

**Business Plan – Fénix Portugal: ZIF Management Entity  
(Pilot Project for Mação Municipality)**

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## Abstract

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When we think about forest fires, Portugal is the country that comes to our minds. Consequently, there is a concern and debate about fire risk management practices. From this discussion resulted the concept of ZIF (Forest Intervention Area) which is being considered as the best practice.

The main problem that difficults the success of the current risk mitigation strategies is due to the structure of the Portuguese territory (minifundio – territory divided in multiple small fractions belonging to a high number of Owners). There is a lack of solutions to overcome this obstacle and achieve a sustainable management of the territory. ZIF concept is being considered as the possible solution.

This Business Plan aims to develop an innovative management model designed to be applied by a management entity of ZIFs and assess its economical and financial viability.

The model consists in using total management practices over the ZIF's territories (while the owners maintain their tenure rights). The management entity is responsible for renting those territories to other entities/individuals that want to explore them in order to run (or expand) their businesses. A percentage of the rents is going to be distributed to the Owners according to the fraction's size belonging to each of them. This model has also the goal of introducing the insurance market to the sector.

**Keywords:** Business Plan; Innovative service; Forest fires; ZIF.

### **JEL Classification**

M13 – New Firms, Start-Ups

O31 – Innovation and Invention: Processes and Incentives

## Resumo

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Quando pensamos em incêndios, Portugal é o país que nos vem logo à cabeça. Como tal, existe, actualmente, uma grande preocupação e debate quanto às práticas de mitigação do risco de incêndio. Desta discussão surgiu o conceito de ZIF (Zona de Intervenção Florestal) e que está a ser considerado como a melhor prática.

Um problema grave que dificulta o sucesso das actuais estratégias de mitigação do risco prende-se com a estrutura do território Português (minifúndio – território dividido em inúmeras pequenas parcelas pertencentes a um elevado número de proprietários). Faltam soluções que possam ultrapassar este problema e alcançar uma gestão sustentável do território. O conceito de ZIF está a ser defendido como sendo a solução.

Este Business Plan tem como objectivo introduzir no mercado um modelo de gestão inovador para ser aplicado por uma entidade gestora de ZIFs e avaliar económica e financeiramente o projecto.

O modelo consiste em utilizar práticas de gestão total sobre os terrenos de uma ZIF (os proprietários mantêm os seus direitos em relação às terras), sendo a Entidade Gestora responsável por arrendar estes mesmos terrenos a entidades/indivíduos que os desejem explorar com o intuito de desenvolverem os seus negócios. Uma percentagem das rendas irá ser distribuída pelos proprietários de acordo com a área da fracção de cada um. Para além disso, o modelo tem ainda como objectivo criar uma solução para introduzir o mercado de seguros no sector.

**Palavras-Chave:** Plano de Negócios; Serviço inovador; Incêndios florestais; ZIF.

### **Classificação JEL**

M13 – Novas Empresas, Start-Ups

O31 – Inovação e Invenção: Processos e Incentivos

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Writing these words represents the end of one of the most important stages of my life. This is the final work inspired by 22 years learning from my family, friends, professors (17 years in school) and many other people that I had the privilege to meet.

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## Glossary

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ANPC – National Association of Civil Protection

APS – Portuguese Association of Insurers

AVIPG – Association of Victims of Fires in Pedrógão Grande

CAPEX – Capital Expenditures

CELPA – Portuguese Association of Paper Industry

CSR - Corporate Social Responsibility

DSS – Decision Support Systems

EBIT – Earnings Before Interest and Taxes

EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization

EBT – Earnings Before Taxes

GPP – Planning, Policy and General Administration Office

GVA – Gross Value Added

ICNF – Institute of Forest and Nature Conservation

IRR – Internal Rate of Return

KSF – Key Success Factor

ME – Management Entity

NPV – Net Present Value

Re – Required Rate of Return

ROE – Return on Equity

SES – Supplies and External Services

SRI – Socially Responsible Investment

STP – Segmentation, Targeting and Positioning

UAL – Utilized Agricultural Land

WTP – Willingness-to-pay

ZIF – Forest Intervention Area

## Executive Summary

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The project's purpose is to help reduce the number and impact of forest fires in the Portuguese territory.

Portugal has particular characteristics that make it very susceptible to forest fires such as weather conditions, geography and type of fuel present in forests. There is also a lack of practices to achieve a clean forest.

The Portuguese government is trying to promote a set of measures for a clean forest but there are particular aspects that make the mission harder to complete. Those aspects are related to forest's structure (called minifundio, which means that the territory is divided in small fractions of land with each owner possessing a small percentage) and there is also a too high number of agricultural and forestry species.

ZIF concept is being perceived as the best fire risk management practice which may result in a more sustainable management of the territory. The concept is still being improved but some constraints were already observed such as the fact that the majority of Management Entities are Associations of Forest Owners and Producers whose business model has some limitations and does not allow the Owners to maximize its revenues from land's exploration. The fact that other private entities are a small percentage of management entities results in an undifferentiated business model. Owners only obtain revenues when there are profits arising from the ZIF's land exploration.

This project consisted in developing an innovative business model to be applied by a management entity and it is focused in achieving a win-win situation both for entities that want to explore fractions of land and the lands' owners.

The model allows firms to rent land with the purpose of exploring it in order to run their businesses (expand the business or simply keep the normal business running) in exchange for an annual rent. The rent's value will depend on a number of factors such as land's quality, cultures being explored in the land, and size of the fraction. *Fénix Portugal* is responsible for managing the ZIF and rent the land's fractions. Lands' Owners only need to deliver the responsibility and control to *Fénix Portugal* (while maintaining their tenure rights over the land) and they receive a percentage of the annual rents according to the size of their fractions of the land when compared to the ZIF's whole area.

One other innovation associated with the model is the fact that it aims to introduce the

insurance market in the sector.

The firm's main target customers are For-Profit-Firms (mainly medium or large sized) that operate in Agriculture and Forestry industry that want to expand their businesses by renting pieces of land with at least 20ha (preferably larger than 100ha).

One other critical factor for *Fénix Portugal* is that this model depends on key strategic partners which are Lands' Owners as they will be the ones who will allow the firm to have business.

The firm opted to follow a differentiation strategy to position in customers and partners' minds as the best option in the market to manage ZIFs. The fact that it is the first management entity to allow Lands' Owners to maximize their profits resulting from lands' exploration is the main driver to be able to charge a premium price and to be perceived as the best option.

In order to meet the firm's goals, it will be necessary to start its operations with 4 employees and it will be needed an initial investment of 80.000€ to cover the needs.

The revenues generation process is simple as they will mainly be a result of annual rents. In the first complete year of activity (2020) the firm will have revenues with the value of 250.371€ resulting in a net profit of 105.946€. In 2023 (the last year under analysis), as a result of the expected success through the implementation of the first ZIFs, the firm's revenues will have the value of 2.194.086€ resulting in a net profit of 1.528.829€.

Considering the project's continuity, its Net Present Value (NPV) is 17.634.012€ (higher than zero), its Internal Rate of Return (IRR) is 257% (higher than the required rate of return) and a payback period of 1 year and 9 months (short).



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## 1. Introduction

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### 1.1 Motivation

The catastrophes that affected Portugal in 2017 – two of the biggest wildfires that ever happened in the country – are the main driver of this Project.

When there is the goal to do something useful for the country, the time dedicated to develop a Master Thesis seems the perfect opportunity to try to achieve this desire and that is why this Projects consists in the development of a Business Plan that could result in a positive impact to society.

Forest fires are a huge problem in many countries of the world and it is a risk very hard to mitigate. When we think about Forest fires, Portugal comes to our mind instantly as it is usually the European country with the highest burnt area per year.

Since the beginning of the 20<sup>th</sup> century, Portugal faced huge wildfires, mainly in the years of 2003 and 2005. The catastrophes of 2017 were the ones with the biggest impact of the century, with numbers similar to the year of 2005 which was considered the worst year when it comes to forest fires in the country. However, taking into account all the data about wildfires in 2017, this is now considered as the worst year ever with more than 440.000ha of burnt land (around 570.000ha if we also consider agricultural land) and over 100 deaths (Lusa, 2017b).

These catastrophes resulted in a big public debate about forest fires and forest management practices from both public and private entities and the Government proceeded with an intensive analysis to understand which actions should be taken in order to improve forest management and conservation.

With this general concern across the country and across all the entities, there is the belief that this is the right time to proceed with real actions in order to protect our forest, our land, our country.

### 1.2 Strategy

After understanding what the general intention was, it was time to understand where and how could I have this positive impact and reach my goals.

The major concern was to help every people affected by the catastrophes of 2017 and take preventive actions in order to mitigate their risk of having to face another fire and loosing part (or all) of their patrimony.

In order to understand how this Business Plan could be structured the first step

was to hold meetings with every interested part in the subject to understand their interests, motivations and what their plans were for the future. It started with a conversation with APS (Portuguese Association of Insurers) and then with AVIPG (Association of Victims of Fires in Pedrogão Grande), ANPC (National Association of Civil Protection), CELPA (Portuguese Association of Paper Industry) and Mação Municipality which was one of the most affected Municipalities in Portugal and is considered to be the role model for every Municipality when it comes to forest management and fire risk management.

As a result of these meetings, there was an unanimous approval for the idea of the Business Plan and the structure was defined based on an agreed partnership with Mação Municipality as there was an intention to proceed with a Pilot Project to implement on two ZIFs (Forest Intervention Areas) – the concept is explained in chapter 3.7 - in the region. The concept of ZIF has been increasing its notoriety and there is an increase in voices defending that this is the right path to achieve a correct forest management besides being a strong fire prevention tool. However, after the implementation of ZIF, there is a lack of positive results and it is perceived as a complex concept hard to implement and manage. Based on this, there is the belief that it is the right path to achieve the desired goals to have a positive impact in Portugal and it was decided to put efforts on developing a Business Plan to create an entity with an innovative management model to be implemented on ZIFs that will prove the potential success of ZIF concept is real.

This management model is going to be first implemented on one of the two ZIFs suggested by the Municipality and the goal is to extend its success to the other ZIF in the Municipality and then the rest of the country.

### **1.3 Opportunity**

The catastrophes of 2017 strengthened the debate about forest management practices and fire risk management.

One of the main concepts around this debate is the concept of ZIF that is considered to be the right path to achieve a sustainable forest management and it is also considered to be the best strategy in order to mitigate the risk of forest fires.

The fact that Portuguese forest land is designed as what is called a minifundio – i.e., forest land belongs to many owners with each one of them possessing a small fraction of land – demonstrates that it is mandatory to achieve a good level of collaboration between the owners in order to promote a sustainable forest land

management. For example, if we look at the ZIF from this Pilot-Project (ZIF Eiras Village – see Annex 36) it represents 1.047ha of land which can be divided in 1.542 properties from 515 owners which can be summed up as 0.7ha per property (Louro, 2013).

It is also obvious that forest land is being abandoned as there is an increase in the number of people leaving rural areas and the ones who stay are (in general) elderly people that in the short/medium term will not have the possibility to do something with their land. From the same example, around 75% of the owners are people with over 64 years and only 10% of total owners live in the ZIF's area (Louro, 2013).

Based on these assumptions, there is a general movement in Portugal in order to promote the concept/strategy and this is also an important concern for the Government. Despite the fact that there are already some ZIFs in Portugal, there is a lack of a successful strategy for ZIF management and it is believed that this is the reason why there is also a lack of positive practical results.

Everyone is trying to figure out an efficient ZIF management strategy and this is also encouraged by the government.

Taking into account the importance and relevance of this debate, this is the right time to focus on this study and analyzing the subject in order to develop a strategy that could be perceived as the right one to succeed and achieve the right ZIF management that will lead to positive results.

#### **1.4 Structure**

The Business Plan is structured to meet the objectives and opportunities of this project.

The already mentioned meetings were the project's starting point. After that stage it was time to study the existing information about the subject by reading scientific articles, specialized newspapers and magazines, books, reports, interviews with experts and many other sources of information. This allowed understanding the concept, the market, trends and the business which resulted in the elaboration of the literature review and it was also the stage where it was possible to draw the Business Plan's guidelines and the project's path.

The next stage consisted in proceeding with a Market Research. The goals of this stage were: understanding the market in Portugal; study the attractiveness of the industry and sector by using concrete tools such as PESTLE Analysis and Five Porter's Forces; understand the customers and partners' profiles; and, finally, study the



competition in the market.

After the analysis regarding the external context, it was time to study the internal context by elaborating the firm's value chain and using the SWOT Analysis tool to prepare the definition of the firm's strategy.

The following stages consisted in defining the firm's strategy and start to build its culture by defining the firm's mission, vision and core values.

Then it was time to define the implementation policies, i.e., the policies and actions that are necessary for the firm to run its business accordingly to the previously defined strategy and these are also the main factors that will influence the firm's future.

Finally, the last stage consisted in proceeding with a Financial and Economical analysis to evaluate the project's feasibility by assessing its profitability and sustainability.

## 2. Value Proposition/Business Proposal

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The project's value proposition consists in the development of an innovative management model for Forest Intervention Areas (ZIFs).

There is a belief that this is the right tool to achieve a sustainable management of rural areas as well as the right path to reduce the number and impact of forest fires.

It is an innovation because it brings the concept of (true) total management practices as the Lands' Owners allow the Management Entity to be totally responsible for the land's management while they maintain their tenure rights.

By being responsible for the land management, the Entity is able to rent it to other Entities/Individuals that will explore the land according to a sustainable plan. A percentage of these annual rents will flow to the Lands' Owners.

The management of relevant sizes of land aligned with a sustainable plan allows the Management Entity to partner with an Insurance firm in order to cover the whole territory. This is a relevant innovation for the market as there are no options to cover rural properties with Insurance because of the Portuguese territory's structure.

There will be a pilot-project to be implemented in Mação Municipality in a partnership with the City Hall. The ZIF's territory represents 1047ha of land and the goal is to explore the whole territory with 5 to 6 species in order to promote its sustainability. There will be a specific plan for each ZIF to provide the guidelines for the exploration in order to achieve the referred sustainability.

The entity will work as a mall: it is responsible for a number of lands' fractions (stores) and rents those fractions to other entities/individuals (brands) that will explore the land in exchange for an annual rent. This operation is agreed and there will be a contract for each fraction.

Another innovation factor is related with the entity being the first in the market to always pay annual revenues to the Lands' Owners while the general practice in the market is to only pay revenues when there are profits resulting from the land's exploration.

This project will be focused on developing and managing ZIFs while allowing profit maximization for Lands' Owners. There is a clear intention to improve the quality of the territory management, boost the economy and a very relevant social concern: reduce the number and impact of forest fires in Portugal.

### 3. Literature Review

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Literature Review is the basis for every research work in order to be accurate and reliable. It consists in the study of the available literature about the subject of a work and it will result in a list of main findings that will support the work and be relevant so that everyone is able to understand the subject.

In this specific case it was defined that the main topics related with the work are the following ones: Fire risk management; Fire & Insurance; Main causes and impacts of fires; Fund management model; Socially responsible investment funds; Forest intervention areas; Social entrepreneurship; Main methodologies for project evaluation.

Based on these topics, the author proceeded with a review of the available literature about the topics. The idea is to present a summary of other authors' contributions for those topics in order to serve as a foundation for the new insights that will be presented in the rest of the work about the same topics.

#### 3.1 Fire Risk Management

It is hard to understand how it is possible to study a certain topic if there is controversy about the concepts and definitions of that topic. Based on this problem and the fact that public discussions about fires are increasing, it is necessary to achieve universal definitions of fire related terms like “fire risk”, “fire hazard” and “fire severity”. It is also a very important discussion because this ambiguous use of terminology may result in misunderstandings that can lead to fatal consequences (Bachman and Allgower, 1999).

Bachman and Allgower (1999) found that there are considerable confusing uses of the risk related terms and they propose a set of definitions based on the concepts of technical risk engineering. This confusing use of terminology leads to an absence of correct methodology for wildfire risk management.

Hardy (2005) also contributed to solve this problem because he considers that the terminology related to fire management seems to have become less concise over time. So he also proposes a set of definitions that have the potential to be universally accepted.

Before providing a definition for “fire hazard”, Hardy (2005) believes it is important to note that the term is independent of weather. Starting from this point, according to Hardy (2005: 75), “fire hazard” is considered to be “*a fuel complex, defined*

*by volume, type, condition, arrangement, and location that determines the degree of ease of ignition and the resistance to control. Fire hazard expresses the potential fire behaviour for a fuel type, regardless of the fuel type's weather-influenced fuel moisture content."*

This definition comes after the one proposed by Bachman and Allgower (1999) where they first introduced the term "hazard" as a process leading to undesirable outcomes. They were the first (at least the first with notoriety) to refer that "hazard" can be related to the process itself instead of representing just the precondition for a specific process. And when we connect "hazard" with "fire" it is even clearer that the definition is being used just to refer to the precondition for the process.

As to what concerns to "fire risk", Hardy (2005: 76) agrees with the definition that has been commonly accepted by the fire community where it is considered that "fire risk" refers to the *"chance that a fire might start, as affected by the nature and incidence of causative agents"*. Hardy (2005) also defends that "fire risk" is not only about the probability of fire occurrence but also about the outcomes.

This definition is sustained by the previous investigation carried by Bachman and Allgower (1999: 70) where they considered risk to be *"the probability of an undesired event and the outcome of it. An undesired event is a realization of a hazard."* Bachman and Allgower (1999: 71) also define "wildfire risk" as *"the probability of a wildfire to occur at a specified location and under given circumstances and its expected outcome as defined by the impacts on the affected objects."*

In terms of "fire severity", one of the most accepted definitions is the one proposed by Simard (1991) where he considers it to be *"the magnitude of significant negative fire impacts on wildland systems."*

Hardy (2005) points out the importance of the fact that this definition has nothing to do with the fire itself but it has everything to do with its effects on wildland systems.

After defining an appropriate fire risk terminology we have the right conditions to start discussing fire risk management which is becoming a trending concept and a global concern due to the recent catastrophes worldwide.

It is clear that devastation, expenditures and complexity are escalating in recent years and this contributes drastically to the difficulties in fire risk management (Pacheco *et al.*, 2015).

There are some decision support tools created thanks to theoretical and

computational progress (Decision Support Systems, DSS) but they need to be improved to address the challenges that result from fire risk management (Pacheco *et al.*, 2015). These DSS are evolving and they started from an initial focus on landscape-level fire growth simulation and burn probability assessment. Then, DSS started to incorporate the economic loss potential, the integration with forest management and planning. The last evolution of DSS was the fact that now they have a more developed system to assess values at risk and real-time assessment (Pacheco *et al.*, 2015).

This evolution is also related to the relatively recent awareness that fire risk management has a big influence at the societal level.

In the work of Pacheco *et al.* (2015) it is also suggested that the DSS are very helpful to assess fire-related issues and to help the decision process for fire risk management but they should keep evolving to a even more complex and efficient model that can help improve decisions. There is always the danger because fire risk management is affected by uncertain and unpredictable factors such as weather forecasts, resources and fire behaviour (Pacheco *et al.*, 2015).

A more holistic view is proposed by many authors, including Calkin *et al.* (2011) that suggest fire risk management model should include communication with communities, partnerships with insurers, etc.

Hardy (2015: 83) also considers that fire risk management decisions are influenced by current policies and pressures but he suggests as a final advice that we should “*understand looking backwards*”.

### **3.2 Fire & Insurance**

Insurance is becoming a very discussed subject when it comes to fire risk management strategies.

Fires in forests are causing huge damage and climate change forecasts only point for a worse scenario (Sauter *et al.*, 2016). According to Sauter *et al.* (2016), nowadays, government support focus on providing financial support to forest owners after disasters. As it was already mentioned, the forecasts suggest that the scenario is becoming worse and if government support keeps providing financial support, this could lead to a heavier financial burden for national budgets (Sauter *et al.*, 2016). Therefore, Sauter *et al.* (2016) suggest that the financial support system must be reconsidered with regard to privatizing forester’s risks and that is why insurance could play a key role.

Sauter *et al.* (2016) conducted a study with 137 german foresters in order to

explain insurance coverage, by asking them to answer a survey. The results of the study point out that, in general, foresters have low willingness-to-pay (WTP) for fire insurance despite the fact that usually they are risk-averse (Musshoff and Maart-Noelck, 2014). This explains the low demand from foresters for fire insurance. It is believed that the main reason for this situation is the lack of a competitive insurance market and, as a result, insurance companies do not have sufficient empirical data on forest damages (Sauter *et al.*, 2016). To solve this problem, insurance companies should develop their models dedicated for fire insurance maybe by increasing the insured area (Sauter *et al.*, 2016) and working close to foresters because it is essential to know their preferences, beliefs and perceptions of forest risks, which are effects expressed in foresters' WTP (Sauter *et al.*, 2016).

As a final remark, Sauter *et al.* (2016) recommend that governments should foster efficient insurance markets because it should be in the interest of governments to privatize foresters risks.

### **3.3 Main causes of fires**

It was conducted a study to discover the main causes of ignition (direct causes) of a fire and it is known that 90% of the fires in the Mediterranean region start because of human activities and behaviour while natural factors represent a weaker cause (Biro, 2009). As to what concerns to indirect causes (those that affect occurrence, behaviour and effects of wildfires), they are related with climatic factors (Biro, 2009). Biro (2009) also refers fuel (vegetation) characteristics as an important cause of fire.

Pyne (2007) also considers that contributing causes for fires group into climate, land use, and human fire practices.

### **3.4 Main impacts of fires**

Biro (2009) explains that the impact of fires is not only in forests but it has a wider impact, like at societal level. They affect forests, the adjacent systems (agricultural, urban, etc.) and the civil society in many aspects such as human life and health, wellbeing, economy, etc. One of the main issues related with fire impacts is the fact they have a big temporal impact since the initial phase until a few decades afterwards (Biro, 2009). Biro (2009) also defends that a rigorous impact assessment and understanding of fire impacts contributes to an efficient and effective way to develop a good fire risk management strategy.

### **3.5 Fund Management Model**

Fund Management has been used professionally for a long time but it is an industry that faced a continuous evolution, especially in the second half of the 20<sup>th</sup> century when managers started to understand that it was an industry with tremendous potential but it had to keep evolving in order to be sustainable over the time. And that is why they started to change the modus operandi of this type of funds (Broby, 2010).

Russell (2006: 14) defined the term “funds” as *“the mechanism whereby the contributions of many individuals are pooled and managed as a single fund. Management of the fund is usually taken to refer to the investment management.”*

In theory, fund management is a very simple form of business where the biggest difficulties are the fact of understanding what is changing and keep evolving based on that, and also trying to figure out how to design the business model so that all the factors combined can contribute to the success of the fund.

This success can be predicted based on the right business model, i.e., the way that the assets are going to be managed on behalf of clients in exchange for a fee in order to be profitable and achieve growth in assets (Broby, 2010).

When the right business model is defined, i.e., when the investment manager achieves the right mix of factors, it can be achieved a return on equity (ROE) in excess of 40% (Broby, 2010).

Fund management industry is very scalable. There is no need to add more resources in order to manage more assets. This factor aligned with being a fee based industry and having variable margins makes it a very competitive and attractive industry (Broby, 1997).

This can also be inferred by the fact that this industry is subject to economies of scale, despite having a high proportion of variable costs (Broby, 2010).

Broby (2010) defends that the business model should be developed in order to be focused on 3 P’s: People, Process and Philosophy. *“The first rule of fund management is that these should all be aligned or else managers very quickly discover that their added value erodes over time due to competition (...)”*(Broby, 2010: 22).

### **3.6 Socially responsible investment funds**

Socially responsible investment (SRI) funds can be defined as an alternative fund management whose principles are related with corporate responsibility and societal concerns and those are the factors that affect and are incorporated into investment decisions, i.e., it is similar to a conventional fund but improved to pursue an impact on

society (Broby, 2010). This investment strategy has the goal to achieve both financial returns and social good (Ito *et al.*, 2012).

This is not a new concept. The first ever documented investment with the characteristics of a SRI was back in 1750 (Broby, 2010) and it is believed that the modern roots of SRI could be found since 1960 (Ito *et al.*, 2012). However, SRI is only becoming a much discussed concept since the last few years and the literature defends that it has experienced a great growth in the past decade (De Moor and Verheyden, 2013). The main driver of this growth is the fact that environment, corporate social responsibility (CSR), governance and societal factors are becoming critical issues that affect business and investment decisions (Ito *et al.*, 2012; De Moor and Verheyden, 2013) and this growth was evident in 2012 when 11.3% of the total capital under professional asset management in the U.S. was investment based on the SRI philosophy which represented a growth of around 486% since 1995 according to the SIF Foundation Report of 2016. Also, in the beginning of 2016, the percentage of the capital under professional management in the U.S. that was based on the SRI philosophy represented around 21.6% which represented a growth of 33% since 2014 as it is stated in the SIF Foundation Report of 2016. This growth in the SRI market is expected to remain a trend and proliferate to a worldwide growth in the next years (Ito *et al.*, 2012).

However, there is no unanimity when the question is if the SRI funds outperform (or underperform) the conventional and traditional funds (Ito *et al.*, 2012; De Moor and Verheyden, 2013) despite the fact of this question being intensively analyzed and discussed in the literature.

### **3.7 Forest intervention areas (ZIF)**

Nowadays, forest management is considered a trending topic that has raised the debate in literature. Taking into account the difficulties of individual forest management, the fact that land owners are moving away from rural areas and the intensity of forest fires, there is a need for new forest management strategies that would focus on promoting cooperation between small-scale forest owners, producers and result in an organized joint strategy (Valente *et al.*, 2013).

The concept of Forest Intervention Areas (ZIF) was born based on this need and its roots (emerged as a concept defined by law in 2005) are also linked with the catastrophic wildfires that occurred in Portugal in 2003 (Valente *et al.*, 2013). In fact, the number of fires was increasing at a high rate as well as their extent and this led to a political debate about the matter that resulted in the approval of a new legal frame for



forest management (Canadas *et al.*, 2016).

According to the COST report on Forest Land Ownership in Portugal, it was established that ZIF would be the designation of a large contiguous surface where the main land use is forest owned by several owners and that is managed under the same forest management plan (Valente *et al.*, 2013; Canadas *et al.*, 2016). Also according to the same report, a ZIF can be constituted with land from different types of owners: private, public and/or common (Valente *et al.*, 2013).

