total population. (INE, 2021)

- **Technologic** – Portugal’s technology financing fell in 2020, while in the rest of Europe (excluding Spain), broke previous records of investment (Barbosa, 2020). Nevertheless, up to 2020, Portugal was on the top 19 list of countries that attracted more investment in tech, and 18th in the fintech talent ranking. (Eco Seguros ,2020)

According to the State of European Tech Report (Atomico Magazine ,2020) the value of European Tech companies grew 5,6 times since 2016 and reduced its dependence on government funding.

Technology in agriculture allows a better control on the harvest than ever before: data collection and processing, allows farmers to make decisions on the harvests regarding fertilizing and watering, to avoid less than expected collections. Machine learning and automation allow this data to be processed and the linked systems to react accordingly. (Bayer, 2020)

- **Environmental** – The EU aims to be the first climate neutral continent in the world by 2050, tackling greenhouse gas emissions. The Paris agreement reunited 55 countries that agreed to work to limit the temperature increase to 1,5°C. Agriculture plays a big part in how natural resources are managed, as it takes almost 50% of the total land in Europe and needs water and fertile soils to function properly. Some fertilizers can damage the soil and groundwater as well. (European Commision, 2020 and European Commision, 2019)

- **Legal** – Portugal is a democratic country, and it follows its own laws and the EU legislation as well. The following documents are determinant to start a Kiwi Agriculture business:
 - CE nº 1673/2004, establishes the norm to commercialize Kiwis; (EUR-Lex)
 - CE nº 2018/848, establishes the norm to produce organic products; (EUR-Lex)

ASAE is the Portuguese entity that ensures food security and economics.

3.3. Porter's Five Forces Analysis

Porter's five forces analysis mirrors the sector, its direct competitors and how suppliers deal with customers. The following points are considered:

- **Threat of new entrants:** the threat of new entrants in the Kiwi farming is considered high. As shown before, the Kiwi consumption is rising, and Portuguese soils have shown to be adequate to its production. Nevertheless, the decreasing number of habitants in the interior part of the country might create some difficulties in hiring qualified labour (e.g. engineers) and people for picking. Moving to the interior can make the business unappealing too as coastal areas are not proper to grow the Kiwi fruit;
- **Threat of substitute products:** the only product considered a direct threat are the golden kiwi and the red kiwi. Both are less acid and sweeter and might gain some adherence but are more expensive. The advantage is that both golden and red kiwi tree are more resistant to the cold than the hayward one, meaning that if a producer wants to adapt to these species, in terms of weather conditions is possible. Any other fruit can be considered indirect substitutes, which means that if price varies, the consumer can easily stop consuming kiwis and substitute them with cheaper fruits, like apples, bananas, oranges, pears, etc; (Beutel, 1990)
- **Bargaining power of suppliers:** considering suppliers of seeds, agriculture machines, pallets, pergola wood and maintenance, fruit boxes, naturally will have an impact on the price, but are diluted with scale. There is a considerable number of suppliers for all these materials, which makes negotiation easier if needed;
- **Bargaining power of buyers:** when selling to big retail the bargaining power of buyers is very high as they are huge clients and give low margins to the supplier. Regarding smaller markets or direct sale, price and offer available will determine the buyers choice;
- **Rivalry among existing competitors:** apparently there is no rivalry as the market is big enough for the current number of producers, and the Portuguese Kiwi Association was created to promote not only the Portuguese kiwis but also to attract clients in Portugal and abroad.

3.4. Kiwi Plant and Technicalities

There are approximately 50 species of kiwi fruits, being the most common one the fuzzy kiwis, known as Hayward.

To plant Hayward kiwi plants, a female and a male plant will be needed, or a self-fertile cultivar. Female plants produce fruit while male plants fertilize, to a ratio of 6-7 females to one male. It takes the Kiwi plant up to 4 years until producing the first Kiwi, and commercial production starts after 6-7 years. Each female plant should have a 3-to-4,5-meter space between them, as the male should be around 60cm away from the female. They must be planted in spring, and the orientation of the rows should be north to south as the sun is important for the plant's development. It should also be protected from wind (Beutel, 1990). They can be planted up to May and harvested up to September. While young, Kiwi plants are sensible to frost. The soil must be fertile, well drained, and slightly acid. Fertilizing is advised, focusing on phosphorus, potassium and nitrogen besides manure (Griffiths, 2021) (RHS, n.d.). As can be seen in the figure below, Kiwi farms need pergolas to sustain the weight of the plant when the kiwis are growing. (AgriFarming, n.d.) (Balcony Gardenweb, 2020)



Figure 3.10 - Kiwi Plant Pergola Source: Balcony Garden Web, 2020

Kiwi pruning is essential for the plant, as it can become too heavy, so both flower and flawed kiwis are pruned. Training of the plant is also necessary, to condition the growth to the top of the pole and then to the perpendicular branches of the pergola. The harvest of the kiwis is still done by hand, but machines are being developed to be able to harvest, reducing the need of human labour. (Saunders, n.d.)

One of the most famous derivative products of Kiwis is dried kiwi, a snack that contains most benefits from fresh kiwis and its high in energy. This can be a solution for when there is excessive production or part of the business. (Wolf, n.d.)

Another side product to be considered is Kiwi Seed Oil, used usually for skincare, containing properties like anti-ageing, regenerating, reliefs itchy skin, treats blemishes, among others, and can also be used as a hair product, providing softness and elasticity. (Health Benefits, n.d.)

4. SWOT Analysis

The SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis is a well-known method to evaluate which strategy will fit best the considered business through an internal analysis, strengths and weaknesses and external analysis, opportunities, and strengths. These will help to define a strategy compelled with the reality that this business will face entering the current market. (Gürel, 2017)

Table 4.1 - SWOT table, Source: The Author, 2022

Strengths	Weaknesses
<ul style="list-style-type: none"> • Familiarity with the geographical area; • The location intended has shown to be adequate to kiwi production; 	<ul style="list-style-type: none"> • Human Resources; • Business with low awareness; • Financial capacity - high initial investment and late return.
Opportunities	Threats
<ul style="list-style-type: none"> • Kiwi consumption is increasing; • Growing market with lack of producers, nationally and internationally ; • Government investment support on interior area of Portugal; • The Portuguese market still imports a considerable amount of kiwis; • Possible to articulate with other fruit or vegetables productions in the first years of the tree development; • Derivative products (kiwi seed oil, dry kiwi); 	<ul style="list-style-type: none"> • Fruit plagues that disrupt production; • Production depends on weather conditions; • Well established producers, with adequate know-how, with well-established clients and suppliers; • Kiwi plants take a minimum of 3 years to produce fruit;

4.1. Strengths

- Familiarity with the geographical area: Part of the owner’s family is from this geographical area, which makes it easier to find better opportunities in the nearby area, as finding human resources or contractors to do some specialized works.
- The location intended has shown to be adequate to kiwi production: The Kiwi trees in this area, have been planted for decades and high kiwi production has been witnessed without any special care. Despite not having an intensive production project, the domestic kiwi trees provide more than needed for domestic consumption and are more than common in that area.

4.2. Weaknesses

- Human Resources: as referred in chapter 3.2, 45% of the total Portuguese population lives either in Great Lisbon or Great Oporto. The difficulties of finding human resources that would like to stay in the interior are growing. Nevertheless, public funds were created to try to contradict this tendency of migrating to the littoral part of the country; (Eportugal, 2020)
- Business with low notoriety: agricultural businesses are rarely easy, and not the kind of business that will have an exponential growth in a short period of time;
- Financial capacity - high initial investment and late return: to create the necessary conditions to have a sustainable growth of kiwis, it is necessary to invest a significant amount of money: land, trees, irrigation system, picking and pruning. All of this becomes residual through time, but it demands high financial availability to be able to start the business.

4.3. Opportunities

- Kiwi consumption is increasing – as discussed in chapter 1.2.1, kiwi consumption increased steadily at an 4,1% rate from 2007 to 2019;
- Growing market with lack of producers, nationally and internationally;
- Government investment support on interior area of Portugal and agriculture – as referred in chapter 1.2, there are public financial supports to agriculture businesses;
- The Portuguese market still imports a considerable number of kiwis – as discussed in chapter 3.1, Portuguese production was over 40% bigger than the total national consumption, but about 38% was still imported;
- Possible to articulate with other fruit or vegetables productions in the first years of the tree development – kiwi trees provide a dense shadow, and some species might be adaptable to the conditions provided;
- Derivative products (kiwi seed oil, dried kiwi) – both products are not available in Portugal and can enter the market as a solo provider.

4.4. Threats

- Fruit plagues that disrupt production – as any agricultural production, different bugs can appear due to different reasons and create different productions than predicted (less quantity, less sweet, bitten by bugs, infestation that might kill the trees, not enough bees to pollinize the female trees);

- Production depends on weather conditions – even before global warming was taken as a serious issue, different weather patterns inside each season could change the expected production. Nowadays, as summers are getting longer and rain less common, agricultural businesses are more exposed to disruptions in production. Especially biologic ones, as they do not count with the help of pesticides;
- Well established producers, with adequate know-how, with well-established clients and suppliers – as previously mentioned in chapter 3.1, there are a number of kiwi producers that have been around for several years, which will have an advantage in know-how and connections in the kiwi business;
- Kiwi plants take a minimum of 3 years to produce fruit – the market might change, the consumption might decrease, more producers can appear, lower margins might be necessary to stay in business.

5. Business Proposition

The goal of this business plan is to create a disruptive kiwi brand: a brand that is not only about the fruit itself, but also about what the fruit can give to your health, wellbeing, adapting to consumer's needs and having high quality standards. The goal is to create a Portuguese organic kiwi brand, where the kiwi is the base but not the only product.

The proposed products and experiences are:

- Hayward Kiwi;
- Dried Kiwi (sub product);
- Kiwi seed oil for cosmetic use (to be evaluated as a solution for product that is not possible to sell);
- Visits to the farm and extra facilities, including picking (if in the proper time of the year) and picnicking;

The mass quantities are to be sold to retailers, business to business, but a store will be created so that it is possible to buy in the farm.

Having personal experience in the geographical area where the business will be implemented, this opportunity comes along with the realization of how this fruit can still be explored.

