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Executive Summary

The Marketing Plan of the gaiasense smart farming system is an essential component of the LIFE GAIA Sense outcomes. It refers to the integrated strategy for the marketing of gaiasense in the target markets identified, namely Greece, Spain, Portugal, Romania and Cyprus.

The marketing plan is based on the one developed for the Greek market, where gaiasense is designed, developed and commercially available. Taking into consideration the specific characteristics of each country, the marketing plan will be used as a framework, the components of which will be properly adapted to meet the needs of the different markets in each target country, getting as closer as possible to the potential customers, collaborators and other stakeholders of gaiasense.

This deliverable provides information on different aspects of the marketing plan, such as the smart farming landscape at a higher level and in each target country individually, highlighting the presence of competition in each case. The deliverable also provides insights on the envisaged marketing plan and the tools to be used for its implementation, digital and traditional marketing techniques and means to be used, marketing goals and monitoring of the implementation of the plan. It also provides information on the communication strategy to be used as part of the marketing plan, as well as information on the pricing, budget, the positioning and branding of gaiasense, among others.

The work described in this deliverable makes use of the work already undertaken and described in other deliverables of the LIFE GAIA Sense project, such as the D2 First Policy Uptake Activities and Material. This allows a seamless interconnection between the activities taking place in the context of different Work Packages, therefore contributing to the holistic implementation of the project's activities.

This initial marketing plan will be more precise and concrete as gaiasense reaches the point of being commercially available abroad; at that point, the strategy, tools, means and activities will be described in more details, aiming to address the clearly specified needs of each different target market.



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Definitions, Acronyms and Abbreviations

Acronym/Term	Explanation
CAP	<i>Common Agricultural Policy</i>
CDG	<i>Civil Dialogue Group</i>
CE	<i>Circular Economy</i>
COMAGRI	<i>Committee on Agriculture & Rural Development of the European Parliament</i>
DG AGRI	<i>Directorate-General for Agriculture and Rural Development</i>
DG CLIMA	<i>Directorate-General for Climate Action</i>
DG ENVI	
EC	<i>European Commission</i>
EIP-AGRI	<i>European Innovation Partnership for Agriculture Productivity and Sustainability</i>
EP	<i>European Parliament</i>
EU	<i>European Union</i>
GAIA	<i>GAIA EPICHEIREIN ANONYMI ETAIREIA PSIFIAKON YPIRESION</i>
KM	<i>Key Message</i>
NP	<i>Neuropublic Ae Pliroforikis & Epikoinonion</i>
SF	<i>Smart Farming</i>
TF	<i>Task Force</i>
WP	<i>Working Party</i>



1. Introduction

1.1 Project Summary

The main objective of the LIFE GAIA Sense project is to demonstrate gaisense, an innovative “Smart Farming” (SF) solution that aims at reducing the consumption of natural resources, as a way to protect the environment and support Circular Economy (CE) models.

More specifically, this project will launch 18 demonstrators across Greece, Spain and Portugal covering 9 crops (olives, peaches, cotton, pistachio, potatoes, table tomatoes, industrial tomatoes, almonds, kiwi) in various terrain and microclimatic conditions. They will demonstrate an innovative method, based on high-end technology, which is suitable for being replicated and will be accessible and affordable to farmers either as individuals or collectively through Agricultural Cooperatives.

Moreover, LIFE GAIA Sense aims to promote resource efficiency practices in SMEs of the agricultural sector and eventually, contribute to the implementation of the Roadmap to a Resource Efficient Europe. This project will demonstrate a method on how the farmer will be able to decide whether to use or avoid inputs (irrigation, fertilizers, pesticides etc.) and more specifically how to apply them in a most efficient way, without risking the annual production. The focus is on the resource consumption reduction side of CE, and the results will be both qualitatively and quantitatively, considering the resources’ efficiency in the agricultural sector.

