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Summary of WP Student Team

Farmlend – A Novel Method for Tackling Agricultural Waste in Crop Production

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Management from the Nova School of Business and Economics.

FARMLEND – A NOVEL METHOD FOR TACKLING AGRICULTURAL WASTE IN
CROP PRODUCTION

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Work project carried out under the supervision of:

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Abstract

In the Field Lab, Building Companies Based on Science, students were given the opportunity to investigate a new scientific breakthrough. The students received a new patented live-metrics technology, with a mission to create a business plan, with a goal to establish a new company. The purpose of this business plan is to present how the company will tackle and face current challenges in the agricultural industry. In the making of the business plan, market research was conducted, followed by creating a solution, a new business model, a financial plan, and possible strategies to enter the market. The final business plan covers the essential elements to pitch the new company to partners and investors.

Keywords: Science-Based Entrepreneurship, Venture Capital, Innovation, Agriculture, Precision Agriculture, Entrepreneurial Finance, Research and Development, Crop Management, Unmanned Aerial Vehicles.

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EXECUTIVE SUMMARY

In the last couple of years, there has been a big pressure from governments, nations, and humans on the sustainability and efficiency of multiple industries. Studies have shown that numerous industries are still working ineffectively, and many resources (physical, financial, and nutritious) are being wasted because of this. Our company is developing a solution that can increase sustainability and efficiency by significantly reduce the waste of the production process of crops in the agricultural sector. More than 25% of the global production of crops gets lost due to these inefficiencies and malpractices, and the main causes of this loss are water mismanagement, loss of fresh produce during the pre-harvest, harvest, post-harvest phases, and crop diseases (FAO, 2020).

Our company, Farmlend, is developing a product that can almost eliminate the industry's loss and unsustainability issues by combining existing resources with the unique patented software developed by two previous master's students from Nova IMS. The result is an incredibly high-tech and efficient drone that, combined with our farm management and data analysis platform, will identify the inefficiencies and losses in small, medium, and industrial farms at every phase of the production process. The product will notify and inform the farmer about the issues to help them solve them by eliminating losses and inefficiencies.

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INTRODUCTION

We are moving at a tipping point in the world on numerous levels. We see pandemics hand in hand with wars shaking through the entire contemporary world as we know it. The consequences are known to us all, inflation, expensive commodity prices, high-interest yields, and high gas prices. Both individuals and companies suffer from these macroeconomic events. And we see that even the oldest, most established industries must innovate to survive. The rising global demand for food and water, the rising global population, and the continuation of development have created a big question mark on how specific industries, more specifically the agriculture industry, should tackle to meet the world's needs in different fields (Caparas et al., 2021).

As mentioned, the world has brought us new consequential challenges, and several of these challenges are in the agricultural sector. The changes in temperature and precipitation are expected to impact land and water regimes, subsequently affecting agricultural productivity (Kurukulasuriya and Rosenthal, 2013). Another challenge is the world's population, projected to reach 10 billion by 2050. Consequently, we will need to increase today's food production by

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56% compared to 2010 to create a sustainable future. In addition, one of the most significant challenges facing today's food industry is food waste, with 25% of produced food going uneaten due to food waste or loss (Ranganathan et al., 2018). If we take a closer look at the waste and loss, a quarter of this loss and waste occurs during the production process of food.

During a study in 2021 by the Environmental Research Letter, a specific project model was created and forecasted that by 2030, crop yield failures are expected to increase by 4.5 times. By 2050 the probability of crop yield failures will be 25 times higher across global breadbaskets if CO₂ fertilization is ignored (Caparas et Al., 2021). Several initiatives have been created to tackle this challenge, and we are slowly but surely starting to see some efforts that can partially disrupt these issues in the future. Although we are beginning to see a slow shift, it is fair to say that plenty of efforts should still be made in the future for the world to stand a chance to tackle this immense problem. We have shaped our company on that note of innovation mixed with the challenges associated with the consumer landscape.

By focusing on the problem of loss and waste generated throughout the production process of food, more precisely in the fruits and vegetable industry, we find that the most important aspects to emphasize for the sector to become more sustainable are the factors related to efficiency and productivity. In order to stimulate the production process for the better and tackle the waste and loss of fruits and vegetables, improvement has to be made in the technology. We are therefore developing a product to tackle this global issue.

To do so, we are creating a new groundbreaking product that optimizes the agriculture production process efficiency and productivity by generating data on crops and their environments. Our product will therefore challenge the three key areas responsible for the loss

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of crops in the agriculture industry: water management, the pre-harvest, harvest, and post-harvest phases of fruit and vegetable production, and crop health.

OUR BUSINESS CASE

At the beginning of the second semester of 2022, our company Farmlend was founded after four Nova SBE students bundled their forces together for their master thesis project. They all shared the same significant interest in a specific software; accurate measurements in real-time using imagery acquired by optical cameras installed into aerial platforms such as drones. The technology was created by two master's students at Nova IMS Information Management School and patented by Universidade de Nova. Currently, the technology is on TRL4, which stands for technology readiness level 4. This phase is already a phase where the technology is being tested in a simulated environment that reflects the actual operating conditions. The four of us genuinely believed that this software, combined with existing and newly created resources, could disrupt a whole industry for the best.

The essence of the Field Lab is for students to create a company based on scientific research which they can choose from a list provided by the Field Lab' supervisor. After meeting with the inventors of the technology and exploring how the technology could generate a huge sustainable impact in a big industry like agriculture that is currently not sustainable and making losses, we believed we could have an impact in the fruit and vegetable sector where there is a lack of sustainability and efficiency. If we would merge the inventors' innovative scientific technology; a software that performs accurate measurements in real-time using imagery acquired by optical cameras with a physical drone and other hardware components, for example, an infrared camera and thermic sensors, we could make the two works together efficiently in combination with the creation of a managing and data analysis platform and application.

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After a couple of meetings and hours between the four of us, a meeting with our project supervisor, Nuno Arantes-Oliveira, and with the two master's students at Nova IMS who created the technology, we decided that our business idea was a good fit for our Field Lab, and that we could solve one of society's biggest issues for the better.

THE PROBLEM

Farmlend has been created to solve the three main problems in the agriculture industry is currently facing: The enormous water waste during the production of the crops, the loss, inefficiencies and malpractice during different harvesting phases and the loss and waste due to crop sicknesses.

Identifying and Understanding the Agriculture's Water Problem

Water is essential to the agriculture industry because it supports plant growth and enables the production of crops that provide food for the world's population. Without adequate water management, food security can be threatened. According to data from the Food and Agriculture Organization of the United Nations (FAO), irrigated agriculture covers 20 percent of cultivated land and produces 40 percent of global food supply. More than 70% of all water consumption in the world is used for agriculture. Globally, the agriculture industry is the largest user of water, accounting for up to 95% of water consumption in some developing countries. According to a study, more than 40% of the water used in the agriculture industry is not used efficiently. To make the agriculture industry more sustainable, it is important to implement strategies that improve water efficiency and minimize water loss. This can include using precision irrigation technologies, improving water storage and distribution systems, and implementing conservation measures. (Balsom, 2020). Climate change is expected to have a significant impact on water scarcity and famine, which can put pressure on the agriculture sector. Climate change is expected to exacerbate the frequency and intensity of natural disasters such as

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droughts, floods, and tropical storms, which can affect the availability of water and other resources for agriculture (OECD, 2016). Therefore, it is important to implement strategies that improve water efficiency, minimize water loss, and ensure the sustainable use of water and other resources for agriculture.

Identify and Understand the Problem and Challenges in all Different Harvesting Stages.

in addition to water mismanagement, the pre-harvest phase is a significant contributor to the waste of fruits and vegetables. This phase is characterized by losses due to insect damage, weed competition, and disease. Harvest losses occur between the beginning and completion of harvesting and are primarily caused by losses due to shattering.

Studies have shown that many fruits and vegetables are lost in the pre-harvest and harvest processes of different crops (Conrad et al., 2018). The leading causes of waste in the pre-harvest production stage are environmental conditions and agricultural practices. The United Nations has called for the adoption of new technologies, precision farming techniques, and tools to address this problem. (Felix Instruments, 2021). The main causes for food loss during the harvest are poorly chosen harvest time and poor or wrong harvest methods. Parameters such as skin color, size, and firmness can be used to fix the harvest time. Therefore, it is essential to improve the efficiency and sustainability of the agricultural sector and its processes to reduce greenhouse gas emissions and other forms of pollution.

Identifying and Understanding the Issues of Crop Sicknesses.

According to The Food and Agriculture Organization of the United Nations, the body responsible for controlling plant pests and diseases and ensuring the safety of the plant trade

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has adopted new international measures to prevent pests from crossing borders and spreading (The Food and Agriculture Organization of the United Nations, 2019).

The standards, including protocols to defend against highly invasive pests such as *Xylella fastidiosa* and the oriental fruit fly, were adopted this week at the annual meeting of the Commission on Phytosanitary Measures (CPM). The CPM is the governing body of the International Plant Protection Convention (IPPC) - the only international body responsible for setting and implementing plant health standards recognized by governments worldwide and by the World Trade Organization (WTO) to facilitate safe trade and protect plant health. With the increase in trade and travel, the risk of plant pests spreading to new areas across borders is greater today than ever before. Every day we see a shocking number of threats to the well-being of our plants and, in turn, to our health, environment, and economy.

The Food and Agriculture Organization of the United Nations (FAO) estimates that annually up to 40 percent of global crop production is lost to pests, resulting in an economic cost of over \$220 billion from plant diseases and at least \$70 billion from invasive insects (FAO, 2021). "Many farmers and governments are struggling to defend against highly destructive pests and diseases that, to make matters worse, are new to them. IPPC gives them the tools and knowledge to keep their crops healthy and prevent pests from crossing borders".

The following is an example of how bacteria can affect plants, and their direct consequences:

- *Xylella fastidiosa* and the oriental fruit fly (*Bactrocera dorsalis*). Ensuring proper diagnosis is critical to initiating rapid action to control the pests.

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- *Xylella fastidiosa* is a deadly bacterium that attacks economically important crops such as olive, citrus or plum trees and grapevines. Since 2015, it has been spreading rapidly from the Americas to Europe and Asia
- Once *Xylella fastidiosa* enters a plant, it stays there - depriving the plant of water until it dies or becomes too weak to bear fruit.
- *Xylella fastidiosa* causes \$104 million in wine losses annually in California alone. In Italy, the bacterium has led to the decline of 180,000 hectares of olive groves - including many centuries-old trees - and poses a threat not only to the Italian economy but to the economies of all Mediterranean countries.
- The oriental fruit fly (*Bactrocera dorsalis*) has infested trees such as avocado, banana, guava and mango in at least 65 countries. In Africa, import bans due to oriental fruit fly infestation cause annual losses of about \$2 billion.

OUR SOLUTION

After researching the agricultural industry and its main challenges described above, we came up with a product that can tackle these problems all at once. With a single product we will revolutionize the precision agriculture industry by mounting extra features to an existing drone. With our software and possible extra sensors, we will generate data in different ways both from the crop and crop fields. Then, we will turn this data into clear and relevant data information giving the farmers an important overview and instructions for needed actions to take for the crops and their environment. Our drone will detect irrigation and water problems, failing and inefficient crops, the production process, and important pre-harvest, and post-harvest information. Due to its ability to fly and achieve certain speeds, it is possible to do visual inspections at a concise speed which tackles the expensive labor cost usually needed for this practice, and our cameras and software replaces the need for expensive skilled observers. Our

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drone provides real-time and accurate data to the farmer, allowing a farmer to take immediate action. We enable farmers to visualize their farms and crop from small to large-scale farms way faster and cheaper than the current options

Additionally, our drone will also be able to identify fertilizers, pests, and diseases. All this data will allow farmers to do better crop and farm management, and as a result, production yields will increase without the need to consume more land. With our drone, we can ensure that the farmer receives a full report covering plant count, health conditions, etc. The following part explains in detail how and with which technologies the drone will be able to solve each challenge.