The production considered will be based on data from New Zealand's production which states that 11650 trays of kiwis were produced per hectare (Granwal, 2021), where each tray takes 3,61 kg

of Kiwi. This means that, for 5 hectares, the expected production with mature trees should be the following:

$$\text{Kiwi expected production (kg)} = 11650 * 3,61 * 5 = 210573 \text{ kg}$$

As C Kiwis production will be biologic, a more conservative production will be considered. It will be assumed that the maximum production will be around 20% less than what would be expected from the New Zealand quantities. The following table shows the predicted consumption since Year 4 (shown as year 3, as the year zero will be considered the year of the investment):

Table 5.1 – Kg of production predicted, Source: Author, 2022

Year	Total (kg of kiwi)
# Kiwi in Y3	25000
# Kiwi in Y4	49167
# Kiwi in Y5	76667
# Kiwi in Y6	104167
# Kiwi in Y7	131667
# Kiwi in Y8	159167
# Kiwi in Y9 – Y11	170000

6. Questionnaire Analysis

To include the consumers perspective and evaluate if the product is relevant to them, a questionnaire was made. The following table shows the asked questions, objectives, and possible answers:

Table 6.1 - Questionnaire questions, possible answers, and goal, Source: Author, 2021

Objectives	Question	Possible Answers (Frequency of the Answer)
<ul style="list-style-type: none"> To understand how the population perceives this product - do they like it? 	<ul style="list-style-type: none"> Do you like fruit? 	<ul style="list-style-type: none"> Yes (94,6%) No (4,9%) Neither like or dislike (0,5%)
<ul style="list-style-type: none"> How often do people eat fruit? Is it common, is it rare? Is this kind of product associated with high consumption rates? 	<ul style="list-style-type: none"> How many times do you eat fruit per day? 	<ul style="list-style-type: none"> I don't eat fruit (1%) I don't eat everyday (22%) Once a day (23%) Twice a day; (34%) Three times a day (14%) More than 3 times a day. (5%)
<ul style="list-style-type: none"> Considering a sample that is present in the market throughout the entire year, (no seasonality), which ones do consumers have at home 	<ul style="list-style-type: none"> Choose the frequency (from once or more a day, once or more a week, rarely or never) that you eat the following fruits: 	<ul style="list-style-type: none"> Banana; (once or more a day 18%, once or more a week 54%, rarely 24% or never 4%) Apple; (once or more a day 22%, once or more a week 56%, rarely 20% or never 2%) Pear; (once or more a day 9%, once or more a week 48%, rarely 39% or never 4%) Avocado (once or more a day 2%, once or more a week 22%, rarely 52% or never 23%); Orange; (once or more a day 12%, once or more a week 49%, rarely 35% or never 4%) Kiwi; (once or more a day 6%, once or more a week 31%, rarely 51% or never 11%)
<ul style="list-style-type: none"> Which fruit is a people's favourite? And how does kiwi rates among this list? 	<ul style="list-style-type: none"> If you could only choose one favourite fruit, which one would you choose: 	<ul style="list-style-type: none"> Banana (8%); Apple; (4%) Pear; Mango (9%); Papaya; Kiwi; Peach (5%); Watermelon (9%); Melon (5%); Cantaloupe; Oranges; (4%) Tangerines; Passionfruit; Cherries (15%); Fig (6%); Grapes; Blackberry Blueberry; Strawberries(10%); Avocado; Pineapple; Other: Please say which I don't know/ non applicable
<ul style="list-style-type: none"> Is kiwi a fruit that people usually like? 	<ul style="list-style-type: none"> Do you like Kiwi? 	<ul style="list-style-type: none"> Yes (74%); No; (15%) It is ok. (15,6 %)
<ul style="list-style-type: none"> How is kiwi considered price wise? 	<ul style="list-style-type: none"> Do you think it is an expensive fruit? 	<ul style="list-style-type: none"> Yes (37%); No (15%); It is ok (33%); I don't know/non applicable (15%)
<ul style="list-style-type: none"> How well known is dried kiwi? Are consumers familiar with this product? 	<ul style="list-style-type: none"> Have you ever tried dried kiwi? 	<ul style="list-style-type: none"> Yes (89%); No (89%); I don't know/ non applicable (2%)

The sample had 1644 people and was made through the Google Forms platform. Despite randomly chosen, 92% of the answers were from women, and only 8% men. The questionnaire can be consulted in Appendix . A focus group was created to answer questions with open responses, and was composed by 3 men and 3 women, with ages from 25 to 57.

6.1. General Questionnaire

The age group of the inquired sample was the following:

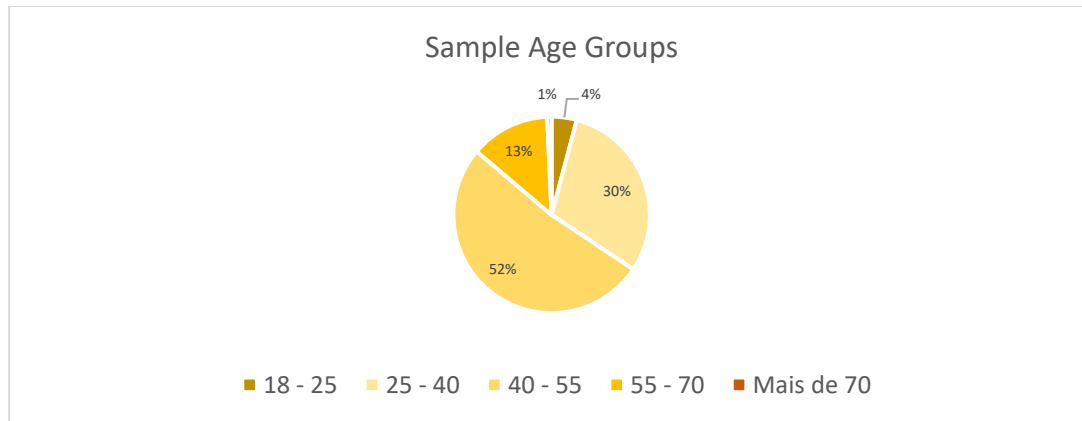


Figure 6.1 – Sample age groups pie chart, Source: Author, 2021

96% of the inquiries were above 25 years old, which means that they are highly likely to do their own shopping, which will be relevant to interpret the results.

It is considered that all questions are independent from one another.

With this questionnaire it will be possible to evaluate if this business makes sense, and how sensitive people are to the product.

6.1.1. Question 1 – Do you like fruit?

Only 0,5% of the inquiries said they did not like fruit, while 5% said they neither liked nor disliked. Having a 95% answer rate of “yes” to this question, fruit can be considered as product with a high likability in a Portuguese home.

6.1.2. Question 2 - How many times do you eat fruit per day?

From the considered group, 76% eat fruit at least once a day. Only 5% eat fruit more than three times a day, and 48% twice or three times a day.

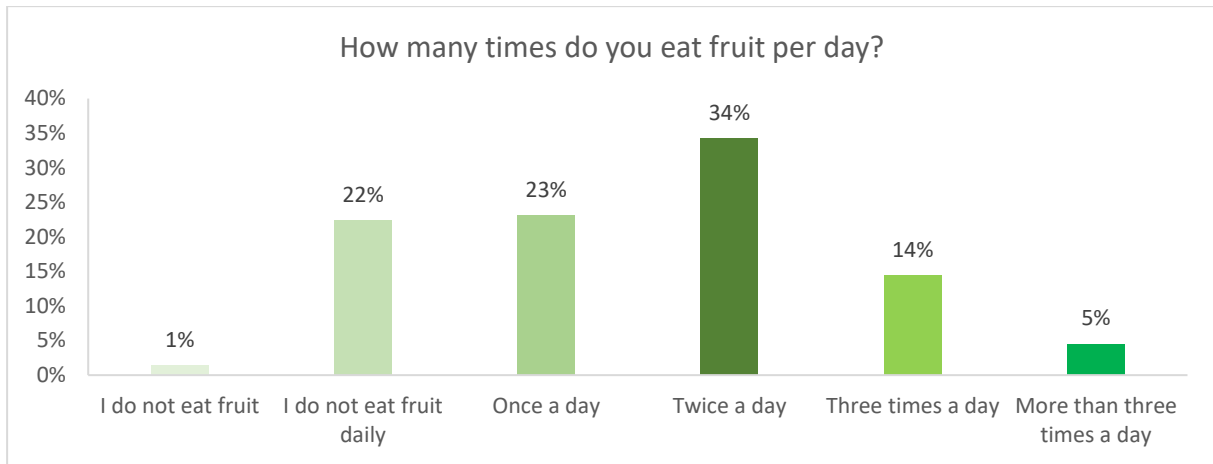


Figure 6.2 – Daily fruit consumption, Source: Author, 2021

6.1.3. Question 3 - Choose the frequency (from once or more a day, once or more a week, rarely or never) that you eat the following fruits:

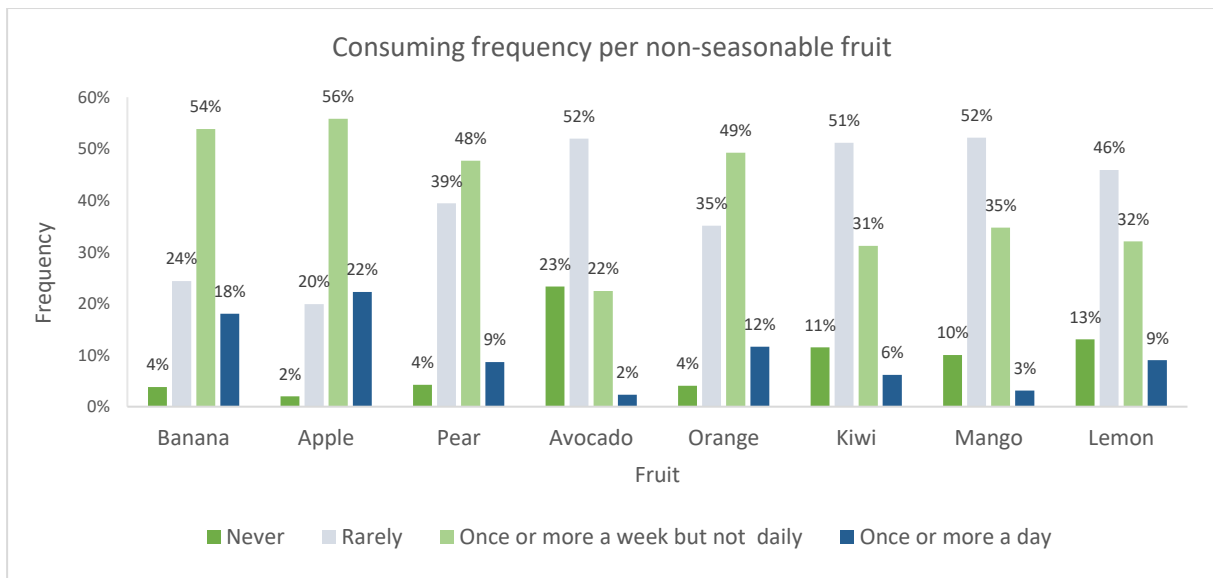


Figure 6.3 – Frequency of consumption per fruit, Source: Author, 2021

As it can be seen, banana, apple, pear, and orange are the ones that the Portuguese eat more frequently per week. Kiwi has 51% of the inquiries stating that they eat it rarely, as only 37% describe it as a weekly/ daily intake.