A management entity is responsible for the management plan of the ZIF and this entity can be a non-profit organization, a voluntary organization, or a forest enterprise if it gets the approval from the forest owners (Valente *et al.*, 2013). A Municipality (or other public organization) can only be a co-management entity with one of these.

According to facts, since the release of ZIF's law (Portuguese Decree-Law 127/2005 with the final version being the Decree-Law 67/2017) in 2005 until the end of 2012, 162 ZIF were endorsed in Portugal and this number represented around 845.000ha of land which is equivalent to 24% of the national forest areas (Valente *et al.*, 2013). According to ICNF, in August of 2017 this number had raised to 189 which represented around 1.084.000ha of land (see Table 2 and Annex 1).

The growing interest in ZIF can be explained based on the benefits associated to the creation of a ZIF like the desire for a sustainable forest management, maximization of forest land use, and mainly the fact that it is one of the most defended strategies when it comes to forest protection against fires (Valente *et al.*, 2013).

Despite the growing interest in this concept, it faced a downturn in 2010 that was related with many constraints associated with the development of ZIF such as complexity in bureaucracy to assemble a ZIF, difficulty to get funds, high implementation costs and there is still a social resistance to this concept mainly because of proprietaries' fear of losing their tenure rights and there is also lack of an effective implementation and results (Valente *et al.*, 2013). It is also believed that this downturn was observed in 2010 thanks to political and economical factors that were particularly impactful by that time (Valente *et al.*, 2013).

Valente *et al.* (2013) proceeded with an empirical study to understand the potential of the ZIF concept and how was it perceived in the portuguese society. As main conclusions it is worth to mention that technicians know about ZIF but when it comes to forest owners and other citizens there is a lack of knowledge about this concept and about other forest management policies; high percentage of technicians

fully agree with ZIF approach, while the majority of the remaining percentage partially agree (this indicates an obvious support from technicians); there is a clear observation that the ZIF approach is having a bigger impact in the regions that are the most affected by forest fires (Valente *et al.*, 2013).

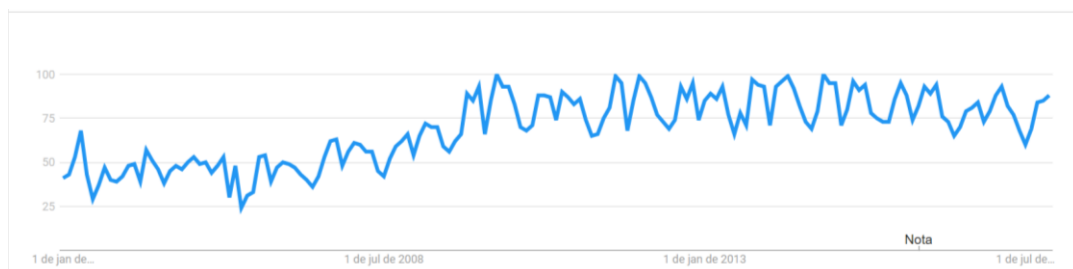
It is obvious that it still generates great discussions and the final verdict about the effectiveness and success of ZIF approach is yet to come.

It is also expected a new revival of this discussion thanks to the huge catastrophes that devastated the portuguese forest in 2017 and that resulted in a new debate about ZIF laws and the whole ZIF approach with the objective to recognize this approach as the right one to fight wildfires.

### 3.8 Social Entrepreneurship

As it was already explained, the foundation of this project is the intention to promote fire risk management practices in order to help reduce the number of fires that devastate Portugal every year. For that reason, this project can be included in Social Entrepreneurship category taking into account the social benefits that it strives to achieve and promote.

Nowadays, Social Entrepreneurship is a trend. This affirmation is easy to validate as we can see in Figure 1.



**Figure 1** - Interest on the concept "Social Entrepreneurship" over time, from 01/01/2004 until 01/11/2017, worldwide.

**Source:** Google Trends.

As it is a trend, the concept is being studied and developed which led to a global idea that “social entrepreneurship” is a complex concept.

Despite the fact that the interest in social entrepreneurship is growing in the last three decades, scholars and practitioners are far from reaching a consensus as to what it actually means (Choi and Majumdar, 2014).

Social entrepreneurship is a concept that has become well established in business (Peredo and McLean, 2006). We can see the real interest in social entrepreneurship as the governments keep creating initiatives to promote it, especially

providing funding for new social entrepreneurship initiatives, and scientific journals keep increasing the number of articles and conferences about it (Choi and Majumdar, 2014).

Choi and Majumdar (2014) contributed for this field of study by trying to come up with a universally accepted definition of social entrepreneurship. They consider that the concept is related with 5 sub-concepts: 1. Social value creation; 2. The social entrepreneur; 3. The Social Entrepreneurship organization; 4. Market orientation; 5. Social innovation. That is why they proposed the conceptualization of Social Entrepreneurship as a cluster concept, i.e., a conglomerate of certain concepts and can be defined through various combinations of the sub-concepts depending on the degree and in which sense we are talking about. Conceptualizing Social Entrepreneurship as a cluster concept implies that Social Entrepreneurship is a representation of the combined quality of certain sub-concepts (Choi and Majumdar, 2014).

Peredo and McLean (2006) also consider that Social Entrepreneurship must be seen as a flexible concept, related with sub-concepts and its characteristics can vary in degree of importance.

### **3.9 Main methodologies for project evaluation**

When it comes to develop a Business Plan, a critical phase is to assess the financial and economical viability of the business to see if it has the potential to be successful.

There are financial indicators to help the decision to invest or not. The most commonly used and accepted ones are the Net Present Value (NPV) and the Internal Rate of Return (IRR) (Soares *et al.*, 2015).

The NPV is the result of reporting all the cash-flows to the same initial period (time 0) using a discount rate (then we have net cash-flows) and then sum all of them. If  $NPV > 0$ , the decision must be to invest; if  $NPV < 0$ , the decision must be not to invest; if  $NPV = 0$ , one must analyze the variables to decide to invest or not (Soares *et al.*, 2015).

IRR is the discount rate that makes the project have  $NPV = 0$ . If discount rate  $<$  IRR, the project should be implemented; if discount rate  $>$  IRR, the project should not be implemented; if discount rate  $=$  IRR, the variables play an important role and must be analyzed before making any decision (Soares *et al.*, 2015). However, NPV is a much more reliable factor of decision because the IRR has variable factors associated that can affect the decision. For example, if  $NPV < 0$  but discount rate  $<$  IRR, the project should not be implemented.

As this project is based on Real Estate Management it is also important to discuss in this Chapter the property valuation methods that are present in the Literature and will play a major role in this project.

According to Figueiredo (2004) there are three main methods to assess the value of a property. Those methods are the Comparative Method, the Income Method and also the Cost Method.

The first method is based on the assumption that there is a high level of knowledge about the local market and the values of similar properties (Figueiredo, 2004). It is most used when there are a high number of public negotiations for similar properties making it easier to compare between each other.

The Income Method is the most used to assess the value of profitable properties or properties to be rented for a certain amount of money because it is based on the revenues arising from a property's exploration (Figueiredo, 2004).

Finally, the Cost Method assumes that the property needs to be repaired or was already repaired. It estimates the cost to reproduce or to substitute the property considering its current state of obsolescence (Figueiredo, 2004).

#### 4. Reference Table

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The Literature Review's process is fundamental to analyze in detail all the existing information about the subject and related topics. This process has the final purpose to come up with relevant information and ideas to be implemented on the following stages of the project such as the strategy definition. After the process there is a high level of knowledge about the characteristics and tendencies of the industry and this provides crucial help for the author to define the project's path and strategy.

Table 1 summarizes the main findings that resulted from Literature Review that will play a fundamental part in developing the Business Plan.

Those findings demonstrate that there is a growing concern about fire risk management practices and ZIF concept is being discussed as the one with the higher probability to achieve success. Despite this general approval of the concept there is still a lot of work to be done. The related bureaucracy is still very complex and it is necessary to define a strategy to reach positive results faster.

Insurance must be integrated in a project related with fire risk management practices. However, the only way to achieve it is by promoting cooperation between Lands' Owners so that the areas to be insured are large enough to be interesting for insurance companies and result in a fair deal for the owners.

After the Literature Review process it is clear that a project focused on the best fire risk management practice (developing ZIFs) with a strategy to achieve positive results in the short/medium-term and including an insurance plan has the necessary conditions to be successful and bring the necessary innovation to the sector.

This is aligned with the fact that it has a positive social impact (included in the Social Entrepreneurship category) and there is no need to have a high number of resources as the theory of fund management models is going to be implemented which may result in a highly scalable project.

Literature Review Topic:	Main findings:
3.1 Fire Risk Management	<ul style="list-style-type: none"> <li>- Debates about fire risk management are increasing;</li> <li>- Devastation has been increasing over the past years due to forest fires;</li> <li>- Fire risk management has a high impact at the societal level;</li> </ul>
3.2 Fire & Insurance	<ul style="list-style-type: none"> <li>- Insurance is crucial for fire risk management practices;</li> <li>- Current financial assistance provided by the Governments after fires may result in financial catastrophes;</li> <li>- Foresters' risks should be privatized;</li> <li>- Foresters have low WTP;</li> <li>- Foresters are risk averse. There is low demand for forest insurance;</li> <li>- The insurance plans should be considered for territories with large area.</li> </ul>
3.3 Main Causes of fires	<ul style="list-style-type: none"> <li>- 90% of the fires in the Mediterranean region start because of human activity;</li> <li>- Natural causes represent a weaker cause;</li> <li>- Indirect causes are related with climatic factors and fuel characteristics.</li> </ul>
3.4 Main impacts of fires	<ul style="list-style-type: none"> <li>- Fires have a high impact in forests but also at societal level;</li> <li>- Fires may have impact until a few decades afterwards;</li> <li>- Fire impacts should be carefully assessed in order to develop an efficient and effective fire risk management strategy.</li> </ul>
3.5 Fund Management Model	<ul style="list-style-type: none"> <li>- Fund management industry is very scalable;</li> <li>- There is no need to add more resources in order to manage more assets;</li> <li>- Business Model should be developed in order to focus on 3 P's: People, Process and Philosophy.</li> </ul>
3.6 Socially Responsible Investment Funds	<ul style="list-style-type: none"> <li>- The concept has experienced a great growth in the past decade;</li> <li>- There is no unanimity when the question is if SRI funds outperform (or underperform) the traditional funds.</li> </ul>
3.7 Forest Intervention Areas	<ul style="list-style-type: none"> <li>- There is a need to promote cooperation between Lands' Owners;</li> <li>- ZIF concept is gaining notoriety due to the benefits that result from its implementation;</li> <li>- Related bureaucracy is complex;</li> <li>- Lack of knowledge about the concept in the population;</li> <li>- It takes time to observe the positive results from its implementation;</li> <li>- It is considered to be the best fire risk management practice and should be improved in order to be commonly implemented.</li> </ul>
3.8 Social Entrepreneurship	<ul style="list-style-type: none"> <li>- Social Entrepreneurship projects are a trend due to the positive image and impacts on society and there are many financial incentives to promote its development.</li> </ul>
3.9 Main methodologies for project evaluation	<ul style="list-style-type: none"> <li>- If a project has a positive NPV the decision should be to invest;</li> <li>- There are 3 main methods to assess the value of a property: Comparative method; Cost method; Income method;</li> <li>- When a property generates profits or is going to be rented for a certain amount of money, the Income method should be used.</li> </ul>

**Table 1-** Literature Review's main findings.

**Source:** Author.

## 5. Market Analysis

### 5.1 ZIF in Portugal

Since the release of the law that gave birth to the concept of ZIF and its implementation that it was stated that ICNF would be the entity responsible for controlling the constitution of ZIFs and analyze its development.

**Table 2** -ZIFs' area distribution in Portugal.

Region	Number of ZIFs	ZIF Area (ha)
North	40	157.558
Centre	92	424.567
Lisbon	3	25.975
Alentejo	34	401.461
Algarve	20	74.154
<b>Total</b>	<b>189</b>	<b>1.083.715</b>

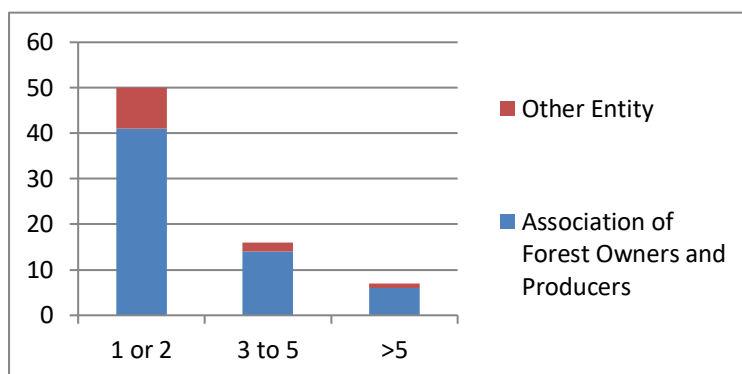
**Date of data collection:** 9th of August of 2017. **Source:** Author, adapted from ICNF (2018)

According to most recent information collected from ICNF and shown in Table 2, there are currently 189 ZIF in Portugal which represent over 1.080.000ha of land. The list of the 189 ZIFs and the respective Management Entities can be found on Annex 1.

As it is stated in Decree-Law 67/2017, the Management Entity (ME) of a ZIF might be an Association of Forest Owners and Producers (non-profit organizations) or other Entity if approved by the Forest Owners and Producers and if their activity is related with forestry and management of forest land. The management entity of a ZIF might also be the Municipality in partnership with an Association of Forest Owners and Producers or other Entity. The concept of Management Entity and its scope of activity are ruled by Decree-Law 66/2017.

From the current 189 ZIF in Portugal, there is a total of 73 Management Entities from which 61 of them are Associations of Forest Owners and Producers while only 12 are other Private Entities (see Annex 2).

Based on the data gathered from ICNF, it was possible to draw Graph 1 in which we can observe there is a lack of a clear market leader and the majority of these Entities only manage one or two ZIF.



**Graph 1**–ZIFs’ distribution per Management Entity. X-axis represents the number of ZIFs managed by Management Entity and Y-axis represents the total number of Entities. **Source:** Author based on data collected from ICNF (2018).

From the 61 Associations, the majority is only concerned with territories from specific regions of the country, i.e., many of them only develop their work in one Municipality, District or region and that can be observed by analyzing their names.

The management model of an Association is much different from the management model of other Entities. First of all, these Associations are non-profit organizations so they must invest the profit they obtain. An Association has a bigger dependency on funds and the main financing plan is through the mandatory fund that any management entity must constitute until the end of the first year (as it is stated on the 18<sup>th</sup> article of the Decree-Law 67/2017) where the contributions from the owners play a major role and mainly through community funds.

In order to accept being part of a ZIF, the owners want to invest little amount of money (or no money at all) and still being paid from “lending” their land. This is easier to achieve if the management entity is not an Association. This is a relevant factor when it comes to justify the lack of success from ZIF implementation because most of the management entities are Associations.

As the attention for this debate is rising, the number of opinions and suggestions is also rising. One of the main issues that are being discussed is the fact that the majority of the management entities implemented a type of partial management for their ZIF, i.e., they still have a big dependency on the land’s owners. They need to approve every action planned by the management entity and they still have responsibilities in managing their own land.



The idea of a total management structure for the management entities is being discussed as the best way to achieve better results for ZIF management. This idea is based on the assumption that the management entities should have total control about the management strategies to be implemented on the ZIF lands whereas the owners should “lend” their properties and let them be managed by the management entity without losing their tenure rights and always having the right to receive a percentage of the annual rents that will be paid by Entities/Individuals from the land’s exploration. In the traditional model that is being used in the market, the lands’ owners only receive a percentage of the profits that result from land exploration (if and when they are generated).

Other factor that is considered to be a critical one to achieve success is to incorporate an insurance plan in the management model as it was also suggested in the Literature by Calkin *et al.* (2016) and Sauter *et al.* (2016). According to the meeting with APS, Insurance in Forestry and Agriculture is very complex and it is not common because usually owners possess small fractions of land and it is not profitable for an insurance company to develop a plan for small fractions of land. Also, the amount of money that they are willing to pay to the owners in case of fires is not enough to create interest for the owners. The only case where it is not so uncommon to have land covered by insurance is when the land is owned by Companies but it depends a lot on the composition of the land and its purpose. Usually, in these cases, the size of the land is enough to create interest in owners and insurance companies. One last factor that influences negatively the market of Insurance Companies in Forestry and Agriculture is the fact that a huge proportion of the Portuguese forest is owned by public entities and in these cases there are no insurance options due to particular characteristics of protection of public goods. To understand the complexity of Insurance in Forestry and Agriculture, especially in fractions of land where the predominant specie is eucalyptus, according to the meeting with CELPA, even The Navigator Company – one of the two biggest firms in Portugal that use eucalyptus to produce paper -tried to incorporate an insurance plan a few years ago and they were not able to develop a plan that could benefit both the company and the insurance firm. Based on the meetings with the stakeholders of this market - mainly the ones with CELPA and APS – it is possible to conclude that ZIF concept is considered to be the best way to overcome this obstacle. There is a belief that a good ZIF management model might be able to introduce an insurance plan in the industry of Forestry and Agriculture.

The ZIF subject was also discussed in a National Meeting in 2013. 22 management entities attended the National Meeting, being part of the total 93 participants. The ICNF was also present in the event. The idea was to discuss about the ZIF concept, the difficulties in implementation, the dynamics of the Portuguese territory and future steps.

As a result of the debate it was clear the idea that ZIF is considered to be the perfect strategy to be implemented in the Portuguese territory taking into account the structure of the territory (minifundio), the type of owners, the lack of profitable activities about the exploration of the land, and the constant risk of fire. In terms of difficulties, it was stated that the main ones are the lack of funding and the problem of managing expectations because it is hard to deliver results in the short/medium-term when the ZIF strategy is implemented.

Since this National Meeting, a few improvements were observed regarding ZIF's law. The most visible one is the change in the minimum size of land legal to create a ZIF (it is now 500ha being owned by at least 25 owners and including at least 50 rustic buildings as it is stated in Decree-Law 67/2017, 5<sup>th</sup> article, 4a)).

Despite the ZIF concept being born in 2003, the real concern with the subject is only now visible and the efforts to improve its implementation and its legal support became a trending topic after the catastrophes of 2017. Some improvements are expected to be implemented as the debate is gaining notoriety based on its urgency.

This is a changing sector, especially in Portugal. It is clear that something must be done in order to provide sustainability for the Portuguese forest. The trends must be studied and all the factors considered in order to improve forest management and exploration which are crucial to decrease the number of fires and especially its intensity and impacts.

## **5.2 PESTLE Analysis**

As this project intends to have a short-term impact in terms of implementation in Portugal - and after an introduction to the Portuguese ZIF market – it is essential to analyze the national context in order to understand the factors that will help the project succeed and also the factors in the Portuguese context that could be a barrier to its implementation.

This being said, this study will proceed with a PESTLE analysis where all the factors around the business will be studied, i.e., Political, Economical, Social, Technological, Legal and Environmental context.

To ease the analysis, the author opted to discuss the Political and Legal context in a single Chapter.

### **5.2.1 Political and Legal Context**

Nowadays, as a result of the catastrophes of 2017, there is a very important and relevant political debate about forest and land protection and also about the concept of ZIF itself as it is considered to be the right path to achieve a correct land management and decrease the risk of fires. It is a trending topic and it is also a topic that has impact on the political vote. This means that Government must pay attention and dedicate time to study the matter and take actions. Based on the same principle, every political party has the goal to do something about it. This subject is one of major interest for society, population and its well-being.

However, as the political cycles for the Government and the City Halls take four years, some of the measures have a short-term impact when sometimes the situations ask for actions with impact in the medium- or long-term.

There is also some ambiguity arising from the political debate about who has the duty to clean forest land. This is being a major debate in Portugal as the Government is now paying close attention to the land and is taking actions to engage everyone in this mission. After tracking every piece of land, the Government will proceed with fines to the owners of land that was not cleaned.

As a result of this debate, there is also the intention to come up with measures regarding the Forestry Register as it is being hard to identify the owners of each piece of land.

In terms of legal factors, in order to promote a professional and sustainable management of the land which would result in an increase of the productivity and profitability resultant from the exploration of forest assets, the Portuguese Government developed the Decree-Law 66-2017 (already improved by Law 111/2017) which rules the concept of Forest Management Entities and its scope of activity. This measure was also intended to solve the problem of a land structure of minifundio such as the Portuguese one.

One of the strategies that emerged to solve this problem was the development of ZIFs. The ZIF concept is ruled by Decree-Law 67/2017 and this is being subject to changes since it was first released in 2005. In twelve years, the law has changed five times with the last one being on June of 2017. The fact that the minimum size of land needed to create a ZIF has changed from 1000ha (Decree-Law 127/2005) to 500ha

(Decree-Law 67/2017) is considered to be the measure with the biggest positive impact. It was also important and positive the decrease in the number of owners and producers needed to implement a ZIF (from 50 in 2005 to 25 in 2017) and also in the number of rural properties (from 100 in 2005 to 50 in 2017). However, the Law is still considered to be very complex and brings difficulties to the creation of ZIF. After the catastrophes of 2017 and as a result of the political debate about ZIF it is expected that new changes in the Law might be implemented.

The difficulty in obtaining funds for the development of activities regarding ZIF management is considered as one of the major problems. Regarding this problem, two of the main ways to finance ZIF activity are the Portugal2020, which is a Partnership Agreement between Portugal and the European Commission, and the Permanent Forest Fund (FFP) which is ruled by Ordinance number 10-A/2018.

In 2018 there was a reinforcement of the Law (Decree-Law 10/2018) regarding the National Forest Defence System, especially about measures to clean the forest and the aggravation of fines to be applied to the owners of land that must be cleaned. The monitoring of the results of this Law was also reinforced.

There were also some changes in the Law regarding actions of afforestation and reforestation (Law 77/2017) and one of the major goals was to stop the expansion of the eucalyptus in Portugal as it is considered to be a very important factor to explain the high number of forest fires in Portugal. However, this is one of the main cultivations for small Portuguese farmers and the measure lacks popularity among this huge proportion of land owners and among firms whose activity is related with the cultivation of eucalyptus like the companies belonging to the paper industry which represent an activity with significant impact in Portuguese economy.

Another legal factor that has relevant influence is one of the results of the political debate after the huge fires of 2017 in Portugal, the Council of Ministers Resolution 157 that represent a legislative package of measures to protect the Portuguese forest and to proceed with a Forest Reform.

The Government also proceeded to improve the Law of the Rural Rental with the Decree-Law 294/2009. According to this new Law, there are no maximum limits for the rents' value and they will be based on an agreement between both parties. It was also established that these contracts will have a minimum duration of seven years and a maximum of seventy years (only for Forest Rental). However, if the contract is for a Campaign Rental (renting land to explore seasonal crops) its duration must be six years

maximum.

### **5.2.2 Economical Context**

Forestry and Agriculture are two activities with a very significant economical impact in Portugal.

In 2015 the Portuguese Gross Value Added (GVA) was 156.838,9 million Euros and the portion represented by Agriculture, Forestry and Fishery was 2.4% as a result of 3.686,6 million Euros – see Annex 3. This demonstrates the positive impact of these activities in the Portuguese economy. Also, in 2015, the total value of Portuguese exports was 62.426,7 million Euros from which 1.225,8 million Euros (2%) were related to products from Agriculture, Forestry and Fishery– see Annex 4.

The sector related to agriculture and forestry is also considered to be the major livelihood for the rural population that represents around 34% of the Portuguese population expressed in Annex 5.

The major threat to the sector is forest fires. This threat is responsible for huge losses in the economy. According to ICNF’s final report of 2015, from 2005 to 2014 the average losses are estimated to be 173 million Euros as it can be assessed by analyzing Annex 6. Obviously, the value of the loss depends on the total size of burnt area and it also depends on the crops. Annex 7 shows the economic value of each crop.

The economic impact is easily observed from a simple example. After the catastrophic fires of October in Portugal, the Government announced it was estimated that almost 350 firms were affected by those fires and the economic sector faced losses of 360 million Euros (Lusa, 2017c).

Portugal is facing a period of economic prosperity and firms are investing in the economy. Agriculture and Forestry are some of the sectors where industries are investing and this climate of optimism must be used in favour of the sector and the economy.

### **5.2.3 Social Context**

Due to the fact that Forest and Agriculture face fires every year, this is a very sensitive thematic for society.

Based on information available in Annex 5, in 2014, Portugal had a rural population of 33.8% with Agriculture and Forestry being the major activities of this population. Also, the proportion of rural territory is very significant, 81.1% of total territory – see Annex 5. The average age of an agricultural producer is 64 years old and

52% of the total agricultural producers are, at least, 65 years old.

There is a migration pattern in Portugal with the rural population moving to urban or even intermediate areas leaving the forest and agricultural land to abandon – see Annex8.

As it can be observed, Agriculture and Forestry have a huge impact on society and consequently so does fires as they are the major factor with negative impact on the sector.

In 2017, Portugal faced many wildfires (as it is common every year) but two of them were particularly catastrophic. Those two huge fires of 2017 resulted in more than 100 human deaths (Lusa, 2017b). It had an immense impact on society. And this impact is visible every year, despite the fact that 2017 was particularly catastrophic.

However, there is also a positive trend in the Portuguese society related to the social context. The profile of the Portuguese farmer is slowly changing. Traditionally, the Portuguese farmer was an elder person, with no education and only lived in rural areas. Nowadays, it is being less unusual to see a young farmer, with education, bringing new knowledge to the sector and with experience living in urban or intermediate areas. According to the Planning, Policy and General Administration Office (2016), in 2013, 5.5% of the Portuguese farmers had higher education.

Despite this positive trend, a huge proportion of land is inherited by generations with lack of interest in Agriculture and Forestry and this leads to an increase in the total area of abandoned land.

#### **5.2.4 Technological Context**

There is no doubt that the 21<sup>st</sup> century is a fantastic era to be alive. We are still experiencing the 4<sup>th</sup> Industrial Revolution and every year represents a tremendous technological progress.