OUR MARKET

As a startup, it is crucial to understand the characteristics and dynamics of our target market to develop our business strategy. In these sections, we have therefore analyzed our geographical market to be able to decide our entry market and where to strategically expand in the future.

PRECISION AGRICULTURE MARKET OVERVIEW

The usage of drones and software in the agriculture markets is also known as precision agriculture. Precision agriculture is a cutting-edge method of managing farms and other agricultural operations that uses information technology and depends on specialized systems, software, and IT services. Globally, the Precision Agriculture market was valued at USD 7.96 billion in 2022 and is estimated to reach USD 20.84 billion by 2030 at a CAGR of 14.95%, from 2022 to 2030 (Grand View Research, 2022).

The market for precision agriculture is divided into five major regions: North America, Latin America, Europe, Asia Pacific, and the Middle East and Africa. North America is the global

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market leader of the five regions, with a revenue share of 45% of the total global precision agriculture market in 2021, as the region is an early adopter of new technologies (Grand View Research, 2022). The Asia Pacific region is currently predicted to grow at the fastest rate because of the increasing modernization of agriculture in countries like China, India, and Indonesia combined with the region's high demand and pressure on agriculture to boost positive outputs because of the increasing population and strong economic growth. The European region is also expected to have robust revenue growth in the following years as the regional players are interested in increasing overall efficiency to remain competitive in the market. (Precedence Research, 2022).

In addition to the five regions, the precision agriculture market is divided into the following three categories.

- **Component**

The component category is divided into; hardware, software, and services, where the hardware segment is leading one the precision agriculture industry. It is forecasted to stay as the leading component as the adoption by hardware among farmers have had a significant increase, especially within developing countries. The software component is increasing together with the hardware as it is needed to ensure effective functioning for the hardware products within precision agriculture. Moreover, the service segment is expected to have high growth as farmers need various services adaption to precision farming, such as system integration and knowledge about the product (Rachita and Vineet, 2021).

- **Technology**

The technology category consists of five categories: remote sensing, GPS/GNSS systems, variable rate technology (VRT), guidance software and geomapping. Within this category,

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Variable Rate Technology (VRT) is the leader and expected to have the highest growth as a result of the early adaptation of this technology from farmers (MarketsandMarkets, 2022).

- **Application**

The application category is divided into; yield monitoring, crop scouting, field mapping, variable rate application, weather tracking, and forecasting, inventory management, farm labor management, financial management, and others (demand forecasting, customer management, payables, and receivables). Yield monitoring leads the application segment as the application enables to improve food and crop security effectively, deal with climate-related disasters and create better agricultural decision-making (MarketsandMarkets, 2022).

KEY MARKET TRENDS

Drivers

- **Reduce cost and increase productivity**

Today farmers face increasing pressure to produce more food with the same resources as before while the world's population grows. The pressure to produce more food is a record high; by 2050, food production is expected to increase by 70% compared to today's level (Seddon, 2018). With the increased production pressure and higher margins pressure, several large-scale producers prioritize maximizing efficiencies. Farmers are also facing the challenges of climate change, slow productivity growth, price increases, and restrictions on energy use. With technological advances such as drones and the increased integration of agricultural software, the farmers can reduce their costs, improve their efficiency, and increase their productivity.

- **Adaption to smartphone usage in agriculture**

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One of the biggest drivers in the market is the increasing demand for using smartphones in agriculture. Companies have introduced the farmers to advanced applications available to every smartphone, enabling today's farmers to be able to monitor their fields from anywhere with their data backed up in the cloud (Stephenson et al., 2021, 4).

Opportunities

- **Increased use and awareness of AI based solutions in precision agriculture**

The increased use and awareness of AI-based solutions in precision agriculture is an opportunity for the industry because AI can significantly improve the efficiency and effectiveness of farming operations. AI-based solutions can help farmers optimize irrigation and fertilization practices, predict crop yields, and detect and predict pests and diseases, which can help reduce costs and increase productivity. The increased use of AI in precision agriculture can also help to improve the sustainability of farming operations and meet the growing demand for food (Javaid et al., 2022, 2).

Restraints

- **High cost of precision farming equipment**

The current technology and tools used in precision agriculture, such as drones, VRT, GPS, smart sensors, GNSS, and guidance tools, are effective but costly purchase and maintain. The high cost of precision farming equipment may limit the adoption of these technologies to larger, more financially secure agricultural businesses, further widening the gap between small and large farms. It can also be a barrier for smaller farmers with limited financial resources, who may not be able to afford the upfront cost of these technologies. For instance, the new technology requires substantial capital investments, farmers in

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developing countries, for instance, India, China, and Brazil, prefer traditional farming over precision farming (Straits Research, 2022).

- **Lack of knowledge among farmers**

A Farmers might be unfamiliar with new precision agriculture technologies and how they can benefit their operations. This lack of understanding can lead to hesitancy or reluctance to adopt these technologies, even if they have the financial resources to do so. Further, the industry constantly evolves with new technologies being developed and introduced. This can make it difficult for farmers to stay up-to-date and fully understand the capabilities and limitations of different precision agriculture solutions. Also, the complexity of precision agriculture systems and the need for specialized training and support can restrain the market. Without adequate knowledge and support, farmers may struggle to effectively implement and utilize precision agriculture technologies, leading to a lack of adoption (Straits Research, 2022).

OUR TARGET MARKET REGION

We have chosen Europe as our target region at entry level. Several factors are making Europe a good start market. First, it is forecasted 150 000 agricultural drones will be used across European farms by 2035, as there is rising adoption of precision agriculture in Europe with an expected CAGR growth of at least 20% until 2027 (Borah and Singh, 2022).

Secondly, one of the most considerable restraints in the precision agriculture market is the investment capital required by the farmers. However, the European Commission is currently invested in fostering precision farming techniques (The European Commission 2018, 13). The European market is known for its strong focus on sustainability and environmental protection, which aligns with our mission to tackle these challenges. Therefore, the European sustainable

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focus and governmental support of using unmanned aerial vehicles (UAV) in agriculture benefit our entry market region.

Third, the European market is affected by an increasing labor shortage because of factors such as low wages, the aging population, and immigration disruption in the Covid-19 pandemic. These factors can give a positive outcome for entering the precision agriculture market as more farmers might be driven to find solutions to improve the efficiency of their farming operations.

THE GERMAN MARKET

Within the European region, we have chosen Germany as our entry market. Germany has one of the highest productions of fruit and vegetables in Europe. In total, crop production in the German market has a revenue of USD 15.61 billion. It is expected to grow to USD 15.67 billion in 2025, making the country top 5 in the global agriculture market regarding crop production. Moreover, the country has a rich agricultural industry, counting a total of 257 900 agricultural businesses in 2019 (Koptuyug. 2022).

We decided that Farmlend will enter the German market because of its leading role in precision agricultural technology in Europe, making it a lucrative market for precision agriculture businesses and startups. Currently, the German precision agriculture market is expected to grow significantly in the following years as several tech companies venture into the sector. The niche market was valued at USD 530 million in 2021, with a historic CAGR of 13.1% within the period 2017-2021 (GlobalData, n.d.).

Secondly, the German government is supportive and has implemented policies encouraging farmers to adopt precision agricultural technologies. Germany invests heavily in agricultural

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research and development and is one of the world's leading agricultural research and innovation countries (Claver, 2019). As a result, German farmers are ahead of the curve when it comes to adopting new agricultural technologies, such as precision agriculture. This factor makes the country favorable for us as a start-up within the precision agricultural space.

Thirdly, entering the precision agriculture market in Germany is an excellent opportunity for our company to capitalize on the growing demand for sustainable and efficient farming practices. German farmers are increasingly turning to precision agriculture to maximize their output while minimizing their environmental impact. This has opened a large market for technology-driven solutions that can help farmers optimize their operations and increase their yield. Lastly, Germany is centrally located in Europe with excellent infrastructure, making it a strategic location for Farmlend regarding our future expansion in the region.

FUTURE EXPANSION AND NEW MARKETS

After establishing our company in the German market, our goal is to expand into more countries in the European region. We aim to reach 4% in the German market share before expanding to our first country France. We will start our expansion in mid-2025 if we reach the goals mentioned in our financial plan. After France, we plan to expand into the Dutch Market at the beginning of 2027. The reason why we have chosen France and Netherlands as our expansion countries is their attractive market in the agriculture industry and both countries are strategically located close to Germany.

- **France**

France is the dominating European market and accounts for 18% of European agricultural production. France a wide variety of crops and livestock, where wine and cereal production

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led France's agricultural economy in 2020, with over 18 billion euros worth of produce.

The country had approximately 430 00 farms in 2019, where the fruit at vegetable sector counts about 75 000 companies (Trenda, 2021).

- **Netherland**

The Netherlands the biggest exporter of agricultural products in Europe, second in the world after the United States. Mainly, the Dutch agricultural industry produces cereals, feed crops, and potatoes. In 2021, there were roughly around 11 200 farms in the country. (van Gelder, 2022). An important factor for why Netherlands will be a good expansion opportunity, is their culture for innovation where the R&D expenditure in the country has more than tripled in the past 30 years (Rintoul, 2020).

Both countries share a similar business environment as Germany, which might reduce our risk and the cost associated with expanding into new markets as we will follow the same business strategy throughout the expansion. Further, both countries have a strong agricultural industry with technology adoption, making the markets more receptive to our company and can provide more opportunities for partnership and collaborations with local agricultural businesses.

BUSINESS STRATEGY

Looking at our company, we believe it is crucial to make a clear overview of what it wishes to accomplish both in the short and longer term, to set objectives and goals, and to show a plan of action about how exactly we will reach those objectives. We believe that a clear and concise strategy is essential, and it is vital to give an overview of what exactly we want to achieve with our company and what impact we want to make. Our business strategy exists out of three main parts. First, we will explain our mission, which will explain the core purpose and value of our company, next we will explain the goals we hope to achieve with our company. And lastly, we

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will explain the vision of our company, which will explain what and how we hope to become in the future.

OUR MISSION

Our main goal is to complete and successfully implement our product. To achieve this, we will put a lot of effort, time, and resources into developing both the physical product and the software. Our objective is to create the best product possible, as its effectiveness will help us reach our final goal. In addition to creating a high-quality product, we also aim to clearly demonstrate its value to society and potential customers. To do this, we will conduct various effective marketing campaigns that showcase how our product can solve significant problems, save costs, and increase efficiency for customers, as well as optimize and make an entire industry more sustainable.

Furthermore, our mission is to ensure that our product works effectively for our customers. We plan to achieve this by creating a thorough implementation process where we and our engineers will help each customer get the most out of our product and platform. Finally, our goal is to create long-term sustainability for our customers and the industry by providing excellent customer service, constantly optimizing and innovating our technology, and applying these innovations to both new and existing customers to stay ahead of the competition and have the biggest positive impact.