1.2. Document Scope

The aim of this deliverable is to provide an overview of the marketing plan to be followed by the LIFE GAIA Sense project after the end of the project, when the smart farming services of the gaisense smart farming system will be commercially available in the countries mentioned in the document: **Greece, Spain, Portugal, Cyprus and Romania.**

This deliverable takes into consideration the **Deliverable D8 “Initial replicability and transferability plan”**, which provided an initial version of the marketing approach and activities to be undertaken by the project regarding the extension of gaisense in new countries. The same document also provided some information on other aspects of interest to this deliverable, such as an analysis of the most important competitors, a proposed concept of the marketing activities and others. All updates since the publication of Deliverable D8 have been implemented in this deliverable, in order to better reflect updates on the smart farming market and the marketing activities to be undertaken in the next period.



The deliverable also makes use of existing work undertaken and documented in other deliverables, such as **D2 “First policy uptake activities report and material”** which sets up the scene regarding the key messages to be used for communicating with various stakeholders.

In the following sections, the deliverable will aim to provide information on the different characteristics of each country’s market, which will help define the most appropriate marketing plan for each market.

2. Market Research

2.1 About smart farming

The digitization of agriculture over the last years came as a response to the need for producing “more with less”; more food in order to meet the nutritional needs of the constantly growing global population and less, because the excessive use of agrochemicals like fertilizers and pesticides, along with the depletion of valuable natural resources like irrigation water had significant impact on the environment.

The need for a transition to a more sustainable food production approach is also highlighted by the recently announced **EU Green Deal**¹, the **Farm to Fork**² strategy and other related strategies and initiatives of the EC. These strategies, along with the reform of the Common Agricultural Policy for the next period, provide the sustainability framework into which farmers will produce our food in a more environmentally-friendly way.

Smart farming comes as a response to the challenges faced by farmers, combining the use of technological tools, the scientific results of specialized researchers and the experience of agricultural advisors. In this context, smart farming provides the tools for next generation agricultural advice (the smart farming advice), that help farmers optimize the use of both agrochemicals and natural resources, increasing their competitiveness and reducing the environmental footprint of their production.

The gaisense smart farming system has been designed by NEUROPUBLIC, coordinator of the LIFE GAIA Sense project, in order to help farmers overcome the challenges that put the sustainability of their farms in risk and improve their competitiveness. The gaisense system has been acknowledged as an innovation at European level thanks to its unique features; one of them is the “Smart-Farming-as-a-Service” business model, which makes the system affordable even to smallholder farmers.

¹ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

² https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork_en

2.2. The smart farming market dynamics

According to the specialized market research agency **Markets and Markets**³, the smart farming market was estimated to be worth USD 13.7 billion in 2020 and is projected to reach USD 22.0 billion by 2025. At the same time, it is expected to grow at a Compound Annual Growth Rate (CAGR) of 9.8% from 2020 to 2025.

This increasing dynamic is mostly due to the increasing pressure that the constantly growing population puts on the food supply system, and is supported by the surging development and adoption of modern technologies in the agricultural sector. This increases the spectrum of the smart farming services offered at global level, from livestock monitoring and plant disease detection to smart irrigation systems and accurate personalized weather forecasts at parcel level. In this context, the rising investments in the agriculture technology sector have propelled the growth of the smart farming market.

The COVID-19 pandemic has led to a marginal dip of the smart farming market in 2020, partly due to the restriction of personal movements and transfer of goods, which have led to disruptions in the supply chain. At the same time, this can also function as an opportunity for adoption of smart farming, thanks to the use of remote monitoring technology and farm management software tools which help farmers and other stakeholders stay productive while reducing their movements even during the post COVID-19 period. COVID-19 has disrupted the supply chain of different aspects of the smart farming market, including precision farming, livestock monitoring, aquaculture, greenhouse and forestry. The companies are already exploring new opportunities to interact with growers and farmers by leveraging advanced technologies.

³ <https://www.marketsandmarkets.com/Market-Reports/smart-agriculture-market-239736790.html>



Figure 1 The impact of COVID-19 to the global smart farming market. Source: Businesswire⁴.

According to the same report, smart farming has the potential to ensure high returns for agribusinesses and it can help farmers address the negative effects of nature on crops by collecting geospatial data of soil, livestock, and plant, and other inter- and intra-field information. In combination with precision farming, it can also provide inputs about required quantities of irrigation water, fertilizers, pesticides and other agrochemicals, therefore reducing waste of resources. This not only helps farmers minimize their production costs, but has also a positive impact on the environmental impact of agricultural activities. The implementation of smart farming also helps towards the increased efficiency through process automation and improved output with the reduced cost of farming; these are two important factors that drive the deployment of smart farming tools.