This evolution is easily observable in every industry, every sector of the economy, and Agriculture and Forestry are no exceptions. They may not have been the first sectors to enjoy this evolution and they may be even to reach the peak of the evolution. One of the best examples is the invention of robots to monitor the agricultural land and the forest to detect fires and consequently mitigate the risk (Rocha, 2017).

Also, this evolution helped to improve Decision Support Systems (DSS) that are mechanisms based on a list of factors and algorithms to help fire fighting.

There is also a discussion to find ways to use technological innovation in order to pursue a better Forestry Register and Property Cadastre with results expected to come

up soon.

There has been an increase in the amount of investment dedicated to improve Agriculture and Forestry and this has led to a more efficient use of resources and an increase in productivity.

The investment has also been used to increase the quality of irrigation, tillage, prevent pests and fertilisation techniques (AIECEP, 2017).

It is certain that the next years will be very important to contribute for forest protection and new technological advances will be experienced and applied in this sector.

### **5.2.5 Environmental Context**

There is the belief that it is safe to say that Agriculture and Forest are the sectors where the Environmental Context has the biggest impact. We can even mix up the concepts.

When we think about environment, we think about green areas. In Portugal, forest and agricultural land (and relatives) represent 91% of the total land (Forest =35%; Agricultural land = 24%; Bush and Pastures = 32%) – see Annex 9.

Total Utilized Agricultural Land (UAL) represents 3.6 million hectares (from a total of 4.6 million) – see Annex 10 - and in 2016 there were 257.736 farms in Portugal (Annex 11). According to data from Policy, Planning and General Administration Office (2016), Forest represents 3.26 million hectares in Portugal.

When it comes to discuss the environment, and as result of recurrent fires, the discussion focuses on how to protect forest and agricultural land.

One of the results is the recent efforts to promote a clean forest and agricultural land as measure to prevent fires as it is known that in Portugal one of the major concerns about the environment is fire prevention.

The weather in Portugal is very favourable for fires as every summer the country registers very high temperatures, sometimes with windy days, that provide the perfect conditions to destroy abandoned pieces of land full with fuel to burn.

As the weather is not a very good help, actions are needed in order to mitigate the risk.

### **5.2.6 Consolidation Grid**

As it is observable in Annex 12, most of the factors are positive and this means they influence positively this industry. The major concerns must come from the Political

– Legal context because despite having very positive factors, some problems may arise due to negative factors.

The Economical, Social, Technological and Environmental context influence positively the industry. However, in the Environmental context there is one particular factor – the Portuguese weather – that can have a very negative impact on the industry.

PESTLE Analysis validates positively the study and assesses a positive viability for the strategic business plan.

### **5.3 Five Porter's Forces**

In 1979, Michael E. Porter wrote a Paper about the development of a model to be used in order to measure the attractiveness of a certain industry through a nominal scale of 1 to 5 while analysing five specific forces that affect an industry (Porter, 1979). This model is a tool to understand the industry and its competition level. According to the model, the higher the number, the more attractive the industry is.

In the next sectors, the author proceeds with an analysis of each force and its evaluation finishing with a consolidation grid. In Annex 13 a table can be found with detailed evaluation of each force under analysis.

#### **5.3.1 Threat of Entry**

**High.** This force represents how easy it is to enter the industry and its attractiveness. This means that if an industry is profitable and has few barriers to enter, the competition will certainly intensify.

In this particular case, there are factors that influence positively this force, as it is the case of low economies of scale, low brand recognition, low probability of retaliation and easy access to funds as well as the technological evolution. However, there are some barriers to enter the industry that equilibrate the power of this force. There is a need for a significant amount of initial capital and it is a complex market to operate in being highly regulated by the Government and with a relevant need for specialized knowledge. The fact that time is needed to obtain return on investments is also a factor that influences the force negatively.

Globally, it can be considered that this force has a power of 3.2, which is highly relevant and represents a significant impact.

#### **5.3.2 Threat of Substitutes**

**Medium.** When we think about this force, the first thing that comes to our mind is the availability of substitutes. In this specific market, the only way to substitute the



service is if the firms and other private entities buy fractions of land (which is unlikely since there are few people/entities willing to sell fractions of land with a considerable size), otherwise there are no substitutes possible because they need land to do their work.

There is no differentiation in the service so there is a high margin to innovate and the industry is facing a period of considerable growth, which influences positively this force.

This market is very specific and has particular characteristics that make it difficult to change from a service provider to other and thus, influences negatively this force.

The overall strength of this force has the value of 2.8 but this value must be carefully analyzed as the risk is not as high as the number might suggest because there is a lack of ways to find substitutes thanks to the characteristics of the service. The power of this force is based on the differentiation a service can achieve and there is a high margin to innovate on that factor.

### **5.3.3 Bargaining Power of Customers**

**Medium.** This force is highly influenced by the number of customers in the industry and the number of substitutes available. As it was already mentioned in the previous section, the number of substitutes available is very low. In terms of number of customers in the industry, this number is very high. These two forces have a significantly negative impact on the force as well as the fact of this service being highly important for the customers.

However, each customer has a huge impact on the firm's activity and in this particular market, the influence of this factor is highly positive on this force.

The value of this force is 2.7 which represents a medium impact but it has to be carefully analyzed as a firm is highly dependable on the customers.

### **5.3.4 Bargaining Power of Suppliers**

**Not Applicable.** The entity that serves as a base for this Business Plan has no Suppliers in its activity.

### **5.3.5 Competitive Rivalry among Existing Firms**

**High.** This force has a major importance to analyze how competitive an industry is and how profitable it can be. If an industry is very competitive, firms must be aggressive to obtain market share and this result in low profits.

In this specific market, the number of competitors is high (and they are similar between each other) and so is the growth of the industry, which results in high competition.

However, the market is very large and this helps to reduce the force of competition. Also, in this market, the particular fact that the major proportion of entities only operate in specific and narrow areas, has a very positive contribution to reduce the level of competitive rivalry among existing entities.

Other factor that is very important to understand the level of competition in the industry is the existence of exit barriers.

In this case, the Exit Barriers are very significant, with high contractual obligations and a considerable degree of specialization. This increases the competitive rivalry in the market.

Overall, this force's value is 3.4 which mean it has a high impact. However, it must be referred that particular factors of this specific market can help mitigate the impact of this force. As it was already mentioned, the scope of the majority of firms is very specific and it is geographically narrow, which reduces the level of competition.

### **5.3.6 Main Conclusions**

Table 3 summarizes the analysis that was explained in the previous sections. From its results it can be assumed that the industry's forces have a significant impact with an average result of 3.02 which means the market is not very attractive with an average result of 1.98.

However, as it was mentioned in previous sections, this market has specific characteristics which have a significant impact on the entities' activity and provide the market with increased attractiveness. The impact of these specific characteristics is underestimated in this analysis so it needs to be considered as a complement of this analysis.

Such specific factors are the lack of possible substitutes, the scope of the majority of firms' activity and its geographical range of activity.

However, there is also a factor that also needs to be analyzed as a complement and it is the fact that an entity in this market is highly dependable on customers and partners (especially land owners, insurance company and Municipalities).

As a final conclusion, the author considers this market to be very attractive and this is the right time to enter in it as there is a very relevant public debate about it and everyone is expecting significant evolutions of the market that will have a tremendous

positive impact.

Also, the lack of a strong competitor, the technological evolution, the existence of public funds dedicated for this purpose and the size of the market are factors that encourage this strategic business plan aligned with the fact that the purpose is to create a strategy to bring innovation to the sector and differentiate from every competitor.

**Table 3-** Porter’s 5 Forces Grid

Forces	Power	Attractiveness
Threat of Entry	3.2	1.8
Threat of Substitutes	2.8	2.2
Bargaining Power of Customers	2.7	2.3
Bargaining Power of Suppliers	N.A	N.A
Competitive Rivalry among Existing Entities	3.4	1.6
<b>Average</b>	<b>3.02</b>	<b>1.98</b>

**Source:** Author.

#### **5.4 Customer Profiles**

In order to identify customer’s profile it is mandatory to analyze according to 6 criteria that must be answered: Who, What, Why, When, Where and How.

##### **5.4.1 Who will it serve?**

For the purpose of this Business Plan it was identified that Customers are private or public entities (or individuals) that want to explore a piece of land.

##### **5.4.2 What customer needs?**

This service will be very valuable as they will have the opportunity to explore pieces of land where they can expand their businesses, cultivate species that are crucial for their businesses, or even as an experiment or hobby. They will have this opportunity in exchange for a rent.

##### **5.4.3 Why satisfy their needs?**

With this project, it is stated that the goal is to achieve a win-win-win-win relationship between the entity, the lands’ owners, the explorer of the land and the Municipality. By implementing this service, the risk of fire is mitigated which represents a benefit mainly for the lands’ owners and the Municipality. The lands’ owners also benefit from the exploration of their lands and the explorer entity benefits by expanding their business or activity.

The purpose is to help Portugal reduce the number of fires per year, promote a sustainable management of the territory, and the intention is to achieve it by helping every stakeholder to benefit from it.

#### **5.4.4 When?**

The project is planned to be developed during the whole year with continuous improvement. Its development is only influenced by the growing season of each culture and the action needed to be implemented in each season. The objective is to have the ability to start the process of implementing a ZIF in any day of the year.

#### **5.4.5 Where?**

In a first phase, the project is going to be implemented on the ZIF of Eiras Village in the Municipality of Mação, Portugal. After the implementation process and the analysis of its outcomes, the project will advance to the second phase where it is going to be implemented on other ZIF in the same Municipality. If it succeeds, then the project will begin the third phase where the goal is to be implemented in other regions of Portugal.

#### **5.4.6 How will it be implemented?**

As the first two phases will be based on implementations in the Municipality of Mação, the partnership with the Municipality is already agreed. The area of Eiras Villages's ZIF is already defined and the lands' owners are already integrated in the project.

The process will then proceed to the next stage in which the entities that want to explore pieces of land will have the opportunity to apply for the ZIF area and the partnership agreement will be defined. After the definition of those partnerships, the insurance plans will be agreed with insurance companies.

Then, the management of the ZIF must follow the rules defined by Law with the situation being continuously analyzed and there will be time for improvements.

#### **5.5 Partners**

It is important to highlight a key strategic partner of the Business that will be critical for the success of the firm – lands' owners. In fact, the activity of the firm will be dependent on them. Lands' owners may be people that still live near their properties, heirs, companies with pieces of land, public owners.

This service will give them the opportunity to obtain profits from the exploration of their lands without needing to put their efforts into it. Whether they are an heir that does not wish to explore the land or an elder farmer without motivation or capabilities to work on his land, this service will grant them profits thanks to the exploration of their land from a third party while maintaining their tenure rights.

## **5.6 Competitors**

As it was observed in previous sections, this market has very particular characteristics that make it a very specific one. And this is also applied to the characterization of Competitors.

ZIF is a Portuguese concept that was developed to be applied in the Portuguese territory so the competition is totally at a national level.

The existing 189 ZIFs in Portugal are currently being managed by 73 Management Entities (Annex 1 and 2) which represent the total competition in the market.

This competition can also be divided in two categories - as it was also mentioned in section 5.1 - based on the final objective of entities: Associations of Forest Owners and Producers that develop ZIFs in a specific region which are non-profit organizations so profit is not their main objective and Other Private Entities that develop ZIFs and need to obtain profit because that is their livelihood despite the benefits they are introducing in society.

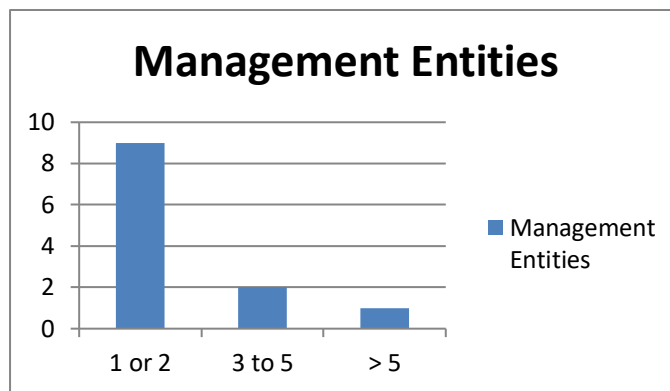
Based on these assumptions, the first group will be considered as Indirect Competition and the second group as Direct Competition despite the differences that this Thesis project intends to introduce in the market as a differentiation strategy.

### **5.6.1 Direct Competition**

From the current 73 Management Entities, 12 are considered to be Direct Competitors (Annex 14) as they are the group of entities that manage ZIFs and they are not Associations of Forest Owners and Producers (non-profit organizations).

To proceed with a consistent analysis of Direct Competition, it was necessary to analyze the 12 Direct Competitors and understand their position in the market and how can they affect this thesis' project.

Based on Graph 2 it is easily observed that there is a lack of a strong competitor with a significant market share.



**Graph 2** -Number of ZIFs managed per Direct Competitor (Management Entity).

X-axis represents the number of ZIFs managed by ME and Y-axis represents the total number of Entities.  
**Source:** Author based on data collected from ICNF (2018).

Nine of the twelve Direct Competitors only manage one or two ZIFs and only one of them is developing new ZIFs – that is the case of “*Gestiverde*” that is currently managing one ZIF but is developing two new ZIFs.

There is missing data from some of these remaining eight competitors but from the analysis it was possible to see that one of the ZIFs is on hold as the Management Entity was having problems due to forest fires in 2009. Others operate ZIFs as a complement to their main activities and there are also entities that have no intention to proceed with the activity of managing ZIFs.

Based on this careful analysis it was possible to conclude that there are four main direct competitors: “*Silviconsultores*”, “*Gestiverde*”, “*Silviguarda*”, and “*Suberpinus*”.

Before proceeding with a simple characterization – explained in Annex 16 - of the four main direct competitors it is important to notice that it was not possible to get information about prices and fees paid by lands’ owners for three of the competitors. However, based on the author’s analysis it is important to understand that these fees and prices are not so relevant and they tend to be proportional to the size of owners’ lands because the main sources of revenue are public funds and the results from lands’ exploration. It is also important to highlight that this project intends to bring an innovative model to the market and the innovation is also based on the fact that lands’ owners will not pay any fee or rent to be part of the ZIF and they will receive a percentage of the annual rents (paid by the entities that will explore the land) every year while in the traditional model, as it was already explained, they only receive a percentage of the profits that result from land exploration (if and when they are

generated).

### 5.6.2 Competitors Matrix

The Competitors Matrix will compare and evaluate the Direct Competitors that were considered to be the main competitors on the following criteria. To better understand the analysis it was considered a scale from 1 to 5 to represent the level of importance of each parameter for each competitor.

**Table 4-**Scale adopted to evaluate main competitors

1	2	3	4	5
Very weak	Weak	Medium	Strong	Very strong

**Source:** Author.

**Table 5 -** Competitors Matrix.

Parameter	Weighting (1 to 5)	Thesis' Project	Gestiverde	Silviguarda	Suberpinus	Silviconsultores
Coverage of National territory	3	5	2	1	3	5
Portfolio of Services	1	1	4	4	4	4
Experience in managing ZIF	5	1	2	3	4	5
Reputation	4	1	3	3	3	3
Differentiation of ZIF management model	4	5	2	2	2	2
Focus on ZIF management	3	5	3	2	3	4
<b>Competitiveness Index</b>		<b>3</b>	<b>2.45</b>	<b>2.4</b>	<b>3.1</b>	<b>3.8</b>

**Source:** Author.

**Note:** It is adopted a weighting scale to obtain more realistic results as each parameter has different relevance when it comes to assess the power of competitors. Weighting value of 1 means “no relevance” and weighting value of 5 means the parameter is critical.

### 5.6.3 Main Conclusions

As a result of the competitors’ analysis with the help of Table 5, one can easily assess the main strengths of each competitor as well as the main challenges that each of them faces. It is interesting to observe that all the entities have a very similar Competitiveness Index which, once again, demonstrates the lack of a clear market leader, despite the fact that “*Silviconsultores*” has a clear advantage over the other competitors as it will be demonstrated in this chapter.

“*Gestiverde*” is focusing its work on ZIF management (they are developing two

new ZIFs) and this is the main strength. However, its lack of national coverage (only operates in Ribatejo) is a challenge that reduces the level of competition.

When it comes to “*Silviguarda*”, the experience in managing ZIFs is the main strength but currently it only manages one ZIF and the focus of the work is changing what makes “*Silviguarda*” the less competitive entity from the ones under analysis.

“*Suberpinus*” has a little higher competitiveness index than the two first competitors and this is mainly derived from their experience in ZIF management and also the fact that they cover a higher proportion of the Portuguese territory instead of focusing on a region. However, the absence of a differentiated management model and the lack of focus on ZIF management reduce the competitiveness index.

The strongest competitor with a competitiveness index of 3.8 is “*Silviconsultores*”. With a strong coverage of the Portuguese territory – currently managing ZIFs in the North, Centre and South Portugal – which results in a vast experience in ZIF management allied to a strong focus on ZIF management, the level of its strengths is higher than the ones of its competitors. The challenges are related with the absence of a differentiated management model (this is a challenge for every competitor in the market) and the fact that there is still a lack of recognition of these brands across the population.

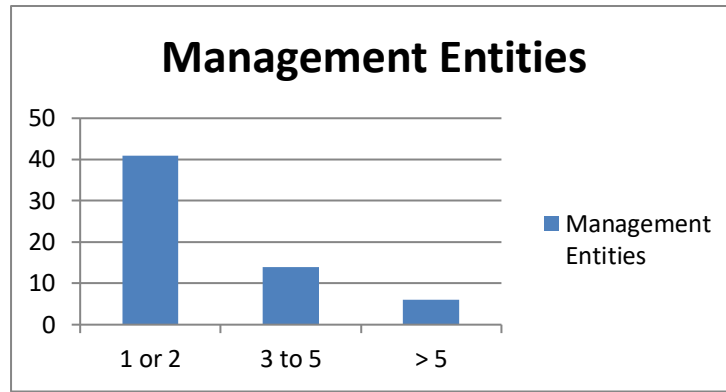
In conclusion, a strong strategy for this project must integrate a differentiated ZIF management model, must be applied to the whole country and the entity should focus on ZIF management. It is also important to define a good promotion strategy to create brand awareness and achieve recognition across the Portuguese population.

#### **5.6.4 Indirect Competitors/Substitutes**

The Indirect Competitors of this project are the Associations of Forest Owners and Producers that are non-profit organizations and manage ZIFs in a specific region, usually where the members of the Association have fractions of land.

Currently, there are 61 Associations managing ZIFs (see Annex 15). The majority of these Associations only manage one or two ZIFs as we can see in Graph 3.





**Graph 3** - Number of ZIFs managed per Association.

X-axis represents the number of ZIFs managed by ME and Y-axis represents the total number of Entities.

**Source:** Author based on data collected from ICNF (2018).

It is important to notice that usually these Associations are constituted by some of the owners of the pieces of land belonging to the ZIF and this results sometimes in conflicts of interests and diverging opinions within the members of the Association which result in disappointing outcomes.

Other disadvantage of this management model is the fact that as they are non-profit organizations, sometimes their final purpose is not related with maximizing their results which contributes to a lack of interest from some of the lands' owners (especially the heirs and other owners who do not live near their lands) that wish to obtain a good amount of profits from the exploration of their lands. Also, the fact that usually these organizations do not have a professional management model is also a disadvantage that can result in the failure of ZIFs.

The fact that the lands' owners may explore their land by themselves can be considered as the only substitute of this project. However, sometimes they have no interest in doing so because they may be heirs that do not know anything about land management, elderly people with no strengths to work on their land or even people that do not live near their land. By having an Entity managing their land, they will cut their expenses, maximize profit and they will have no worries about the land's exploration.

## 6. Internal Analysis

### 6.1 Value Chain

In 1985, Michael E. Porter introduced a model to analyze and describe the set of activities that compose the process of every business since the beginning of its activity until the delivery of a valuable product or service for customers (Porter, 1985). This is known as Value Chain and it is based on internal activities of a firm. The activities are divided in two categories: Primary (or Core) Activities and Secondary (or Support) Activities. The Primary Activities are the ones that are critical for the business and Secondary Activities are the ones that sustain Primary Activities and help improving them.

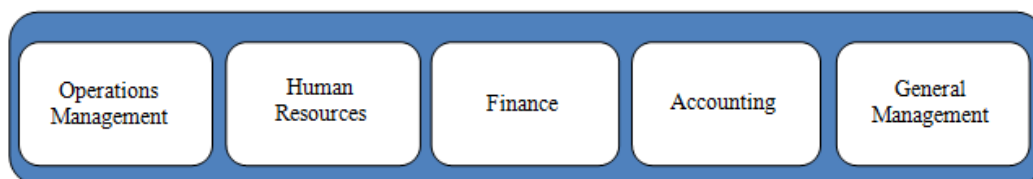
Usually, this model is used in Product Industries. However, in this case, as this is a Service Industry, it will be presented an adapted model from the one that was introduced by Porter (1985) in order to proceed with a better analysis for this Business Plan.

Figures 2 and 3 represent the Firm's Value Chain.



**Figure 2** - Firm's Primary Activities.

Source: Author.



**Figure 3** – Firm's Secondary Activities.

Source: Author.

**Market Research:** This activity is critical for the firm's success. The first activity that must be implemented since the beginning of the activity and during every stage of the process is Market Research. In this market, it is essential to understand the external factors that affect the business and they are always changing their conditions. Environment – the most important factor – is a mutable factor and a firm that operates

in this market must be analysing it during every stage of the process.

It is also important to study the species that are used in Agriculture and Forestry and understand which ones should be explored in each ZIF depending on the time of the year, weather, profitability and type of land. These are also mutable factors and it requires a continuous research.

Finally, and obviously, it is also important to keep a continuous study about market conditions. A business can only succeed if it meets what customers want, if it makes the right decisions and if it is capable of change according to the changes in the market. That is why the Market Research stage is so critical.

**Sales & Marketing:** In order for a business to be active, it needs Customers. In this case, this business needs to develop ZIFs and needs to attract entities to explore the ZIF's land. This is when Sales & Marketing activities play their critical role. It is important to promote the company to Municipalities, lands' owners and the population in general. It is the only way to be able to develop ZIFs.

After the development of a ZIF, it is important to promote the company to entities that may be interested in exploring pieces of land that belong to the ZIF. It is the only way to obtain Revenues and, consequently, Profit.

During the activity, it is also important to promote the results of the company to attract more customers and to be known by the population.

**Customer Service:** Last, but not least, Customer Service is another critical activity within the Business Process that help the company to succeed.

The market needs a differentiated service and this is also related with a differentiated customer relationship. Having a set of Customers and critical partners results in needing different approaches to address each one. Partners – lands' owners – need to feel that their opinion and knowledge is valued by the company, and it is. This is demonstrated by having a close relationship with the owners (the ones that seek this attention), frequently asking for feedback and make some decisions inspired by their opinions and knowledge. It is also important to give a frequent feedback about the company's work. Customers – entities exploring the ZIF's land – require a different attention. In this case it is also important to ask for feedback and show that the company is following the development of the work.

Once again, it is important to notice that this is an adapted model of Value Chain analysis designed for the purpose of this Business Plan. All the stages are connected and this is not a sequential process. Every activity is being implemented at every stage of the

company's activity and this also applies to the secondary activities that are also connected to the primary activities and they assure better results for the company.

As it was stated in previous sections – and is also reinforced based on this analysis – the company must follow a differentiation strategy. This is the way to achieve the best results possible and all these activities play an important role to create a differentiated service that will be delivered to every Customer.

## 6.2 SWOT Analysis

In order to conduct a relevant and consistent internal analysis considering also external factors, one of the main frameworks that are used for this purpose is the SWOT analysis. This tool is very much appreciated because it synthesizes the analysis as it present the strengths of the business as well as its weaknesses in order to help the entity improve the business. It also assesses the external factors that influence the business by presenting the opportunities provided by external forces that may improve the business and also the threats that the business might face as a result of external factors.

**Table 6-** SWOT Analysis

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Partnership with the reference Municipality in terms of fire risk management practices and proactivity;</li> <li>2. Focus on ZIF management;</li> <li>3. Total management practices instead of partial management practices;</li> <li>4. Partnerships already established with key players of the market.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of experience in ZIF management;</li> <li>2. Need to create brand awareness as it is a new entity;</li> <li>3. Business highly dependable on weather conditions and time needed to obtain profits.</li> </ol>
Threats	Opportunities
<ol style="list-style-type: none"> <li>1. Threat of competitors reproducing the differentiated management model;</li> <li>2. Lack of positive results in the first ZIF might result in the end of the business for the entity;</li> <li>3. Huge fire risk in Portugal;</li> <li>4. New management concept to be introduced in the market so there is high risk.</li> </ol>	<ol style="list-style-type: none"> <li>1. No differentiated management models in the market;</li> <li>2. Public debates about ZIF concept and its implementation;</li> <li>3. Measures to promote a reduction in the number of fires and their impact are being promoted and there are incentives to encourage them;</li> <li>4. Changes in Portuguese demography and the profile-type of land owners.</li> </ol>

*Source: Author*

## 7. Competitive Analysis

### 7.1 SWOT Matrix

After conducting a SWOT analysis, one is fully aware of business strengths and weaknesses as well as the external factors that can be seen as opportunities or threats to the business. That is why the next step should be developing a SWOT matrix that will help deciding the strategies that an organization should follow in order to achieve success. This tool analyzes the correlations between the four factors of a SWOT analysis (Strengths, Weaknesses, Threats and Opportunities) and that is why it is also called as Cross SWOT analysis.