OUR GOAL

Regarding our objective, we have set four goal categories in which we have and hope to achieve different goals. The four categories are individual farmers, industrial farmers, the (crop) agriculture industry and the world.

- **Goal category 1: Individual farmers**

As a company, our goal is to empower farmers with innovative technologies to optimize crop production and reduce food and water waste. We are committed to leveraging our drone technology to provide farmers with accurate data and insights so they can adjust their practices to achieve maximum yield and efficiency. By doing so, we can help make the global food system more sustainable and robust.

- **Goal category 2: Industrial farmers**

Our goal towards wholesalers is to provide them with reliable, timely, and accurate data that can help guide their decisions and maximize their profits without compromising the sustainability of food production. We strive to offer customizable solutions that meet the unique needs of wholesalers and robust analytics, so they have the insights necessary to make informed and strategic decisions about their purchases.

- **Goal category 3: The agricultural industry**

Our goal in the agriculture industry is to optimize crop production and reduce food and water waste through the use of innovative technologies. We aim to develop solutions that make the farming process more efficient and cost-effective, and we strive to provide farmers with access to reliable data and insights that can help them make informed decisions. Our goal is to help the industry achieve maximum yields and efficiency.

- **Goal category 4: World**

We believe that the agricultural industry must play an essential role in tackling the problem of global warming. We strive to develop technologies that enable farmers to adopt more efficient and eco-friendlier practices. We are committed to creating solutions that can help reduce greenhouse gas emissions, agricultural waste, promote water conservation, and enhance soil health.

OUR VISION

Our goal is to be a pioneer and an example for other companies in all industries. We strive to develop innovative solutions that can be used in the agricultural industry as a model for other sectors, helping them adopt more sustainable practices. We work to promote environmental awareness and sustainability and hope to inspire other companies to follow. Additionally, we aim to educate farmers and other stakeholders on the importance of sustainability and maintain a passion for creating solutions that can reduce our global environmental footprint. We believe that by leading by example and providing comprehensive technologies, we can build a more equitable and sustainable global food system.

THE TEAM

In this section of the business plan, we will introduce you to Farmlend's current team and their responsibility. In addition, it includes new positions our company needs to employ in the start phase and their responsibilities to drive our company to success.

CURRENT TEAM

Initially, our company consisted of four founders: Calvin Verbeeck, Pedro Salgado, Thibaud Van der Putten, and Victoria Torp Borresen. The four founders will perform as the company's executive team based on previous academic and professional backgrounds. Together, our four founders have a perfect blend of skills and experience to drive our company to success and achieve our goals. The roles are assigned as follows:

Calvin Verbeeck, Chief Executive Officer (CEO)

Calvin has a passion for entrepreneurship and a background in finance and management. After graduating high school, he started his first company, "Ezekiel 25:17," a high-quality music and

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cultural events company. He then pursued a Bachelor's degree in Global Business and Entrepreneurship, gaining a broader understanding of topics such as finances, strategic and financial management, mergers and acquisitions, private equity, entrepreneurship, and economics.

After completing his Bachelor's degree, Calvin decided to continue his education with a Master's degree in Management, specializing in finance. This further deepened his understanding of management and business practices, preparing him to begin his professional career. In addition to his own company, Calvin has gained experience through internships in several companies.

Calvin's academic and professional experiences, combined with his passion for disrupting outdated markets and patterns with innovative ideas and products, make him an excellent candidate for the role of CEO in our company. In this role, his responsibilities include developing and implementing a strategic business plan, identifying, and pursuing new business opportunities, leading, and managing the team, building and maintaining relationships with key stakeholders, monitoring market trends, overseeing the financial performance of the company, and communicating the company's vision and goals. The overall goal would be to lead and manage the business to achieve its strategic objectives and drive growth and success.

Academic background: M.Sc. Management, B.Sc. in Global Business and Entrepreneurship

Pedro Martins de Carvalho Guedes Salgado, Chief Technology Officer (CTO)

Pedro has a Bachelor's in Business Management where he experienced several business cases and problems. During this time, his curiosity about the technology sector started to emerge.

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Throughout his studies, Pedro has always shown interest in technology, doing two internships related to the area and working in the technology sector in the consultancy firm “2Logical” in 2019. Therefore, Pedro is the logical candidate for CTO.

After finishing his bachelor, Pedro felt that there was still a lot to learn; doing a Master’s in Management was the obvious choice. This opportunity allowed him to interact more with real-life companies, increasing his knowledge and experience. Therefore, Pedro offers extensive knowledge of the product and its forthcoming difficulties, and he will be able to continue his work in the new position of CTO. In addition to diagnosing IT difficulties, Pedro is in charge of developing, implementing, maintaining, and analyzing the company's IT resources. Pedro's role is to assess short- and long-term demands while investing cash to help the firm achieve its objectives. Furthermore, Pedro will help analyze the potential customers and evaluate how the product can add value to them.

Academic background: M.Sc. Management, B.Sc. in Business Management

Thibaud Ludovicus Van der Putten, Chief Financial Officer (CFO)

Being a student of management with an area of expertise in finance and having gathered previous working experience in venture capital, mergers and acquisitions, and private banking, Thibaud is the ideal candidate to take on the role of CFO.

His experiences gathered from the Dutch Founders fund and Degroof petercam, sector-agnostic investment firms, ensure the financial know-how applicable to a diverse set of sectors. More specifically, after having done previous investments within the Agri-tech results in critical knowledge of the funding opportunities that lie within this vertical.

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The building of two non-venture capital-funded start-ups makes that he has touch with the monitoring of important KPIs within a growth company for optimal reporting and the flexibility needed within a start-up. In short, a good equilibrium between experiences in the field of finance and an agile work environment result in the recipe of our CFO. His responsibilities lie in tracking cash flow and financial planning as well as analyzing the company's financial strengths and weaknesses to propose strategic directions.

Academic background: M.Sc. Financial Management B.Sc. General Business and Economics.

Victoria Torp Borresen, Chief Marketing Officer (CMO)

Victoria has a background in marketing and will take on the role of the CMO. She has previous experience working with marketing and sales for Red Bull. At Red Bull, she was the national project leader for two global events. She has a proven track record of creating successful marketing strategies and driving results on a national and international level. In addition, she has experience working with CRM in the Norwegian company Db Journey, dealing with customer service strategy, and improving customer and brand experience. With this experience, she has the skills and ability to understand and serve customers' needs.

In her Master of Management, Victoria has an area of expertise in Strategy and International Business and a Bachelor's with a major in Marketing, demonstrating her strong academic background and understanding of key business concepts. The combined academic and professional experience will be invaluable in her role as CMO, where she will be responsible for developing and implementing marketing strategies to create revenue and growth. She will use a combination of digital and physical marketing strategies in her role. Furthermore, Victoria

Group Participation

will also work closely with our sales team to develop effective sales enablement materials and support the sales process. She will regularly analyze customer data and feedback to refine our marketing strategies and ensure that we meet our customers' needs. Overall, Victoria's approach to marketing will be data-driven, customer-focused, and results-oriented, and we are confident that it will help our startup to achieve its growth goals.

Academic background: M.Sc. Management, B.Sc. International Management

TEAM IN THE FUTURE

With our current executive team's skills and knowledge, our company is required to hire people with technological expertise, especially in software engineering and development. Therefore, we are expecting to hire employees for the following positions in the future:

- **Project Manager**

Help build and manage the software development team. Assist the executive team with planning and defining the requirements of the project.

- **Software Engineer**

Responsible for designing, implementing, and maintaining the software components of our company's software, including everything from the algorithms and data structures used to process data to the user interfaces and other front-end components. Further, the position will help us to develop new features and capabilities for our software in the future.

- **Software Developer Front-end**

Build and code the company's software package, web application, and website. Responsible for managing and testing our product's features and components that are directly viable and accessible by our end-user.

Group Participation

- **Software Developer Back-end**

Create and maintain server-side applications and APIs, work with our databases to store and manage data, and develop algorithms and other tools to support Farmlend's platform. They will also be responsible for troubleshooting and debugging server-side issues and errors.

- **Data Scientist**

Use machine learning to improve our data quality and product offering.

- **Smartphone Application Developer**

Create a mobile solution for our software by app coding, testing, debugging and modifying our application.

- ***UX Designer***

Design and optimize the visual user experience to make our application usable, accessible, and enjoyable for the customer, covering everything from the layout and design of user interface to the overall flow and functionality of our platform.

- **Sales Representatives**

Identifying potential customers and presenting our products. Provide the customers with support and guidance on how to use our product. The sales representative will also build and maintain relationships with our customers and gather customer feedback and insights to our product development team.

- **Customer Support**

Provide assistance and support to our customers. This involves answering customer inquiries, troubleshooting technical issues, and providing guidance and advice on how to use our product effectively. They will also play a key role in building and maintaining strong customer relationships.

- **Legal Counsel**

Group Participation

Responsible for providing legal advice and support. This role will ensure compliance with relevant laws and regulations and protect our company from potential legal risks and liabilities.

SCIENTIFIC ADVISORY BOARD

Farmlend's business idea and research are supported by the current scientific team, which will strengthen our companies' scientific capabilities and technologies. They will continue to support and facilitate Farmlend's research and development. The scientific advisory board includes one of the persons who developed the idea:

Andrea Tonini, *PhD in Geological and Earth Sciences/Geosciences*

Andrea has an area of expertise in remote sensing (satellite and UAV) and geo-information management for environmental and public security.

OUR COMPETITORS

As a startup, it is crucial to understand our competitive landscape to understand the market better. Analyzing our competitors allows us to differentiate ourselves, identify opportunities for growth and capture a meaningful market share. The observations made throughout our competitor analysis have helped us identify, develop, and influence our marketing and sales strategies.

COMPETITIVE LANDSCAPE

The current competitive landscape in Germany is highly fragmented, with new players entering the market and existing players adapting to the latest technologies within precision agriculture. Below we have identified five competitors in our target market, Germany, and we divided them into three categories:

- **Direct competitors:** these companies offer the customer both a drone with a crop management platform and software
- **Indirect competitors:** Our indirect competitors are defined as companies selling only a platform or software without a drone. Here, the farmers must buy or own a drone before using the competitors' products.
- **Potential competitors:** our potential competitors are currently not competing with our company. However, we see them with the potential to enter the market with a similar product in the future, which might pose a threat to our company.

Direct Competitors

- **DJI Agriculture**

DJI Agriculture is a hardware plus software from the globally leading drone company, DJI.

Their products are committed to provide intelligent solutions through drone technology,

facilitating agricultural innovation and development on a global scale. The company, offers a wide array of crop protection drones, including the MG-1, MG-1S, MG-1P, and T16, as well as P4 Multispectral and Phantom 4 RTK. In addition, DJI has introduced a software for both computer and smartphone called, DJI Agriculture Data Management Platform and SmartFarm App. Additionally, the company also offers their customers a drone academy to become a drone agricultural pilot. (DJI Agriculture, 2020).

- *Price Model:* yearly subscription
- *Price Software:* €315/year
- *Price Hardware:* price range from \$1 000 – \$23 000

- **PrecisionHawk**

Provides software analytics for the farmers with a partnership with DJI. Their product can come with a pre-assembled package, including the DJI hardware and PrecisionHawk's flight and analytics software. Even though the company advertises buying its software with a DJI drone, its product is compatible with other drone brands like BirdsEyeView, Sensly, Parrot 3RD, and more. The software is seamlessly integrated into the drone as an application to interpret growth trends, generate prescription maps, identify early indicators of plant stress, and measure the farmers' zonal efficiency. Furthermore, their software *PrecisionAnalytics Agriculture* is a web-based platform (PrecisionAnalytics Agriculture, 2022).