6.1.4. Question 4 - Choose your favourite fruit

The top 10 chosen fruits were cherries, strawberries, watermelon, mango, banana, figs, peaches, melon, apples, and oranges. This sums 76% of the answers. Kiwi only had 8 answers, correspondent to 0,5%.

Business Plan - Launch of a Kiwi Company

6.1.5. Question 5 - Do you like kiwi

74% of the inquiries said they like kiwi, while only 0,4% said they did not like kiwi, and 15,2% were indifferent, did not like or dislike.

6.1.6. Question 6 - Do you think kiwi is an expensive fruit

Regarding price, 37% consumers consider kiwis expensive, and 33% think it is reasonably priced. Only 15% think it is not expensive.

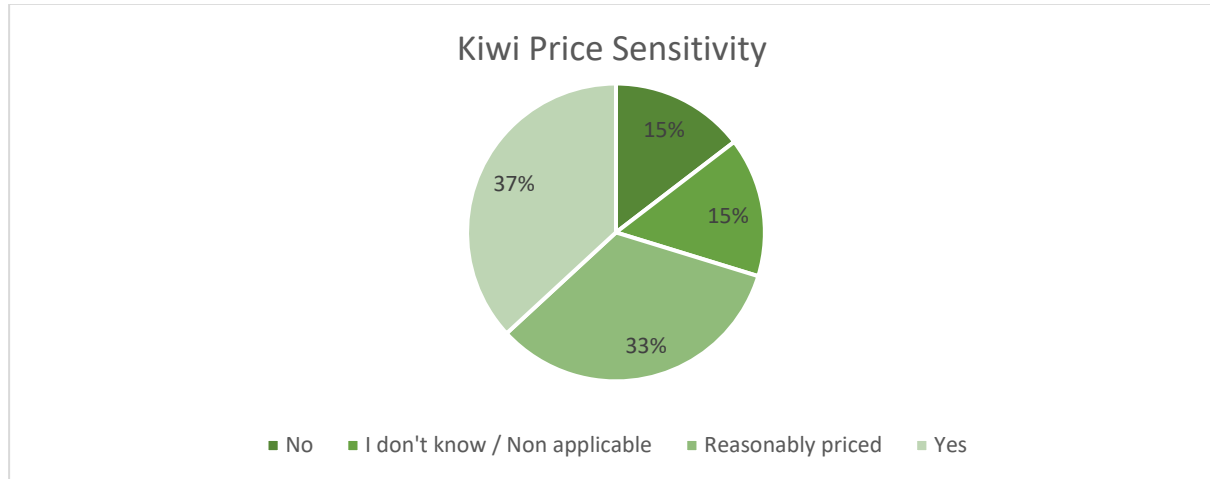


Figure 6.4 – Kiwi Price Sensitivity chart, Source: Author, 2021

6.1.7. Question 7 – Have you tried dehydrated kiwi

Only 9% of the inquiries have tried dehydrated kiwi.

6.2. Focus Group

A conversation about kiwis was taken with 6 different people, to understand what these people like and dislike most about kiwis, and why do they eat it: health benefits? Flavour only? Freshness?

The goal was to have a broader notion on how people feel about kiwi without restricting them to pre-defined words.

Table 6.2 - Focus Group questions and answers, Source: Author, 2021

Inquiry	Why do you like kiwi	What bothers you about kiwi	Why do you eat kiwis
1	"Flavour, texture, the green part"	"To peel it"	"It has been a fruit that has been with me all my life, as I had a plantation in my yard, and it is filled with vitamins that are good for you."
2	"It tastes good, as it is sweet but a bit acid"	"It can be a bit too acid, and it is a very expensive fruit"	"I eat it because it helps to regulate intestinal functioning"
3	"It is sweet without being too sweet"	"The little hairs in the peel"	"Besides tasting good, it is a high source of Vitamin C and fibre"
4	"I like the flavour and it is a practical fruit"	"It is an expensive fruit"	"I don't peel it, so it is very practical to eat it, and it is loaded with vitamins"
5	"It is a sweet fruit, that I eat daily at breakfast"	"Peeling it"	"It is so good for your health, as it is literally a vitamin booster. I love the taste, and how good it is for your health"
6	"I like the sweet flavour"	"It can occasionally be too acid for me"	"I don't do the grocery shopping, so I eat it because I have it at home."

The answers of the focus group bring attention to some details of the fruit that had not been discussed previously. Peeling the kiwi seems to be optional, but most people do it and do not like it. The vitamins and health benefits of the kiwi fruit seem to be attractive to this group, but the acidity and price are pointed as negative characteristics.

6.3. Conclusions

The questionnaire showed that:

- In general, people like kiwi, but only 37% eat it at least once a week, and 6% daily;
- 37% of the inquiries believe it is an expensive fruit;

Business Plan - Launch of a Kiwi Company

- The vast majority have not tried dehydrated kiwi;
- Only 0,5% considered kiwi as their favourite fruit;
- Peeling, occasional acidity and price were pointed out as the main disadvantages of this fruit;
- Flavour was considered the main reason to like kiwi;
- Regarding the reasons to eat kiwi, 5 of the 6 inquiries in the focus group referred health reasons: from vitamins, helping with intestinal issues, kiwi seems to be famous for helping with consumers wellbeing.

Considering these conclusions, it was considered that a new subproduct, peeled kiwi, could be added to the product list. A kiwi that is already ripe, to avoid the acidity and the need to peel. This would allow product that does not fit the measurements to enter the retailers stores, could be used for this subproduct, and would no longer account for breakage. After some investigation it was concluded that retailers already have this product, made by the fruit that consumers do not buy, which will make this product not interesting to them.

7. Segmentation, Targeting and Positioning

Having a successful business depends on selling the product to the right people, people who want it, need it. According to Camilleri (Camilleri, 2017), it is necessary to adopt a strategy of target marketing, creating clusters of customers with similar needs, to build a proper strategy. Naturally, the chosen cluster will be the one that will guarantee higher profitability.

The target market will consist of the group of people that consider the general product a need, but the segmentation will break the target market into segments and identify, inside these segments, the different needs of the consumers. Targeting then becomes which segments of the identified ones are of interest to be pursued. Positioning is the final step, as each segment has a specific marketing mix. (University of Arizona, 2022)

7.1. Segmentation

Segmentation can be done based on several types of criteria demographics (age, life stage, gender, income, generation, race, and culture,) psychographic, (psychological/personality traits, lifestyle and values), behavioural (needs and benefits, who has decision roles, user and usage).

The segmentation criteria used in our targeting will be geographic, demographic, psychographic and behavioural.

7.2. Targeting

The targeting will depend on the product considered. The target of the green kiwi is defined as the following:

- Geographic: Portugal, focus on big cities, Lisbon and Oporto;
- Demographic: men and women, of all ages, middle or upper class;
- Psychographic: healthy lifestyle, working;
- Behavioural: fruit consumers, care about what they eat, and where it comes from.

Geographically, the concentration of population is much higher in the cities, and those two cities account for approximately 45% of the total population. As liking kiwi does not have an age group or gender differentiation, the only relevant segmentation demographic wise is income, as it is not considered a cheap product. As kiwis are filled with health benefits, people who care about their health will be more sensitive to the product. The goal is to enter the market with two premisses, Portuguese and organic, as the main retailers sell kiwis imported from Zespri brand. This segments the behavioural market as people that care about where their kiwis come from, and if they are organic.

For the dehydrated kiwi as it can be considered snacks, the target becomes narrower, and it will be directed to every age from 6-year-old children to 45-year-old adults. Geographically it will be focused on big cities, and people that have average to high wages.

The kiwi seed oils target are women from 20- to 50-years-old, that care about skincare. Geographically it will be focused on big cities, and women with average to high wages.

7.3. Positioning

Positioning can be developed in a functional, symbolic, or experiential way. Functional positioning solves a problem to the consumer, while symbolic states status and sense of belonging to a special group and experiential positioning means the product will be positioned to people who care about a special feature, that will connect with it emotionally. (Expert Program Management ,2019)

As three different kinds of products are being considered, and each have different primary and secondary clients, a separation per product will be done to define each positioning: kiwi fruit, dehydrated kiwi, and kiwi seed oil.

7.3.1. Kiwi Fruit

Kiwi fruit is undoubtedly the main product of this business, and the one with more competition. The positioning of this product will follow a functional and experiential way, as it will be available for everyone who likes kiwi, will be organic and will be Portuguese, which will appeal to consumers who make this kind of products a priority in their daily eating habits. To evaluate how our Kiwis will differentiate from other competitors, four competitors will be considered: Zespri, Kiwi Coop, Kiwi Life and Kiwi Green Sun. Zespri is the biggest Kiwi producer in the world. The last three are Portuguese companies composed by several different producers in one company only. All the listed competitors are well established in the market and are currently big producers. Any productive disruption can be much easily dealt with from this well-established companies, considering investment in technologic development capacity as well. C-Kiwi's competitive advantage is having their farms in the target market and being organic. This will produce healthier kiwi fruits, develop Portugal's agrobusiness, while creating employment. The positioning matrix, relating each company can be seen below:

Table 7.1 - Positioning Matrix for C Kiwi and its competitors, Source: Author and Company's websites, 2022

Company	Country	Type of Product	Kiwi Species	Market
Zespri (Zespri, n.d.)	New Zealand	Kiwis	Green Kiwi, Gold Kiwi, Organic Green Kiwi, Organic Gold Kiwi	Worldwide
Kiwi Coop (Agrotec Magazine, 2019) (Kiwicoop, 2022)	Portugal	Kiwis	Green Kiwi, Gold Kiwi, Baby Kiwi and Red Kiwi	In 2018, 90% of total production was exported
Kiwi Life (Kiwilife, 2022)	Portugal and Spain	Kiwis and avocados	Green Kiwi, Organic Green Kiwi and Gold Kiwi	Exports to Spain, France, Canada, Morocco and Brazil
Kiwi Green Sun (Revista Frutas, Legumes e Flores, 2019)	Portugal	Kiwis	Green Kiwi	In 2020, 85% was exported to Spain Morocco, England, Canada and Brasil
C Kiwi	Portugal	Kiwis	Organic Green Kiwi	National consumption

7.3.2. Dehydrated Kiwi

Dehydrated Kiwi is usually a sliced kiwi, that is then dried, traditionally in the sun. Nowadays there are specific machines to do this process and is also possible to do it using the oven. This product will have a functional positioning, as it is not available yet in the Portuguese market, therefore having no competitors at this specific time. This is the main competitive advantage for C Kiwi, as it will be the only competitor in the Portuguese market. The competitor's strength regarding the exact same product is the availability to create this product in the meanwhile since C Kiwis dried kiwi production is only expected to happen in 10 years' time. It can also be expected that if this happens, the other companies will have a bigger margin to lower the price, as their financial stability will be predictably better.