**Table 7-** SWOT Matrix analysis, based on previous SWOT analysis

	Strengths	Weaknesses
Opportunities	<p><b>S-O Strategies</b></p> <p><b>S1 vs. O2 vs. O3:</b> The Municipality of Mação is already promoting fire risk management practices. By establishing a partnership with the Municipality, the entity receives important help and obtain all the conditions necessary to proceed with its work;</p> <p><b>S2 vs. O2 vs. O3:</b> ZIF concept is related with fire risk management practices since its origins. By focusing on ZIF management, the entity is one step further when it comes to practices with the purpose of protecting the territory from fires and it can also benefit from the current public debates about the thematic;</p> <p><b>S3 vs. O1:</b> The entity aims to bring a new and differentiated management model to the market based on total management practices instead of the usual partial management practices that can be found on the market. The entity will also promote a partnership with an Insure company to strengthen the differentiation strategy as it is not present in the market.</p>	<p><b>W-O Strategies</b></p> <p><b>W2 vs. O2 vs. O3:</b> In order to mitigate the effects of having no brand awareness, the entity must maximize the benefits that might come as a result of this thematic being a trend and having high impact on society;</p> <p><b>W3 vs. O1:</b> The new differentiated management model must take into account that the time needed to generate profits must be reduced in comparison with the actual market average.</p>
Threats	<p><b>S-T Strategies</b></p> <p><b>S3 vs. S4. Vs. T1:</b> It is relatively easy for a management entity to restructure its management model and reproduce the one presented in this Business Plan. However, by establishing partnerships with key players in the market and insurance companies aligned with total management practices, the entity mitigates the risk of this threat;</p> <p><b>S1 vs. T2:</b> By establishing a partnership with the key Municipality in terms of fire risk management practices, the entity is one step closer to achieve success, especially in the first ZIF that is going to be developed in the Municipality;</p> <p><b>S1 vs. T3:</b> The entity will benefit from the Municipality's</p>	<p><b>W-T Strategies</b></p> <p><b>T1 vs. T4 vs. W2:</b> There is a high risk to lose the business if competitors reproduce the management model. This new and differentiated management model must be very well protected;</p> <p><b>T3 vs. W3:</b> There is a high risk of occurring fires in the ZIF. This can result in the end of firm's activity. Fire risk management practices must be implemented and are critical for the firm's success;</p> <p><b>T4 vs. W3:</b> One of the factors that are crucial for the firm's success is the time needed to obtain profits. The management model must lead to a</p>

	<p>knowledge about fire risk management practices and thus mitigate the fire risk;  <b>S1 vs. S4 vs. T4:</b> In order to mitigate the risk that comes from introducing a new management model in the market, the entity established partnership with key players in the industry that already have a very good reputation (Municipality and Agriculture/Forestry firms).</p>	<p>reduction in this time so that the firm has the opportunity to be one step above the competition.                  If this reduction is not achieved, it might result in the end of firm's activity.</p>
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**Source:** Author.

**Note:** S1 represents the first point of Strengths; O1 represents the first point of Opportunities; and so on.

## 8. Objectives of the Plan

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During the time that a business is active, a firm must define the set of objectives that it proposes to achieve. This is especially true when the firm is beginning its activity.

By defining the objectives, the firm is able to define its strategy and action plan that will help the positioning in the market and it is a path to achieve them. These objectives might be quantitative and qualitative. The objectives that *Fénix Portugal* proposes to achieve can be found below.

### Qualitative Objectives:

- Create ZIFs in every region of Portugal (North, Centre and South);
- Promote a sustainable use and management of the Portuguese territory;
- Give the deserved relevance that Agriculture and Forestry deserve as a key sector of the Portuguese economy;
- Promote and implement fire risk management practices in order to help reduce the number of fires in Portugal and their impact;
- Reduce the number of hectares of land that are abandoned;
- Promote a clean forest and land;
- Reduce the impact of migration flows from rural areas of Portugal to bigger cities;
- Promote job creation;
- Be the firm of reference when it comes to ZIF management;
- Provide a quality service for every customer;
- Help improve the business of firms that operate in the sector of Agriculture and Forestry;
- Help land owners to maximize their profits from land exploration;
- Create partnerships with Municipalities from every region of Portugal and with firms of reference in Agriculture and Forestry;
- Promote brand awareness in the whole territory.

### Quantitative Objectives:

- Create at least 1 ZIF per 3 years;
- Obtain a payback period of less than 3 years;
- Achieve an EBITDA margin of at least 50%;
- Reach a Net Profit of at least 100,000€ per year.

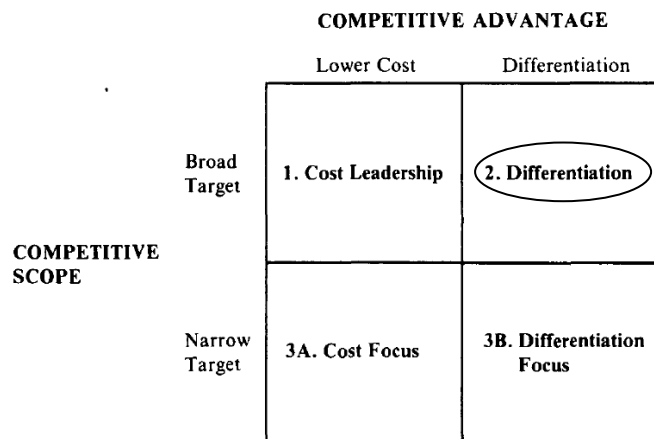
## 9. Development Strategy

### 9.1 Strategy Definition

Porter (1985) defined that Positioning is determinant for a firm’s success. Positioning strategy will result in profitability above or below the industry average. Porter (1985) also considered that a good positioning strategy that results in profitability above the industry average is only possible in the long run if the firm is able to achieve a sustainable competitive advantage. According to the author there are two basic types of competitive advantage that can be achieved by firms - low cost (cost advantage) or differentiation – and they result from the interaction between the firm and the five forces (discussed on Chapter 5.3) but also from the ability of the firm to cope with those forces when compared with the other competitors’ ability.

Porter (1985) also adds other strategy – Focus strategy – that has to do with the competitive scope of the firm. It is considered that a firm follows a focus strategy when its competitive scope is narrow. This last strategy can be divided in two variants: cost focus and differentiation focus.

Cost advantage, differentiation, and focus strategy are called by Porter (1985) as the three generic strategies. Figure 4 illustrates the generic strategies.



**Figure 4-** Porter’s three generic strategies.

**Source:** Author, adapted from (Porter, 1985)

Each firm can only pursue one of these strategies in order to achieve success (Porter, 1985).

In this specific case, after analyzing its strengths and weaknesses, and also its



interaction with the five forces, *Fénix Portugal* follows a differentiation strategy by defining key attributes of the service that are perceived by customers as important and establishing a strategy to meet those needs in a way that cannot be found in the market, thus creating a service that is considered to be unique by customers. By reaching a unique quality, the firm is able to establish a premium price for the service. Nevertheless, the firm must also pay attention to its cost position despite not being the main strategic focus.

The competitive scope of the firm is broad, thus resulting in a Differentiation strategy as it is shown in Figure 4.

A differentiation strategy can be based on a number of factors such as the customer service, particular features of a product (design or materials' quality), marketing strategy, technology, and so on, or even based on a combination of some of these factors. In this particular case, *Fénix Portugal's* differentiation strategy is based on a unique customer service and unique characteristics of the service provided by the firm. These aspects will be discussed with greater detail on Chapter 10 but here follows a list of some of the competitive advantage drivers:

- Use of total management practices instead of partial management practices;
- Inclusion of an Insurance Plan in the market;
- Lands' owners do not need to take any actions during the activity of the firm;
- Lands' owners will be asked to provide regular feedback and the firm will require their approval for any action of the firm within their properties. These are measures concerning a unique customer service to be implemented by the firm;
- Use of the knowledge from Municipalities and lands' owners as they are the entities that truly know the territory's strengths, weaknesses, opportunities and threats;
- High qualification of the team;
- Total focus on ZIF management;
- One person dedicated to keep close communication with customers for each ZIF;
- Regular activity reports to be available for customers.

## 9.2 Vision, Mission and Core values

In order to define the strategic plan, a firm must declare what is its vision and mission, i.e., what is its purpose to exist and what are its ambitions. The firm must also define its core values and they must be understood by everyone in the organization because they are what will define the way that everyone should act and it will be their guide. In the next paragraphs follows the Mission, Vision and Core Values of *Fénix Portugal*.

**Vision:** To be the firm of reference in ZIF management and a key partner to Portuguese Municipalities.

**Mission:** Strive for a sustainable management of the Portuguese rural territory.

### **Core Values:**

- Customer commitment – Strive to achieve customer satisfaction through dedicated service to every customer;
- Sustainability – To have an attitude of responsibility in order to promote a sustainable environment and spread it to every customer and market player;
- Responsibility – To be committed and rigorous about the work;
- Integrity – Always doing the right thing and keeping the values of the company in mind;
- Performance and Productivity – Strive to achieve the best results for the firm while respecting the values of the firm;
- Collaboration – To see customers and market players as good partners for the firm;
- Build social value – Create a positive impact in society through the work of the firm;
- Ambition – Always strive to be better and achieve the best results;
- Resiliency – To never give up and always strive to be successful.

### 9.3 Key Success Factors

A Key Success Factor (KSF) is any factor that is critical for a firm to achieve its mission and be successful. In this case, *Fénix Portugal* must pay close attention to the following KSF in order to achieve its mission.

**Table 8 - Key Success Factors (KSF).**

Key Success Factor (KSF)	Description
Customer Service	Keep a focus on providing the service with a positive impact to customers and partners in order to achieve full customer satisfaction.
Strategic Partnerships	Create partnership with Municipalities, lands' owners, key players in the market and insurance companies.
Brand Image	Create brand awareness and define a perfect positioning strategy in the market to achieve a better brand image than the ones of competitors.
Profit	Keep in mind that being profitable means returns to customers. Based on that, strive to achieve the higher profit possible.
Total Management Practices	There are many competitors in the market with Partial Management Practices and it is very uncommon to observe positive outcomes. Provide the service with Total Management Practices in order to be successful.
Fire Risk Management Practices	Many customers want to be part of a ZIF because it is considered the best practice to mitigate the risk of fire. If their land is affected by a fire while being part of the ZIF it is highly possible that they may not see any other purpose to be part of the ZIF. <i>Fénix Portugal</i> must pay close attention to fire risk management practices in order to keep the customers.

**Source:** Author.

## 10. Implementation Policies

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### 10.1 Brand

Brand is the first factor that distinguishes a company from its competitors. It is the way of a firm to transmit its values to the market. It is the first step for a firm to create an image and an idea in customers' minds that will be used to associate quality and specific characteristics that are different from the ones of competitors. Brand is very important for the competitiveness of a firm and it is the basis for a firm's communication strategy.

Due to the already explained importance of brand, its definition is an extremely important process for a firm and must be preceded by a careful analysis.

As a result of this critical process, the management entity that is being developed in this Business Plan will be called *Fénix Portugal*.

First of all, the name is in Portuguese because this project is supposed to be implemented in Portugal and it is associated with a Portuguese concept: ZIF. This is the reason of the company's second name – Portugal.

The idea is to be faithful to the roots of this project. As it was already explained, this project is based on the idea of doing something useful for the country in order to mitigate the risk of fires and also the impact of the fires as they are inevitable. Based on that, the idea is to create a strong connection between the company and the idea of fire risk mitigation. That is why the first name of the company is *Fénix* (Phoenix in Portuguese) – the mythological bird that is considered to have a long life by regenerating (or being born again) and arising from his own ashes.

Despite having the goal to reduce the number of fires and their impacts, this work also has the intention to be perceived as a sign of hope that after the (inevitable) fires and from the ashes it is possible to have a new – and better – life.

### 10.2 Segmentation, Targeting and Positioning

This is an important stage for a Business. Segmentation, Targeting and Positioning (STP) is a very well known marketing model and it is highly relevant in order to define the perfect marketing strategy to address the market.

First, it is essential to segment the market in different groups based on certain characteristics and each group has common needs. Then, it is important to assess the attractiveness of each segment and target the most attractive one(s), i.e., the one(s) with

the highest potential to be profitable for the firm. Last but not least, the firm must define a strategy to position in customers' minds as the most attractive firm.

### **10.2.1 Segmentation**

In Chapter 5.4 it was conducted an analysis to identify the Customer Profile of *Fénix Portugal's* activity. Based on that analysis it is now possible to segment the market and define the target groups.

Annex 17 lists the main variables that were used to segment the market for *Fénix Portugal*. The activity of *Fénix Portugal* has very particular characteristics and the variables listed in Annex 17 are the ones with major relevance.

### **10.2.2 Targeting**

Based on the segments identified in Annex 17 and its analysis, it is possible to target the most attractive segments that are the ones most likely to be profitable for *Fénix Portugal*.

The firm must target For-Profit-Firms (mainly medium or large sized) that operate in Agriculture and Forestry industry that want to expand their businesses by renting pieces of land with at least 20ha (preferably bigger than 100ha). The firm must privilege cultivations with high profitability and entities that want contracts with a durability of at least 14 years. The distance from a firm to ZIF's area and the geographical range of the entity's activity are two factors that are not relevant enough to be critical for targeting strategy.

After targeting specific customers' segments, it is important to note that these are not the only targets of *Fénix Portugal*. However, they are the most important ones as they are the ones with the highest probability to be profitable for the firm.

### **10.2.3 Positioning**

In simple words, Positioning is a strategy that will define how customers perceive the firm's service by associating specific attributes/characteristics to the service. It is the Position that the firm's service occupies in customers' mind when compared to competitors.

A good Positioning strategy gives the firm an advantage over competitors. In order to define the specific characteristics/attributes that a firm will use to define the Positioning strategy, i.e., the ones that can provide a competitive advantage, the firm must answer three questions:

1. What are the Positioning strategies of competitors?

2. What are the Customers' needs?
3. What are the benefits that the firm will introduce in the market?

By analysing the first two questions it is possible to find gaps in the market. There is a lack of alternatives with: a differentiated service; a total management model that focus on obtaining a relevant customer relationship; a management model that focus on ZIF management; a management model that pursues the maximization of profit while keeping the strong values that were the roots of this project. And Customers need this alternative.

As to what concerns the last question, this project has strong connection with the social context. The first idea was to develop a project that had the goal to reduce the number of fires in Portugal and its impact. The goal is still present in this project and it is also strongly connected with sustainability. The project strives for a clean country with a sustainable forest and agricultural land management.

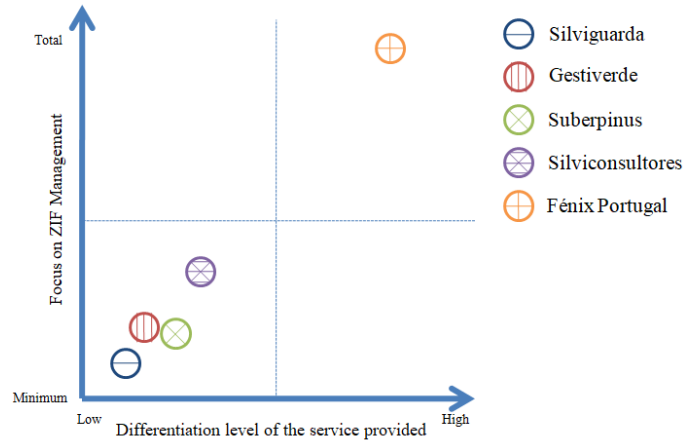
These benefits are similar to the ones from competitors but there is a word that makes the difference: FOCUS. This project is the first in the sector that is totally focused on ZIF management and focused on these goals and benefits. This is a driver to achieve advantage in the market. It is also the first firm in the sector that gives the opportunity for customers to rent a fraction of land and manage it according to their goals while respecting the terms of the contract.

To conclude the Positioning strategy, the final stage is to draw the Positioning Map to understand customers' perception of each main competitor (based on their Positioning strategies) as well as how *Fénix Portugal* positions itself in customers' minds. However, it is not possible to draw the map for this project because, as it was already explained, none of the competitors gives the opportunity that *Fénix Portugal* will provide to customers – renting a fraction of land and having total control over it.

As a conclusion, customers are expecting a new alternative that will provide them a differentiated service with a strong concern about customer relationship and providing a unique opportunity to expand their businesses and maximize profits.

It is also important to notice that the Positioning strategy is also critical for the key strategic partners of the business – Lands' Owners. One can do the same exercise that was used to understand the Positioning strategy for customers by answering the same three questions and it will be possible to understand that the same answers apply to these partners (lands' owners). However, when it comes to lands' owners it is possible to draw a Positioning Map. In order to draw this Map (Figure 5), it was needed to assess

the two major characteristics that influence the choice of lands’ owners when deciding for a firm’s service in this market. For that purpose, as it was analyzed on chapter 5, the two main characteristics selected were “Differentiation level of the service provided” and “Focus on ZIF management”.



**Figure 5-** Positioning Map.

**Source:** Author.

Lands’ owners are expecting an alternative that is totally focused on ZIF management and that will allow them to maximize their profits from land exploration without needing efforts to achieve it.

*Fénix Portugal* positions itself as the new alternative that will meet the expectations from both partners and customers and be completely different from the competitors.

### 10.3 Marketing-mix

The concept of Marketing Mix as we know it nowadays was developed by McCarthy & Perreault Jr. (2002) and it is considered to be the set of controllable variables that a company can use in order to satisfy its target customers and achieve the desired and successful marketing strategy. Usually, and as a result of their work, we refer the Marketing Mix strategy as the four Ps strategy because it is considered that the variables of the Marketing Mix can be aggregated in four basic variables that start with the letter P: the Product is offered at a Price with a Promotion strategy to reach the target customers and it is available at a specific/strategic Place (McCarthy & Perreault, 2002).

However, *Fénix Portugal* will provide a Service instead of offering a Product. In this case, it is usual to talk about Marketing Mix as the seven Ps strategy (Booms &

Bitner, 1981). The first four Ps are the same but three new Ps were added: People, Process and Physical evidence. It is assumed that the service is the Product and these three new Ps are critical in order for a firm to achieve an optimal service delivery.

In the next sections, *Fénix Portugal*'s marketing mix will be detailed as a function of each of the seven Ps.

It is important to note that *Fénix Portugal* has key strategic partners – Lands' Owners. These partners are critical for the firm's success and that is why the marketing strategy should also address a plan to reach them. For that purpose, each "P" will be detailed for both customers and key strategic partners.

### **10.3.1 Product**

The Product that serves as basis for this Business Plan is a Service that consists in an innovative and differentiated management model to develop and manage ZIFs in Portuguese territory, i. e., *Fénix Portugal* will be a Real Estate Rural Assets Management Entity.

As the Law states (Decree-Law 67/2017), a ZIF can be constituted when there is a territory composed by at least 500ha of rural land. These hectares of land may belong to one or more Individuals or other Entities.

For these Key Strategic Partners, this Service consists in *Fénix Portugal* assuming the rights to use their land without the owners losing their tenure rights and always having the right to make the final decision. This will be supported by total management practices, instead of the most commonly used in the market that are partial management practices. While the rights to explore the land belong to *Fénix Portugal*, the owners have the right to receive a percentage of the profits that result from ZIF's land exploration. As it was already explained, this is a key differentiating factor because *Fénix Portugal* is the first firm in the market to deliver annual profits to lands' owners while the current general practice in the market is to deliver profits when there are revenues resulting from land's exploration.

As to what concerns *Fénix Portugal*'s customers (Entities/Individuals that will explore the ZIF's land), the Service consists in having the possibility to rent X hectares of ZIF's land to develop or expand their Business. It can also be useful for a firm that wants to initiate a new activity in a different sector (Agriculture and Forestry, in this case). If they already operate in the sector of Agriculture and Forestry, this new activity can be a complementary one. In exchange, Entities will pay an annual rent that will depend on the culture, the size of the land they will rent and the type of land. As



sustainability is a key concern of this project, each ZIF will only have five or six species. This number can be higher if the size of the ZIF is relevant enough to apply the measure.

One can think of *Fénix Portugal*'s service as a mall. The mall has X number of stores – the pieces of land that belong to the owners – and each brand – the entities that want to explore ZIF's land – rents the space during an agreed period in order to develop their business.

One other differentiation factor – and critical to achieve success – is the implementation of an insurance plan for the whole ZIF as a result of the partnership (to be defined) with an insurance company.

Also, after the constitution of each ZIF and if the territory has the necessary characteristics, *Fénix Portugal* will meet with its Customers to study the possibility of integrating other activities in ZIFs' land such as hunting reserve or beekeeping.

Regular feedback (from and to customers/partners) and a close follow up of the activity are key factors to achieve success because they are the drivers for a successful customer relationship which is one of the *Fénix Portugal*'s main goals.

### **10.3.2 Price**

It is critical to start the explanation of the Pricing strategy with a brief overview of this market. The value of an hectare of rural land in Portugal is extremely dependent on a number of factors such as the type of land, the localization of the land, the cultures being explored, the type of surrounding properties, and so on. That is why one can find completely different values for an hectare of land in the northern region of Portugal and an hectare of land in the region of Alentejo even if the lands have the same cultures.

Based on these factors, in this Chapter and also in the following Chapters of this work, the author decided to use values based on transactions that can be found in the Literature and also values that are based on the author's interviews with Lands Owners.

Price is a critical variable for the marketing mix strategy of the firm. It is the only variable that produces revenues (Kotler & Armstrong, 2012) and it is the variable that can have the biggest negative impact on a firm's strategy because a failed pricing strategy will generate few (or none) revenues.

The price of a service should be between the level where no revenues will be generated (where price equals the costs of providing the service) and the level where there is no demand for that high price (Kotler & Armstrong, 2012). It is important to note that *Fénix Portugal* follows a differentiation strategy so the prices will be higher

than the market average to support the superior service quality that the firm promises to provide.

The Pricing strategy for customers is complex as a result of the complexity of the business. These Entities/Individuals will pay an annual rent to *Fénix Portugal* for the exploration of a fraction of ZIF's land. In order to define the price, *Fénix Portugal* must take into account the size of the land to be rented, the type of land, the type of culture and the localization of the land. The factor that takes into account all of these variables is the market value of the land. Before assessing the Market Value of the Land, the Firm must take into account if the land is already being explored (with existing cultures) or if there are no cultures in the land (or even with the purpose to substitute cultures). For that reason, in order to assess the value of the annual rent, *Fénix Portugal* defined that it will be a dynamic percentage (between 4% and 9%) of the market value of the respective fraction. The value of this dynamic rate will depend on the size of the land and the contract's durability. For land already being explored, its market value will be assessed using the Income Method as it is the method of reference when it comes to rural properties to be rented (Figueiredo, 2004)–  $V_t = (V_m \times 12)/t$  – where  $V_t$  stands for Value of the Land,  $V_m$  is the monthly revenue generated from production and  $t$  stands for capitalization rate. In order to define a capitalization rate to be used throughout this work, it will be assumed that this rate will be between 3% and 5% depending on the risk of the culture (Cerat, 2009; Cerat, 2012). Higher capitalization rates mean cultures with higher risk which result in lower market value.

The Income Method is useful for this Business because it takes into account the value of the Land as a result of its Net Income (revenues resulting from land's exploration minus the expenses incurred for maintenance purposes).

To better understand the Pricing strategy, next follows an example of the assessment of a rent:

Assuming an Entity is interested in renting 100ha of ZIF's land already being explored with eucalyptus, *Fénix Portugal* must calculate the value of the annual rent to be paid by the Entity.

Assuming the average value of a eucalyptus' hectare of 4,000€/ha and considering a long term contract and medium-high quality of the land, we can assume a rent of 5% of the land's value. Based on these assumptions, the value of the annual rent to be paid by the Entity to *Fénix Portugal* will be 200€/ha which result in a rent of 20,000€/year.

After understanding the example it is important to note that 40% of the annual rent is retained by *Fénix Portugal* and the other 60% will be distributed for the Land Owners. Each Land Owner will receive a percentage corresponding to the proportion of Land owned by each of them.

For land with no cultures being explored or with the purpose to substitute cultures, *Fénix Portugal* will charge an annual rent whose value will depend if it is forest land or grassland.

### **10.3.3 Place**

As it was mentioned during this project, a key success factor is related with the establishment of partnerships with Municipalities. These Entities are going to be the drivers for the development of a ZIF because they have close contact with Lands' Owners and they know the territory the best. These are the reasons to explain the particular Place strategy that *Fénix Portugal* will assume.

The firm will have its headquarters in Santarém due to geographical reasons. It is a central region and it is believed (supported by Table 2) that the majority of ZIFs to be implemented will be in central regions just like the ZIF that serves as Pilot-Project for this Business Plan. This office will be the support for administrative work.

*Fénix Portugal* will also have online presence. There will be an investment on a website. This was one of the identified gaps in the market. The majority of competitors have outdated websites and there are even some competitors with no online presence. There is a clear gap and *Fénix Portugal* can use this gap for its benefit by reaching younger generations with high qualifications, which is a growing segment. The online presence will also be observable in social networks.

The firm will also be present in Agriculture and Forestry fairs and Eiras Village's ZIF will serve as a service demonstration – these two aspects will be detailed in the next section 10.3.4.

The majority of the firm's business will be coming from direct contact with customers/partners and (mainly) indirect contact through Municipalities which are going to act as intermediates and will help the firm to initiate contact with potential key partners (lands' owners). That is the reason why the firm will create a Selling Team which is going to be further explained in the following section.

### **10.3.4 Promotion**

The Promotion strategy is critical for a firm. It will be the basis to achieve a

strong communication strategy that will give the opportunity for the firm to promote its service, attract potential customers/partners and even retain customers.

In order to achieve a successful Promotion strategy, the firm must have clear communication goals. Next follows a list of *Fénix Portugal*'s communication goals:

- Create a relevant brand image;
- Attract potential customers/partners;
- Retain future customers;
- Show ZIF's benefits;
- Promote the service's differentiation;
- Promote an excellent customer relationship;
- Promote close contact with customers/partners;
- Describe, in a clear way, the service;
- Promote a sustainable image;
- Obtain feedback about the service;
- Promote transparency;
- ZIF is the best tool to reduce the fire risk and its impact;
- ZIF is the best land management tool to generate profits for Land Owners;
- ZIF is the best tool to promote the sustainability of the Portuguese territory.

After the definition of the communication goals, the firm is able to set its promotion mix, i.e., the set of activities to be implemented by the firm regarding five communication tools: advertising, public relation, personal selling, sales promotion, and direct-marketing (Kotler & Armstrong, 2012).