- *Price Model:* Yearly subscription
- *Price Software:* N.D
- *Price Hardware:* price range from \$1 000 – \$23 000 if choosing a DJI drone

Indirect Competitors

- **Xarvio™ Digital Farming Solution** – is an established software company providing its customers a field management software to increase efficiency, save time, optimize crop production to contribute to a more sustainable agriculture. The company is also working with the established farming company, John Deere to optimize plant production and protect the environment (Xarvio, n.d.)
 - *Price Model:* Subscription - three different subscription plans
 - *Price:* Base free/year – Application timer €400/year – Variable Application €700/year.
- **PIX4D** - Offers farmers advanced agriculture software with *PIX4Dfields* for aerial crop analysis and digital farming. Their software uses remote sensing to identify stress factors with comprehensive field data. By using vegetation indices in the field with drone maps they generate prescription maps, so the drones can apply spot spraying or variable rate application. Further, their software works with analytics from the field based on plant health to make decisions for the farmers (Pix4D, 2022).
 - *Price model:* Subscription - three different subscription plans, one free trial month
 - *Price:* €230/month, €1150/yearly, €2600/perpetual

Potential Competitors

- **CLAAS Group** – The German Company CLAAS Group is a leading global agricultural machinery manufacturer. They are known for self-propelled forage harvesters and are a top global performer in agricultural engineering with tractors, agricultural balers, and green harvesting machinery in their portfolio. The company has already established itself in smart farming with machinery and its own fleet view platform (CLAAS Group, n.d.). Even though the company is not in the agricultural drone market yet, big corporations like this are

potential competitors because of their rich resources and network compared to smaller startups.

OUR COMPETITIVE ADVANTAGE

Despite our product sharing several similarities as both our direct and indirect competitors, our competitive advantage over our competitors is our product's speed and preciseness with the new live metrics technology. Our live metrics technology will benefit our customers by providing a more comprehensive and up-to-date view of their crops, allowing the farmers to make more informed decisions. Farmlend's new technology will enable its user to quickly identify and respond to potential issues, such as pests, disease, or other crop challenges, before they become more serious. As a result of more precise and accurate data, our farmers will have less crop waste than our competitors. In addition, our software will be more user-friendly with an intuitive interface than our competitors. By making our software and hardware as user-friendly as possible, we will make it stand out from our competitors and attract more customers.

Another competitive advantage of Farmlend is our focus on customer and training services for our farmers. We will provide personalized support, assistance with troubleshooting and problem-solving, and timely and helpful responses to any questions or concerns the farmers might have. By going above and beyond to provide our customers with excellent customer service and follow-ups, our company can differentiate itself from our competitors and build a reputation for being a reliable and trustworthy partner for farmers.

POSITIONING

After analyzing the current market, our customers, and our competitors, we see an open position for Farmlend. We have identified the main factors as level of accuracy and level of integration, which we define as follows:

- **Level of accuracy**

This is defined as how accurately and fast the product can map, detect, and survey crops.

The higher the level of accuracy, the more precise the drone and the software are together.

- **Level of integration**

This is defined as how easy it is to integrate your product with other farming tools. A high level of integration means the product can be used with several products; for instance, if a company only sells software, it will have a higher integration level than if it sells both the software and hardware.

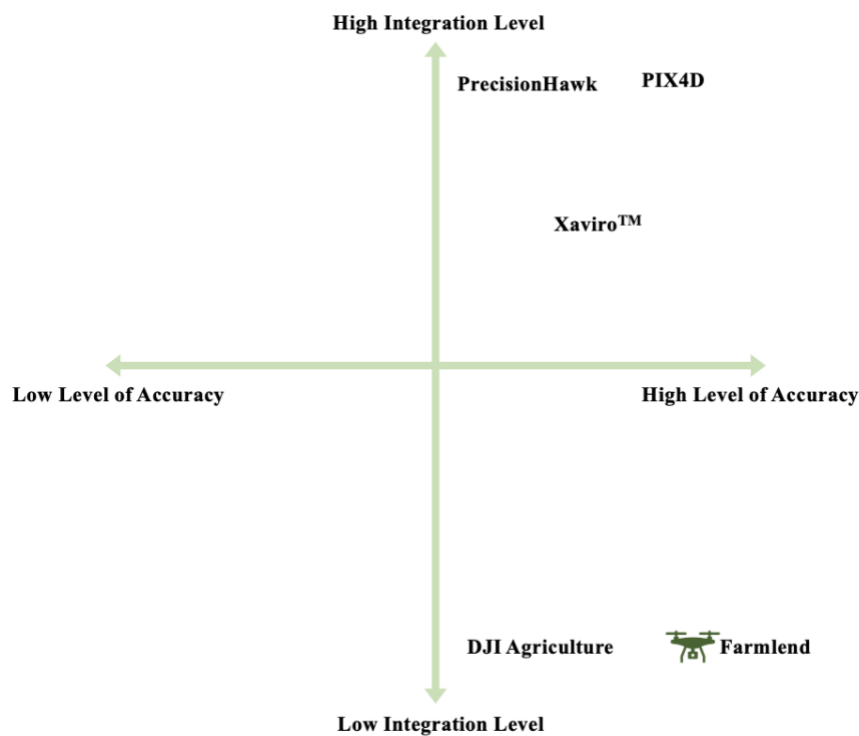


Figure 7: Position of FarmLend in the Competitive Landscape

Farmlend enters the area with high accuracy as our new patented live-metrics technology is more accurate than existing ones on the market. Moreover, our company is positioned with a low level of integration as we sell our product as a package with software and hardware. By positioning ourselves with a low integration level, we believe it will make the whole process more accessible for the customers as everything is integrated, and they do not struggle to find out what software is best for their drone.

MARKETING PLAN

Our marketing plan outlines the strategies and tactics needed to effectively bring our product, Farmlend, to the German market. It will include objectives, an analysis of the competitive landscape, a marketing strategy, our sales funnel, marketing budget and a timeline for launching our product.

OBJECTIVES

Our primary objectives are as following:

- **Objective 1: Create a presence in the industry**
 - Develop a robust digital marketing strategy that includes a user-friendly website, email marketing, social media presence, search engine advertisement (SEA) and search engine optimization (SEO).
 - Increase the visibility of the company through demo days, trade fair, industry events, and media coverage.
- **Objective 2: Increase sales**
 - Develop a sales funnel and marketing strategy to increase sales and generate revenue.
 - Develop a pricing strategy that is competitive with the market.
 - Develop a customer-centric service strategy that is focused on providing an excellent customer experience.

- **Objective 3: Generate leads**

- Execute targeted email campaigns to potential customers in the agricultural and precision farming industry.
- Conduct webinars and seminars to educate potential customers about the software and its benefits.
- Build relationships with our potential customers through a direct-sales marketing strategy.

- **Objective 4: Track result and continuously improve**

- Utilize data and analytics to measure the success of marketing initiatives and to identify opportunities for improvement.

PROMOTIONAL STRATEGY

Farmlend will use a combination of digital and physical marketing strategies to promote our product. Our digital strategies will include a website, social media, email campaigns, and search engine optimization. And our physical marketing strategies involve attending trade shows, conferences, and direct sales. At the beginning of our product launch, we will focus on physical marketing as we believe in showcasing and demonstrating our new product. However, we will also use digital marketing tools to create brand awareness to reach more customers, as this is more cost-effective.

Digital Marketing

- **Optimize our search engine optimization (SEO)**

As we launch our website and platform for our product, we will invest in SEO to increase traffic to our webpage through organic search engine traffic. This will be done by

conducting keyword research for our market, optimizing our website content and structure to include those keywords and phrases.

- **Search engine advertisement (SEA)**

To increase Farmlend's visibility and drive traffic to our website, we will target specific keywords related to precision agriculture, drones, and software. Using SEA, our company can reach potential customers that are actively searching for these products and services and increase our chances of turning them into leads and customers. Further, by bidding on keywords and competing for visibility on the search engine result page, the SEA will help us compete with the larger and more established companies in the precision agriculture industry and gain a foothold place in the market.

- **Email campaigns**

We will create email campaigns to inform potential customers about our company's products and services to increase brand awareness and generate traffic to our webpage. As well as keeping the customer updated with any new developments, such as new features in the future. Email campaigns are an excellent opportunity to reach a broad audience which will help us increase sales and generate leads. Further, we will use email campaigns to build a relationship with our customers and provide them with helpful content, such as industry news and tips and tricks for our product. To create a relationship with our customers and provide them with up-to-date information, we will send a weekly newsletter to both current and new customers.

- **Social media**

Before our product launch, we will already have created a presence on the social media channels, Instagram, Twitter, and LinkedIn. We will showcase Farmlend's benefits and features on these three social media platforms, share customer stories, and build awareness and interest in our technology. Moreover, we will use LinkedIn to connect with

professionals in the precision agriculture industry and participate in relevant industry discussions. Our content will be created both in-house and by outsourcing photographers or videographers to assist marketing them with creating content. There will also be created a social media plan to be consistent and ensure our content aligns with our overall business goal.

Physical Marketing

- **Direct sales**

Our sales representative will reach out to the targeted potential customers with emails, cold phone calls, and physical visits to build customer relationships. With the physical visit to the farms, the customer will be able to test our product with our sales representative. Farmlend's sales representative will educate and showcase to potential customers the benefits of Farmlend's product. They will also help set up our product system and help customers find the best subscription plan for their needs. By communicating directly with potential customers, either by visiting their farms or over the phone, we will target the specific market and increase our customer relationships. Additionally, our sales representative will make an in-person presentation to present for the larger corporations to explain Farmlend's features and the benefits of the technology in more detail.

- **Trade fairs and conferences**

To expose our product and create brand awareness within our industry, it will be crucial for our company to be present at agriculture trade fairs and conferences. Trade fairs often attract a large number of attendees who are interested in the latest products and innovations in the precision agriculture industry. By attending these events, Farmlend can gain exposure and visibility and showcase its drone software's features and benefits to a broad audience of potential customers and partners. Additionally, attending trade fairs and conferences can

provide an opportunity for Farmlend to network with other professionals and experts in the precision agriculture industry. At the industry trade fairs or conferences, we will have our expert team showcase our product and answer attendees' questions to generate leads, acquire new customers, and network with the industry. These are the trade fairs we will prioritize in the beginning:

- ***Agritechna, Germany:*** is the world's leading technological agriculture trade fair with a focus on the future of the plant production.
 - ***Agra-messe, Germany:*** The largest agriculture trade fair for agriculture in East and Central Germany with almost 50 000 visitors from the industry.
 - ***AgroTech, Polen:*** One of the biggest agriculture trade fairs in Europe hosting almost 50 000 visitors from over 11 countries. Lately, there has been high focus on autonomous agriculture.
- **Hosting demo days**

Invite potential customers to showcase the product and demonstrate its technology and capabilities. Demo days will be a great tool to build credibility and trust in our product. We will also host a demo day and seminars in partnership with agricultural retailers in the market. As a result, demo days can provide us with a platform for networking with potential investors, partners, and customers.