A major factor restraining the growth of the smart farming market, according to the report, is the necessity for expensive initial investments: Currently, smart farming tools are expensive, making it unaffordable for smallholder farmers in developed regions and most farmers in emerging economies. Thus, the latest technology can be accessed only by big and industrialized farms owing to the high cost of technology. Apart from high initial monetary investment to deploy GPS,

⁴ <https://www.businesswire.com/news/home/20200928005492/en/Global-Smart-Farming-Market-Analysis-with-COVID-19-Recovery-Plan-and-Strategies-for-the-Consumer-Staples-Industry-Technavio>



drones, and GIS, VRT, and satellite devices, precision farming also requires a skilled workforce to handle these technology-enabled devices, which poses a challenge for the adoption of these technologies among small-scale farmers.

The giasense smart farming system has addressed this challenge, as it follows the “**Smart-Farming-as-a-Service**” model. In this way, farmers do not need to invest in expensive technological tools and infrastructure; instead, they only have to pay a relatively small annual subscription in order to have access to the smart farming services of giasense.

A report titled “**Smart Farming Market by Product, Application, and Geography - Forecast and Analysis 2020-2024**”⁵ by Techavio identifies the availability of low-cost cloud services as one of the key factors driving the smart farming market growth and encourages farmers to adopt smart farming.

A similar research by **Emergen Research**⁶ states that the smart farming market size will reach USD25.98 Billion by 2028, with an increasing adoption of IoT in farming and use of modern technologies as the key factor driving the industry growth. The research highlights the fact that “*IoT-based smart farming targets large-scale farming operations and adds value to new trends such as family farming and organic farming, and enables highly transparent farming. Remote sensing smart farming improves productivity, reduces waste, and provides enhanced resource management*”.

Based on this information, in the next few years smart farming is expected to have a big impact on the agricultural sector, allowing farmers to produce more, better and more sustainably, while at the same time helping to bridge the gap between small and large-scale agricultural businesses. This trend is not only pertinent in developed countries but also in developing countries which have realized its immense importance as well and have the potential to join the era of digital agriculture through smart farming.

2.3 Market Patterns

Agricultural production heavily depends on unpredictable factors, the most important of which is weather. The effects of climate change have affected the seasonality of climate, and extreme weather phenomena that affect agriculture are nowadays more frequent and extreme. Farmers

⁵ <https://www.technavio.com/report/smart-farming-market-industry-analysis>

⁶ <https://www.globenewswire.com/news-release/2021/02/02/2168498/0/en/Smart-Farming-Market-Size-to-Reach-USD-25-98-Billion-by-2028-Increasing-Adoption-of-Iot-in-Farming-and-use-of-Modern-Technologies-will-be-the-Key-Factor-Driving-the-Industry-Growth.html>



now have the option to turn to technology in order to protect their crops to the extent possible, and this has a positive impact on the smart farming market.

While the smart farming market exhibits a constantly growing rate, it does not exhibit any seasonality, as it can be considered as a kind of investment for the next years. Covering almost all different crop types through different cultivation periods all over the year, the smart farming market is expected to continue expanding its offerings to even more farmers and their organizations.

2.4 Customers

The main customers of the smart farming market are farmers and their organizations, i.e. agricultural cooperatives and farmers' groups. They are the ones to benefit from the offerings of smart farming and following the smart farming advice they can optimize the management of their production, improving yields and quality, minimizing their costs and improving their competitiveness.

Agricultural advisors are also customers of the smart farming offerings. They can use the smart farming technological tools to improve their work and become more efficient. For example, agricultural advisors can use the specially designed mobile apps of gaisense for recording on farm observations, measurements and info about soil and plant tissue sampling during a field visit. They can also use the same apps for accessing diverse information about the farm at parcel level, such as NDVI maps, detailed weather forecast, information about the potential risks to affect a given parcel etc. Last but not least, they can receive the smart farming advice from the gaisense system, adjust it if needed and then guide farmers into its application in the field.