### **Advertising**

- Investment on an innovative website with the power to attract customers/partners. As it was already explained, this is a gap in the market and *Fénix Portugal* will put efforts to benefit from it. The website will detail information about *Fénix Portugal*, its work, future activities, customers' feedback, partners' feedback, contacts and an option to schedule meetings. This will also be supported by being present in social networks, mainly on Facebook because it is the Social Network with the perfect characteristics to promote a service like the one provided by *Fénix Portugal*. It gives the opportunity to promote the brand, show the work developed by the firm, promote new activities and be in constant contact with (potential) customers/partners;

- Advertise on regional newspapers because these are the ones that have a strong focus on the specific issues of each region and it is a tool with strong impact on target customers/partners.

### **Public Relation**

- Promote awareness-raising activities to demonstrate the potential benefits of developing ZIFs and attract potential customers/partners. These activities will be promoted throughout the Portuguese territory and promoted in partnership with Municipalities;
- Partnership with non-profit organizations with strong “green” image that promote a sustainable environment;
- Annual public reports to demonstrate the work developed in each ZIF during the year and to demonstrate the ZIF’s positive impacts on society.

### **Sales Promotion**

*Fénix Portugal* has no intention to promote any activities of this category in the short-term.

### **Personal Selling**

- Creation of a Selling Team (CEO plus an Engineer) to meet with Municipalities. The firm’s Promotion strategy will be focused on the contact with Municipalities for the reasons explained in the previous section – 10.3.3. It is believed that these Entities will be the main drivers of the firm’s success and a clear example is the fact that the Project-Pilot was born based on a partnership with the Municipality of Mação;
- The Selling Team has also the purpose to meet with Entities that may be interested in renting pieces of land belonging to a ZIF (potential customers);
- The ZIF that serves as Pilot-Project for this Business Plan – Eiras Village’s ZIF – will also have the purpose to be visited by potential customers/partners, Municipalities or other interested entities/individuals. The intention is to attract potential customers/partners and generate business by demonstrating the positive results obtained at that stage;
- Creation of merchandising with *Fénix Portugal*’s logo, such as pens, notebooks and key chains;
- Creation of business cards and brochures with *Fénix Portugal*’s logo. The business cards will be personalized to each member of the staff and the

brochures will have different purposes, for instance, there will be brochures with information about the company, the work that is being developed by the firm at that time, information about the market, trends in the industry, curiosities and so on.

### **Direct Marketing**

- Be present in Agriculture and Forestry fairs in order to attract potential customers/partners by promoting the firm to them. This will also give the opportunity to be in close contact with customers/partners.

Annex 18 details the costs that the firm will incur to develop these activities.

### **Marketing Budget**

In order to define the budget to be allocated to each Promotion tool, the firm must analyze the Market and its needs.

As it was explained, the focus of the Promotion strategy must be the meetings with Municipalities in order to establish partnerships to generate Business. In an advanced stage, this focus should include meetings with potential customers.

For that purpose, the major proportion of the Marketing Budget will be allocated to Personal Selling activities because those are the main ones that generate business but also to Advertising activities because those will be drivers for Personal Selling activities.

This decision is also supported by the fact that this Business is very specific and the differentiation strategy followed by *Fénix Portugal* must be detailed in order to be understood. The most efficient way is through direct contact with potential customers in face-to-face meetings.

The promotion of awareness-raising activities and the presence in Agriculture and Forestry fairs are also important Promotion activities and *Fénix Portugal* must invest on them.

Marketing Budget must be higher in the first three years in order to generate business. In the first year the investment level must be enough to start the activity. The Marketing Budget for the following two years will also be relevant to keep generating business and promote brand awareness. At the fourth year, the Marketing Budget will face a reduction resulting from a lower level of advertising investment.

Tables 9 and 10 define the percentage of the Budget that will be allocated to each promotion tool and the concrete value of money that will be spent on each of them.

**Table 9** - Percentage of Marketing Budget to be allocated to each promotion tool

	2019	2020	2021	2022	2023
Advertising	46%	30%	30%	22%	25%
Public Relation	12%	15%	15%	22%	25%
Sales Promotion	0%	0%	0%	0%	0%
Personal Selling	37%	48%	48%	46%	40%
Direct Marketing	5%	7%	7%	10%	10%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Author.

**Table 10**- Marketing Budget to be allocated to each promotion tool. In Euros.

	2019	2020	2021	2022	2023
Marketing Budget	17,015	13,527	13,728	9,696	8,762
Advertising	7,744	4,117	4,178	2,121	2,152
Public Relation	2,028	2,058	2,089	2,121	2,152
Sales Promotion	0	0	0	0	0
Personal Selling	6,307	6,402	6,497	4,475	3,465
Direct Marketing	936	950	964	979	993

Source: Author.

### 10.3.5 People

People are a key element of a service. They help to define the quality of the service and they are the link that connects the firm to its (potential) customers. This is why it is so important to have motivated people in the firm and happy with their work.

In order to accomplish people satisfaction and motivation, *Fénix Portugal* intends to integrate its collaborators in every stage of the business. Every collaborator will have the opportunity to be present in fairs, meetings with (potential) customers, awareness-raising activities, and so on. It is also very important to promote team building events in order to achieve good relationships between the team.

Every collaborator will have a close contact with (potential) customers/partners and a critical role in the firm's success.

As this Business will be dependent on customer satisfaction, it is important to train the staff to achieve a successful communication with customers/partners which is going to be a driver for *Fénix Portugal* to provide a service of excellence to every customer/partner.

### 10.3.6 Process

The Processes in this Business are complex. As it was already explained, the complexity to develop a ZIF is one of the main constraints for this Business and there is nothing that *Fénix Portugal* can do because the process is complex in legal terms.

For this project's purpose, the Processes will be explained in a simple way for better understanding.

The first step is to meet with Municipalities and ask for their support. After this stage, *Fénix Portugal* with the help from Municipalities meets with Lands' Owners in order to demonstrate ZIF's benefits and plan the constitution of the ZIF if agreed. Legal procedures must be taken into account as it is stated by ICNF and Decree-Law 67/2017. After the Business is legally ready to be active, *Fénix Portugal* will manage ZIF's land and provide a service of excellence to partners with constant feedback and annual reports.

When a ZIF is constituted, starts the Process for customers. The first step is to attract potential customers and this is processed through meetings, marketing and advertising. When there is interest from a potential customer, it is time to write the contract. For that purpose, it is needed to define values, time, cultures and so on. After legal procedures, the interested entity is ready to start exploring the ZIF's land. *Fénix Portugal* grants a customer service and support of excellence and feedback plays a critical role in this relationship.

#### **10.3.7 Physical Evidence**

The purpose of this "P" is to make an intangible service the most tangible possible. However, this specific Business is extremely intangible which difficult the task.

This tangible perception must be supported by merchandising of products with the logo of *Fénix Portugal* (such as pens, notebooks and key chains) and the delivery of brochures and business cards with the logo of *Fénix Portugal*'s brand to (potential) customers/partners as well as annual reports and feedback questionnaires to customers/partners. The firm's innovative website and the online presence in social networks will also support the Physical Evidence strategy.

#### **10.4 Innovation (R&D)**

In 2021, *Fénix Portugal* will create an Office dedicated to study the new tendencies in the market and also to study the technological context that may affect the Business.

As it was already mentioned in this work, the world is living a period of great technological evolution and it is expected that this evolution will also affect the Agriculture and Forestry sectors.



It is important to be studying the evolution in order to be able to use it for the firm's benefit. One example is the already mentioned case of the robots that can be used to monitor Forest and alert for fires in the earliest stage (Rocha, 2017) which increases the probability to control potential damages by mitigating the risk.

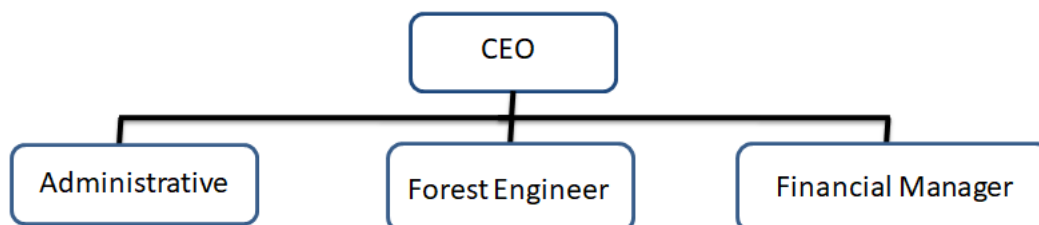
This Office will also be responsible for studying the environmental context to understand if it is possible to improve the ZIFs managed by the firm. One example is the introduction of mechanisms to create energy in ZIFs' land. The goal is to promote the sustainability of the Business and also to promote sustainable measures to protect the environment.

## 10.5 Organizational Structure and Staff

### 10.5.1 Organizational Structure

In the first year of activity - 2019 – *Fénix Portugal* will opt for a simple Organizational Structure due to the lack of revenues as the firm will be focused on generating business.

For that reason, in 2019, *Fénix Portugal's* organizational structure is as follows in Figure 6.



**Figure 6-** *Fénix Portugal's* Organizational Structure for 2019.

**Source:** Author.

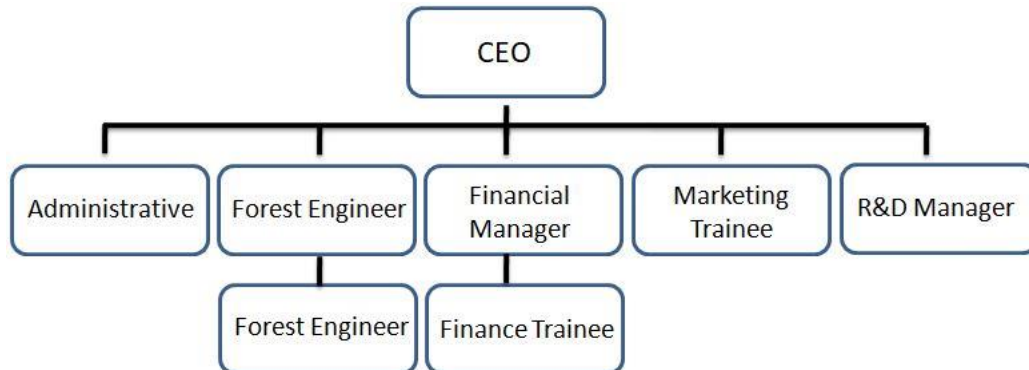
As it can be observed in Figure 6, the Organizational Structure of the firm is divided in two hierarchical levels. The first one – where the CEO is the only element – represents the strategic/tactical level. The CEO is the element that will define the strategy of the firm and he will be the one with power to implement strategic decisions. The second level represents the operational level and, in the first year, will be composed by an Administrative, a Forest Engineer to support the CEO with technical skills/knowledge related with the business and a Financial Manager to provide support for financial decisions. The CEO will also have Operational tasks as he will be the element that is going to develop the marketing strategy of *Fénix Portugal*.

The firm will also need the work of a lawyer and an accountant but these contracts will be part of the category “Provision of Services”.

In the following years, as a result of the expected growth of the business, *Fénix Portugal* will need to support this growth with more staff. It is important to take into account the fact that this is a business with high probability of growth but it is also a business whose activity is slow, i.e., it takes some time to develop a ZIF and make it operational. For that reason, *Fénix Portugal* only expects to increase the number of employees in the third year of activity – 2021. However, for the year of 2020, *Fénix Portugal* intends to hire a Trainee to develop the Marketing activities planned by the firm in its strategy.

In 2021, *Fénix Portugal* has the intention to hire a Marketing Manager to be focused in developing the Marketing strategy of the firm, expand the team of Forest Engineers, expand the Finance team with a new member to collaborate with the Financial Manager, and hire a R&D Manager to develop the work explained in chapter 10.5.

Figure 7 represents the desired organizational structure that *Fénix Portugal* intends to have implemented by the end of 2021.



**Figure 7-** *Fénix Portugal*'s desired Organizational Structure by the end of 2021.

**Source:** Author.

Annex 19 details the job description of each member of the Staff.

### 10.5.2 Remuneration Policy

In order to define the remuneration of the Staff, it is necessary to understand the current position of the firm, the firm’s strategy, goals, market conditions, competitors and so on.

The strategy of *Fénix Portugal* is to provide remunerations that will help to motivate and retain the staff in order to achieve the firm’s goals while implementing the desired strategy.

Based on these factors/variables, Table 11 lists the staff’s remunerations.

**Table 11-** Staff’s Gross Remuneration. In Euros

Staff Gross Remuneration						
(in Euros)	Monthly	2019	2020	2021	2022	2023
CEO	1,200	16,800	17,052	17,307	17,568	17,832
Administrative	600	8,400	8,526	8,654	8,784	8,916
Forest Engineer 1	1,100	15,400	15,638	15,865	16,104	16,346
Financial Manager	1,100	15,400	15,638	15,865	16,104	16,346
Marketing Trainee	700	-	9,954	10,096	10,248	10,402
R&D Manager	900	-	-	12,981	13,176	13,374
Forest Engineer 2	1,100	-	-	15,865	16,104	16,346
Finance Trainee	700	-	-	10,096	10,248	10,402
<b>Total</b>	<b>7,400</b>	<b>56,000</b>	<b>66,808</b>	<b>106,729</b>	<b>108,336</b>	<b>109,964</b>

*Source: Author.*

It is important to highlight that after 2021, the remunerations will be reviewed and they may be improved depending on the status of the business.

## 11. Implementation Requirements

Before starting to manage the first ZIF, *Fénix Portugal* must proceed with a number of activities in order to be able to start its business. Those activities are planned to start on the 1<sup>st</sup> of January of 2019 and they are listed in Table 12. It is important to note that the activities that are not scheduled in the Calendar were already implemented by *Fénix Portugal*.

The Gantt Methodology was used in order to ease the activities' analysis and come up with a clear calendar. This methodology also helps the Entity to determine a chronology and a structure to plan the work to be developed and provide all the necessary conditions for the project's implementation. The Gantt Chart can be found in Annex 20.

**Table 12-** Project's Activities and Duration.

	Activities	Estimated Duration (in weeks)	Start
1	Project's feasibility analysis	24	
2	Viability study	24	
3	Investment decision	4	
4	Project's approval by experienced entrepreneurs	1	
5	Firm's constitution	1	Week 1
6	Brand registration	1	Week 1
7	Selection of firm's headquarters	3	Week 1
8	Promotion of <i>Fénix Portugal's</i> brand (Marketing activities)	29	Week 2
9	Discussion of implementation with Mação Municipality	4	Week 3
10	Selection and Recruitment of Employees	6	Week 5
11	List of potential partners (Municipalities)	1	Week 7
12	First meetings with potential partners	8	Week 8
13	Meetings with lands' owners from Mação	1	Week 7
14	List of potential customers	1	Week 9
15	First meetings with potential customers	12	Week 10
16	Compliance of legal aspects to develop the first ZIF	8	Week 7
17	Negotiation with potential customers	8	Week 19
18	Contract signature with customers	3	Week 26
19	Implementation of ZIF in Mação	1	Week 29
20	Realization of adjustments to the business plan, if needed	24	Week 7

**Source:** Author

These activities will have a total duration of 29 weeks which will result in *Fénix Portugal* being completely ready to start its core business in July of 2019.

## 12. Economical and Financial Viability

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### 12.1 Project Assumptions

The economical and financial viability study of the project will be detailed in this Chapter 12. For that purpose, several assumptions were made to reach the numbers that will be the basis for this Chapter. Those assumptions will be detailed in this section.

The first semester of 2019 will be dedicated to prepare the business to be operational in the second semester of 2019 when the first ZIF will be implemented.

After that, *Fénix Portugal* will be completely ready to start its core business and it will be assumed that in the second year of activity (2020) the firm will implement a new ZIF. In 2022 and 2023, as a result of the expected success resulting from the implementation of the first two ZIFs in Mação Municipality, *Fénix Portugal* will assume the implementation of two ZIFs (one in 2022 and one in 2023). It will be assumed that each ZIF is constituted in January of the respective year. However, in 2019, Eiras Village's ZIF will be constituted in July.

It is also assumed that each ZIF will be explored with five or six (maybe more if the ZIF's size is relevant enough) profitable cultures that are present in the region and contribute for the sustainability of the territory. For example, in Eiras Village's ZIF, as it was mentioned by the City Hall, the intention is to explore the ZIF's land with Pine Tree, Eucalyptus, Arbutus, Blueberries, Raspberries and Horticultural species. The exploration plans will be prepared by the time of each ZIF's constitution and it will already be agreed with the exploring Entities/Individuals so that each ZIF is being explored in its whole territory.

From Table 2, it is expected that the remaining (after the two ZIFs in Mação) two ZIFs will be constituted in the Northern region (one ZIF) and Alentejo (one). It will be assumed that those ZIFs will have a territory structure similar to the area's average and it will also be assumed that all the contracts have long term duration (which allied with a high quality land results in a 5% rate for every contract).

Each ZIF will have 2% of land dedicated to be explored with horticultural species.

For the purpose of the viability analysis it will be assumed that 9% of each ZIF's territory will not generate profits (roads, water, social areas, protected species, and so on).

According to Table 2, the average size of a ZIF is 5,734ha. To ease the analysis, this is the size that is going to be considered as the size of each future ZIF. However, as there is already a partnership to implement two ZIFs in Mação and with the territory already defined, the first ZIF's size is 1,047ha and the second is 1,497ha. Also, the values (territory's structure, number of owners, number of properties, and so on) that will be used to assess the viability of the ZIFs' constitution in Mação were delivered to *Fénix Portugal* by the City Hall of Mação.

As to what concerns the remaining territory, *Fénix Portugal* will assume the territory as it is detailed in Annex 9: 35% of Forest land; 24% Agriculture; 9% unproductive; 22% of bushland; 10% of natural pastures. It is important to bear in mind that this is the structure for ZIFs to be implemented after the ones in Mação.

As the Business is very constant and similar throughout the years this viability analysis will be focused on the first five years of activity (from 2019 to 2023).

Annex 21 summarizes the assumptions that were not detailed in this Chapter and all the values that will be presented in this Chapter are adjusted to the expected inflation based on the Bank of Portugal predictions (Banco de Portugal, 2018).

## **12.2 Sales Forecast**

In order to develop a realistic sales forecast, *Fénix Portugal* must define several assumptions (already explained in Chapter 12.1) and understand its sources of revenue which are generated from provision of services. *Fénix Portugal* is going to focus its business in renting rural properties belonging to a ZIF so the main sources of revenue are the annual rents.

As it was already explained, if the business achieves the expected success and if the territories have the necessary conditions, *Fénix Portugal* may obtain revenues from extra activities to be integrated in the ZIFs' territory such as hunting reserves and beekeeping activities.

The revenues arising from the rents depend on several factors such as cultures being explored, the size of the land, the quality of the land, and so on. As it was explained in the Pricing strategy, lands' market values will be based on values found in the literature and also values that were mentioned in *Fénix Portugal*'s meetings with owners and people that know the business.

Based on data detailed in assumptions, Annex 22 summarizes the quantities that will be the basis to estimate the sales forecast and Annex 23 details the prices to be considered for a hectare of each culture. The calculation of the revenues arising from

each ZIF is presented in Annex 24.

These values allow *Fénix Portugal* to calculate a realistic sales forecast for the first five years of business. The sales forecast is detailed in Table 13.

**Table 13** - Sales Forecast.

	2019	2020	2021	2022	2023
Number of ZIFs being managed	0.5	2	2	3	4
<b>Revenues from ZIFs exploration</b>	<b>127 651 €</b>	<b>625 928 €</b>	<b>625 928 €</b>	<b>2 246 065 €</b>	<b>5 485 214 €</b>
<b>Revenues distributed to Lands' Owners (60%)</b>	<b>76 590 €</b>	<b>375 557 €</b>	<b>375 557 €</b>	<b>1 347 639 €</b>	<b>3 291 128 €</b>
<b>Total Revenues retained by Fénix Portugal (40%)</b>	<b>51 061 €</b>	<b>250 371 €</b>	<b>250 371 €</b>	<b>898 426 €</b>	<b>2 194 086 €</b>

Source: Author

### 12.3 Investment and Financing

*Fénix Portugal* will rent an Office in Santarém. The Office is empty, so there is a need to invest in office materials.

There is also a need to invest in order to register the firm and brand.

*Fénix Portugal's* capital expenditures (CAPEX) in the investment year (2019) will have a value of 6.127,81€. Then, *Fénix Portugal* will also need to invest in new office materials due to the expected expansion of its team in 2021. This investment will have the value of 1.253,52€. Also, due to depreciations (using the rates provided by the Regulatory Decree 25/2009) of office materials, there will be a need to reinvest 1.272,36€ in 2022.

Due to the characteristics of the Business, the investment level needed to initiate activity is relatively low. For that reason, there will be no need to finance the activity with bank loans so there will be no debt. The investment will be totally supported by the firm's initial capital of 80.000€ which funding source is the promoter.

As to what concerns Working Capital, the firm's needs are always higher than its resources, which results in a sustainable positive WC. For the second year, *Fénix Portugal* will implement a policy for Cash Reserve of 1% of Revenues, which is going to remain the same in the following three years. The firm will also implement a policy so that exploring entities/individuals pay the annual rents at the beginning of the year and payments to Lands' Owners occur at the end of each year.

Annex 25 represents *Fénix Portugal's* Investment Map and provides further details while Annex 32 details the Working Capital map.

### 12.4 Income Statement Analysis

*Fénix Portugal's* Income Statement Map is available to be analyzed in Annex

29.

From its analysis, it is possible to conclude that 2019's Net Income – the investment year – is going to be negative (-53.237,32€). This is due to the fact that there will only be revenues from half of the year (as the first ZIF is ready to be constituted in July) and the firm will have expenses since the beginning of the year (personnel expenses, marketing activities and supplies and external services).

In 2020, as the firm will be managing two ZIFs, the situation changes significantly. Revenues face a growth of almost five times the revenues of 2019 and expenses face a very low growth. This allows *Fénix Portugal* to reach an EBITDA margin of 55% in 2020.

The fact that *Fénix Portugal* has an operating structure with high impact from fixed costs aligned with a high growth rate of revenues and low volatility in expenses allows the firm to have a relevant growth in EBITDA throughout the years and this is reflected in EBITDA margin as it grows from 55% in 2020 to 93% in 2023.

In the end of 2020 *Fénix Portugal* already presents a positive Net Income of 105.945,59€ which represents 42% of revenues. The firm's Net Income has a high positive growth throughout the years and in 2023 its value will be 1.582.828,51€ which represents 72% of revenues.

### **12.5 Balance Sheet Analysis**

*Fénix Portugal's* Balance Sheet is available to be analyzed in Annex 30.

As it is observable, the firm's Assets face a high growth rate mainly due to Current Assets as a result of the high increase in Revenues throughout the years. This increase is reflected in Cash and Bank Deposits and Other Financial Assets. When it comes to Non-Current Assets, the growth pattern is very stable as the firm has few needs to invest in Intangible and Tangible Fixed Assets.

The high growth rate of Assets is also supported by a high growth rate of Equity as the Net Income increases throughout the years as it was mentioned in Income Statement Analysis. The value is also a result of the firm's retained earnings from previous periods and the mandatory Legal Reserve as it stated in Article 295 of Portuguese Companies Code.

*Fénix Portugal's* operating structure allows the firm to run its business without Non-Current Liabilities and the high value of Current Liabilities (due to taxes paid to the state) is a result of the firm's high earnings before taxes (EBT).

### **12.6 Financial Indicators**



The Economical and Financial Indicators of a firm allow understanding the current situation of the respective firm, its performance and also what aspects should be improved by the firm's board.

*Fénix Portugal's* will face a relevant growth in all its positive indicators such as Assets, Equity, Revenues, EBITDA, Net Income and so on. It is also important to highlight the growth of EBITDA margin and Net Profitability of Sales which are going to be 93% and 72% in 2023, respectively. The weight of Personnel Expenses in Revenues will face a relevant reduction as it starts (in 2020) in 33% (which means high impact) and reduces to 6% in 2023.

Throughout the four years under analysis, all the Profitability indicators (such as Return on Assets, Return on Sales, Return on Equity, and Return on Investments) are above (or close to) 50% which is an indicator of the firm's high profitability.

In terms of Financial Autonomy, in 2020 the firm's Equity represents 74% of its assets while in 2023 this value grows to 83%. As the firm has no long-term debt, this is another indicator of a positive financial structure.

Annex 31 details *Fénix Portugal's* Financial Indicators.

## **12.7 Project Evaluation – Feasibility Analysis**

In order to calculate the Required Rate of Return (Re), the CAPM Model was applied. Its results are presented in Annex 33. For this purpose, it was considered the Portuguese Government Bonds (10 years) for the risk free rate and the Portuguese market risk premium. The unlevered beta was calculated as the average of the following sectors: Farming/Agriculture; Investments and Assets Management; Real Estate (General/Diversified); Real Estate (Operations and Services). The Required Rate of Return is critical in order to update all the Cash Flows for the period of investment decision.

Annex 34 details the Cash Flows regarding each period. In the first year, the Operating Cash Flow is negative due to the necessary investments. In the following years it faces a relevant growth.

In the same Annex 34, it is presented the firm's Free Cash Flows to Equity which represents *Fénix Portugal's* equity after expenses, reinvestment and debt have been paid. This allows calculating the Discounted Cash Flows, which are the firm's Cash Flows updated to the present moment that are necessary to find the main indicators that are presented in Table 14 and detailed in Annex 35.

As it was explained in Chapter 3.9, a project is economically and financially

viable if its NPV is positive and its IRR higher than required rate of return (discount rate). Also, low payback period means an attractive project. After analyzing the values it is observable that the project's NPV is higher than zero (higher than fifteen million Euros), its IRR is 257% (a very high rate denotes the attractiveness of the project) and with a low payback period of one year and nine months. The three factors demonstrate the project's high attractiveness and sustain its viability.

It is important to bear in mind that the promoter started this project with the purpose of continuity and with no need of long-term debt. The calculations are sustained by these assumptions.

**Table 14** - Project Evaluation (Main Indicators)

Main Indicators	
NPV	17.634.012,44 €
Internal Rate of Return (IRR)	257%
Payback Period	1 year and 9 months

**Source:** Author

## 12.8 Sensitivity Analysis

Despite the fact that this project was developed with the goal to be the most realistic possible, one must always be aware that there are unpredictable factors (internal and/or external) that may affect the business and so the results.