DISTRIBUTION CHANNELS

In our marketing strategy Farmlend will sold in both direct and indirect distribution channels:

Direct Distribution

- **Website**

Our product will be sold online on our own website. Our website includes product information, company information, and a call to action. We will include clear product descriptions, product categories, and pricing information to create an effective website. Our website will also lead our customers to our platform with personal logins once they have purchased and installed our product.

Further, to give the best customer experience, we will develop a series of informative videos to demonstrate how our precision agriculture software and hardware will benefit the farmers. In addition, we want to educate potential customers about the benefits of drones in agriculture with content such as informative blog posts. The videos and blog posts will showcase how our product can benefit farmers and agricultural businesses. The customer can purchase one of our three subscription plans on the website. As customer service is an essential part of our marketing, we will offer online consultations for the customers, so we meet their specific needs.

Indirect Distribution

- **Retailers**

Farmlend will partner up with Agricultural retailers in our market so our customers can see the product in a physical store before buying. Here we will have an extra focus on training the retailers' salespersons' expertise about our product to help the customer find the best solution for their needs. Retailers in the industry might also already have established relationships with customers, so by selling our products through retailers we can gain access to a broader network of customers in the industry.

OUR SALES FUNNEL

To demonstrate how our company and sales representatives will acquire and retain customers, we have developed a sales funnel that begins with raising awareness about the product among our potential customers and ends with keeping customers through ongoing support. Each stage of the model presents how our sales representatives will engage with our potential customers and move them closer to becoming paying users of our product. By following our sales funnel, Farmlend can acquire and retain customers effectively and grow our revenue and customer base.

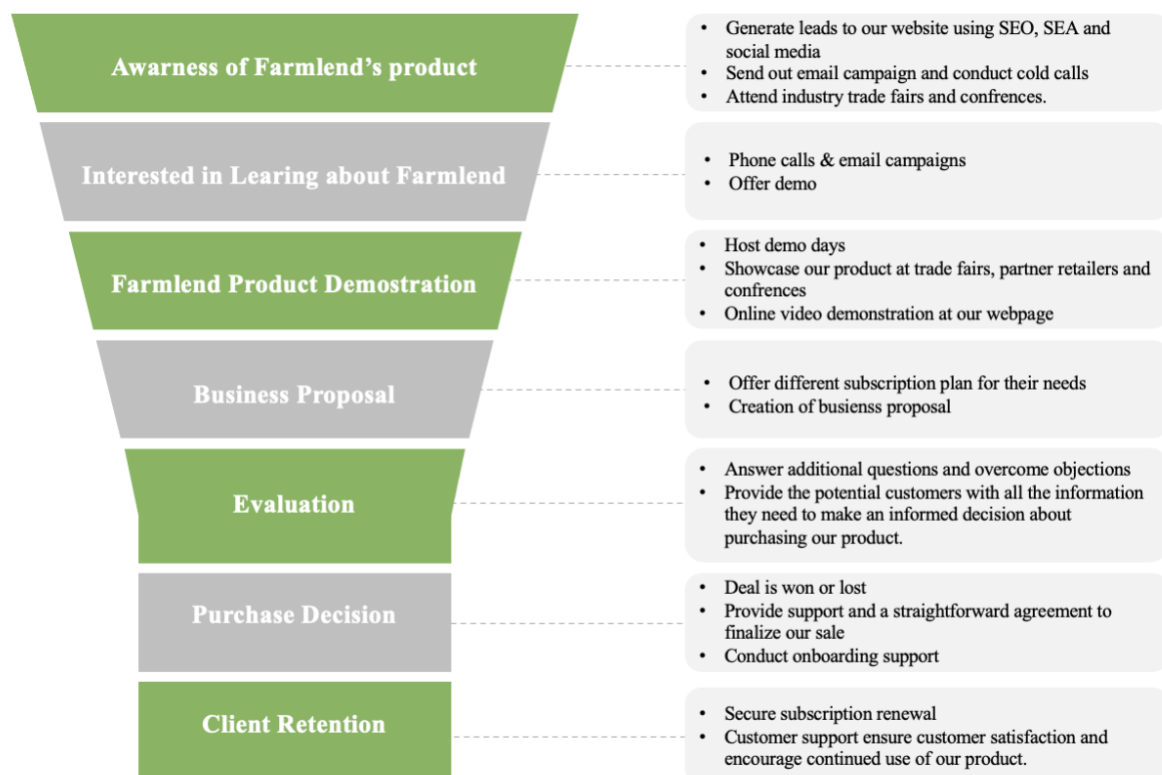


Figure 8: Farmlend's Sales Funnel

PEOPLE

In our company, we have a strong focus on the customer. Our interaction with our customers will be from the two roles of sales representatives and customer service, who will serve as the

first point of contact and shape our interaction with potential customers and users. The two roles must have a clear line of communication about each other's roles and responsibilities, where they communicate regularly to ensure our customers' needs and concerns are addressed timely and effectively. As a lot of our marketing goes through direct sales and physical marketing, it is crucial to establish sales and customer service representatives with a strong understanding of our product and solution.

Customer Service Strategy

As Farmlend's focus is on having strong customer service to meet our customers' satisfaction and work to retain them. We, therefore, want to market and differentiate ourselves with excellent customer service tailored to our customers' needs and have developed a customer service strategy plan.

- **Establish a customer service team**

It will be essential to establish a customer service team to provide quality customer service and support. This team will be knowledgeable about the product, have excellent problem-solving skills, and be able to respond quickly and efficiently to our customer inquiries.

- **Offer multiple customer service channels**

As we want to be easily accessible for our customers, we will offer customer service through multiple channels. This includes phone support and email in the beginning. Our customers will also be able to get a physical visit for bigger technical problems.

- **Technical support**

We will assist customers in troubleshooting any technical issues that might arise. We will also provide customers with detailed instructions and procedures on how the software and hardware work. In addition, through our email and website, we will provide customers with information about any software updates and any future features.

- **Collect feedback**

In the beginning, it will be crucial for our company to collect feedback from our customers.

We will provide optional surveys for our customers to gain valuable insight into customer satisfaction levels and help identify areas of improvement.

- **Follow-up with customers**

We will follow up with customers after they have purchased to ensure customer satisfaction and encourage repeat business. This will also help us build trust and loyalty among our customers. The customer service representative will also give this feedback to the sales representative, which could be used to improve our company's sales approach.

OUR MARKETING MILESTONES

In the table below our first marketing milestone from our first year is addressed. Our marketing milestones are an important representation of the key marketing objectives that we plan to achieve within the first year.

MONTH	MARKETING MILESTONE	DESCRIPTION
July 2023	Launch website and social media	• Our website serves as a sales distribution channel and a marketing tool; therefore, it will launch three months before launch to inform about our product. Customers will be able to put themselves on a waiting list and subscribe to our email newsletter to be the first in our launch. • Start pushing out content on the social media platforms, Instagram, Twitter and LinkedIn.
July 2023	Begin SEO and SEA efforts	• Our goal in starting the SEO and SEA efforts three months before launch is to increase the visibility of Farmland's website and search engines. This will make it easier for potential customers to become aware of our product before release.

July 2023	Partner up with our first retailers	We are partnering up with our first retailers to resell our product and host demo days and seminars in the future.
August 2023	Begin first direct sales efforts	Our sales representatives begin reaching out to potential customers showcasing our product and offering the customer the chance to sign up for demonstrations and trials of our product.
August 2023	Send out first email campaigns	Our email campaign will provide an introduction to Farmlend and our product and will encourage potential customers to visit the website and learn more.
September 2023	Host our first demo days on selected farms	Our demo days will provide a hands-on experience for our potential customers, allowing them to see the drone technology in action and to ask questions and get more information before our launch.
October 2023	Product Launch	Our product launch for the public.
November 2023	Attend our first industry trade fair	Attend our first trade fair Agritechna in Germany 12-18. November to showcase our product.
December 2023	Reach 20 customers	Our Sales Representative reached 20 customers and continued working against new customers.

Figure 9: Farmlend's Marketing Milestones for 2023

MARKETING BUDGET

Our marketing budget for the first year is €50 000 for 2023 and can be divided into the last two quarters of the year. The budget has the highest investment in trade fairs, retail partnerships, and SEA and SEO to promote and create awareness for our company in the beginning. We will carefully evaluate the return on investment for each marketing activity and adjust the budget to ensure that our company's marketing efforts are effective and aligned with Farmlend's goals and objectives. We have also included some room for unexpected marketing expenses in our budget. Included in the budget activities are the following:

	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Des-23	Yearly Total
Digital Marketing	€3 900,00	€3 900,00	€3 400,00	€4 000,00	€4 000,00	€4 000,00	€23 200,00
SEA	€750,00	€750,00	€750,00	€1 250,00	€1 250,00	€1 250,00	€6 000,00
SEO	€1 000,00	€1 000,00	€1 000,00	€1 000,00	€1 000,00	€1 000,00	€6 000,00
Content Creation	€1 000,00	€1 000,00	€500,00	€600,00	€600,00	€600,00	€4 300,00
Social Media	€750,00	€750,00	€750,00	€750,00	€750,00	€750,00	€4 500,00
Email Newsletter	€400,00	€400,00	€400,00	€400,00	€400,00	€400,00	€2 400,00
Physical Marketing	-	€1 000,00	€1 000,00	€3 000,00	€17 000,00	€1 500,00	€23 500,00
Trade Fairs and Conferences	-	-	-	-	€15 000,00	-	€15 000,00
Retail Partnership	-	€1 000,00	€1 000,00	€3 000,00	€2 000,00	€1 500,00	€8 500,00
Totals:							€46 700,00

Figure 10: Farmlend's Marketing Budget

- **Search Engine Optimization**

This budget activity consists of keyword research, on-page optimization, and link building to improve search engine rankings and drive organic traffic to Farmlend's website.

- **Search Engine Advertisement**

This budget activity includes advertisement creation, bid management, targeting and placement. In general, the cost of this activity is decided by Cost-Per-Click (CPC) of the targeted keywords, where we will track the campaign and optimize our efforts after budget.

- **Social media and content creation**

Within social media, we will spend our budget advertising on Instagram, Twitter, and LinkedIn platforms, sharing engaging and informative content. In social media, we will pay for targeted ads reaching farmer audiences based on their demographics, interests, behaviors, and location. Within content creation, the budget is allocated for outsourcing resources such as videographers, editors, copywriters, or photographers.

- **Email campaigns**

In this activity, we will spend our budget on email marketing software, design, and content creation to send targeted email campaigns to potential customers.

- **Trade fairs**

Victoria Torp Borresen - 50367

This activity includes booth space, media packages, and other marketing materials to promote Farmlend at the Agritechnica trade fair. Agritechnica will be the first and only trade fair we attend in 2023 as our product will is still in the development phase to attend earlier held trade fairs in 2023.

- **Partnership with retailers**

Budget activities include co-marketing efforts with targeted retailers in our industry, including joint promotions, product demos, and in-store events. As our product launch in

Group Participation

October, we will spend more of the budget to host demo days for the farmers and push more marketing out in their store.

FINANCIAL PLAN

The financial plan outlines our projected financial performance, including pricing, revenue, expenses, and projections for profit and loss and cash flow. It is an important part of our business plan and demonstrates the potential growth and viability of our company to investors and stakeholders.

PRICING

Our pricing is based on two different aspects of our product. On one side, customers should rent the hardware to be able to measure all the live data. These are all monthly transactions where the customers pay rent for the obtained hardware. On the other side of the project, the dashboard, where all data is analyzed and transformed into to-do lists, would be covered by another pricing model. This subscription model is of paramount importance for us as this creates the stickiness of our product and, therefore, will be the main driver of our revenue model.