In addition, specialized researchers can also act as customers of smart farming offerings. A smart farming system like gaisense is a valuable source of huge volumes of accurate data which can be used by researchers to develop and test their scientific models for the irrigation, crop protection and fertilization of a given crop. In the context of collaborations or even through a paid smart farming service, researchers can have access to such data as well as access to testbeds for testing their scientific models under real conditions, in the form of pilot fields.



2.5 Current sales in the industry

According to the report Smart Agriculture Market by Type and Component: Global Opportunity Analysis and Industry Forecast, 2021–2027⁷, the key players operating in the smart agriculture industry include Trimble Inc., Deere & Company, Topcon Positioning Systems, DeLaval Inc., AgEagle Aerial Systems Inc., Afimilk Ltd, Raven Industries, Inc., Ag Junction LLC., AGCO Corporation, and GEA Group. These companies are active in the precision farming segment of the market, having experience in the development and provision of technological solutions for the smart farming sector in general. According to the same report, the Asia-Pacific region holds the largest market share of the smart farming market, which is expected to reach a total of USD 29.2 million by 2027.

There are no publicly available data for the smart farming sales per country; such data would be useful for the purposes of launching a smart farming system like gaia sense in a new country. However, according to the same report, the Asia-Pacific dominates the market and is expected to grow with a CAGR of 8.3% during the forecast period (2021-2027).

2.6 Benchmarks in the industry

The agriculture sector is undergoing a transformation driven by new technologies, which seems very promising as it will enable this primary sector to move to the next level of farm productivity and profitability. These new technologies are increasingly being applied in the farms to maintain the financial and environmental sustainability of farm production.

Agriculture started as a labor-intensive and low-productivity activity and reach high optimization levels through the last decades. The major benchmarks in this path of agriculture from ancient times to nowadays are described in the following sections.

Agriculture 1.0 refers to agriculture from ancient times to about 1950, when farming was essentially with a lot of manual labor. This model is locally adapted, labor intensive, relatively small, diverse that are very much at the heart of their respective communities and societies. A labor-intensive system of agriculture with low productivity. It was able to feed the population but required a vast number of small farms and a third of the population to be active in the primary agricultural production process.

⁷ <https://www.alliedmarketresearch.com/smart-agriculture-market>



Agriculture 2.0 from 1950 to about 2010 is where agricultural machinery, fertilizers and seeds improved through genetic modification helped farmers produce more with less effort. It refers to the combination of agronomic management practices and new tools like synthetic agrochemical like pesticides. This has created what we call agribusiness or industrial agriculture. It has also pushed farming in to the economic edge and helped reduce the cost of food. Widely remembered as “The Green Revolution”, this phase of farming began in the late 1950s when agronomic management practices like supplemental nitrogen and new tools like synthetic pesticides, fertilisers and more efficient specialised machines allowed to take advantage of relatively cheap inputs, thus dramatically increasing yield potential and growing returns to scale (consolidation) at all levels⁸.

Agriculture 3.0 or precision agriculture was the time when specialized sensors, cloud computing, advanced software and technologies like the Internet of Things and remote sensing were introduced to the agricultural sector. The use of GPS for purposes other than military ones gave a significant boost to agriculture through the development of precision agriculture. This allowed for detailed monitoring of various aspects of farming like field mapping, variable rate application of seeds and agrochemicals and yield prediction, among others.

Precision Farming improves the accuracy of the operations, managing in-field variations rather than treating fields as a whole, managing animals rather than herds. The intention is to give each plant exactly what it needs to grow optimally, with the goal to optimise the agronomic output while reducing the input (“more with less”).

Agriculture 3.0 can be seen as the gradual introduction of more and more advanced and mature Precision Farming technologies. The focus is moved from pure efficiency in terms of cutting costs to profitability which can be seen as objectively and creatively seeking ways to lower costs and enhance quality or develop differentiated products⁹.

Agriculture 4.0, Smart Farming or Digital Farming was born when telematics and data management were combined to the already known concept of Precision Agriculture, improving the accuracy of agricultural operations. As a result, smart farming is based on Precision Agriculture principles with producers using systems that generate data in their farms, which will be processed in such a way to make proper strategical and operational decisions¹⁰.