For that purpose, the author opted to predict possible scenarios where the results are affected by those factors. Those scenarios are the ones with the highest probability to occur (even if they are unlikely to occur).

In the first scenario, it was considered a possible variation in Supplies and External Services, Personnel Expenses and Capital Expenditures. The second scenario takes into account a possible variation in Revenues. The results of these impacts in project evaluation main indicators are detailed in Table 15.

**Table 15-** Sensitivity Analysis.

Variation in SES + Personnel Expenses + CAPEX				
	Pessimistic Scenario			Optimistic Scenario
Δ	20%			-20%
NPV	17 214 618,23 €			18 053 787,76 €
IRR	224%			307%
Payback Period	2 years and 3 months			1 year and 3 months
Variation in Revenues				
	Pessimistic Scenario	Realistic Scenario		Optimistic Scenario
Δ	-20%	-5%	5%	20%
NPV	12 597 238,43 €	16 374 818,94 €	18 893 205,94 €	22 670 786,45 €
IRR	202%	242%	271%	321%
Payback Period	3 years and 1 month	1 year and 11 months	1 year and 8 months	1 year and 6 months

Source: Author.

As it is observed, a possible variation in SES, CAPEX and Personnel Expenses have low impact in main indicators such as NPV, IRR and Payback Period even with a variation as relevant as 20%.

However, a variation in Revenues may have a bigger impact. In a negative scenario, the project still has a positive NPV and high IRR but the Payback Period is considerably high. When it comes to a positive scenario, the results are even better than the ones of the realistic scenario. However, it is not credible to believe in positive variation of 20% of revenues due to the characteristics of the business.

As a final remark it is important to highlight that in every scenario the firm has a positive NPV and a high IRR which validates positively the Business Plan in an economical and financial analysis.

## 13. Conclusion

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The goal of this project was to develop an innovative management model to be applied in ZIF management and that would create the necessary conditions to achieve a sustainable management of the Portuguese territory and reduce the number (and impacts) of forest fires.

In Literature Review section it was possible to conclude that fire risk management practices are a trending topic and ZIF comes up in Portuguese literature as the best practice to be implemented. There is also the belief that foresters' risks should be privatized and insurance could play a key role in this subject.

The external analysis demonstrated that ZIFs' development is being applied in the Portuguese context and the majority of these ZIFs are being managed by Associations of Forest Owners and Producers or other non-profit organizations while the number of ZIFs being managed by other private entities is relatively low.

The tools used in the external analysis - PESTLE Analysis and 5 Porter's Forces – validated the project.

It was also concluded that the firm's customers are private or public entities (or individuals) that want to explore a piece of land belonging to the ZIF's territory. The firm will also have key strategic partners which are the Lands' Owners.

As a result of competitors' analysis it was possible to conclude that the firm has four direct competitors, however it is important to refer that none of the competitors has the same business strategy as *Fénix Portugal*.

The firm opted to follow a differentiation strategy based on the quality of the customer service and also based on the fact of providing an opportunity for other entities that is completely new in the market. *Fénix Portugal* may position itself in customers and partners' minds as a premium option as it is the firm that helps them to maximize their revenues from land exploration.

The firm's revenues will arise from the annual rents that entities will pay and 60% of that value will follow to Lands' Owners. This is another innovation that the firm will bring to the market as it will be the first one to always provide revenues to the owners without needing to wait for revenues arising from the land's exploration. Also, it is the first one that do not charge any fee to lands' owners.

As a final stage of the Business Plan it was conducted an Economical and

Financial viability analysis. It was possible to conclude that the firm's initial investment of 80.000€ is sufficient to cover the needs to start the business and bring positive results from the second year of operation onwards. In a realistic scenario, the *Fénix Portugal's* NPV is equal to 17.634.012,44€ with an IRR of 257% and a payback period of 1 year and 9 months. As a practice of prudence it was conducted several sensitivity analysis regarding possible variations in Supplies and External Services, Capital Expenditures, Personnel Expenses and Revenues, and the firm is still attractive in every scenario.

However, it is worth to mention some limitations that rose throughout the project's development despite the fact that the Business Plan was developed in a realistic perspective that resulted from the author's intensive study of the sector and market.

First, it is important to note that the firm will work with considerably high areas and one of the assumptions is that all of the land that is able to be explored is going to be rented. However, due to the land's size it is possible that some of the land will only be rented after the ZIF is constituted which would influence the revenues of each year.

Second, as it was mentioned throughout the work, the constitution of a ZIF is a very complex process. In some cases this complexity may result in limitations for the business.

Also, other external factors such as political regulations and climate conditions may influence the project's results.

It is reasonable to believe that the project when put in practice may be slightly different from this Business Plan as the process evolves and new ideas are generated. However, it is realistic to say that this Business Plan provides the necessary conditions to make the project come true and help Portugal to achieve a sustainable management of the territory and reduce the number (and impact) of forest fires.

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**Annex 1 – List of ZIFs and Management Entities in Portugal**

ZIF's Name	Year of Constitution	Area (ha)	Current Management Entity
Alva e Alvoco	2006	4,741	CAULE - Associação Florestal da Beira Serra
Cadaval, Rio Maior e Azambuja	2007	8,217	APAS Floresta - Associação de Produtores Florestais
Entre Douro e Sousa	2007	7,223	Associação Florestal do Vale do Sousa
Serra do Caldeirão/Loulé	2007	2,459	APFSC - Associação de Produtores Florestais da Serra do Caldeirão
Penaverde	2007	2,061	QUEBRÂNGULO - Engenharia Florestal Unipessoal, Lda.
Arade	2007	10,541	VIVER SERRA - Associação para a Protecção e o Desenvolvimento das Serras do Barlavento Algarvio
Alfátima	2007	2,582	URZE - Associação Florestal da Encosta da Serra da Estrela
Castelo	2007	1,496	AFLOMAÇÃO - Associação Florestal do Concelho de Mação
Romãs	2007	2,740	Ivo Gomes - Unipessoal, Lda.
Dornelas	2007	1,808	QUEBRÂNGULO - Engenharia Florestal Unipessoal, Lda.
Aldeia de Eiras	2007	1,047	AFLOMAÇÃO - Associação Florestal do Concelho de Mação
Alcofra	2007	2,327	VERDELAFÕES - Associação de Produtores Florestais
Farvão	2008	1,870	URZE - Associação Florestal da Encosta da Serra da Estrela
Monforte da Beira-Malpica do Tejo	2008	34,091	AFLOBEI - Associação de Produtores Florestais da Beira Interior
Ortiga	2008	1,777	AFLOMAÇÃO - Associação Florestal do Concelho de Mação
Aravil	2008	21,415	SILVAPOR - Agricultura e Silvicultura, Lda.
Cabeça Gorda	2008	1,607	AEROFLORA - Produção, Comercialização e Prestação de Serviços Agro-florestais e Ambientais, Lda.
Penhascoso Norte	2009	1,234	AFLOMAÇÃO - Associação Florestal do Concelho de Mação
Sarzedas-Magarefa	2008	1,287	AFLOBEI - Associação de Produtores Florestais da Beira Interior
Sarzedas-Estacal	2008	1,323	AFLOBEI - Associação de Produtores Florestais da Beira Interior
Penha Garcia	2008	22,514	AFLOBEI - Associação de Produtores Florestais da Beira Interior
Penoita	2008	3,113	Cooperativa Três Serras de Lafões, C.R.L.
São José das Matas	2008	1,694	AFLOMAÇÃO - Associação Florestal do Concelho de Mação
Aldeia do Mato	2008	6,878	GESTIVERDE - Gestão Rural Lda.
Alcobertas	2008	3,061	APFRA - Associação dos Produtores Florestais da Região de Alcobaça
Serra do Caldeirão-Tavira	2008	2,104	APFSC - Associação de Produtores Florestais da Serra do Caldeirão
Tábua Mondego	2008	4,572	CAULE - Associação Florestal da Beira Serra
Lourosa	2008	4,041	CAULE - Associação Florestal da Beira Serra
Serra do Caldeirão-São Brás de Alportel	2008	2,362	APFSC - Associação de Produtores Florestais da Serra do Caldeirão
Penedos	2008	1,318	Associação Florestal do Concelho de Góis
Cumeadas	2008	2,951	CUMEADAS - Associação de Proprietários Florestais das Cumeadas do Baixo Guadiana
Arneiro das Milhاريças e Espinheiro	2009	2,828	APFRA - Associação dos Produtores Florestais da Região de Alcobaça
Serapitel	2009	1,344	URZE - Associação Florestal da Encosta da Serra da Estrela

Paiva	2008	7,619	Associação Florestal do Vale do Sousa
Terra Chã	2008	8,276	CAULE - Associação Florestal da Beira Serra
Chamusca, Pinheiro Grande e Carregueira	2008	12,565	ACHAR - Associação dos Agricultores de Charneca
Lomba	2008	2,142	ARBOREA - Associação Agro-Florestal e Ambiental da Terra Fria Transmontana
Vila Maior	2009	1,581	VERDELAFÕES - Associação de Produtores Florestais
Mondalva	2008	6,798	CAULE - Associação Florestal da Beira Serra
Chouto e Parreira	2008	26,466	ACHAR - Associação dos Agricultores de Charneca
Pousaflores	2008	1,209	Associação Florestal do Concelho de Ansião
Ulme e Vale de Cavalos	2008	22,620	ACHAR - Associação dos Agricultores de Charneca
Foupana	2008	5,220	CUMEADAS - Associação de Proprietários Florestais das Cumeadas do Baixo Guadiana
Aljão/Mondego	2008	4,288	URZE - Associação Florestal da Encosta da Serra da Estrela
Ponte de Lima	2008	1,160	AFL - Associação Florestal do Lima
Tábua Alva	2008	4,632	CAULE - Associação Florestal da Beira Serra
Tábua Nordeste	2008	9,879	CAULE - Associação Florestal da Beira Serra
Cordinha	2008	6,205	CAULE - Associação Florestal da Beira Serra
Queirã	2008	1,758	Cooperativa Três Serras de Lafões, C.R.L.
S. Marcos da Serra Nordeste/Odelouca	2008	2,813	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Brenhosa	2008	1,852	CUMEADAS - Associação de Proprietários Florestais das Cumeadas do Baixo Guadiana
Vale de Nogueiras	2009	1,955	NATURA VIVA - Associação Ambiental e Florestal
Alenquer, Azambuja e Cadaval	2009	8,007	APAS Floresta - Associação de Produtores Florestais
Charneca da Calha do Grou	2009	18,113	APFC - Associação dos Produtores Florestais do Concelho de Coruche e Limitrofes
Gondomar	2009	1,257	PORTUCALEA - Associação Florestal do Grande Porto
Mafra Este	2009	2,608	FLOREST - Associação dos Produtores Agrícolas e Florestais da Estremadura
Almeirim e Alpiarça	2009	27,369	ACHAR - Associação dos Agricultores de Charneca
Moura Alva	2009	4,380	CAULE - Associação Florestal da Beira Serra
Serra das Talhadas	2009	1,283	Associação de Produtores Florestais e Agrícolas do Concelho de Proença-a-Nova
Carvalhais	2009	1,853	VERDELAFÕES - Associação de Produtores Florestais
Serra da Estrela Sul	2009	4,288	CAULE - Associação Florestal da Beira Serra
Gouveia Este	2009	5,712	URZE - Associação Florestal da Encosta da Serra da Estrela
Algodres/Vale de Afonsinho	2009	2,670	ATN - Associação Transumância e Natureza
Lavacolhos	2009	1,987	PINUS VERDE - Associação de Desenvolvimento Integrado da Floresta
Monte de Roques	2009	3,336	AFL - Associação Florestal do Lima
Ponte da Barca	2009	2,505	AFL - Associação Florestal do Lima
Alijó Norte	2009	2,968	AFLODOUNORTE - Associação Florestal do Vale do Douro Norte
Alcaravela I	2009	1,218	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Baldios de Valverde, Pé da Pedreira, Barreirinhas e Murteira	2009	2,222	ACHAR - Associação dos Agricultores de Charneca
Paradela	2009	1,852	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Enxames	2009	1,567	AFIN - Associação Florestal do Interior
Santa Comba Dão	2009	10,490	CAULE - Associação Florestal da Beira Serra
Sra. do Desterro	2009	2,124	URZE - Associação Florestal da Encosta da Serra da Estrela
Castelo Branco	2009	10,614	AFLOBEI - Associação de Produtores Florestais da Beira Interior
Vidual	2009	1,395	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Senhora do Espinheiro	2009	1,326	URZE - Associação Florestal da Encosta da Serra da Estrela

Águas Boas/Forles	2009	1,682	CEDRUS - Associação de Produtores Florestais de Viseu
Outeiro da Cortiçada, Fráguas e Alcanede	2009	2,902	APFRA - Associação dos Produtores Florestais da Região de Alcobça
Balurcos	2009	7,050	CUMEADAS - Associação de Proprietários Florestais das Cumeadas do Baixo Guadiana
Encosta de Linhares	2009	1,187	CELFLOR - Associação de Produtores Florestais
Sarzeda	2009	1,007	RIBAFLO - Associação Florestal das Terras do Ribadouro
Odelouca	2009	2,216	VIVER SERRA - Associação para a Protecção e o Desenvolvimento das Serras do Barlavento Algarvio
Penegral	2009	1,552	APFRA - Associação dos Produtores Florestais da Região de Alcobça
São Martinho do Peso	2009	4,028	APATA - Associação de Produtores Agrícolas Tradicionais e Ambientais
Serra do Picotino	2009	2,797	APATA - Associação de Produtores Agrícolas Tradicionais e Ambientais
Freguesia de Belver	2009	6,983	Associação de Produtores Florestais da Freguesia de Belver
Figueiredo de Alva	2009	2,654	VERDELAFÕES - Associação de Produtores Florestais
Ribeiras da Lamarosa e Magos e da Charneca de Muge	2009	28,354	APFC - Associação dos Produtores Florestais do Concelho de Coruche e Limítrofes
Valoura	2009	1,399	AGUIAR FLORESTA - Associação Florestal e Ambiental de Vila Pouca de Aguiar
Jales	2009	4,218	AGUIAR FLORESTA - Associação Florestal e Ambiental de Vila Pouca de Aguiar
Almaceda	2009	6,413	Associação de Produtores Florestais de Espadana e Gardunha
Serra da Figueira-Zava	2009	1,860	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Malhão	2009	1,060	URZE - Associação Florestal da Encosta da Serra da Estrela
Terras do Demo	2009	2,455	ADRLU - Associação de Desenvolvimento Rural Lobos Úivam
Senhora do Socorro	2009	2,017	URZE - Associação Florestal da Encosta da Serra da Estrela
Vale Benfeito, Grijó, Vilar do Monte e Castelãos	2009	1,335	FATA - Federação da Agricultura de Trás-os-Montes e Alto Douro
Brunhoso	2009	4,020	APATA - Associação de Produtores Agrícolas Tradicionais e Ambientais
Pedra D'Orca	2009	1,307	URZE - Associação Florestal da Encosta da Serra da Estrela
Ribeira de Pêra	2009	1,125	APFLOR - Associação dos Produtores Florestais do Concelho de Pedrogão Grande
São Marcos da Serra	2009	3,791	VIVER SERRA - Associação para a Protecção e o Desenvolvimento das Serras do Barlavento Algarvio
Rio Alvoco	2009	2,113	Cooperativa Agro-pecuária da Beira Central, C.R.L.
São Bartolomeu da Serra	2009	6,224	ASFOALA - Associação de Produtores Florestais do Alto Alentejo
Freixo Verde	2009	2,203	SUBERAMBIENTE, Lda.
Seia Alva	2010	3,683	CAULE - Associação Florestal da Beira Serra
Aboim	2010	2,725	AFEDT - Associação Florestal de Entre Douro e Tâmega
Álvaro	2010	1,939	APFAM - Associação dos Produtores Florestais de Alvelos e Muradal
Arade-Alte/São Bartolomeu de Messines	2010	1,784	Associação In Loco de Intervenção, Formação e Estudos para o Desenvolvimento Local
Mondego	2010	2,505	Cooperativa Agrícola dos Lavradores do Vale do Mondego
Torres Vedras Oeste	2010	2,958	FLOREST - Associação dos Produtores Agrícolas e Florestais da Estremadura
Sabrosa	2010	4,500	AFLODONORTE - Associação Florestal do Vale do Douro Norte
Seia Norte	2010	9,367	URZE - Associação Florestal da Encosta da Serra da Estrela
Penas Róias-Azinhoso	2010	3,779	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
Carregal do Sal-Mondego	2010	5,454	SOLO VIVO - Associação para a Promoção do Desenvolvimento Local, Rural, Agrícola, Florestal e Ambiental
São Vicente	2010	2,621	Associação de Produtores Florestais de Espadana e

			Gardunha
<b>Malhada do Cervo</b>	2010	1,130	AFLOBEI - Associação de Produtores Florestais da Beira Interior
<b>Perna da Negra</b>	2010	3,615	ASPAFLOBAL - Associação dos Produtores Florestais do Barlavento Algarvio
<b>Benquerenças</b>	2010	1,514	AFLOBEI - Associação de Produtores Florestais da Beira Interior
<b>Clarines</b>	2010	7,759	Fernando Silvestre Pereira, Lda.
<b>Lutão</b>	2010	5,794	CUMEADAS - Associação de Proprietários Florestais das Cumeadas do Baixo Guadiana
<b>Torres Vedras Este</b>	2010	3,954	FLOREST - Associação dos Produtores Agrícolas e Florestais da Estremadura
<b>Lapão</b>	2010	1,300	APFLOR - Associação dos Produtores Florestais do Concelho de Pedrogão Grande
<b>Montedeiras</b>	2010	1,477	AFEDT - Associação Florestal de Entre Douro e Tâmega
<b>Gondar</b>	2010	1,181	AFEDT - Associação Florestal de Entre Douro e Tâmega
<b>Campelo</b>	2010	3,121	FICAPE - Cooperativa Agrícola do Norte do Distrito de Leiria
<b>Felgueiras</b>	2010	3,292	Associação Florestal do Vale do Sousa
<b>Chaves Sul</b>	2010	4,006	AFACC - Associação Florestal e Ambiental do Concelho de Chaves
<b>Boa Memória</b>	2010	3,164	APFCAN - Associação de Produtores Florestais dos Concelhos de Alcobaça e Nazaré
<b>Pousadas</b>	2011	4,453	CEDRUS - Associação de Produtores Florestais de Viseu
<b>Planalto Beirão-Carregal do Sal</b>	2010	6,204	Associação de Produtores Florestais do Planalto Beirão
<b>Vila Franca de Xira</b>	2011	751	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
<b>Erra</b>	2011	12,475	APFC - Associação dos Produtores Florestais do Concelho de Coruche e Limitrofes
<b>Esmolfe e Sezures</b>	2011	2,745	Dão Flora - Associação de Produtores Florestais
<b>Vale de Infesta e Alto de Ourilhe</b>	2011	2,461	Cooperbasto - Cooperativa Agrícola de Basto, C.R.L.
<b>Senhora do Aviso</b>	2011	2,417	ANA - Associação Norte Agrícola
<b>Ramela</b>	2011	1,583	AFLOESTRELA - Associação de Produtores Florestais da Beira Alta
<b>Felgar, Souto da Velha, Carviçais e Meirinhos</b>	2011	6,605	APATA - Associação de Produtores Agrícolas Tradicionais e Ambientais
<b>Baixo Sorraia</b>	2011	43,414	APFC - Associação dos Produtores Florestais do Concelho de Coruche e Limitrofes
<b>Malcata</b>	2011	1,458	AFLOESTRELA - Associação de Produtores Florestais da Beira Alta
<b>Divor</b>	2011	54,789	APFC - Associação dos Produtores Florestais do Concelho de Coruche e Limitrofes
<b>Castro Vicente</b>	2011	2,998	SILVICONULTORES - Ambiente e Recursos Naturais, S.A.
<b>Alcobaça e Nazaré Norte</b>	2011	4,228	APFCAN - Associação de Produtores Florestais dos Concelhos de Alcobaça e Nazaré
<b>Pedras Juradas</b>	2011	3,312	URZE - Associação Florestal da Encosta da Serra da Estrela
<b>Arcos de Valdevez</b>	2011	1,349	AFL - Associação Florestal do Lima
<b>Alto da Sobreira</b>	2011	789	AFACC - Associação Florestal e Ambiental do Concelho de Chaves
<b>Campia</b>	2011	5,105	VERDELAFÕES - Associação de Produtores Florestais
<b>São Lourenço</b>	2011	4,976	AFL - Associação Florestal do Lima
<b>Serra de Santa Luzia</b>	2011	11,366	AFL - Associação Florestal do Lima
<b>Soure-Sicó</b>	2011	7,395	SAURIUM FLORESTAL - Associação Prá Floresta do Concelho de Soure
<b>Planalto</b>	2011	5,207	ARBOREA - Associação Agro-Florestal e Ambiental da Terra Fria Transmontana
<b>Lousada</b>	2011	2,406	Associação Florestal do Vale do Sousa
<b>Serra do Caldeirão-Tavira II</b>	2011	4,419	APFSC - Associação de Produtores Florestais da Serra do Caldeirão
<b>Vale de Prazeres, Mata da Rainha e Penamacor</b>	2011	4,069	AFIN - Associação Florestal do Interior
<b>Rio Maior Sul</b>	2011	5,105	APAS Floresta - Associação de Produtores Florestais
<b>Viso e Anexas</b>	2011	6,440	ASFOALA - Associação de Produtores Florestais do Alto Alentejo

<b>Fonte Santa</b>	2011	1,981	CROFLOR - Associação de Produtores Florestais do Cró
<b>Madeirã</b>	2011	2,722	APFAM - Associação dos Produtores Florestais de Alvelos e Muradal
<b>Monção</b>	2012	6,745	AGRESTA - Associação dos Agricultores do Minho
<b>Marvão</b>	2012	7,647	Terras de Marvão - Associação de Desenvolvimento Local
<b>Lima Vez</b>	2012	23,015	AFL - Associação Florestal do Lima
<b>Rio Maior</b>	2012	7,557	APAS Floresta - Associação de Produtores Florestais
<b>Gançaria, Fráguas e São Sebastião</b>	2012	2,241	APFRA - Associação dos Produtores Florestais da Região de Alcobaça
<b>Juncal e Montes</b>	2013	760	APFRA - Associação dos Produtores Florestais da Região de Alcobaça
<b>Abrã e Alcanede</b>	2014	2,953	APFRA - Associação dos Produtores Florestais da Região de Alcobaça
<b>São Barnabé Norte</b>	2015	3,495	SILVIGUARDA - Silvicultura e Transportes, Lda.
<b>São Barnabé Sul</b>	2015	3,690	SILVIGUARDA - Silvicultura e Transportes, Lda.
<b>São Barnabé Este</b>	2015	3,377	SILVIGUARDA - Silvicultura e Transportes, Lda.
<b>Seiça-Ourém</b>	2015	4,142	Geoterra - Estudos e Serviços Integrados, Lda.
<b>São Barnabé Oeste</b>	2015	2,769	SILVIGUARDA - Silvicultura e Transportes, Lda.
<b>Cachopo Sul</b>	2015	3,877	SUBERPINUS - Serviços Agro-florestais, Lda.
<b>Trancoso Oeste</b>	2015	2,139	Piscotávora - Associação de Produtores Florestais
<b>Trancoso Norte</b>	2015	4,566	Piscotávora - Associação de Produtores Florestais
<b>Trancoso Este</b>	2015	7,734	Piscotávora - Associação de Produtores Florestais
<b>Santana da Serra III</b>	2015	2,741	SUBERPINUS - Serviços Agro-florestais, Lda.
<b>Trancoso Sul</b>	2015	6,561	Piscotávora - Associação de Produtores Florestais
<b>Santana da Serra II</b>	2015	2,289	OURIFLORESTAL - Plantação e Conservação de Florestas, Unipessoal, Lda.
<b>Santana da Serra I</b>	2015	6,581	OURIFLORESTAL - Plantação e Conservação de Florestas, Unipessoal, Lda.
<b>São Bartolomeu de Messines Norte</b>	2016	2,303	SUBERPINUS - Serviços Agro-florestais, Lda.
<b>Cachopo Norte</b>	2016	1,965	SUBERPINUS - Serviços Agro-florestais, Lda.
<b>Tondela Sul</b>	2016	6,729	SOLO VIVO - Associação para a Promoção do Desenvolvimento Local, Rural, Agrícola, Florestal e Ambiental
<b>Almodôvar Sul</b>	2016	2,849	SUBERPINUS - Serviços Agro-florestais, Lda.
<b>São Francisco da Serra</b>	2016	5,137	ASFOALA - Associação de Produtores Florestais do Alto Alentejo
<b>Burinhosa</b>	2016	1,627	APFCAN - Associação de Produtores Florestais dos Concelhos de Alcobaça e Nazaré
<b>Coimbra Este</b>	2017	6,372	Número Sensação Lda.
<b>Rio Torto</b>	2017	21,731	Associação dos Agricultores dos Concelhos de Abrantes, Constância, Sardoal e Mação
<b>Charneca de Abrantes</b>	2017	21,734	Associação dos Agricultores dos Concelhos de Abrantes, Constância, Sardoal e Mação
<b>Grândola Leste</b>	2017	52,651	ANSUB - Associação de Produtores Florestais do Vale do Sado
<b>Tâmega</b>	2017	5,016	Cooperbasto - Cooperativa Agrícola de Basto, C.R.L.
<b>Estuário do Tejo</b>	2017	24,000	ACHAR - Associação dos Agricultores de Charneca
<b>Marão</b>	2017	6,122	Secretariado dos Baldios de Trás-os-Montes e Alto Douro

Source: ICNF (2018).