We are using the pricing strategy of markup pricing concerning the one-off sale of the drones. Taking the cost price and adding a predetermined margin on top to secure profitability. The two main reasons for using this strategy would firstly be the easy implementation at an early stage of the company, and this would be a fundament of a bigger total pricing strategy which will be determined later during the maturity phase of the company. As a result, we can determine the pricing and dictate the market that way.

Group Participation

Concerning the subscription-based model. We opted for this pricing model for a variety of reasons. The main driver would be the fact that we are creating a reoccurring revenue model, which gives some certainty of income. Currently, a big trend in the VC environment is investing in SaaS models. A reoccurring model mostly monetizes these, and this has become a soft benchmark in the industry and will provide us with an advantage if we consider funding.

We would divide our services into three different brackets. The “Basic, Premium or Enterprise” pack. All brackets contain different services, which is calculated through the price. We first decided to showcase the most expensive bracket on the website. We believe that this will create an anchoring effect toward the other offerings. Underneath the different value offerings are illustrated:

BASIC	PREMIUM	ENTREPRISE
€ 99	€ 149	€ 249
• Access to the basic features, such as data collection and analysis, basic reporting capabilities • Only one-person use	• All features from Basic, plus additional advanced features such as advanced data analysis and modeling, more detailed reporting capabilities. • Support multiple users	• Include all features from Premium in addition to more advanced data analysis • Support of multiple users and teams' collaboration • Access to specialised training and support such as webinars and workshop
SMALL-SIZE FARMERS	MEDIUM-SIZE FARMERS	CORPORATE FARMERS

Figure 11: Farmlend's Subscription Plan

REVENUE FORECAST – GROWTH OBJECTIVES

We see that no revenue is generated in the first six months as we are still developing and testing our MVP. Looking at the different revenue streams, we have identified two main drivers of liquidity for Farmlend. The first is the one-off sales of the drones with the implemented software and the installation of the whole product on the farms. This driver will, as seen in exhibit 1 “Revenue forecasting”, mainly ensure early liquidation inside our company and be the main revenue driver of our business model. The second driver of our revenue would be the subscription fees. This model would ensure a reoccurring revenue, which contributes to a steady cash flow and will make us more favorable during the raising of funding rounds.

We expect immense revenue growth YOY. The first year, overall revenue would increase on average by x percent. The one-off Sales revenues would contribute 700% growth while the subscription revenues would grow 1100%. This might sound very impressive, but if you look at the actual numbers, you will see that this growth is very normal. Going from almost no revenue makes that only looking at the percentages would give you a wrong interpretation of the numbers. On average, the overall revenues will continue to double itself in the upcoming years. We feel like the main drivers of this increase would be the expansions we are planning to do over time towards both the French and Dutch market. Moreover, we value the quality of our sales force and the customer relationships very highly, to make sure Farmers do not churn from the platform.

KEY EXPENSES

We have identified three main cost drivers which seemed to be most relevant for us and have the biggest influence on the cash flows, discussed at the end of this chapter.

- **Research & development**

Our whole company stands and falls within the quality of the service provided by our drones. That's why we value the development of our drones in combination with the development of the software very highly. We foresee 350k for the complete development of our software. Moreover, we have calculated a budget of an extra 200k for developing our MVP, including a very simplistic "app". Right before we enroll our operations, we have scheduled a budget of 1 million euros for the development of the prototype, website, and fully functional application. Furthermore, as seen in our financial plan, we foresee a 100K EUR each quarter to do research concerning new developments of the drone. Moreover, In June 2025 we foresee another 500K EUR for the development of new hardware features of our drone. From that point in time on, we have scheduled a budget of 50k EUR each quarter for the research and development of new markets, hardware, and software features.

- **CAPEX**

In our forecasting, we have identified two main drivers of our capital expenditures.

As we will need a place to implement the software within the drones, we need a place to do so. We will call it our factory. This entails a big warehouse outside the city center, where our drones get developed, fixed if something goes wrong and finally stored. The first factory will be placed outside Leipzig, Germany, and we have foreseen an initial budget of 250k Euro. We plan to apply this tactic to every country we expand towards. Thus, after our expansion towards France in July 2025, we will also buy and develop a factory there. This factory will be outside the city center of Nevers, as we want these factories to be as central as possible to smoothen the logistical process. We plan to depreciate both properties over 120 months, ten years from the moment we have bought it. This would equal a 25k monthly payment until July 2025 and at least a 50k monthly payment during the next eight years.

Group Participation

- **Operating and service costs**

The cost would mostly fall underneath the post of COGS and SG&A on the financial statements. These costs are of paramount importance for our organization. Without them, the whole operation would be non-existent.

The biggest driver for our operative and service costs would be the cost price of the drones together with the implementation of our software. We will negotiate yearly contracts with our partner DJI. At first, we have estimated a 25% gross margin and we will increase this one towards 40% over the coming few years thanks to the increase in number of drones ordered. This will increase our negotiation power and smoothen the relationship. Afterwards, our operational cost would be the salary costs of both so-called “field & factory” workers and the founding team. We have calculated an initial higher paycheck as we want to attract real talent, who want to stay with us for the long term and want to give us their all. More important expenses would be the leasing of a Headquarters where our founding team and salespeople will be active. For Germany, this would be Frankfurt, in France, this would be Paris, and, in The Netherlands, this would be Amsterdam. We chose these cities because this is where all the young, local talent will move towards after their studies. Moreover, our “field” workers, customer support, and sales should be very mobile to have in-person contact with our clients as well, as we want to deliver top-notch after-sales services. Thus, we should provide them with the best material possible: cars, laptops, and phones. In this way, we want to support them to work to the best of their abilities.

- **Funding beyond**

We are considering raising a series A & B round and maybe even beyond that as we want to stay private as long as possible. There are many reasons why start-ups like to stay private for a longer time. Some do it because there are more convenient ways of financing than

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IPO, for example embedded finance solutions. But we would like to stay private as long as possible because we like to have control over our own company and still be able to make our own decisions without the need of voting or informing external third parties.

In short, we would use these rounds in order to expand towards a third geo location in 2028 for example in the Netherlands or expansion towards other verticals, such as winery or other crops. Further reasons for funding can be found a bit further under the part “our company in the future”.

CAPITALIZATION TABLE

A capitalization table documents the ownership structure and indicates the path to financing rounds and exits. Using this spreadsheet, it becomes transparent and straightforward which shareholders are holding how many shares in Farmland. (Silicon Valley Bank 2022). Cap table represents a crucial due diligence document for our prospective investors. It allows them to be certain that we as founders own enough for them to align their interests with our founding team (AngelList Venture n.d.). Moreover, it signals to investors how high the founders' incentive is for the startup and can guarantee that there is sufficient remaining equity to attract new investors in later rounds (Silicon Valley Bank 2022). Besides being beneficial for the investors, it is also crucial for us as a founding team.

- **Raising funds**

The cap table provides us with a good overview of how our ownership is structured. This could help us in a discussion with prospective funds concerning a new financing round. Furthermore, it offers a good foundation for major decisions such as the issue of new shares or stock option pools and for informing investors about the impact of new financing rounds on their existing investments (Corporate Finance Institute n.d.).

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- **Hiring employees**

Transparency is something we as a founding time hold in high esteem, like many other start-ups claim nowadays. Nevertheless, we want to make sure that we are transparent with our employees about the cap table. We would like to include some of our core and early employees in the cap table under the form of ESOP. This ensures that we can keep high-performing talent in the company, even if we run into financial difficulties. If the scenario occurs that we sell or liquidate Farmlend, employees who own shares in the company will know what payouts they will receive.

- **Tax and Regulation Compliance**

Since cap tables, globally, serve as legal proof of equity ownership. Tax authorities in all over the world can find out whether the company, its employees, and its investors are all paying the correct tax amount. If the scenario occurs that we fail to keep the cap tables updated, either We and our employees will pay more tax than required, or we would pay hefty fines for reporting less tax than required. Furthermore, next to our term sheet, our capitalization table is the place where we keep a firm overview of the voting rights within the company. In this way, we want to prevent giving voting right to the wrong candidates and keeping the internal decision making up to speed to ensure an agile environment.

Currently, all four founders own 25% of Farmlend each. We have decided on an evenly split equity as we strongly believe that all four of us as founders will strongly contribute to taking Farmlend to the next level. However, we have decided to grant our CEO Calvin Verbeeck with the higher voting right compared to the three other co-founders. In this way we want to prevent getting stuck on important decisions and he would always have the last vote. Not only do we as founders prefer this split, but a large number of investors recommend a balanced split among the co-founders.

EXIT OPPORTUNITIES

Starting this story together as a team, would make Farmlend our child which we would want to see growing and, in the end, resulting in a successful company. Why would one consider selling his own child? Well, we have determined two main reasons. Firstly, because we want to give outside investors their return on invested capital. The investments made in our start-up are unlike loans with interest payments. These investors do not see any return until they exit. That's why we want to strategically decide together on when we should exit. The second reason would be because we as a founding team, love the start of building a company, the hassle and emotions it brings with it. Bearing these two reasons in the back of our mind, we have considered five different exit opportunities. Find them below.

- **Merger and acquisition**

Overall, this means merging with a similar company or being bought by a bigger company. This is a win-win situation when the company has comparative skills or could save recourses. These are so called synergies and they would result in a very well-known saying $2+2=5$. For us specifically, we see two routes here either we exit through the agriculture sector where a huge player would buy us, or we exit through a merger with a drone manufacturer.

- **Initial public offering (IPO)**

This used to be the preferred mode, and the quick way to riches. But since the Internet bubble burst in the year 2000, the IPO rate has declined every year until 2010, and is now at about 15 percent. This would be our least favorite option as we would lose a lot of voting rights and control within our company.

- **Sell to a friendly individual**

This is also known as a secondary sale. It is not to be compared to an M&A deal as you do not merge both entities. We consider this sale as we would look for an industry professional

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with the right skillset and smarter than the four of us combined. This would also be the perfect way to choose the successor ourselves in combination with an exit for both of us as founders and the external investors. Thus, this is up until now our favorite exit scenario.

- **Cash Cow**

This would be in favor for us as founders. We love the initial phase of building a company and in this way, we would still be involved in the company be it not in the operational way and having space to explore new ideas. We would only do this when both the company and the market are stable and have stable cashflows. In addition, we would find a great CEO who can lead the company and pay out initial investors and we would use the extra cash to explore and develop new ideas. Up until today, this would be our preferred plan.

- **Liquidation and close**

This is the worst exit scenario we could ever imagine; we are not properly considering it. However, we should think about it in a scenario where after years of hard work, not even one person would like to buy our start-up and it would become irrelevant to the market.

We would like to stress that as a founding team, we have always had a vague idea on how to exit the company. We are discussing it intensely as we should all be aligned before starting this whole adventure. However, we feel that being a good founder and having a proper start-up entails that the founding team wants to grow the company 200x and are not looking for an easy exit after for example five years. We are still very early stage in what we are building but currently all our heads are in the same direction. Building the next Unicorn in the agritech sector and this would mean that we are not planning on exiting within the next ten years.

COMPANY ROADMAP

We have created a company roadmap as a communication and planning tool to outline the short- and long-term goal of our company, along with specific milestones on the way. The roadmap will help our teamwork against the same goals and objectives and communicate our company's direction and progress to stakeholders, such as investors or partners.