As for considering general dry fruits as a competitor, there are already brands in the supermarket and vending machines, that have apple slices, pear, melon, among others. One brand is Frubis, that has a well-established business, and the consumer already knows this brand. If they choose to add kiwi as their product, they will probably get cheaper prices than C Kiwis.

Regarding consumers expectations, following the questionnaire answers, there is no expectation to account for, as almost no one has ever tried it. It should be considered though that the price expectation on this product is high and has that connotation.

7.3.3. Kiwi Seed Oil

The Kiwi Seed oil will have a functional positioning. It is a product used in cosmetics and has several properties that have proved to be beneficial for skincare. There is not any kiwi seed oil available in Portugal, and this is again the main competitive advantage for C-Kiwi. However, there is one skincare brand that uses this product from New Zealand, called Antipodes, that is available for sale in Portugal in different online stores and has high reviews from consumers and it is seen as a good skincare brand.

8. Marketing Mix

8.1. Product

Our product characteristics will be divided in physical characteristics, packaging, services, brand, and product lifecycle.

As previously discussed, our main product is Organic Portuguese Kiwi – Hayward Green Kiwi. Our performance goal is to have the best kiwi, the tastier, best-looking kiwi. The ones that we will not be able to sell, will be either used for dry Kiwi or Kiwi seed oil. Whichever destiny it may take, our goal is to keep the quality standards high, creating the lowest waste possible. An example of the products design is below (Flipkart,2021) (Kerala Spices, n.d.)(Essentially Lili, 2020):



Figure 8.1 – Visual representation of C Kiwi three products, left to right, green kiwi, dry kiwi and kiwi seed oil, Source: Flipkart, Kerala Spices, Essentially Lili, 2021

Regarding packaging, our kiwis will be primarily packed in a carton open box and the secondary packaging will be a big carton box, as can be seen below (Embalpom, n.d.):



Figure 8.2 – Kiwi Primary (left) and (secondary) Packaging, Source: Embalpom, 2022

For the dried Kiwi, the secondary packaging will be the same, but the primary packaging will consist in a plastic vacuum bag (Alibaba, n.d.):



Figure 8.3 – Example of packaging of the dried kiwi, Source: Alibaba, 2022

As for the kiwi seed oil, the primary packaging will be as seen in Figure 8.1, a glass bottle but with a normal top. The secondary packaging will be carton boxes, but corrugated cardboard will be needed to protect the glass from breaking.

All the primary packaging will have C Kiwi's logo on them.

Our brand logo was created, supported by the online platform Looka (Looka, 2021). The idea behind the logo was to be simple and light, with summery colours and only essential information, our main message: we are Kiwi sellers, we are Portuguese and Organic. It can be seen below:



Figure 8.4 – C Kiwis Logo, created using Looka platform, Source: Looka, 2021

Regarding service, our goal is to have a post-sale service, that will be reachable to solve any issue that might occur, manage new orders, among others.

To offset the carbon print of our business, we will calculate how much carbon our whole process (producing, delivering, packaging) releases to the atmosphere, to elaborate a carbon neutral plan. One of the goals is to have solar panels in the farm, to use the sun energy as much as possible and to re-use water from raining, using specific tanks. C Kiwi's farm will have an office in the same location as the farm, and wants to receive guests and schools, to visit the farm and get to know us and our products better.

Our product lifecycle stage will be, as soon as the investment starts, in the introduction phase. This phase will last for a minimum of 3 years as the first sellable production will be after at least 3 years of the initial investment. Low sales will be expected for the first productive year, and we will probably only be able to sell to nearby retailers, following a selective distribution in the beginning. Only organic green kiwis will be produced in these first years, and low margins are expected. From the 6th year onwards, the growing phase will begin, where is expected to start getting our products all around the country in every possible big retailer. Our margins are expected to be bigger as the production will be higher, as the trees are adults now, and we have gained experience training them, at a similar cost.

8.2. Pricing

Our pricing goals will change over time. Despite believing we are a premium product, combining two characteristics that are searched for these days (Portuguese and Organic), we plan to enter the market with a penetration strategy. Although it might appear pricier to have an organic production, the chosen area to have a kiwi farm has kiwi trees spread all around, that survive on their own, with no special care or fertilization. This will be an advantage for C-Kiwi, as we will be able to have an organic production at the price of a non-organic one.

One of the factors that needs to be considered are markdowns, as retailers usually have weeks where specific products have a lower price. This is usually partially paid by the supplier, so the margin needs to have this flexibility and still be profitable.

Table 8.1 – C Kiwis pricing, Source: Author, 2021

	kg	Cost of Production per kg	Sell Price to Retailers	Retailers Margin	Retailers Sale Price	Retailers Sale Price + Taxes
# Kiwi in Y3	25000	0,56 €	1,31 €	0,3	1,70 €	2.09
# Kiwi in Y4	49167	0,33 €	1,31 €	0,3	1,70 €	2.09
# Kiwi in Y5	76667	0,35 €	1,31 €	0,3	1,70 €	2.09
# Kiwi in Y6	104167	0,28 €	1,35 €	0,3	1,75 €	2.15
# Kiwi in Y7	131667	0,24 €	1,35 €	0,3	1,75 €	2.15
# Kiwi in Y8	159167	0,21 €	1,35 €	0,3	1,75 €	2.15
# Kiwi in Y9	170000	0,21 €	1,39 €	0,3	1,80 €	2.21
# Kiwi in Y10	170000	0,21 €	1,39 €	0,3	1,80 €	2.21
# Kiwi in Y11	170000	0,21 €	1,39 €	0,3	1,80 €	2.21

The prices of kiwis of the main Portuguese retailers (Pingo Doce, Continente, Auchan and Lidl) in December 2021 were the following:

Table 8.2 – Different retailer’s Kiwi price, Source: Author, 2021

€/kg	Pingo Doce (Mercadão, 2021)	Continente	Auchan (Auchan, 2021)	Lidl	C Kiwi
Kiwi Gold	4,98	5,99	5,48	-	-
Kiwi Gold Bio Zespri	9,98	-	-	-	-
Green Kiwi	2,99 1,99 Markdown (Portuguese Product)	3,99	2,49	2,99 normal price 2,19 Markdown (Portuguese Product)	-
Green Bio Kiwi	7,98	-	-	-	2,21 € to 2,34 €

As can be seen, the current variety of products available in the market does not include our business proposition. Nevertheless, the price goal (to sell to retailers) will be 1,31€/kg. in the first productive years, 1,35€/kg from year 6 to year 9 and 1,39 €/kg in the following years.

It was previously seen in chapter 6.1.6, that 37% of consumers consider Kiwis an expensive fruit. The truth is, the Portuguese Kiwi can be much cheaper than the imported one. It is possible to take advantage of seasonality and create a price difference between autumn/winter (where the production in Portugal is higher) and spring/summer months, where the odds of importing it from are highly likely.

Kiwi fruits can also last a long time refrigerated if the picking is done while the fruit is still in a specific development stage, before turning ripe. This will also be considered in the financial analysis, to evaluate if this investment will allow us to commercialize the kiwi fruit in a bigger period and if so, if it is worth it.

None of the other products have competitors currently in Portugal. Nevertheless, our strategy will be the same for kiwi fruits: penetration, getting the product some attention at the best possible price.

8.3. Place

C Kiwi’s products will be available in big retailers and smaller local grocery shops, following an intensive distribution strategy. It is planned to have a small shop in the farm, that will only sell our products and eventually some merchandise. The type of distribution that will be used are indirect channels, as the product will not be sold by C-Kiwi to the consumer directly soon or is planned to have a dimension big enough to be considered in the distribution circuit decision.

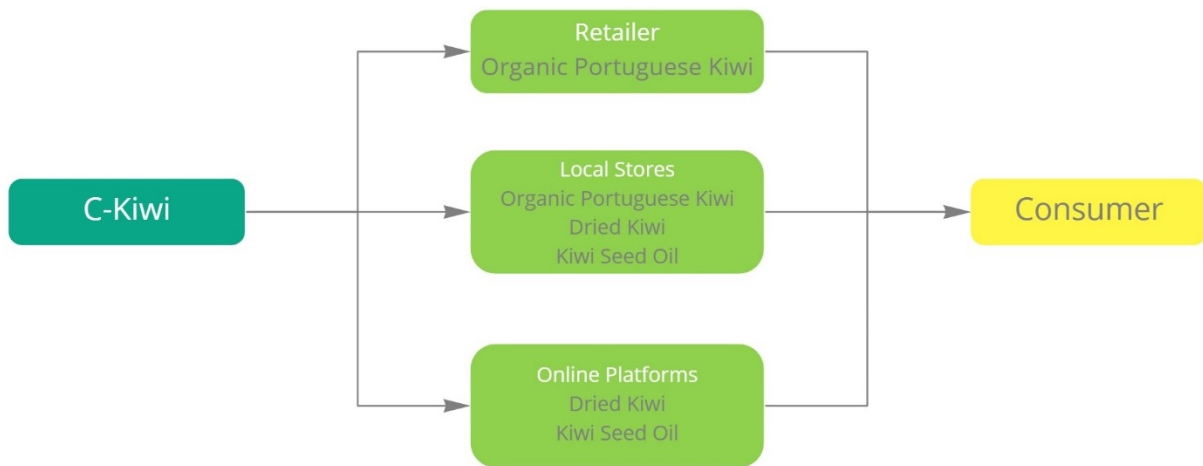


Figure 8.5 – Distribution Circuit Scheme, Source: Author, 2022

As can be seen in Figure 8.5, different distribution channels will be used for each product: While for the green organic kiwi, only retailers and local stores will be used, for the dried kiwi besides the retailers and the local stores, online platforms will be used, and finally, for the kiwi seed oil, where only online platforms will be used. For these last 2 products, C Kiwi wants to make them available at digital selling platforms as they are specific products that are serving smaller groups (dried kiwi) and niches (kiwi seed oil).