**Annex 2 – List of the 73 Management Entities**

<b>Associações (61):</b>
ACHAR – Associação dos Agricultores da Charneca
ADRLU – Associação de Desenvolvimento Rural Lobos Uivam
AEROFLOLA – Produção, Comercialização e Prestação de Serviços Agro-florestais e Ambientais, Lda.
AFACC – Associação Florestal e Ambiental do Concelho de Chaves
AFEDT – Associação Florestal de Entre Douro e Tâmega
AFIN – Associação Florestal do Interior
AFL – Associação Florestal do Lima
AFLOBEI – Associação de Produtores Florestais da Beira Interior
AFLODONORTE – Associação Florestal do Vale do Douro Norte
AFLOESTRELA – Associação de Produtores Florestais da Beira Alta
AFLOMAÇÃO – Associação Florestal do Concelho de Mação
AGRESTA – Associação dos Agricultores do Minho
AGUIAR FLORESTA – Associação Florestal e Ambiental de Vila Pouca de Aguiar
ANA – Associação Norte Agrícola
ANSUB – Associação de Produtores Florestais do Vale do Sado
APAS Floresta – Associação de Produtores Florestais
APATA – Associação de Produtores Agrícolas Tradicionais e Ambientais
APFAM – Associação dos Produtores Florestais de Alvelos e Muradal
APFC – Associação dos Produtores Florestais do Conselho de Coruche e Limítrofes
APFCAN – Associação dos Produtores Florestais dos Concelhos de Alcobaça e Nazaré
APFLOR – Associação dos Produtores Florestais do Concelho de Pedrogão Grande
APFSC – Associação de Produtores Florestais da Serra do Caldeirão
APFRA – Associação dos Produtores Florestais da Região de Alcobaça
ARBOREA – Associação Agro-Florestal e Ambiental da Terra Fria Transmontana
ASFOAL – Associação de Produtores Florestais do Alto Alentejo
ASPAFLOBAL – Associação dos Produtores Florestais do Barlavento Algarvio
Associação de Agricultores dos Concelhos de Abrantes, Constância, Sardoal e Mação
Associação in Loco de Intervenção, Formação e Estudos para o Desenvolvimento Local
Associação Florestal do Concelho de Ansião
Associação Florestal do Concelho de Góis
Associação Florestal do Vale do Sousa
Associação de Produtores Florestais e Agrícolas do Concelho de Proença-a-Nova
Associação de produtores Florestais de Espadana e Gardunha
Associação dos Produtores Florestais da Freguesia de Belver
Associação de Produtores Florestais do Planalto Beirão
ATN – Associação Transumância e Natureza
CAULE – Associação Florestal da Beira Serra
CEDRUS – Associação de Produtores Florestais de Viseu
CELFLOL – Associação de Produtores Florestais
Cooperativa Três Serras de Lafões, C. R. L.
Cooperativa Agrícola dos Lavradores do Vale do Mondego
Cooperativa Agro-pecuária da Beira Central, C. R. L.
Cooperbasto – Cooperativa Agrícola de Basto, C. R. L.

CROFLOR – Associação de Produtores Florestais do Cró
CUMEADAS – Associação de Proprietário Florestais das Cumeadas de Baixo Guadiana
Dão Flora – Associação de Produtores Florestais
FATA – Federação da Agricultura de Trás-os-Montes e Alto Douro
FICAPE – Cooperativa Agrícola do Norte do Distrito de Leiria
FLOREST – Associação dos Produtores Agrícolas e Florestais da Estremadura
NATURA VIVA – Associação Ambiental e Florestal
PINUS VERDE – Associação de Desenvolvimento Integrado da Floresta
Piscotávora – Associação de Produtores Florestais
PORTUCALEA – Associação Florestal do Grande Porto
RIBAFLORE – Associação Florestal das Terras do Ribadouro
SAURIUM FLORESTAL – Associação Prá Floresta do Conselho de Soure
Secretariado dos Baldios de Trás-os-Montes e Alto Douro
SOLO VIVO – Associação para a Promoção do Desenvolvimento Local, Rural, Agrícola, Florestal e Ambiental
Terras de Marvão – Associação de Desenvolvimento Local
URZE – Associação Florestal da Encosta da Serra da Estrela
VERDELAFÕES – Associação de Produtores Florestais
VIVER SERRA – Associação para a Protecção e o Desenvolvimento das Serras do Barlavento Algarvio
<b>Empresas (12):</b>
Fernando Silvestre Pereira, Lda.
Geoterra - Estudos e Serviços Integrados, Lda.
GESTIVERDE – Gestão Rural, Lda.
Ivo Gomes – Unipessoal, Lda.
Número Sensação, Lda.
OURIFLORESTAL – Plantação e Conservação de Florestas, Unipessoal, Lda.
QUEBRÂNGULO – Engenharia Florestal Unipessoal, Lda.
SILVICONSULTORES – Ambiente e Recursos Naturais, S. A.
SILVIGUARDA – Silvicultura e Transportes, Lda.
SILVAPOR – Agricultura e Silvicultura, Lda.
SUBERPINUS – Serviços Agro-florestais, Lda.
SUBERAMBIENTE, Lda.

**Source:** Author adapted from ICNF (2018).

**Annex 3** – Weight of Agriculture, Forestry and Fishery in Portuguese Economy. In million Euros.

Gross Value Added		
Year	Total	Agriculture, Forestry and Fishery
2015	156.838,9	3.686,6

Source: Author, adapted from Pordata (2018).

**Annex 4** – Weight of Agriculture, Forestry and Fishery in Portuguese Economy. In million Euros.

Exports		
Year	Total	Agriculture, Forestry and Fishery
2015	62.426,7	1.225,8

Source: Author, adapted from Pordata (2018).

**Annex 5** – Importance of rural areas in Portugal. Data from 2014.

	N.º	%
População / <i>Population</i> (1000 hab.)	10 427	100
Rural / <i>Rural</i>	3 524	33.8
Intermédia / <i>Intermediate</i>	1 782	17.1
Urbana / <i>Urban</i>	5 121	49.1
Idade / <i>Age</i> (1000 hab.)		
Total		
< 15 anos / <i>years</i>	1 522	14.6
15 - 64 anos / <i>years</i>	6 835	65.6
> 64 anos / <i>years</i>	2 070	19.9
Rural / <i>Rural</i>		
< 15 anos / <i>years</i>	467	13.3
15 - 64 anos / <i>years</i>	2 246	63.7
> 64 anos / <i>years</i>	811	23.0
Superfície / <i>Territory</i> (Km <sup>2</sup> )	92 228	100
Rural / <i>Rural</i>	74 823	81.1
Intermédia / <i>Intermediate</i>	10 667	11.6
Urbana / <i>Urban</i>	6 738	7.3
Dens. Populacional / <i>Pop. Density</i> (hab/Km <sup>2</sup> )		
Total	113	
Rural / <i>Rural</i>	47	

Source: Planning, Policy and General Administration Office (2016).



**Annex 6** – Losses in Euros as a result of forest fires

Year	Burnt Area (há)	Losses (euros)
2005	339.089,00	756.746.827,03
2006	76.058,00	132.001.898,42
2007	32.595,00	37.109.004,36
2008	17.564,00	22.371.685,45
2009	87.420,00	86.259.213,83
2010	133.090,00	183.911.947,14
2011	73.829,00	80.557.921,01
2012	110.232,00	196.227.660,43
2013	152.756,00	208.337.839,76
2014	19.929,00	27.503.168,95
2015	64.443,00	119.406.200
<b>Average 2005 - 2014</b>	<b>104.256,20</b>	<b>173.102.716,64</b>

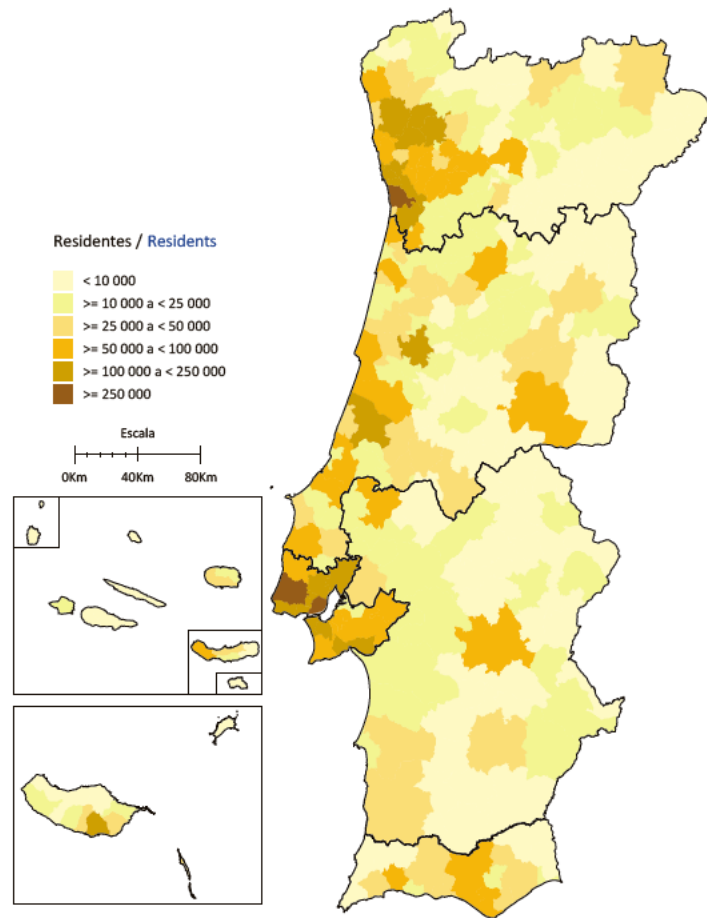
Source: Author, adapted from ICNF (2016).

**Annex 7** - Economic value of each crop.

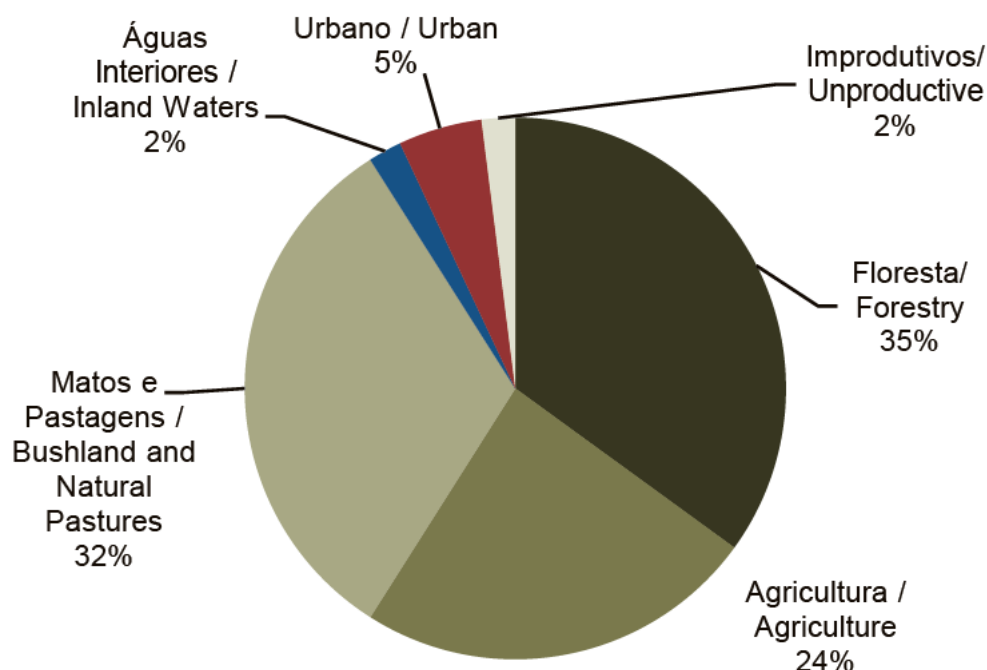
Element at risk	Vulnerability	Value
Woody Production		
- Pine Tree	0.875	€ 91/hectare
- Other resinous wood	1.00	€ 84/hectare
- Eucalyptus	0.75	€ 136/hectare
Multifunctional		
- Cork Oak	0.50	€ 618/hectare
- Holm Oak	0.50	€ 112/hectare
- Meek Pine	0.70	€ 494/hectare
- Chest Nut	0.70	€ 830/hectare
- Arbutus	0.50	€ 191/hectare
- Carob tree	0.70	€ 781/hectare
Conservation		
- Oaks	0.60	€ 87/hectare
- Other hardwoods	0.50	€ 1507/hectare
- Acacia and Incense	0.30	€ 0/hectare

Source: Author, adapted from Unit's Direction of Forest Defence (2012).

### Annex 8 – Resident Population by Municipality – 2015



Source: Planning, Policy and General Administration Office (2016).

**Annex 9 – Portuguese Land Use – 2010**


Source: Planning, Policy and General Administration Office (2016).

**Annex 10 – Land Use in Portugal - 2013**

Uso / Use	Portugal		Continente / Mainland	
	1000 ha	%	1000 ha	%
<b>Superfície Total / Total Area</b>	<b>4 626</b>	<b>100.0</b>	<b>4 492</b>	<b>100.0</b>
<b>Superfície Agrícola Utilizada / Utilized Agricultural Area</b>	<b>3 642</b>	<b>78.7</b>	<b>3 518</b>	<b>78.3</b>
<b>Terra Arável / Arable Land</b>	<b>1 101</b>	23.8	<b>1 082</b>	24.1
Cereais para grão / Grain cereal	302	6.5	302	6.7
Hortícolas / Vegetables	42	0.9	41	0.9
Horta Familiar / Kitchen Garden	15	0.3	14	0.3
Flores / Flowers	3	0.1	3	0.1
Batata / Potato	12	0.3	11	0.2
Prados temp. e forragens / Temp. grassland and forage crops	379	8.2	364	8.1
Pousio / Fallow land	333	7.2	333	7.4
<b>Culturas permanentes / Permanent crops</b>	<b>709</b>	15.3	<b>705</b>	15.7
Frutos Frescos / Fresh fruits	42	0.9	42	0.9
Citrinos / Citrus fruits	18	0.4	18	0.4
Frutos sub-tropicais / Subtropical fruits	4	0.1	3	0.1
Frutos secos / Nuts	140	3.0	140	3.1
Vinha / Vineyard	162	3.5	160	3.6
Olival / Olive grove	340	7.3	340	7.6
<b>Prados e pastagens permanentes / Permanent grassland</b>	<b>1 817</b>	39.3	<b>1 718</b>	38.2
<b>Superfície Agrícola Não Utilizada / Unutilised Agricultural Area</b>	<b>101</b>	<b>2.2</b>	<b>99</b>	<b>2.2</b>
<b>Matas e florestas (sem culturas sob-coberto) / Forestry and woodland (without underplanted crops)</b>	<b>808</b>	<b>17.5</b>	<b>800</b>	<b>17.8</b>
<b>Outras Superfícies / Other Area</b>	<b>76</b>	<b>1.6</b>	<b>75</b>	<b>1.7</b>

Source: Planning, Policy and General Administration Office (2016).

## Annex 11 – Number of farms in Portugal

Farms			
Year	Total	Less than 20 ha	20 ha or more
2016	257.736	233.823	23.914

Source: Author, adapted from Pordata (2018).

## Annex 12 - Consolation Grid regarding PESTLE Analysis and its main factors

Factors	--	-	+	++
<b>Political - Legal Context</b>				
Current debate about fire prevention and ZIF (trending topics)				•
Political cycles promote measures with short-term impact		•		
Ambiguity in the political debate		•		
Continuous improvement of ZIF law				•
ZIF law is considered to be complex and limitative	•			
Lack of sources of funding	•			
Reinforcement of National System of Forest Defence Law			•	
Efforts to stop the expansion of eucalyptus		•		
Forest Reform through a package of laws as a result of catastrophes of 2017			•	
<b>Economical Context</b>				
Significant impact of Agriculture and Forestry in Portuguese economy			•	
Major livelihood for the rural population of Portugal				•
Relevant impact of Fires in Portuguese economy			•	
Economical prosperity with investment being made in the sectors			•	
<b>Social Context</b>				
Rural population represents 33.8% of total Portuguese population			•	
Rural territory represents 81.1% of total territory				•
Average age of a farmer is 64 years old in Portugal			•	
Migration pattern from rural areas to urban and intermediate areas			•	
Over 100 human deaths due to fires in 2017			•	
Lack of interest for Agriculture and Forestry from the majority of land's heirs				•
<b>Technological Context</b>				
Agriculture and Forestry are two of the sectors facing the biggest technological improvements			•	
Robots that monitor agricultural land and forest to detect fires and mitigate the risk			•	
<b>Environmental Context</b>				
Forest and Agricultural land represent 91% of total Portuguese territory				•
In 2016 there were 257.736 farms in Portugal				•
Every year, Portugal has to face huge fires due to characteristics of the weather	•			

Source: Author.

**Annex 13 – Porter’s 5 Forces**

Porter's 5 Forces	Forces' contribution is higher if the value is:	Level of impact for the Force				
		1	2	3	4	5
<b>Threat of Entry</b>						
Necessity of Capital	Low				x	
Knowledge Needed	Low				x	
Complexity to operate in the market	Low				x	
Time to market	Low			x		
Fast Return on Investment	High	x				
Probability of retaliation from other companies	Low	x				
Brand reputation	Low		x			
Government Regulation	Low				x	
Service Differentiation	Low	x				
Economies of Scale	Low		x			
Access to Funds	High				x	
Technological Evolution	High				x	
<b>Total</b>		11	8	3	16	0
<b>Force's Overall Value</b>		3.2				
<b>Threat of Substitutes</b>						
Availability of Substitutes	High		x			
Margin to Innovate	High				x	
Growth of Industry	High					x
High Entry Barriers	Low				x	
Price Attractiveness of Substitutes	High		x			
Low Switching Costs to Consumers	High		x			
<b>Total</b>		0	6	0	6	5
<b>Force's Overall Value</b>		2.8				
<b>Bargaining Power of Customers</b>						
Number of Customers in the Industry	Low				x	
Number of Substitutes	High	x				
Switching costs	Low				x	
Available Information	High				x	
Ease to backward integrate	High			x		
Level of impact of each customer	High					x
Importance of the service's quality for customers	Low					x
Level of service's differentiation	Low	x				
Level of customer's concentration	High	x				
<b>Total</b>		7	0	3	8	6
<b>Force's Overall Value</b>		2.7				
<b>Bargaining Power of Suppliers</b>						
Not Applicable (N/A)						
<b>Total</b>		0	0	0	0	0
<b>Force's Overall Value</b>		N/A				
<b>Competitive Rivalry among Existing Firms</b>						

Number of Competitors	High				x	
Industry Growth	High				x	
Size of Market	Low				x	
Geographical range of firms' activity	High		x			
Similarity between firms	High				x	
Existence of Direct Substitutes	High		x			
<b>Exit Barriers</b>						
High Fixed Costs	High		x			
Legal and Social restrictions	High				x	
Contractual Obligations	High					x
Degree of Specialization	High					x
<b>Total</b>		0	6	0	18	10
<b>Force's Overall Value</b>		3.4				

Source: Author.

#### Annex 14 – List of Direct Competitors

<b>Direct Competitors</b>
Fernando Silvestre Pereira, Lda.
Geoterra - Estudos e Serviços Integrados, Lda.
GESTIVERDE – Gestão Rural, Lda.
Ivo Gomes – Unipessoal, Lda.
Número Sensação, Lda.
OURIFLORESTAL – Plantação e Conservação de Florestas, Unipessoal, Lda.
QUEBRÂNGULO – Engenharia Florestal Unipessoal, Lda.
SILVICONSULTORES – Ambiente e Recursos Naturais, S. A.
SILVIGUARDA – Silvicultura e Transportes, Lda.
SILVAPOR – Agricultura e Silvicultura, Lda.
SUBERPINUS – Serviços Agro-florestais, Lda.
SUBERAMBIENTE, Lda.

Source: Author adapted from ICNF (2018).

**Annex 15 – List of Indirect Competitors**

<b>Indirect Competitors</b>
ACHAR – Associação dos Agricultores da Charneca
ADRLU – Associação de Desenvolvimento Rural Lobos Uivam
AEROFLORELA – Produção, Comercialização e Prestação de Serviços Agro-florestais e Ambientais, Lda.
AFACC – Associação Florestal e Ambiental do Concelho de Chaves
AFEDT – Associação Florestal de Entre Douro e Tâmega
AFIN – Associação Florestal do Interior
AFL – Associação Florestal do Lima
AFLOBEI – Associação de Produtores Florestais da Beira Interior
AFLODOUNORTE – Associação Florestal do Vale do Douro Norte
AFLOESTRELA – Associação de Produtores Florestais da Beira Alta
AFLOMAÇÃO – Associação Florestal do Concelho de Mação
AGRESTA – Associação dos Agricultores do Minho
AGUIAR FLORESTA – Associação Florestal e Ambiental de Vila Pouca de Aguiar
ANA – Associação Norte Agrícola
ANSUB – Associação de Produtores Florestais do Vale do Sado
APAS Floresta – Associação de Produtores Florestais
APATA – Associação de Produtores Agrícolas Tradicionais e Ambientais
APFAM – Associação dos Produtores Florestais de Alvelos e Muradal
APFC – Associação dos Produtores Florestais do Conselho de Coruche e Limitrofes
APFCAN – Associação dos Produtores Florestais dos Concelhos de Alcobaça e Nazaré
APFLOR – Associação dos Produtores Florestais do Concelho de Pedrogão Grande
APFSC – Associação de Produtores Florestais da Serra do Caldeirão
APFRA – Associação dos Produtores Florestais da Região de Alcobaça
ARBOREA – Associação Agro-Florestal e Ambiental da Terra Fria Transmontana
ASFOAL – Associação de Produtores Florestais do Alto Alentejo
ASPAFLOBAL – Associação dos Produtores Florestais do Barlavento Algarvio
Associação de Agricultores dos Concelhos de Abrantes, Constância, Sardoal e Mação
Associação in Loco de Intervenção, Formação e Estudos para o Desenvolvimento Local
Associação Florestal do Concelho de Ansião
Associação Florestal do Concelho de Góis
Associação Florestal do Vale do Sousa
Associação de Produtores Florestais e Agrícolas do Concelho de Proença-a-Nova
Associação de produtores Florestais de Espadana e Gardunha
Associação dos Produtores Florestais da Freguesia de Belver
Associação de Produtores Florestais do Planalto Beirão
ATN – Associação Transumância e Natureza
CAULE – Associação Florestal da Beira Serra
CEDRUS – Associação de Produtores Florestais de Viseu
CELFLOR – Associação de Produtores Florestais
Cooperativa Três Serras de Lafões, C. R. L.
Cooperativa Agrícola dos Lavradores do Vale do Mondego
Cooperativa Agro-pecuária da Beira Central, C. R. L.
Cooperbasto – Cooperativa Agrícola de Basto, C. R. L.

CROFLOR – Associação de Produtores Florestais do Cró
CUMEADAS – Associação de Proprietário Florestais das Cumeadas de Baixo Guadiana
Dão Flora – Associação de Produtores Florestais
FATA – Federação da Agricultura de Trás-os-Montes e Alto Douro
FICAPE – Cooperativa Agrícola do Norte do Distrito de Leiria
FLOREST – Associação dos Produtores Agrícolas e Florestais da Estremadura
NATURA VIVA – Associação Ambiental e Florestal
PINUS VERDE – Associação de Desenvolvimento Integrado da Floresta
Piscotávora – Associação de Produtores Florestais
PORTUCALEA – Associação Florestal do Grande Porto
RIBAFLORE – Associação Florestal das Terras do Ribadouro
SAURIUM FLORESTAL – Associação Prá Floresta do Conselho de Soure
Secretariado dos Baldios de Trás-os-Montes e Alto Douro
SOLO VIVO – Associação para a Promoção do Desenvolvimento Local, Rural, Agrícola, Florestal e Ambiental
Terras de Marvão – Associação de Desenvolvimento Local
URZE – Associação Florestal da Encosta da Serra da Estrela
VERDELAFÕES – Associação de Produtores Florestais

**Source:** Author adapted from ICNF (2018).



**Annex 16 – Direct Competitors’ characterization**

Management Entity	Characterization	Other Services/Activities	Target	Price and Profit Information	Promotion
<b>Gestiverde</b>	Created in 1995, Gestiverde is a consulting company in the area of forestry and they are currently managing one ZIF and developing two more.	All in the area of forestry: Consulting services; technical support; investment management.	In terms of ZIF development, Gestiverde focus on the area of Ribatejo in Portugal.	In the current ZIF, the owners do not pay any fee to be part of the ZIF. They receive part of the profits resulting from land’s exploration.	Presence in the target territory; contacts with Municipalities; Field work; Good Website.
<b>Silviguarda</b>	Firm with 15 years of experience in the field of forestry. Despite the fact that it is considered they manage 4 ZIF’s, it is just one big ZIF but divided in 4 parcels.	All in the area of forestry: technical support; forestry operations; forest rehabilitation.	Silviguarda operates in two regions of South Portugal, Almodôvar and Tavira.	No information available. Lands’ owners receive part of the profits resulting from land’s exploration.	Presence in the target territory; contacts with Municipalities; field work; recent presence online but not significant.
<b>Suberpinus</b>	Created in 2005, Suberpinus is focused on the provision of services in Forestry. Currently is managing 5 ZIF’s.	All in the area of Forestry: Consulting services; forest rehabilitation.	South Portugal, especially regions where the dominant species are cork oak and arbutus.	No information available. Lands’ owners receive part of the profits resulting from land’s exploration.	Presence in the target territory; contacts with Municipalities; Field work; Website.
<b>Silviconsultores</b>	Operating in the market since 2007, Silviconsultores is the biggest player of the market. Currently manages 8 ZIF’s	All in the area of Forestry: Consulting services; production and management of biological assets; forest operations; professional training activities.	Silviconsultores operates in every region of Portugal	No information available. Lands’ owners receive part of the profits resulting from land’s exploration.	Presence in the whole Portuguese territory; contacts with Municipalities; field work.

**Source:** Author. Part of the information was adapted from Competitors’ websites which can be found in the Reference List.

**Annex 17 – Main characteristics for Market Segmentation**

<b>Customers: Entities that want to explore pieces of land</b>	
<b>Type of Entity:</b>	Association; Firm; Individual; Public
<b>Exploration's goal:</b>	For profit; Not for profit
<b>Status of activity:</b>	Starting activity; Expanding business
<b>Entity's dimension:</b>	Micro; Small; Medium; Large
<b>Geographical range of the entity's activity:</b>	Regional; National; International
<b>Profitability of cultivation:</b>	High; Medium; Low
<b>Size of desired land:</b>	100ha or higher; 21 to 99ha; 20ha or less
<b>Entity's Industry:</b>	Agriculture; Forestry; Other Industries
<b>Distance from firm to ZIF's area:</b>	Distant; Medium; Near
<b>Durability of contract:</b>	28 years or more; 15 to 28 years; 7 to 14 years

Source: Author.