FIVE FIRST OPERATING YEARS

2022:

- Found Farmland and conduct market research to identify customers and assess the demand for our product in the precision agriculture industry.
- Develop a business plan to secure funding from investors or a lending institution to support the development of the software.

2023:

- Assemble a team of skilled software developers, engineers, and business professionals to work on the project.
- Complete the development of a prototype of the drone software and begin field testing it to validate its performance in real-world conditions.
- Launch our product on the market and begin selling it to our customers.
- Developing partnership in the agricultural industry.

2024:

- Continue to improve and update our product with R&D based on customer feedback and market trends.
- **Milestone:** achieve our first 150 customers, showing growing demand for the product in the German market.

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2025:

- Expand the company's operations to France to tap into new markets and increase sales.
- **Milestone:** Opening our first office abroad

2026:

- **Milestone:** reach 2 000 customers from the German and France market together.
- Still working hard with R&D to develop our product to become market leader in the industry.

2027:

- Expand Farmlend's operation to the Netherlands to further increase our presence in the European market.
- **Milestone:** Achieve positive cash flow.

2028:

- Start developing additional applications for our product to continue to grow and meet the changing need of the precision agricultural industry.
- **Milestone:** reach 20 0000 customers using our product from Germany, France and the Netherlands.

OUR COMPANY THROUGH TIME

Our company in the future

As founders, you should have a vivid imagination and a lot of creativity to be able to identify gaps in the market and solve them with a novelty. It's the same for us, we have identified a gap and jumped on the opportunity of the software to solve this. But every founder and early-stage venture capitalist are aware of the fact that around 70% of the companies still make a pivot towards another destination and still turn out to be successful. At Farmlend, we have not thought about making pivots as we firmly believe that our value proposition will become the winning solution in the market. Nevertheless, we have some side paths we are very vaguely exploring,

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and which might be, in a very far future, some value propositions we might consider adding on our existent business for the convenience of our prospective clients and the development of our Unicorn. You can find them below.

- **Vertical expansion**

After our product launch, Farmlend will be following the product hardware and its accompanying software within the first two years to innovate not only vertically but horizontally as well.

We would like our technology in the future to be able to spray and spread over crops and fields. Our technology would spray anywhere, having automated spraying over drizzly acreage, slopes, and large areas. Also, with an accurate centimetre-level system for both application and scheduling, and with an efficient spray of up to 6 L/min and spray width of about 7m.

However, although this idea would make our technology a multi-function agricultural product, it still comes with some challenges regarding where to integrate the tank for the spray in terms of hardware as well as battery life decreasing due to new applications and methods.

- **Horizontal expansion**

Firstly, being blessed by our patents on the software we are using, would entail a competitive advantage on the usage of live metrics in drones. We have already had vague discussions on whether or not we should expand from a vertical service provider, meaning within one industry, towards a more horizontal provider. We would take this step by step, firstly we would expand towards other crops, as we are tackling similar problems there. Afterwards, we would consider other industries, think about precision building, national defense etc. This would mean that we should add a new drone to our offerings and adapt

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the Backoffice, being the platform as well. As mentioned before, this is a path we are bearing in the back of our mind but up until today we have not considered it.

- **Circular economy**

According to McKinsey, one of the five ongoing trends would be the sustainability trend. This trend is around for a few years and the results of the exploding topics survey with n=15k came that 94% of people have an increased concern of sustainability and climate change, post COVID (Howarth, 2021). The most prominent factors would be clothing, food and automobiles. Now if we dig deeper into the topic, we see that an upcoming trend for 2022 would be circular economies. It's all about incorporating a model of production and consumption that involves reusing, repairing, refurbishing and recycling existing materials and products (Graham, 2021). A shining example of a big brand who has made the shift is US clothing company, Patagonia. Other companies, like Umicore – a clean mobility materials and recycling company hailing from Belgium – have also adopted a similar stance in their mission to give new life to used metals. The circular economy is a beautiful idea, and it comes as no surprise that it is inspiring businesses and environmentalists alike.

Now our company is all devoted to aiding the agricultural sector in getting rid of water mismanagement and food losses. Very impactful for the environment. We started thinking in the same trend, where can we make our business model leaner and cleaner? We devoted ourselves to not only dispose to an electrical vehicle fleet but also to ameliorate our business model itself. That's when we thought about the adding of a circular model and jumping on this new trend. We would add an internal refurbishment process for drones of other brands. During this refurbishment, our software would be applied to these drones as well and results in less production waste and less drones that would need to be replaced in the long term. We would like to amplify the fact these are only broad ideas where the founding team

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sometimes talks about. But our main focus for now lies in the building of our core business Farmlend.

CONCLUSION

More than 25% of the production of crops in the agricultural sector goes to waste. Farmlend will increase sustainability and efficiency to considerably decrease the waste of the production process of crops by introducing our product, a new revolutionary mix of developed software and new drone technology, that modernizes how farmers monitor and manage their crops through a platform. The platform also creates value for the farms, allowing them to decrease crop diseases, water mismanagement, and loss during the harvest phases.

The finished product will offer a revolutionary all-in-one solution that can measure, evaluate and optimize crop production and eventually increase efficiency and sustainability, generating value for the entire agricultural sector. We will pursue an aggressive intellectual property strategy to guarantee that the value of the created product is safeguarded inside the firm through filings in Germany and the rest of Europe. Europe was chosen at the entry level for its rising adoption of precision agriculture and investments in fostering precision farming techniques. Moreover, Farmlend will enter the German market for its leading role in the European market and for being the most lucrative market for precision agriculture businesses and start-ups.

The marketing plan outlines a complete set of strategies and tactics to increase brand awareness, generate leads, and drive sales. The plan is centered around four key objectives: creating a presence in the industry, increasing sales, generating leads, and tracking results and continuously improving. To achieve these objectives, the plan proposes a range of digital and

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physical marketing strategies, including SEO, SEA, email campaigns, social media, attending trade shows and conferences, and using a direct-sales approach.

By implementing these marketing efforts, Farmlend aims to establish a strong presence in the precision agriculture industry and build relationships with potential customers. The plan's digital marketing strategies will help increase the visibility of the company and its products. In contrast, physical marketing strategies such as attending trade shows and using a direct-sales approach will provide opportunities to showcase the company's technology and build relationships with potential customers and partners. Our marketing efforts are well-structured and based on a clear understanding of the needs and preferences of Farmlend's target market. By implementing and executing the strategies, our company is well-positioned to achieve its objectives and establish itself as a key player in the precision agriculture industry.

Our business model is in short how it will generate revenues and the cost structure, our company is expected to generate revenues by selling our innovative solutions. These revenues will consist of three different subscriptions that we will offer each will provide a different set of features on our digital precision farming platform next to the incomes of our subscription we will also generate revenues by selling our drone itself. The drone and the subscriptions are substitutional articles meaning that for one of both to work, a customer need to buy the other one. Next to our revenues that we will generate there will also be a clear set of key expenses.

Our key expenses are divided into three main groups. First, there will be the expenses of research and development which will be of major importance both for the creation of our products and afterward for the continuation of innovating the product to continuously meet customers' needs and stay ahead of the competition. Next to the research and development

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group, there will also be a group of major CAPEX expenses. These expenses include our warehouse and future warehouses. Lastly, there are significant expenses, including working and service costs. In this group, there are expenses for the salaries of our field factory workers and the costs of buying the drones and integrating and developing the software for the drone and the whole digital solution. These revenues and costs are the main lars of our business model. For our business and company to be successful, it is of tremendous importance that these pillars are constantly being monitored closely and adjusted when needed.

Looking at our financial forecasting, we see an extensive growth of revenues which go hand in hand with a very high burn. For this reason, our initial valley will take four years, and we will be cash flow positive in 2027. That is why Farmlend should consider, next to getting skin in the game and investing ourselves, raising capital from external investors who are the right fit for the team and the roadmap we have in our minds. We expect our selected investors to contribute with their experience in the roll-out of several unicorns and to work with us to open doors that would otherwise have stayed closed.

We have planned to fund Farmlend for the next five years, mainly through our lead investor, Atlantic lab, a German government grant, and two other strategic venture capital funds. We expect to raise a total of around four million EUR in funding. However, we must be prepared for upcoming risks in securing financing and be mindful of the requirements and pressure external funders will lay on our shoulders and our start-up. By keeping close track of our capitalization table, where the ownership structure is documented, we ensure that we have a good overview of which shareholders hold how many shares in Farmlend. All four founders have decided on an initial evenly split equity, and we have decided to get diluted in the same way, as we firmly believe that all four of us have the skill that we bring to the table for Farmlend

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to become the new unicorn in the agricultural sector. To finish the financial part, we discussed but have not considered any specific exit yet. Until now, we still prefer the secondary sale as we would never let our Farmland fall into the hands of someone we do not think is capable of supporting the extensive growth trajectory.

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Group Participation

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APPENDIX

Exhibit1: Revenue forecasting

Group Participation

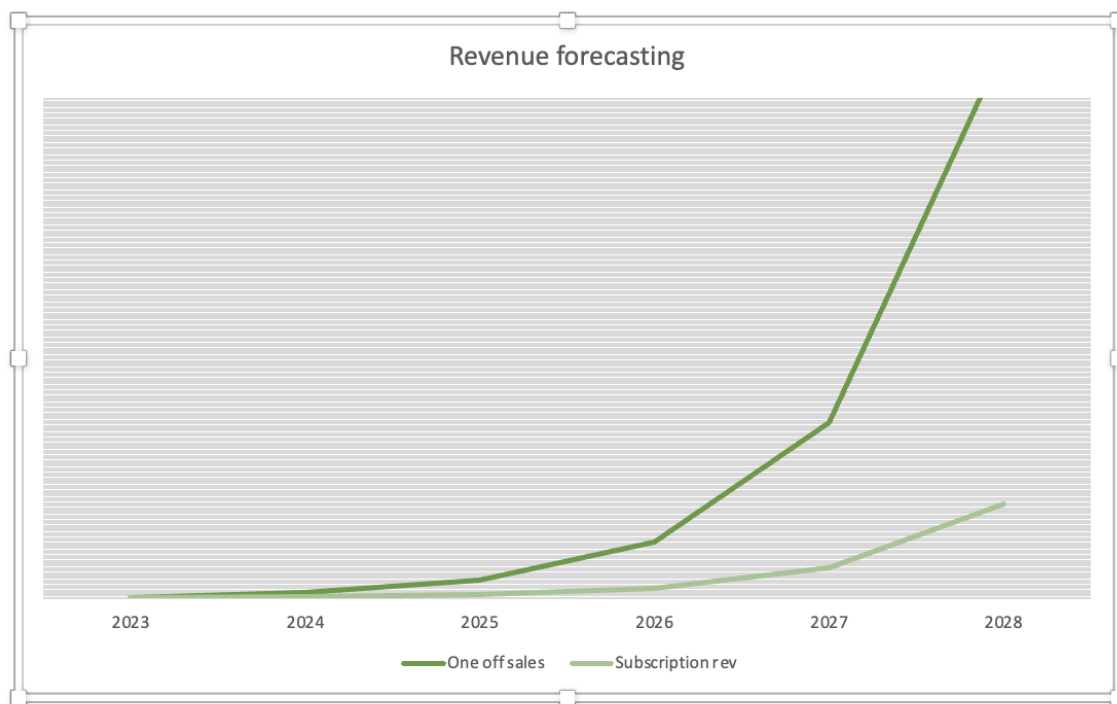


Exhibit 2: Capitalization table Pre-seed round

Pre-Seed Round			
Valuation		€	
Pre-money	4.000.000		
Investment	1.000.000		
Post-money	5.000.000		
Dilution	20,0%		
Share price	40,00		
Amount of shares	100.000,00		