Regarding the green kiwi transportation, it will depend on the order and on the client. If big orders are in place, the goal will be to make the fewer trips possible, due to price and sustainability. If the orders are smaller and closer to the farm, delivery can be made by C Kiwi directly with no need to use transport companies. As the farm is located at the centre of the country, in *Castanheira de Pera*, it is easy to get to the three main cities, Lisbon, Porto and Coimbra. Another thing that will be evaluated is if other producers of the area will share transportation, in the best interest of all.

8.4. Promotion

C Kiwis promotion strategies include presence in social media, namely Instagram, a website, and special store shelves. An example of the store shelves is below. The idea is to have in every retailer store, a shelf clearly identified with the brand, and filled with our kiwis. An example can be seen below. (VFK Renzel , n.d.)



Figure 8.6 – C Kiwi’s Shelf, Source: VFK Renzel, 2022

Besides the C Kiwi’s shelves, it is planned to outsource the marketing service. The main idea is to be online, and to be in every platform possible when people search for fruit in Portugal.

A website layout example is below:

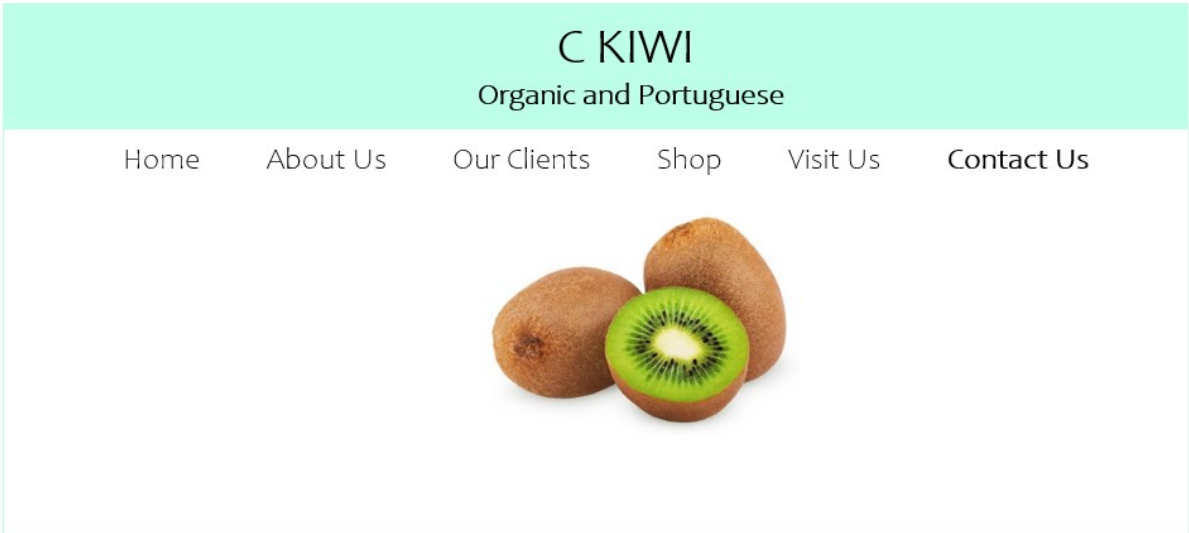


Figure 8.7- C-Kiwi’s Website layout, Source: Author, 2021

Besides the website, social media pages on Instagram will be created, to promote our daily activity and show consumers our products, different recipes, and ways to use them, as our farm and the growing of our Kiwis. (Guia da Semana, n.d.)

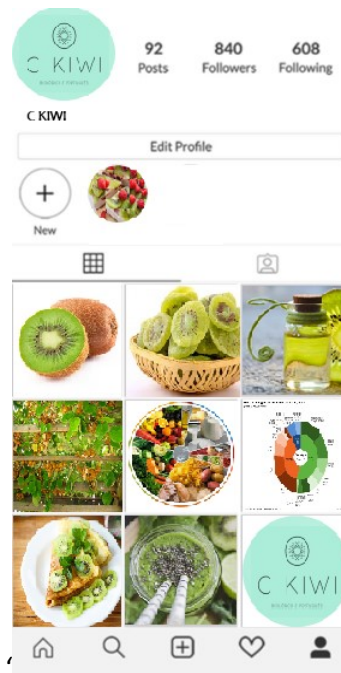


Figure 8.8 – Instagram Layout, Source: Author, 2022

The promotion strategies will have different layers: final clients and retailers. Both will be considered with the same level of importance, as the brand needs to gain resonance but to do so, retailers must agree on having us in their stores.

Table 8.3 – Different promotion strategies, Source: Author, 2022

Target	Promotion Strategy
Retailers	<ul style="list-style-type: none"> ○ Quality and price; ○ Portuguese product ○ Helps to achieve sustainability goals for retailers; ○ End of season sell outs.
Final Client	<ul style="list-style-type: none"> ○ Disruptive price entering the market; ○ Partnerships with popular fruit baskets (e.g. <i>Chico da Fruta</i>); <p>After establishing a constant production and solid clients:</p> <ul style="list-style-type: none"> ○ Social media marketing, using influencers related to cooking, or healthy lifestyles; ○ Invite Portuguese chefs to cook different recipes using C-Kiwis on C-kiwis Instagram, to gain followers and recognition; ○ Guided visits to the farm and its facilities.

The planned timetable for these different Marketing investments is the following:

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Table 8.4 – Timetable for marketing investments, Source: Author, 2022

Marketing	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Partnerships with popular fruit baskets (e.g. <i>Chico da Fruta</i>);						1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €
Social media marketing, using influencers related to cooking, or healthy lifestyles;			8 000,00 €	8 160,00 €	8 323,20 €	8 489,66 €	8 659,46 €	8 832,65 €	9 009,30 €
Invite Portuguese chefs to cook different recipes using C-Kiwis on C-kiwis Instagram, to gain followers and recognition;						1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €
Guided visits to the farm and its facilities.									
Website	5 000,00 €								
Total	5 000,00 €	0,00 €	8 000,00 €	8 160,00 €	8 323,20 €	10 489,66 €	10 659,46 €	10 832,65 €	11 009,30 €

9. Financial Analysis

To perform a proper financial analysis, some assumptions and decisions were made to evaluate how the business could become profitable. All these calculations are in the Appendix B – Financial Analysis. The kiwi business is complex as there are several steps in different moments in time. The initial investment is made, and only in year 3 (counting year 0 as the initial year), after the investment, the production starts to be in commercial. All default spreads and risk premiums per country were based on Damodaran, 2022.

Our strategy will be, according to this complex logistics, to invest in different infrastructures/equipment in three different periods of time: Year zero, Year 3 and Year 10. Chapter 9.1 shows the assumptions made for each considered item and what will be bought at each period. Considering these prices and investments, an income statement, cashflow, balance sheet, will be created and therefore the NPV, IRR, Payback and the ratios Gross Profit / Revenues. EBITDA / Revenues and Net Income / Revenues will be calculated to determine the viability of this project.

9.1. Assumptions

To better categorize the assumptions made on this financial analysis, this chapter will be divided in 5 chapters: Investments, Operational Costs, Sales Forecast, Costs of Goods Sold and Government Support, Loans and Owners Investment .

9.1.1. Investments

The main investments for C Kiwis business are considered in 4 moments in time: Year 0, Year 3 and Year 10.

Table 9.1 – Investment assumptions and determined depreciation, Source: Financial Analysis, Author, 2022

Investment		Depreciation and Amortization			Capex (Year 11)
Item	Cost	Years of Depreciation	Yearly Depreciation	Monthly Depreciation (Y0)	
Land	100 000,00 €	-	-	-	
Kiwi Trees	28 760,00 €	-	-	-	
Automatic Water System	10 000,00 €	20	500,00 €	-41,67 €	4 500,00 €
Solar Panels	3 400,00 €	20	170,00 €	-14,17 €	1 530,00 €
Water Re-use System	1 000,00 €	20	50,00 €	-4,17 €	450,00 €
T shaped trellis	24 691,00 €	20	1 234,55 €	-102,88 €	11 110,95 €
Water Pump	6 809,00 €	20	340,45 €	-28,37 €	3 064,05 €
Jeep	7 500,00 €	20	375,00 €	-31,25 €	3 375,00 €
Computers	2 000,00 €	20	100,00 €	-8,33 €	900,00 €
Tractor	20 000,00 €	20	1 000,00 €	-83,33 €	9 000,00 €
Storage House (Y3)	20 000,00 €	40	500		16 500,00 €
Fruit Dehydrator (Y10)	6 000,00 €	10	600		5 400,00 €
Fruit Oil Extractor (Y10)	10 000,00 €	10	1000		9 000,00 €
Total Depreciation per Year			Year 0 (10 months only)	3 141,67 €	64 830 €
			Year 1 – 2	3 770,00 €	
			Year 3 -9	4 270,00 €	
			Year 10	4 870,00 €	
			Year 10 – 11	5 870,00 €	

As can be seen in Table 9.1, most investments are made in Year 0 as expected. On year 3, the production starts, and a storage house is built, to have a place to store our kiwis. Later, in year 10, a new investment is made in a fruit dehydrator and a fruit oil extractor.

Although almost every price was assumed, the kiwi trees quantity was dimensioned through the number of trees needed per hectare:

For 1 acre (0,405 hectares), 194 Kiwi female plants are needed, and for 5 female plants, one male plant is needed (Bernadine, n.d.). The conclusions about the needed quantities can be seen in Table 9.2.