**Annex 18 – Promotion Costs in Euros**

	<b>2019</b>
<b>Marketing Budget</b>	<b>17,015</b>
<b>Advertising</b>	<b>7,744</b>
Website	760
Regional Newspapers	6,984
<b>Public Relation</b>	<b>2,028</b>
Awareness-raising activities	2,028
<b>Sales Promotion</b>	<b>0</b>
<b>Personal Selling</b>	<b>6,307</b>
Selling Team	5,070
Merchandising	1,125
Business cards and Brochures	112
<b>Direct Marketing</b>	<b>936</b>
Fairs	936

Source: Author.

**Annex 19 – Employees’ Job Description**

Function	Job Description
CEO	<ul style="list-style-type: none"> <li>- Design the firm’s strategy and make strategic decisions;</li> <li>- Define and implement the marketing strategy in the first three years of activity;</li> <li>- Recruitment and Selection;</li> <li>- Direct contact with (potential) customers and partners;</li> <li>- Promote <i>Fénix Portugal</i>’s brand;</li> <li>- Co-author of the annual budget and the firm’s financial plan;</li> <li>- Study the Industry and market conditions during the first three years;</li> <li>- Promote firm’s culture and values;</li> <li>- Negotiate partnerships;</li> <li>- Close contact with customers in order to obtain feedback and promote a customer relationship of excellence;</li> <li>- Human Resources activities.</li> </ul>
Administrative	<ul style="list-style-type: none"> <li>- Be available to contact (potential) customers and partners;</li> <li>- Be responsible for the administrative work of <i>Fénix Portugal</i>;</li> <li>- Organize the Agenda.</li> </ul>
Forest Engineer	<ul style="list-style-type: none"> <li>- Lead all the work in the ZIF’s land;</li> <li>- Study the viability of each culture in the ZIFs;</li> <li>- Elaborate reports providing counselling about how to manage each specific ZIF.</li> </ul>
Financial Manager	<ul style="list-style-type: none"> <li>- Be responsible for all the financial aspects of the Business;</li> <li>- Elaborate the annual financial plans;</li> <li>- Be responsible for obtaining Funds;</li> <li>- Be responsible for the financial aspects of the contracts with customers.</li> </ul>
Finance Trainee	<ul style="list-style-type: none"> <li>- Be responsible for providing support to the Financial Manager.</li> </ul>
Marketing Trainee	<ul style="list-style-type: none"> <li>- Be responsible for the Marketing activities of the firm;</li> <li>- Promote <i>Fénix Portugal</i>’s brand;</li> <li>- Create brand awareness.</li> </ul>
R&D Manager	<ul style="list-style-type: none"> <li>- Focus on following the external factors that may affect the business in order to find opportunities to improve the work of the firm and also to be aware of threats to the business and strive to mitigate the risks;</li> <li>- Study the impact of technology in the business and find opportunities to incorporate it in the firm’s work;</li> <li>- Study the integration of extra activities in ZIFs’ territories such as beekeeping and hunting reserves.</li> </ul>

Source: Author

**Annex 20 – Gantt Chart**

	Activities	Duration in weeks																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	#	28	29
1	Project's feasibility analysis	24																													
2	Viability study	24																													
3	Investment decision	4																													
4	Project's approval by experienced entrepreneurs	1																													
5	Firm's constitution	1																													
6	Brand registration	1																													
7	Selection of firm's headquarters	3																													
8	Promotion of Fénix Portugal's brand (Marketing activities)	29																													
9	Discussion of implementation with Mação Municipality	4																													
10	Selection and Recruitment of Employees	6																													
11	List of potential partners (Municipalities)	1																													
12	First meetings with potential partners	8																													
13	Meetings with lands' owners from Mação	1																													
14	List of potential customers	1																													
15	First meetings with potential customers	12																													
16	Compliance of legal aspects to develop the first ZIF	8																													
17	Negotiation with potential customers	8																													
18	Contract signature with customers	3																													
19	Implementation of ZIF in Mação	1																													
20	Realization of adjustments to the business plan, if needed	24																													

Source: Author

## Annex 21– Assumptions

Assumptions	
TSU - Employer	23,75%
Work Accident Insurance	1%
Income Tax	21%
Derrama of Santarém Municipality	1,50%
VAT - SES	23%
VAT - Water	6%
VAT - Investments	23%

Expected Inflation (based on Bank of Portugal's projections)					
	2019	2020	2021	2022	2023
	1,40%	1,50%	1,50%	1,50%	1,50%
Accumulated Inflation	101,40%	102,92%	104,46%	106,03%	107,62%

Source: Author

## Annex 22– Number of ZIFs being managed in each year

	2019	2020	2021	2022	2023
ZIFs managed	1*	2	2	3	4

\*The first ZIF will be constituted in July of 2019.

Source: Author

## Annex 23 – Cultures being explored in each ZIF and economical value of land.

Mação's ZIFs (2019, 2020)		Northern Region's ZIFs (2022)		Alentejo's ZIF (2023)	
Culture	Value per hectare	Culture	Value per hectare	Culture	Value per hectare
Pine Tree	5 000 €	Oak Tree	8 000 €	Vineyard	30 000 €
Eucalyptus	4 000 €	Pine Tree	5 000 €	Cork Oak	12 000 €
Irrigated Land	10 000 €	Holm Oak	5 000 €	Holm Oak	5 000 €
Bushland	1 500 €	Irrigated Land	10 000 €	Pine Tree	5 000 €
Natural pastures	5 000 €	Bushland	1 500 €	Bushland	1 500 €
Olive Tree (Intensive)	25 000 €	Natural Pastures	5 000 €	Natural Pastures	5 000 €
				Irrigated Land	10 000 €

Source: Author

**Annex 24**– Revenues resulting from each ZIF’s exploration

5% rate	Eiras Village's ZIF (half 2019)		Mação's Second ZIF (2020)		Northern Region's ZIF (2022)		Alentejo's ZIF (2023)	
	Annual Revenues		Annual Revenues		Annual Revenues		Annual Revenues	
	Pine Tree	91 767 €	Pine Tree	133 281 €	Oak Tree	283 736 €	Vineyard	2 176 077 €
	Eucalyptus	69 560 €	Eucalyptus	100 862 €	Pine Tree	177 335 €	Cork Oak	431 987 €
	Olive Tree	57 038 €	Olive Tree	82 336 €	Holm Oak	177 335 €	Holm Oak	179 995 €
	Irrigated Land	7 098 €	Irrigated Land	10 922 €	Irrigated Land	729 486 €	Pine Tree	179 995 €
	Bushland	15 895 €	Bushland	23 157 €	Bushland	100 357 €	Irrigated Land	15 067 €
	Natural Pastures	13 943 €	Natural Pastures	20 069 €	Natural Pastures	151 888 €	Bushland	101 862 €
	<b>Total Revenues</b>	<b>255 301 €</b>	<b>Total Revenues</b>	<b>370 627 €</b>	<b>Total Revenues</b>	<b>1 620 137 €</b>	Natural Pastures	154 166 €
							<b>Total Revenues</b>	<b>3 239 149 €</b>
	<b>Fénix Portugal's retained Revenues (40%)</b>	<b>102 120 €</b>		<b>148 251 €</b>		<b>648 055 €</b>		<b>1 295 660 €</b>
	<b>Revenues distributed to Lands' Owners (60%)</b>	<b>153 181 €</b>		<b>222 376 €</b>		<b>972 082 €</b>		<b>1 943 489 €</b>

Source: Author

**Annex 25 – Investment Maps (1)**

Assets	Supplier	Quantity	Unit Price	Total Cost	Depreciation rate (Regulatory Decree 25/2009)	Useful Time (Years)	Annual Depreciation	Reinvestment Year	Reinvestment
<b>Furniture and Office Material</b>									
Secretary Lamp	IKEA	4	45,63 €	182,52 €	14,28%	7	26,07 €		
Printer	WORTEN	2	81,12 €	162,24 €	14,28%	7	23,18 €		
Desk	IKEA	8	59,83 €	478,61 €	12,50%	8	59,83 €		
Meeting Table	IKEA	1	262,63 €	262,63 €	12,50%	8	32,83 €		
Chairs	IKEA	12	45,63 €	547,56 €	12,50%	8	68,45 €		
Computer	WORTEN	4	304,2 €	1 216,8 €	33,33%	3	405,6 €	2022	1 272,36 €
TV Led	WORTEN	1	283,92 €	283,92 €	14,28%	7	40,56 €		
TV Shelf	IKEA	1	277,84 €	277,84 €	12,50%	8	34,73 €		
Bookshelf	IKEA	2	282,91 €	565,82 €	12,50%	8	70,73 €		
Trash Bin	IKEA	3	15,21 €	45,63 €	12,50%	8	5,70 €		
<b>Other Tangible Assets</b>									
Air Conditioner	WORTEN	2	365,04 €	730,08 €	12,50%	8	91,26 €		
Vacuum Cleaner	WORTEN	1	121,68 €	121,68 €	14,28%	7	17,38 €		
<b>Intangible Assets</b>									
Society Constitution				365,04 €					
Website				759,5 €					
Brand Registration				127,94 €					
<b>Total Investment</b>				<b>6 127,81 €</b>					
<b>Total Annual Depreciation</b>							<b>876,32 €</b>		

Source: Author

**Annex 25 – Investment Maps(2)**

	2019	2020	2021	2022	2023
<b>Tangible Assets</b>					
Furniture and Office Material	4 023,57 €	0 €	1 253,52 €	0 €	0 €
Other Tangible Assts	851,76 €	0 €	0 €	0 €	0 €
Reinvestments				1 272,36 €	
<b>Tangible Assets Total Investment</b>	<b>4 875,33 €</b>	<b>0 €</b>	<b>1 253,52 €</b>	<b>1 272,36 €</b>	<b>0 €</b>
<b>Intangible Assets</b>					
Legal Compliance	492,98 €	0 €	0 €	0 €	0 €
Website	759,5 €	0 €	0 €	0 €	0 €
<b>Intangible Assets Total Investment</b>	<b>1 252,48 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>
<b>Assets Total Investment</b>	<b>6 127,81 €</b>	<b>0 €</b>	<b>1 253,52 €</b>	<b>1 272,36 €</b>	<b>0 €</b>
<b>Total Depreciations</b>	<b>876,32 €</b>	<b>876,32 €</b>	<b>1 294,16 €</b>	<b>1 312,68 €</b>	<b>1 312,68 €</b>
<b>Net Tangible Fixed Assets</b>	<b>3 999,01 €</b>	<b>3 122,69 €</b>	<b>3 082,05 €</b>	<b>3 041,73 €</b>	<b>1 729,05 €</b>

Source: Author



**Annex 26 – Supplies and External Services Map**

Supplies and External Services (SES)	Estimated monthly cost	Fixed Cost	Variable Cost	2019	2020	2021	2022	2023
Office's rent	300 €	100%	0%	3 650 €	3 705 €	3 761 €	3 817 €	3 874 €
Water	30 €	100%	0%	365 €	371 €	376 €	382 €	387 €
Electricity	120 €	100%	0%	1 460 €	1 482 €	1 504 €	1 527 €	1 550 €
Gas	20 €	100%	0%	243 €	247 €	251 €	255 €	258 €
Internet + TV + Communications	50 €	100%	0%	608 €	618 €	627 €	636 €	646 €
Legal Services (Lawyer - subcontract)	500 €	100%	0%	6 084 €	6 175 €	6 268 €	6 362 €	6 457 €
Accounting Services (Subcontract)	300 €	100%	0%	3 650 €	3 705 €	3 761 €	3 817 €	3 874 €
Office and Cleaning Materials	40 €	100%	0%	487 €	494 €	501 €	509 €	517 €
<b>Total SES as Fixed Costs</b>				<b>16 547 €</b>	<b>16 797 €</b>	<b>17 049 €</b>	<b>17 305 €</b>	<b>17 563 €</b>
<b>Total SES as Variable Costs</b>								
<b>Total SES</b>				<b>16 547 €</b>	<b>16 797 €</b>	<b>17 049 €</b>	<b>17 305 €</b>	<b>17 563 €</b>
% of Fixed Costs				100%	100%	100%	100%	100%
% of Variable Costs				0%	0%	0%	0%	0%

**Source:** Author

**Annex 27 – VAT**

VAT	2019	2020	2021	2022	2023
<b>VAT payable</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>
VAT - Investments	1 409,39 €	0 €	288,31 €	292,64 €	0 €
VAT - SES	3 743,76 €	3 800,24 €	3 857,35 €	3 915,21 €	3 973,70 €
<b>VAT receivable</b>	<b>5 153,15 €</b>	<b>3 800,24 €</b>	<b>4 145,66 €</b>	<b>4 207,85 €</b>	<b>3 973,70 €</b>

Source: Author

**Annex 28 – Personnel Expenses**

Personnel Expenses	2019	2020	2021	2022	2023
Staff's Gross Remuneration	56 000 €	66 808 €	106 729 €	108 336 €	109 964 €
TSU - employer	13 300 €	15 867 €	25 348 €	25 730 €	26 117 €
Work accident insurance	560 €	668 €	1 067 €	1 083 €	1 100 €
<b>Total Cost</b>	<b>69 860 €</b>	<b>83 343 €</b>	<b>133 144 €</b>	<b>135 149 €</b>	<b>137 181 €</b>

Source: Author

**Annex 29 – Income Statement**

	2019	2020	2021	2022	2023
Services Provided	51 061 €	250 371 €	250 371 €	898 426 €	2 194 086 €
<b>Gross Profit</b>	<b>51 061 €</b>	<b>250 371 €</b>	<b>250 371 €</b>	<b>898 426 €</b>	<b>2 194 086 €</b>
Supplies and External Services	16 547 €	16 797 €	17 049 €	17 305 €	17 563 €
Marketing Activities	17 015 €	13 527 €	13 728 €	9 696 €	8 762 €
Personnel Expenses	69 860 €	83 343 €	133 144 €	135 149 €	137 181 €
<b>EBITDA</b>	<b>-52 361 €</b>	<b>136 704 €</b>	<b>86 450 €</b>	<b>736 276 €</b>	<b>2 030 580 €</b>
Depreciations	876,32 €	876,32 €	1 294,16 €	1 312,68 €	1 312,68 €
<b>EBIT (Operational Result)</b>	<b>-53 237,32 €</b>	<b>135 827,68 €</b>	<b>85 155,84 €</b>	<b>734 963,32 €</b>	<b>2 029 267,32 €</b>
Interest and Similar Income received	0 €	0 €	0 €	0 €	0 €
Interest and Similar Expenses paid	0 €	0 €	0 €	0 €	0 €
<b>EBT</b>	<b>-53 237,32 €</b>	<b>135 827,68 €</b>	<b>85 155,84 €</b>	<b>734 963,32 €</b>	<b>2 029 267,32 €</b>
Income Tax	0 €	28 523,81 €	17 882,73 €	154 342,30 €	426 146,14 €
Derrama	0 €	1 358,28 €	851,56 €	7 349,63 €	20 292,67 €
<b>Net Income</b>	<b>-53 237,32 €</b>	<b>105 945,59 €</b>	<b>66 421,56 €</b>	<b>573 271,39 €</b>	<b>1 582 828,51 €</b>

Source: Author

## Annex 30 – Balance Sheet

Balance Sheet - 31st of December of Year N					
	2019	2020	2021	2022	2023
<b>Assets</b>					
<b>Non-Current Assets</b>					
Tangible Fixed Assets	3 999,01 €	3 122,69 €	3 082,05 €	3 041,73 €	1 729,05 €
Intangible Assets	1 252,48 €	1 252,48 €	1 252,48 €	1 252,48 €	1 252,48 €
<b>Total of Non-Current Assets</b>	<b>5 251,49 €</b>	<b>4 375,17 €</b>	<b>4 334,53 €</b>	<b>4 294,21 €</b>	<b>2 981,53 €</b>
<b>Current Assets</b>					
State and Other Public Sector Institutions	5 153,15 €	3 800,24 €	4 145,66 €	4 207,85 €	3 973,70 €
Other Financial Assets	0 €	138 119,84 €	200 066,10 €	907 671,01 €	2 755 239,37 €
Cash and Bank Deposits	29 658,04 €	32 162,11 €	34 665,82 €	43 650,08 €	65 590,94 €
<b>Total of Current Assets</b>	<b>34 811,19 €</b>	<b>174 082,19 €</b>	<b>238 877,58 €</b>	<b>955 528,94 €</b>	<b>2 824 804,01 €</b>
<b>Total Assets</b>	<b>40 062,68 €</b>	<b>178 457,36 €</b>	<b>243 212,11 €</b>	<b>959 823,15 €</b>	<b>2 827 785,54 €</b>
<b>Equity</b>					
Capital	80 000 €	80 000 €	80 000 €	80 000 €	80 000 €
Legal Reserves	0 €	0 €	5 297,28 €	8 618,36 €	16 000 €
Transited Results	0 €	-53 237,32 €	52 708,27 €	113 832,55 €	683 782,86 €
Net Income	-53 237,32 €	105 945,59 €	61 124,28 €	569 950,31 €	1 575 446,87 €
<b>Total Equity</b>	<b>26 762,68 €</b>	<b>132 708,27 €</b>	<b>199 129,83 €</b>	<b>772 401,22 €</b>	<b>2 355 229,73 €</b>
<b>Liabilities</b>					
<b>Non-Current Liabilities</b>					
<b>Total of Non-Current Liabilities</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>	<b>0 €</b>
<b>Current Liabilities</b>					
State and Other Public Sector Institutions	13 300 €	15 867 €	25 348 €	25 730 €	26 117 €
Income Tax	0 €	28 523,81 €	17 882,73 €	154 342,30 €	426 146,14 €
"Derrama" (overtax)	0 €	1 358,28 €	851,56 €	7 349,63 €	20 292,67 €
<b>Total of Current Liabilities</b>	<b>13 300 €</b>	<b>45 749,09 €</b>	<b>44 082,28 €</b>	<b>187 421,93 €</b>	<b>472 555,81 €</b>
<b>Total Liabilities</b>	<b>13 300 €</b>	<b>45 749,09 €</b>	<b>44 082,28 €</b>	<b>187 421,93 €</b>	<b>472 555,81 €</b>
<b>Total Equity and Liabilities</b>	<b>40 062,68 €</b>	<b>178 457,36 €</b>	<b>243 212,11 €</b>	<b>959 823,15 €</b>	<b>2 827 785,54 €</b>

Source: Author

**Annex 31 – Economical and Financial Indicators**

<b>Growth</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Assets</b>				
Total Assets	345%	36%	295%	195%
Current Assets	400%	37%	300%	196%
Non-Current Assets	-17%	-1%	-1%	-31%
<b>Equity</b>				
Total Equity	396%	50%	288%	205%
<b>Liabilities</b>				
Total Liabilities	244%	-4%	325%	152%
Current Liabilities	244%	-4%	325%	152%
Non-Current Liabilities	0%	0%	0%	0%
Revenues	390%	0%	259%	144%
EBITDA	*	-37%	752%	176%
EBIT	*	-37%	763%	176%
EBT	*	-37%	763%	176%
Net Income	*	-37%	763%	176%
EBITDA/Revenues	55%	35%	82%	93%
Operating Margin of Sales (EBIT/Revenues)	54%	34%	82%	92%
Net Profitability of Sales (Net Income/Revenues)	42%	27%	64%	72%
Weight of Personnel Expenses in Turnover (Personnel Expenses/Revenues)	33%	53%	15%	6%

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Profitability</b>				
Net ROA (Net Income/Assets)	59%	27%	60%	56%
Gross ROA (EBIT/Assets)	76%	35%	77%	72%
ROS (EBIT/Revenues)	54%	34%	82%	92%
ROE (Net Income/Equity)	59%	27%	60%	67%
ROI (EBT/Assets)	76%	35%	77%	72%
<b>Financial Structure</b>				
Financial Autonomy (Equity/Assets)	74%	82%	80%	83%
Total Solvability (Equity/Liabilities)	290%	452%	412%	498%
Total Debt (Liabilities/Assets)	26%	18%	20%	17%
Debt Structure (Current Liabilities/Liabilities)	100%	100%	100%	100%
<b>Liquidity Indicators</b>				
Current Liquidity (Current Assets/Current Liabilities)	3,81	5,42	5,10	5,98
<b>Efficiency</b>				
Rotation of Assets (Revenues/Assets)	1,40	1,03	0,94	0,78
Rotation on Equity (Revenues/Equity)	1,89	1,26	1,16	0,93
<b>Risk</b>				
Degree of Financial Leverage (EBIT/EBT)	1	1	1	1

Source: Author

### Annex 32 – Working Capital Map

	2019	2020	2021	2022	2023
Cash Reserve	29 658,04 €	32 162,11 €	34 665,82 €	43 650,08 €	65 590,94 €
VAT Receivable	5 153,15 €	3 800,24 €	4 145,66 €	4 207,85 €	3 973,70 €
<b>Total Needs</b>	<b>34 811,19 €</b>	<b>35 962,35 €</b>	<b>38 811,48 €</b>	<b>47 857,93 €</b>	<b>69 564,64 €</b>
VAT Payable	0 €	0 €	0 €	0 €	0 €
SS	13 300 €	15 867 €	25 348 €	25 730 €	26 117 €
<b>Total Resources</b>	<b>13 300 €</b>	<b>15 867 €</b>	<b>25 348 €</b>	<b>25 730 €</b>	<b>26 117 €</b>
<b>WC</b>	<b>21 511,19 €</b>	<b>20 095,35 €</b>	<b>13 463,48 €</b>	<b>22 127,93 €</b>	<b>43 447,64 €</b>
<b>Investment in WC</b>	<b>21 511,19 €</b>	<b>-1 415,84 €</b>	<b>-6 631,87 €</b>	<b>8 664,45 €</b>	<b>21 319,71 €</b>

Source: Author

### Annex 33 – Required Rate of Return (CAPM Model)

<b>Growth Rate (g)</b>	<b>1,80%*</b>
Risk-Free rate (Rf)	3,15%**
Unlevered Beta ( $\beta_u$ )	0,66***
Risk Premium (E(Rm)-Rf)	7,96%****
<b>Required rate of return (Re)</b>	<b>8,40%</b>

Source: Author (Adapted). \* Based on predictions from Bank of Portugal;  
 \*\*<https://www.pordata.pt/Portugal/Taxas+de+rendibilidade+de+obriga%C3%A7%C3%B5es+do+tesouro-2803>;  
 \*\*\*[http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/Betas.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/Betas.html) Damodaran;  
 \*\*\*\*[http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/ctryprem.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html)

**Annex 34 – Cash Flows Maps**

	2019	2020	2021	2022	2023
EBITDA	-52 361 €	136 704 €	86 450 €	736 276 €	2 030 580 €
Depreciations	876,32 €	876,32 €	1 294,16 €	1 312,68 €	1 312,68 €
EBIT	-53 237,32 €	135 827,68 €	85 155,84 €	734 963,32 €	2 029 267,32 €
EBIT(1-t)		107 303,87 €	67 273,11 €	580 621,02 €	1 603 121,18 €
Derrama		1 358,28 €	851,56 €	7 349,63 €	20 292,67 €
Investment in WC	21 511,19 €	-1 415,84 €	-6 631,87 €	8 664,45 €	21 319,71 €
<b>Operating Cash Flow</b>	<b>-73 872,19 €</b>	<b>108 237,75 €</b>	<b>74 347,59 €</b>	<b>565 919,62 €</b>	<b>1 562 821,48 €</b>

	2019	2020	2021	2022	2023
Operating Cash Flow	-73 872,19 €	108 237,75 €	74 347,59 €	565 919,62 €	1 562 821,48 €
Investment in CAPEX	6 127,81 €	0 €	1 253,52 €	1 272,36 €	0 €
<b>Free Cash Flow to Firm (FCFF)</b>	<b>-80 000,00 €</b>	<b>108 237,75 €</b>	<b>73 094,07 €</b>	<b>564 647,26 €</b>	<b>1 562 821,48 €</b>
Accumulated FCFF	-80 000,00 €	28 237,75 €	101 331,82 €	665 979,08 €	2 228 800,55 €

	2019	2020	2021	2022	2023	Terminal Value
Net Income	-53 237,32 €	105 945,59 €	66 421,56 €	573 271,39 €	1 582 828,51 €	
Depreciations	876,32 €	876,32 €	1 294,16 €	1 312,68 €	1 312,68 €	
Investment in WC	21 511,19 €	-1 415,84 €	-6 631,87 €	8 664,45 €	21 319,71 €	
Investment in CAPEX	6 127,81 €	0 €	1 253,52 €	1 272,36 €	0 €	
<b>Free Cash Flow to Equity (FCFE)</b>	<b>-80 000,00 €</b>	<b>108 237,75 €</b>	<b>73 094,07 €</b>	<b>564 647,26 €</b>	<b>1 562 821,48 €</b>	<b>24 105 337,37 €</b>
Accumulated FCFE	-80 000,00 €	28 237,75 €	101 331,82 €	665 979,08 €	2 228 800,55 €	

Source: Author

**Annex 35 – Project Evaluation – Main indicators**

	2019	2020	2021	2022	2023	Terminal Value
Free Cash Flow to Equity (FCFE)	-80 000,00 €	108 237,75 €	73 094,07 €	564 647,26 €	1 562 821,48 €	24 105 337,37 €
Discounted Cash Flow (DCF)	-73 800,74 €	92 112,84 €	57 384,46 €	408 940,47 €	1 044 150,16 €	16 105 225,24 €
Accumulated DCF	-73 800,74 €	18 312,11 €	75 696,56 €	484 637,04 €	1 528 787,20 €	17 634 012,44 €
<b>NPV</b>	<b>17 634 012,44 €</b>					
<b>Internal Rate of Return (IRR)</b>	<b>257%</b>					
<b>Payback Period</b>	<b>1 year and 9 months</b>					

Source: Author

### Annex 36 – Eiras Village's ZIF