EV to Equity Bridge (€)	Pre-money	Investment	Post-money
Enterprise Value	4.000.000	–	4.000.000
+/- Cash	–	1.000.000	1.000.000
-/- Debt		–	–
Equity Value	4.000.000	1.000.000	5.000.000

Cap Table	€	#	%
Business angels	750.000	18.750	15,0%
Atlantic Labs	250.000	6.250	5,0%
Founders	4.000.000	100.000	80,0%

Exhibit 3: List of German venture capital funds

Group Participation

Names of VC	number of agricultural investments
Atlantic Labs	7
Bayern Kapital	4
TGFS - Technologiegründerfonds Sachsen	4
Cherry Ventures	4
Ananda Impact Ventures	3
High-Tech Grunderfonds	3
Quadia	2
RTP Global	2
LocalGlobe	2
Wi Venture	2

Exhibit 4: Financials

Profit & Loss statement						
€k, unless stated otherwise	2023	2024	2025	2026	2027	2028
Net sales	148	1.333	4.182	13.125	41.193	129.281
Cost of sales	(306)	(1.361)	(3.828)	(11.293)	(32.875)	(100.659)
Gross profit	(158)	(28)	354	1.833	8.318	28.623
Salaries, wages & benefits	(270)	(360)	(540)	(720)	(720)	(1.020)
Lease expense	(60)	(60)	(90)	(120)	(120)	(170)
Utilities expense	(36)	(36)	(54)	(72)	(72)	(102)
R & D expenses	(1.650)	(300)	(850)	(150)	(150)	(150)
Marketing Expense	(60)	(120)	(180)	(240)	(240)	(290)
Other expenses	(24)	(24)	(36)	(48)	(48)	(68)
SG&A	(2.100)	(900)	(1.750)	(1.350)	(1.350)	(1.800)
EBITDA	(2.258)	(928)	(1.396)	483	6.968	26.823
Depreciation & Amortization	(3)	(9)	(18)	(30)	(42)	(54)
EBIT	(2.262)	(938)	(1.414)	453	6.926	26.769
Interest	—	—	—	—	—	—
EBT	(2.262)	(938)	(1.414)	453	6.926	26.769
Corporate income tax	25,0%	565	234	353	(113)	(1.732)
Net income	(1.696)	(703)	(1.060)	340	5.195	20.077
Dividends	30,0%	509	211	318	(102)	(1.558)
Retained earnings	(1.187)	(492)	(742)	238	3.636	14.054
Gross margin %	(106,8%)	(2,1%)	8,5%	14,0%	20,2%	22,1%
EBITDA margin %	(1.524,3%)	(69,7%)	(33,4%)	3,7%	16,9%	20,7%
EBIT margin %	(1.526,5%)	(70,4%)	(33,8%)	3,5%	16,8%	20,7%
Cashflow statement						
€k, unless stated otherwise	2023	2024	2025	2026	2027	2028
+/- EBITDA	(2.258)	(928)	(1.396)	483	6.968	26.823
-/- Interest paid	—	—	—	—	—	—
-/- Taxes paid	565	234	353	(113)	(1.732)	(6.692)
-/- Change in net WC	(20)	(128)	(371)	(1.244)	(3.903)	(12.247)
Cashflow from operations	(1.713)	(822)	(1.413)	(874)	1.334	7.884
-/- Capex	(60)	(60)	(115)	(120)	(120)	(120)
+/- Disposals / (Acquisitions)	—	—	—	—	—	—
Cashflow from investments	(60)	(60)	(115)	(120)	(120)	(120)
+/- Equity issuance / (buyback)	—	—	—	—	—	—
-/- Dividend payments	509	211	318	(102)	(1.558)	(6.023)
+/- Debt issuance / (redemption)	—	—	—	—	—	—
Cashflow from financing	509	211	318	(102)	(1.558)	(6.023)
Change in cash	(1.264)	(671)	(1.210)	(1.096)	(345)	1.741

Exhibit 5: Sales forecasting

Group Participation

Sales & COGS

Q

Sales						
€k, unless stated otherwise	2023	2024	2025	2026	2027	2028
One of sales income	132	1.138	3.573	11.214	35.194	110.454
Subscription revenu (lag of a month)	16	194	609	1.911	5.999	18.827
Net sales	148	1.333	4.182	13.125	41.193	129.281
Price of drone and implementation of software	(99)	(812)	(2.323)	(7.289)	(22.876)	(71.795)
Delivery and installation cost	(26)	(228)	(715)	(2.243)	(7.039)	(22.091)
Labor cost Sales rep 1 per 10 deals	(7)	(57)	(179)	(561)	(1.760)	(5.523)
Labor cost customer support 2 per region	(30)	(120)	(180)	(240)	(240)	(290)
Labor cost factory worker 3 per region	(144)	(144)	(432)	(960)	(960)	(960)
Cost of sales	(306)	(1.361)	(3.828)	(11.293)	(32.875)	(100.659)

Exhibit 6: Working Capital

Working capital

Working capital							
€k, unless stated otherwise	Opening	2023	2024	2025	2026	2027	2028
Δ Inventories		35	57	239	592	1.858	5.837
Δ Receivables		28	156	491	1.540	4.832	15.165
Δ Payables		(43)	(85)	(358)	(888)	(2.787)	(8.755)
Change in net WC		20	128	371	1.244	3.903	12.247
Inventories	10	45	102	341	933	2.791	8.628
Receivables	45	73	229	720	2.260	7.092	22.257
Payables	(25)	(68)	(154)	(512)	(1.400)	(4.187)	(12.942)
Net WC	30	50	178	549	1.793	5.696	17.943
Inventories		2023	2024	2025	2026	2027	2028
Cost of sales		(306)	(1.361)	(3.828)	(11.293)	(32.875)	(100.659)
Avg. Days Inventory Outstanding (DIO)	20,0	20,0	20,0	20,0	20,0	20,0	20,0
Days in period		365	366	365	365	365	366
Inventories		17	74	210	619	1.801	5.500
Receivables		2023	2024	2025	2026	2027	2028
Net sales		148	1.333	4.182	13.125	41.193	129.281
Avg. Days Sales Outstanding (DSO)	40,0	40,0	40,0	40,0	40,0	40,0	40,0
Days in period		365	366	365	365	365	366
Receivables		16	146	458	1.438	4.514	14.129
Payables		2023	2024	2025	2026	2027	2028
Cost of sales		(306)	(1.361)	(3.828)	(11.293)	(32.875)	(100.659)
Avg. Days Payable Outstanding (DPO)	30,0	30,0	30,0	30,0	30,0	30,0	30,0
Days in period		365	366	365	365	365	366
Payables		(25)	(112)	(315)	(928)	(2.702)	(8.251)

Exhibit 7: SG&A

Selling, General & Administrative expenses

SG&A						
€k, unless stated otherwise	2023	2024	2025	2026	2027	2028
Salaries, wages & benefits	(270)	(360)	(540)	(720)	(720)	(1.020)
Lease expense	(60)	(60)	(90)	(120)	(120)	(170)
Utilities expense	(36)	(36)	(54)	(72)	(72)	(102)
R en D expense	(1.650)	(300)	(850)	(150)	(150)	(150)
Marketing expense	(60)	(120)	(180)	(240)	(240)	(290)
Other expenses	(24)	(24)	(36)	(48)	(48)	(68)
SG&A	(2.100)	(900)	(1.750)	(1.350)	(1.350)	(1.800)

Exhibit 8: PP&E

Group Participation

Property, Plant & Equipment

Property, Plant & Equipment							
€k, unless stated otherwise	Opening	2023	2024	2025	2026	2027	2028
[Asset 1]	250	307	358	402	441	474	501
[Asset 2]	250	–	–	552	604	649	688
Fixed assets	500	307	358	955	1.045	1.123	1.189
Capex		60	60	115	120	120	120
Depreciation		(3)	(9)	(18)	(30)	(42)	(54)
[Asset 1]	Opening	2023	2024	2025	2026	2027	2028
Asset BoP		250	307	358	402	441	474
Capex		60	60	60	60	60	60
Depreciation (mths)	120,0	(3)	(9)	(15)	(21)	(27)	(33)
Asset EoP	250	307	358	402	441	474	501
Months from start		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
[Asset 2]	Opening	2023	2024	2025	2026	2027	2028
Asset BoP		250	250	250	302	354	399
Capex		–	–	55	60	60	60
Depreciation (mths)	120,0	–	–	(3)	(9)	(15)	(21)
Asset EoP	250	250	250	302	354	399	438

Exhibit 9: DCF model

Discounted Cashflow

DCF						
€k, unless stated otherwise	2023	2024	2025	2026	2027	2028
Net sales	148	1.333	4.182	13.125	41.193	129.281
EBITDA	(2.258)	(928)	(1.396)	483	6.968	26.823
D&A	(3)	(9)	(18)	(30)	(42)	(54)
EBIT	(2.262)	(938)	(1.414)	453	6.926	26.769
Adj. tax (over EBIT)	25,0%	565	234	353	(113)	(1.732)
Change in net WC	(20)	(128)	(371)	(1.244)	(3.903)	(12.247)
Capex	(60)	(60)	(115)	(120)	(120)	(120)
Free cash flow (FCF)	2023	2024	2025	2026	2027	2028
EBITDA	(2.258)	(928)	(1.396)	483	6.968	26.823
-/- Adj. tax	565	234	353	(113)	(1.732)	(6.692)
-/- Change in net WC	(20)	(128)	(371)	(1.244)	(3.903)	(12.247)
-/- Capex	(60)	(60)	(115)	(120)	(120)	(120)
Unlevered FCF (future value)	(1.773)	(882)	(1.528)	(994)	1.214	7.764
Period discount	1,0x	2,0x	3,0x	4,0x	5,0x	6,0x
WACC	20,0%	20,0%	20,0%	20,0%	20,0%	20,0%
Discount factor	0,83x	0,69x	0,58x	0,48x	0,40x	0,33x
Unlevered FCF (present value)	(1.478)	(612)	(884)	(479)	488	2.600
Exit multiple						
PGR	1,0%					
EBITDA (last period + 1)	27.091					
EBITDA exit multiple	15,0x					
Terminal value (FV)	406.365					
Discount factor	0,33x					
Terminal value (PV)	136.091					
Explicit forecast period	(366)	(0,3%)				
Terminal value	136.091	100,3%				
Enterprise value	135.725	100,0%				
PGR						
PGR	1,0%					
WACC	20,0%					
UFCF (FV)	7.764					
Terminal value (FV)	40.863					
Discount factor	0,33x					
Terminal value (PV)	13.685					
Explicit forecast period	(366)	(2,7%)				
Terminal value	13.685	102,7%				
Enterprise value	13.319	100,0%				

Exhibit 10: Funding needed

Group Participation

in K

Total Burn: (3.454) 3 million needed

Funding needed			
	Bootstrapping	Pre seed	Seed
Round 1	(550)	(1.000)	(2.000)
Own capital	200	–	–
Non-equity inv	350	–	–
Equity round	–	1000	2000
End round	–	–	–