Table 9.2 – Kiwi trees dimensioning , Source: Financial Analysis, Author, 2022

Kiwi trees dimensioning				Expected price / unit	Total Price	
For each male tree, 5 female trees are needed	5	hectares	Kiwi female plants	2396	10,00 €	23 960,00 €
	5	hectares	Kiwi male plants	480	10,00 €	4 800,00 €

9.1.2. Sales Forecast

The predicted sales are based in the quantities considered and three different prices are considered for the green kiwi:

Table 9.3 – Sales forecast for C Kiwis products, Source: Financial Analysis, Author, 2022

Sales Forecast			
	Year	Total (KG OF KIWI)	Revenues
Kiwi Fruit	# Kiwi in Y0	0	0,00 €
	# Kiwi in Y1	0	0,00 €
	# Kiwi in Y2	0	0,00 €
	# Kiwi in Y3	25000	42 500,00 €
	# Kiwi in Y4	49167	83 583,90 €
	# Kiwi in Y5	76667	130 333,90 €
	# Kiwi in Y6	104167	182 292,25 €
	# Kiwi in Y7	131667	230 417,25 €
	# Kiwi in Y8	159167	278 542,25 €
	# Kiwi in Y9	170000	306 000,00 €
	# Kiwi in Y10	170000	306 000,00 €
	# Kiwi in Y11	170000	306 000,00 €
		Sale Price per Kg Y3 – Y5	1,70 €
	Sale Price per Kg Y6 – Y8	1,75 €	
	Sale Price per Kg Y9 – Y11	1,80 €	
Dried Kiwi	Dried Kiwi expected sales (small packages)	5000	3 500,00 €
	Dried Kiwi expected Price (small packages)	0,70 €	
Kiwi Seed Oil	Kiwi Seed Oil expected sales (small packages)	1000	5 000,00 €
	Kiwi Seed Oil expected Price (small packages)	5,00 €	

Considering the average prices presented in Table 8.2, of retailers that sell kiwi, our price proposition allows the retailer to practice low prices, counting with their margin. The 5 cents increase in price in Y6 and Y9 is due to the considered increases in the price of COGS (e.g. inflation).

Moreover, for dry kiwi, a conservative sale is being considered as only one year of the time interval of this financial analysis is considered. Both are new products, and it was safer to consider low production and sales. Nevertheless, 5000 packages for dried kiwi and 1000 bottles of kiwi seed oil were considered as sales for Y11.

The average time to collect from customers considered is 90 days.

9.1.3. Operational Costs

The operational cost considered were the following:

- Salaries – considering two fixed workers (owner and one employee) with a 1000€ wage in the first three years. From Year 3 (Y3) onwards, there will be a 5% raise per year. It will also be considered a 6000€ expense for the picking service on Y3, for 6 people working for 3 weeks, a 9600€ expense on Y4 for 8 people for 5 weeks, and from Y5 to Y11 a 15000€ expense for 10 people. The increase is due to increasing production, therefore more kiwis will need to be picked;
- Social Security – calculated in function of the salaries paid, considering an 11% rate;
- IMI – rate over property, considering a 21% value;
- Licences: estimated value for the needed licenses to produce and commercialize kiwis;
- R&D: research and development predicted costs;
- Site Investment and Marketing Outsourcing: explained in Table 8.4.

Table 9.4 has the considered costs each year, and salaries and marketing costs include inflation variation rate of 2%.

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Table 9.4 – Operational Costs, Source: Financial Analysis, Author, 2022

Operational Costs	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Salaries	20 000,00 €	24 000,00 €	24 000,00 €	31 200,00 €	36 060,00 €	42 783,00 €	44 172,15 €	45 630,76 €	47 162,30 €	48 770,41 €	50 458,93 €	52 231,88 €
Social security	2 200,00 €	2 640,00 €	2 640,00 €	3 432,00 €	3 966,60 €	4 706,13 €	4 858,94 €	5 019,38 €	5 187,85 €	5 364,75 €	5 550,48 €	5 745,51 €
IMI	291,67 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €	350,00 €
Licences	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €	1 000,00 €
R&D	500,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €	600,00 €
Site Investment + Marketing Outsourcing	0,00 €	0,00 €	0,00 €	5 000,00 €	0,00 €	8 000,00 €	8 160,00 €	8 323,20 €	10 489,66 €	10 659,46 €	10 832,65 €	11 009,30 €
Total	23 991,67 €	28 590,00 €	28 590,00 €	41 582,00 €	41 976,60 €	57 439,13 €	59 141,09 €	60 923,34 €	64 789,81 €	66 744,61 €	68 792,06 €	70 936,68 €

9.1.4. Costs of Goods Sold (COGS)

The costs of goods sold considered include all the costs needed to produce and get the product to the client. Table 9.7 shows the considered prices.

The considered COGS were the following:

- Water and electricity: estimated value, the price suffers an annual adjustment with an inflation of 2%;
- Transportation: production only starts on the 3rd year, as do transportation costs. As the production in the first two production years (year 3 and year 4) is relatively low, distribution will only be considered in the farm area. From year 5 onwards, full distribution around the country is considered, and the price rises;
- Maintenance: maintenance costs considered to start in the third year, and increase with inflation (2%);
- Packaging: same as transportation, costs only start in the 3rd year. As previously stated, two types of packaging are used, and the price evolution is due to the increasing production:

Table 9.5 – Sell Boxes and Transport boxes sizes and costs, Source: Financial Analysis, Author, 2022

Packaging Dimensioning		Cost
1 Sell Box	Takes 10 kiwis	0,05 €
1 Transport box	Takes 20 sell boxes	0,10 €
1 Kiwi – 69 gr – 0.069 kg		

Table 9.6 – Packaging dimensioning, Source: Financial Analysis, Author, 2022

Year	Kiwis (kg)	Kiwis (Number)	Sell Boxes	Transport boxes	Sell Boxes Total Price	Transport boxes Total Price	Total Packaging Price
# Kiwi in Y3	25000	362319	36232	1812	1 811,60 €	181,20 €	1 992,80 €
# Kiwi in Y4	49167	712566	71257	3563	3 562,85 €	356,30 €	3 919,15 €
# Kiwi in Y5	76667	1111116	111112	5556	5 555,60 €	555,60 €	6 111,20 €
# Kiwi in Y6	104167	1509667	150967	7549	7 548,35 €	754,90 €	8 303,25 €
# Kiwi in Y7	131667	1908218	190822	9542	9 541,10 €	954,20 €	10 495,30 €
# Kiwi in Y8	159167	2306769	230677	11534	11 533,85 €	1 153,40 €	12 687,25 €
# Kiwi in Y9 – Y11	170000	2463769	246377	12319	12 318,85 €	1 231,90 €	13 550,75 €

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Table 9.7 – Costs of Goods Sold, Source: Financial Analysis, Author, 2022

Costs of Goods Sold	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Water and electricity	2 400,00 €	2 880,00 €	2 937,60 €	2 996,35 €	3 056,28 €	3 117,40 €	3 179,75 €	3 243,35 €	3 308,21 €	3 374,38 €	3 441,87 €	3 510,70 €
Transportation	0,00 €	0,00 €	0,00 €	1 000,00 €	1 000,00 €	9 000,00 €	9 000,00 €	9 000,00 €	9 000,00 €	9 000,00 €	9 000,00 €	9 000,00 €
Maintenance	0,00 €	0,00 €	0,00 €	8 000,00 €	8 160,00 €	8 323,20 €	8 489,66 €	8 659,46 €	8 832,65 €	9 009,30 €	9 189,49 €	9 373,28 €
Packaging	0,00 €	0,00 €	0,00 €	1 992,80 €	3 919,15 €	6 111,20 €	8 303,25 €	10 495,30 €	12 687,25 €	13 550,75 €	13 550,75 €	13 550,75 €
Total	2 400 €	2 880 €	2 938 €	13 989 €	16 135 €	26 552 €	28 973 €	31 398 €	33 828 €	34 934 €	35 182 €	35 435 €
Production (kg)	-	-	-	25000	49167	76667	104167	131667	159167	170000	170000	170000
Cost Per Kg Sold	-	-	-	0,56 €	0,33 €	0,35 €	0,28 €	0,24 €	0,21 €	0,21 €	0,21 €	0,21 €

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9.1.5. Government Support, Loans and Owners Investment

- Government Support: several financial supports have been created by the Portuguese Government for different reasons, to help develop different businesses and areas of the country. The ones that make sense to C Kiwis project are the following:

Table 9.8 – Portuguese Government funds and respective value, Source: Financial Analysis, Author, 2022

Financed by Portuguese Government Funds	Financial Support
<i>Apoio Mudar Interior</i> – Support to change the dynamize of the country (República Portuguesa, 2021)	4 827,00 €
<i>Investimento exploração Agrícola</i> – Investment in Agriculture (Portal dos Incentivos,2020)	25 000,00 €
<i>Apoio Investimento Paineis Solares</i> – Investment in Solar Panels (República Portuguesa ,2021)	2 500,00 €
<i>Apoio Jovens Agricultores Portugal 2030</i> – Investment in Young Farmers (Portal dos Incentivos, 2020)	30 000,00 €
<i>Apoio Agricultura Biológica</i> – Support to Organic Farming (IFAP, 2021)	6 000,00 €
Total	68 327,00 €

- Loan: a loan was considered of 300 000,00 €, with an interest rate of 6% and to be paid in 12 years;
- Owners' investment: it is assumed that the owner's investment will be 140.000€.

C Kiwis Debt to Equity ratio is, then:

$$\frac{D}{E} = \frac{300\,000,00\text{€}}{68\,327,00\text{€} + 140\,000\text{€}} = 1,44 \quad \text{Equation 1}$$

9.2. Financial Ratios

The tables corresponding to the Cash Flow Statement and Income Statement can be found in Appendix .

9.2.1. NPV – Enterprise Vale

To determine the Enterprise value, the unlevered cost of capital had to be determined. To do so, the risk-free rate was determined, and the market risk premium was taken from Damodaran, [0]. As our D/E is different from the sector, the unlevered Beta (BU) was determined, and therefore the unlevered cost of capital, Ru. With these resources and the free cash flow from the 11 years, the NPV value was obtained, **903 541,14€**.

9.2.2. IRR – Internal Rate of Return

The obtained value was of **50%**, which means that C Kiwis profitability is 50% on the investment value.

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9.2.3. Profitability Index

It is determined as the ratio between the present value of future cash flows and the initial cost of the project. If this ratio is above one, it reflects a good investment, if everything goes as planned. C Kiwis profitability ratio is **1,155**.

9.2.4. Payback Period

The determined payback period is Y4, meaning in the 5th year after the investment was made. This is when the Cash Flow becomes positive.