⁸ https://www.cema-agri.org/images/publications/position-papers/CEMA_Digital_Farming_-_Agriculture_4.0__13_02_2017_0.pdf

⁹ <https://www.dairyglobal.net/Articles/General/2017/3/Digital-Farming-what-does-it-really-mean-100861E/>

¹⁰ Saiz-Rubio, V.; Rovira-Más, F. From Smart Farming towards Agriculture 5.0: A Review on Crop Data Management. *Agronomy* **2020**, *10*, 207. <https://doi.org/10.3390/agronomy10020207>



In terms of definitions, Agriculture 4.0, in analogy to Industry 4.0, stands for the integrated internal and external networking of farming operations. This means that information in digital form exists for all farm sectors and processes; communication with external partners such as suppliers and end customers is likewise carried out electronically; and data transmission, processing and analysis are (largely) automated. The use of Internet-based portals can facilitate the handling of large volumes of data, as well as networking within the farm and with external partners.

The smart farming market and the corresponding industry has been formed over the last years with the collaboration of different stakeholders. It exhibits a high diversity of offerings, aiming to address different needs of farmers, in different contexts and under different conditions.

2.7 Suppliers

Due to the complexity behind the smart farming offerings, the suppliers of the smart farming market consist of a large and diverse ecosystem. The following paragraphs provide an overview of each category identified.

Hardware suppliers: Smart farming makes use of various technologies such as Earth Observation and Remote Sensing, IoT and Machine Learning, and technological tools that need specialized hardware to operate. This hardware ranges from specialized sensors for data recording to a large scale infrastructure consisting of telemetric IoT devices like the agrometeorological stations of gaiasense. In between there is a wide variety of other hardware like components for autonomous tractors and the automation of agricultural activities like irrigation (e.g. electrovalves), drones, specialized electronics, cloud computing infrastructure and other components of a smart farming system like gaiasense. Providers of technological solutions based on NFC, RFID, LPWAN and other connectivity protocols are essential for the operation and interconnection of various IoT devices used by smart farming.

Software suppliers: The smart farming offerings require different kinds of software developments, such as the visualization of data, the development of mobile and web applications, the development of specialized software that allows the integration of data from multiple sources etc. In addition, an important software type is the one for the management of various types of data, in the form of a digital repository.



Scientific outcomes: Smart farming heavily depends on the use of scientific outcomes in the form of scientific models for the irrigation, fertilization and crop protection of various crops. These scientific models are fed with the data acquired from various sources and they become the basis of the gaia sense smart farming advice for the corresponding agricultural activity. Individual specialized researchers, research institutes and other types of research organizations are the suppliers of such models.

In addition, specialized and experienced scientists on topics such as Earth Observation and Remote Sensing, Big Data Analytics, Machine Learning and Deep Learning, Information and Computer Engineers, Software Engineers and Developers provide their expertise for the development and the evolution of smart farming services.

Data suppliers: Smart farming makes use of various data types, in huge volumes. Such data include meteorological and solid data acquired from telemetric agrometeorological stations, earth observation data from satellites, historical soil data available through digital repositories, statistical, financial and demographic data, etc. While some of these data come from free and open sources, like UN FAO Databases, ESA repositories and EUROSTAT, among others, there are data sources that only provide access to data on a payment basis, through an annual subscription or per dataset. Examples include the Airbus Pléiades satellite images¹¹ and Planet's Planetscope¹². In any case, the availability of high quality data, and consequently reliable data providers, is essential for the operation of smart farming services.

Suppliers of smart farming offerings: This category includes the companies who make use of the hardware, software and other components identified in the previous sections, in order to provide smart farming services to end users, such as farmers. This requires expertise in the combination of the different components towards the development and specialization in the smart farming sector.

¹¹ <https://www.intelligence-airbusds.com/en/8692-pleiades>

¹² <https://www.planet.com/products/planet-imagery/>



3. Target Markets

The target market of smart farming services, like the ones provided by gaiasense, is a diverse one and consists of a wide variety of user types, with different demographic characteristics, background and location. The main target segment of this market consists of farmers, either individual ones or organized in agricultural cooperatives and other forms of organization. At the same time, other types of potential market stakeholders is also considered, as they are either potential customers or collaborators of interest to gaiasense.