9.2.5. Gross Profit Margin, EBITDA to Sales Ratio and Net Profit Margin

Table 9.9 – Gross Profit Margin, EBITDA to Sales Ratio and Net Profit Margin, Source: Author, 2022

Years	Gross Profit Margin	EBITDA to Sales Ratio	Net Profit Margin
0	0	0	0
1	0	0	0
2	0	0	0
3	0,67	-0,28	-0,66
4	0,81	0,32	0,00
5	0,80	0,36	0,10
6	0,84	0,52	0,28
7	0,86	0,60	0,37
8	0,88	0,65	0,43
9	0,89	0,67	0,46
10	0,89	0,66	0,46
11	0,89	0,67	0,47

The gross profit margin, meaning the margin before costs, taxes, amortizations, and depreciations, is always positive, as expected. As for the EBITDA to Sales Ratio, meaning the margin after costs but before taxes and amortisations, is negative on year 3 and positive onwards. The net profit margin, the margin after costs, taxes, and amortisations, is negative on year 3, zero on year 4, and starts being positive on year 5.

9.3. Balance Sheet

The Balance Sheet is presented in Table 9.10. As seen in chapter 0, the debt-to-equity ratio is **1,44**, which means that the company's assets are mostly financed by Debt.

In the 6th year, the debt has been paid to a point where D/E is lower than one, **0,62**, which means that from that year onwards the company's assets are mostly financed by owner's equity.

Table 9.10 - Balance Sheet, Source: Financial Analysis, Author, 2022

Balance Sheet	Y0	Final Y0	Final Y1	Final Y2	Final Y3	Final Y4	Final Y5	Final Y6	Final Y7	Final Y8	Final Y9	Final Y10	Final Y11
Current Assets													
Cash	288 167 €	239 857 €	181 796 €	123 678 €	47 904 €	19 961 €	1 656 €	18 973 €	71 059 €	155 358 €	263 423 €	367 227 €	486 645 €
Accounts receivable	€				10 625 €	20 896 €	32 583 €	45 573 €	57 604 €	69 636 €	76 500 €	76 500 €	78 625 €
Inventory	-€												
Short-term investments	-€												
Total current assets	288 167 €	239 857 €	181 796 €	123 678 €	58 529 €	40 857 €	34 240 €	64 546 €	128 664 €	224 993 €	339 923 €	443 727 €	565 270 €
Non - Current Assets													
Long-term investments	-€												
Property, plant, and equipment	-€												
Land	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €	100 000 €
Kiwi Trees	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €	28 760 €
Automatic Water System	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €	10 000 €
Solar Panel	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €	3 400 €
Water Re-use System	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €
T shaped trellis	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €	24 691 €
Water Pump	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €	6 809 €
Jeep	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €	7 500 €
Computers	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €
Tractor	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €	35 000 €
Storage House					20 000 €	20 000 €	20 000 €	20 000 €	20 000 €	20 000 €	20 000 €	20 000 €	20 000 €
Kiwi Dehydrator and Slicer												2 000 €	2 000 €
Fruit oil extractor												10 000 €	10 000 €
(Accumulated depreciation)		-3 142 €	-6 912 €	-10 682 €	-14 452 €	-18 722 €	-22 992 €	-27 262 €	-31 532 €	-35 802 €	-40 072 €	-45 942 €	-51 812 €
Intangible assets													
Licenses	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €	1 000 €
Total non-current assets	220 160 €	217 018 €	213 248 €	209 478 €	225 708 €	221 438 €	217 168 €	212 898 €	208 628 €	204 358 €	200 088 €	206 218 €	200 348 €
Total Assets	508 327 €	456 875 €	395 044 €	333 156 €	284 237 €	262 296 €	251 408 €	277 444 €	337 292 €	429 352 €	540 011 €	649 945 €	765 619 €
Current Liabilities													
Accounts payable	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€
Short-term loans	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€
Income taxes payable	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€
Current portion of long-term debt	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€
Total current liabilities	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€	-€
Non-Current Liabilities													
Long-term debt	300 000 €	285 399 €	266 889 €	247 237 €	226 373 €	204 222 €	180 705 €	155 738 €	129 230 €	101 088 €	71 210 €	39 489 €	5 811 €
Total long-term liabilities	300 000 €	285 399 €	266 889 €	247 237 €	226 373 €	204 222 €	180 705 €	155 738 €	129 230 €	101 088 €	71 210 €	39 489 €	5 811 €
TOTAL LIABILITIES	300 000 €	285 399 €	266 889 €	247 237 €	226 373 €	204 222 €	180 705 €	155 738 €	129 230 €	101 088 €	71 210 €	39 489 €	5 811 €
Owner's Equity													
State Support to Investment	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €	68 327 €
Owner's Investment	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €	140 000 €
Retained earnings	-€	-36 851 €	-80 171 €	-122 408 €	-150 463 €	-150 253 €	-137 624 €	-86 620 €	-265 €	119 937 €	260 475 €	402 129 €	551 480 €
Total owner's equity	208 327 €	171 476 €	128 156 €	85 919 €	57 864 €	58 074 €	70 703 €	121 707 €	208 062 €	328 264 €	468 802 €	610 456 €	759 807 €
Equity+ Liabilities	508 327 €	456 875 €	395 044 €	333 156 €	284 237 €	262 296 €	251 408 €	277 444 €	337 292 €	429 352 €	540 011 €	649 945 €	765 619 €

10. Conclusion

C Kiwis business has shown to be a good business to invest in. The calculated financial ratios are all positive, and from year 4 onwards the business becomes profitable. The kiwi market state now is growing, and shows no signs of slowing down, and, despite considering Portugal as its main market, no international opportunities will be disregarded.

Associated with the current health guidelines around the world, where vegetables and fruit are shown to be a more and more essential part of daily food intake, and following an organic farming, makes this an attractive business to invest in.

A new approach allowing visitors in the farm, even organizing school trips, and putting the brand first, to create brand resonance and bring C Kiwis brand to everyone, may create a different brand as no Kiwi Portuguese brand as done before.

The disadvantages of this business are mainly agriculture setbacks, that might have to do with weather changes, not enough rain, plagues, among others. This can disrupt production and the predicted sales. Other risks have to do with the entering of different players in the business, that might disrupt prices and lower the predicted margins.

Another point to be considered is a detailed financial analysis with the current prices, taxes and interests rates at the time of implementation.

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Appendix A - Questionnaire

Questionnaire:

1. Age Group:
 - 18-25
 - 25-40
 - 40-55
 - 55-70
 - +70
2. Gender you identify with:
 - Female;
 - Male;
 - None of the above;
3. Do you like fruit?
 - Yes
 - No
 - Neither like or dislike;
4. How many times do you eat fruit per day?
 - I don't eat fruit;
 - I don't eat everyday;
 - Once a day;
 - Twice a day;
 - Three times a day;
 - More than 3 times a day.
5. Choose the frequency (from once or more a day, once or more a week, rarely or never) that you eat the following fruits:
 - Banana;
 - Apple;
 - Pear;
 - Avocado;
 - Orange;
 - Kiwi;
 - Mango;
 - Lemon;
 - Berries;
6. If you could only choose one favourite fruit, which one would you choose:
 - Banana;
 - Apple;
 - Pear;
 - Mango;
 - Papaya;
 - Kiwi;
 - Peach;
 - Watermelon;
 - Melon;
 - Cantaloupe;
 - Oranges;
 - Tangerines;
 - Passionfruit;
 - Cherries;
 - Fig;
 - Grapes;
 - Blackberry
 - Blueberry;
 - Strawberries;
 - Avocado;
 - Pineapple;
 - Other: Please say which
 - I don't know/ non applicable

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7. Do you like Kiwi?
 - Yes;
 - No;
 - It is ok.
8. Do you think it is an expensive fruit?
 - Yes;
 - No;
 - It is ok;
 - I don't know/ non applicable
9. Have you ever tried dry kiwi?
 - Yes;
 - No;
 - I don't know/ non applicable

Questionário

1. Idade:
 - 18-25
 - 25-40
 - 40-55
 - 55-70
 - +70
2. Género:
 - Feminino;
 - Masculino;
 - Outro;
3. Gosta de fruta?
 - Sim
 - Não
 - Não gosto nem desgosto;
4. Quantas vezes come fruta por dia?
 - Não como fruta;
 - Não como todos os dias;
 - 1 vez por dia;
 - 2 vezes por dia;
 - 3 vezes por dia
 - Mais que 3 vezes por dia
5. Escolha a frequência com que consome os seguintes frutos (Nunca, Raramente, Uma ou mais vez por semana, uma ou mais vez por dia):
 - Banana;
 - Maçã;
 - Pêra;
 - Abacate
 - Laranja
 - Kiwi
 - Frutos Vermelhos
6. Se pudesse escolher apenas uma fruta preferida, qual escolheria:
 - a. Banana;
 - b. Maçã;
 - c. Pêra;
 - d. Abacate
 - e. Laranja
 - f. Kiwi;
 - g. Pêssego;
 - h. Melância;
 - i. Melão;
 - j. Melo;
 - k. Laranja;
 - l. Tangerina;
 - m. Maracujá;
 - n. Cerejas;

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- o. Figos;
 - p. Uvas;
 - q. Amoras;
 - r. Mirtilos;
 - s. Morangos;
 - t. Abacates;
 - u. Ananás;
 - v. Outra (Por favor indique qual):
 - w. Não sei/Não aplicável
7. Gosta de Kiwi?
- Sim;
 - Não;
 - Não gosto nem desgosto.
 - Não sei/Não aplicável.
8. Acha que o Kiwi é um fruto cara?
- Sim;
 - Não;
 - O preço é adequado.
 - Não sei/Não aplicável
9. Já provou Kiwi desidratado?
- Sim;
 - Não;
 - Não sei/Não aplicável

Appendix B – Financial Analysis

○ **Cash Flow Statement**

Table A.1 – Cash Flow Statement, Financial Analysis, Source: Author, 2022

2021	End Y0	End Y1	End Y2	End Y3	End Y4	End Y5	End Y6	End Y7	End Y8	End Y9	End Y10	End Y11	
Net Income	-36 851 €	-43 320 €	-42 236 €	-28 055 €	209 €	12 629 €	51 004 €	86 355 €	120 202 €	140 538 €	141 655 €	149 351 €	
Depreciation (+)	3 142 €	3 770 €	3 770 €	3 770 €	4 270 €	4 270 €	4 270 €	4 270 €	4 270 €	4 270 €	5 870 €	5 870 €	
Inventory(+/-)	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	
Accounts Receivable(+/-)	0 €	0 €	0 €	-10 625 €	-10 271 €	-11 688 €	-12 990 €	-12 031 €	-12 031 €	-6 864 €	0 €	-2 125 €	
Accounts Payables(+/-)	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	
CFO	-33 709 €	-39 550 €	-38 466 €	-34 910 €	-5 792 €	5 212 €	42 284 €	78 594 €	112 441 €	137 943 €	147 525 €	153 096 €	
CAPEX(-)	0 €	0 €	0 €	-20 000 €	0 €	0 €	0 €	0 €	0 €	0 €	-12 000 €	0 €	
CFI	0 €	0 €	0 €	-20 000 €	0 €	0 €	0 €	0 €	0 €	0 €	-12 000 €	0 €	
CS(+)	0,00 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €	
Loan(+/-)	-14 601,03 €	-18 510,20 €	-19 651,87 €	-20 863,95 €	-22 150,79 €	-23 517,01 €	-24 967,49 €	-26 507,42 €	-28 142,34 €	-29 878,10 €	-31 720,92 €	-33 677,40 €	
CFF	-14 601 €	-18 510 €	-19 652 €	-20 864 €	-22 151 €	-23 517 €	-24 967 €	-26 507 €	-28 142 €	-29 878 €	-31 721 €	-33 677 €	
Total Cash Flow	-48 310,38 €	-58 060,61 €	-58 118,21 €	-75 774,04 €	-27 942,33 €	-18 305,26 €	17 316,93 €	52 086,32 €	84 298,26 €	108 065,37 €	103 803,88 €	119 418,41 €	
Cash	Beginning Y0	End Y0	End Y1	End Y2	End Y3	End Y4	End Y5	End Y6	End Y7	End Y8	End Y9	End Y10	End Y11
	288 167,00 €	239 856,62 €	181 796,01 €	123 677,80 €	47 903,76 €	19 961,43 €	1 656,17 €	18 973,10 €	71 059,42 €	155 357,68 €	263 423,06 €	367 226,93 €	486 645,34 €

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○ Income Statement Y0

Table A.2 – Income Statement from Year 0, Financial Analysis, Source: Author, 2022

Income Statement Y0	March	April	May	June	July	August	September	October	November	December	Income Statement Y0
Revenues	- €	- €	- €	- €	-	- €	- €	- €	- €	- €	- €
COGS	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Cost of KIWI											- €
Gross Profit	- €	- €	- €	- €							- €
Operating expenses	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	2 539 €	25 392 €
Salaries	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	2 000 €	20 000 €
Social securities	220 €	220 €	220 €	220 €	220 €	220 €	220 €	220 €	220 €	220 €	2 200 €
Water/electricity	240 €	240 €	240 €	240 €	240 €	240 €	240 €	240 €	240 €	240 €	2 400 €
IMI	29 €	29 €	29 €	29 €	29 €	29 €	29 €	29 €	29 €	29 €	292 €
Licences	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
R&D	50 €	50 €	50 €	50 €	50 €	50 €	50 €	50 €	50 €	50 €	500 €
EBITDA	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	- 2 539 €	-25 392 €
Depreciation and Amortisation	-314 €	-314 €	-314 €	-314 €	-314 €	-314 €	-314 €	-314 €	-314 €	-314 €	-3 142 €
EBIT	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	- 2 853 €	-28 533 €
Interest Expense	- 1 190 €	- 1 196 €	- 1 202 €	- 1 208 €	- 1 214 €	- 1 220 €	- 1 226 €	- 1 232 €	- 1 238 €	- 1 244 €	-12 168 €
Profit before Taxes	- 4 043 €	- 4 049 €	- 4 055 €	- 4 061 €	- 4 067 €	- 4 073 €	- 4 079 €	- 4 085 €	- 4 091 €	- 4 098 €	-40 701 €
Taxes	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €	- €
Net Income	- 4 043 €	- 4 049 €	- 4 055 €	- 4 061 €	- 4 067 €	- 4 073 €	- 4 079 €	- 4 085 €	- 4 091 €	- 4 098 €	-40 701 €

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○ **Income Statement**

Table A.3 – Income Statement, , Financial Analysis, Source: Author, 2022

Income Statement	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Revenues	- €	- €	- €	42 500 €	83 584 €	130 334 €	182 292 €	230 417 €	278 542 €	306 000 €	306 000 €	314 500 €
COGS	2 400 €	2 880 €	2 938 €	13 989 €	16 135 €	26 552 €	28 973 €	31 398 €	33 828 €	34 934 €	35 182 €	35 435 €
Gross Profit	-2 400 €	-2 880 €	-2 938 €	28 511 €	67 448 €	103 782 €	153 320 €	199 019 €	244 714 €	271 066 €	270 818 €	279 065 €
Operating expenses	22 992 €	27 590 €	27 590 €	40 582 €	40 977 €	56 439 €	58 141 €	59 923 €	63 300 €	65 285 €	67 363 €	69 539 €
Salaries	20 000 €	24 000 €	24 000 €	31 200 €	36 060 €	42 783 €	44 172 €	45 631 €	47 162 €	48 770 €	50 459 €	52 232 €
Social securities	2 200 €	2 640 €	2 640 €	3 432 €	3 967 €	4 706 €	4 859 €	5 019 €	5 188 €	5 365 €	5 550 €	5 746 €
IMI	292 €	350 €	350 €	350 €	350 €	350 €	350 €	350 €	350 €	350 €	350 €	350 €
R&D	500 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €	600 €
Site Investment + Marketing Outsourcing	- €	- €	- €	5 000 €	- €	8 000 €	8 160 €	8 323 €	10 000 €	10 200 €	10 404 €	10 612 €
EBITDA	-25 392 €	-30 470 €	-30 528 €	-12 071 €	26 472 €	47 343 €	95 178 €	139 096 €	181 414 €	205 780 €	203 454 €	209 526 €
Depreciation and Amortisation	3 142 €	3 770 €	3 770 €	4 270 €	4 270 €	4 270 €	4 270 €	4 270 €	4 270 €	4 270 €	5 870 €	5 870 €
EBIT	-22 250 €	-26 700 €	-26 758 €	-7 801 €	30 742 €	51 613 €	99 448 €	143 366 €	185 684 €	210 050 €	209 324 €	215 396 €
Interest Expense	-14 601 €	-16 620 €	-15 479 €	-14 267 €	-12 980 €	-11 614 €	-10 163 €	-8 623 €	-6 988 €	-5 253 €	-3 410 €	- €
Profit before Taxes	-36 851 €	-43 320 €	-42 236 €	-22 068 €	17 762 €	39 999 €	89 285 €	134 743 €	178 696 €	204 798 €	205 915 €	215 396 €
Taxes	-504 €	-605 €	-617 €	-5 987 €	-17 553 €	-27 370 €	-38 281 €	-48 388 €	-58 494 €	-64 260 €	-64 260 €	-66 045 €
Net Income	-36 851 €	-43 320 €	-42 236 €	-28 055 €	209 €	12 629 €	51 004 €	86 355 €	120 202 €	140 538 €	141 655 €	149 351 €

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○ Payback, Gross Profit Margin, EBITDA to Sales Ratio and Net Profit Margin

Table A.4 -Payback, Gross Profit Margin, EBITDA to Sales Ratio and Net Profit Margin, Financial Analysis, Source: Author, 2022

Payback												
Years	0	1	2	3	4	5	6	7	8	9	10	11
Cash Flow	€ (23 780,83)	€ (28 537,00)	€ (28 606,70)	€ (5 169,39)	€ 30 842,66	€ 56 450,71	€ 112 915,18	€ 164 753,04	€ 216 323,89	€ 245 843,81	€ 251 769,53	€ 311 048,29
PV Cash Flow	-23 781	-27 527	-26 618	-4 640	26 704	47 147	90 969	128 036	162 167	177 776	175 620	209 294
PV Accumulated Cash Flow	-23 780,83	-51 308,25	-77 926,65	-82 566,58	26 704,26	73 851,38	164 820,76	292 857,17	162 166,70	339 942,91	515 563,19	724 857,04
Gross Profit Margin												
Years	0	1	2	3	4	5	6	7	8	9	10	11
Gross Profit	€ (2 400,00)	€ (2 880,00)	€ (2 937,60)	€ 28 510,85	€ 67 448,47	€ 103 782,10	€ 153 319,58	€ 199 019,14	€ 244 714,14	€ 271 065,57	€ 270 817,90	€ 279 065,27
Revenues	0,00 €	0,00 €	0,00 €	42 500,00 €	83 583,90 €	130 333,90 €	182 292,25 €	230 417,25 €	278 542,25 €	306 000,00 €	306 000,00 €	314 500,00 €
Gross Profit / Revenues	0%	0%	0%	67%	81%	80%	84%	86%	88%	89%	89%	89%
EBITDA To Sales Ratio												
Years	0	1	2	3	4	5	6	7	8	9	10	11
EBITDA	€ (25 391,67)	€ (30 470,00)	€ (30 527,60)	€ (12 071,15)	€ 26 471,87	€ 47 342,97	€ 95 178,50	€ 139 095,80	€ 180 924,33	€ 205 320,96	€ 203 025,84	€ 209 128,59
Revenues	0,00 €	0,00 €	0,00 €	42 500,00 €	83 583,90 €	130 333,90 €	182 292,25 €	230 417,25 €	278 542,25 €	306 000,00 €	306 000,00 €	314 500,00 €
EBITDA / Revenues	0%	0%	0%	-28%	32%	36%	52%	60%	65%	67%	66%	66%
Net Profit Margin												
Years	0	1	2	3	4	5	6	7	8	9	10	11
Net income	€ (36 851,03)	€ (43 320,41)	€ (42 236,34)	€ (28 055,09)		€ 12 629,25	€ 51 004,00	€ 86 355,00	83 583,90 €	€ 140 078,45	€ 141 226,15	€ 148 953,59
Revenues	0,00 €	0,00 €	0,00 €	42 500,00 €		130 333,90 €	182 292,25 €	230 417,25 €	0%	306 000,00 €	306 000,00 €	314 500,00 €
Net income / Revenues	0%	0%	0%	-66%		10%	28%	37%	43%	46%	46%	47%