The following sections include information about the potential target market of gaiasense, as a smart farming offering.

3.1 User types

The potential and most prominent end users and customers of the gaiasense smart farming solutions are farmers, agricultural cooperatives and agricultural advisors. However, different user types, such as researchers and developers of smart farming solutions are also considered.

Agricultural cooperatives

Agricultural cooperatives are the main market segment of gaiasense, as they have the organizational structure and capacity - financial and technical - for adopting a new production management system like gaiasense. What makes agricultural cooperatives ideal for the adoption of gaiasense is the existence of an experienced agronomist and / or agricultural advisor who will be responsible for manual data recording, having the ability to operate the necessary software (web and mobile apps), the experience of keeping a log of farming activities and the skills to guide farmers through the implementation of a smart farming advice.

The gaiasense system has already been implemented in collaboration with various agricultural cooperatives all over Greece, and the results so far are really positive.

Individual farmers

Individual farmers are also a significant market segment for gaiasense. They usually comprise the largest share of the agricultural producers in most countries, despite the challenges they face, especially when it comes to smallholder farmers.

Individual farmers usually lack the financial and technical (i.e. digital skills) capacity for investing in and using the smart farming tools available in the market; at the same time, they still need to

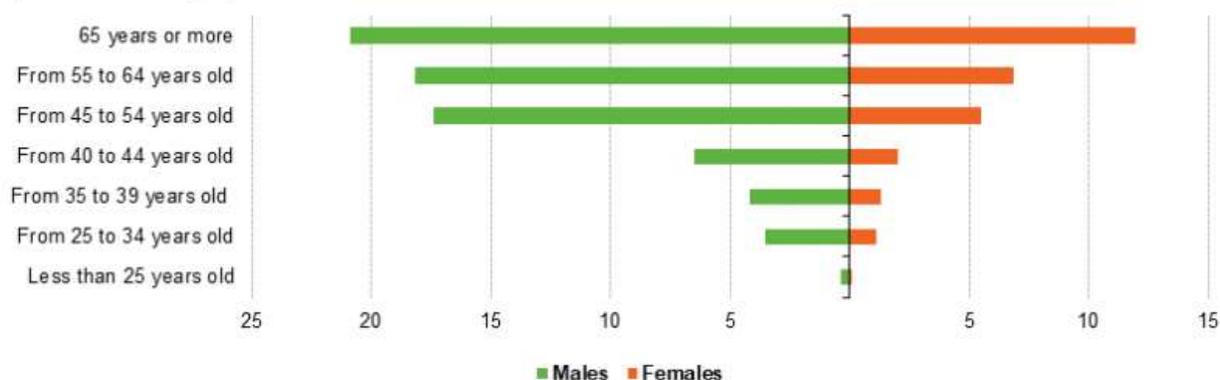


improve their competitiveness by reducing their production costs, increasing their production and minimize the environmental impact of their agricultural activities.

The gaiasense system comes to help farmers at a low cost, thanks to its "Smart Farming as a Service" approach. In this way, farmers can reap the benefits of smart farming with a low annual fee, without having to invest in expensive infrastructure or technological tools. In addition, the recently launched gaiasense mobile app makes gaiasense even more accessible to smallholder farmers.

Younger farmers are more familiar with new technologies; therefore, it is easier for them to adopt new farm management approaches like smart farming. However, according to Eurostat, only one in ten EU farm managers (11 %) were under the age of 40 years old in 2016¹³. This might be an issue for approaches that heavily depend on technological tools but in the case of gaiasense and its simplified approach, farmers only need to use their smartphone and an easy to use mobile app for vovf smart farming.

Age classes of farm managers, by gender, EU-28, 2016
(% of all farm managers)



Source: Eurostat (online data code: ef_m_farmang)



Figure 2: Age classes of farm managers, by gender, in the EU-28 as of 2016. Source: Eurostat.

Another characteristic that may affect the adoption of modern farm management approaches like smart farming by farmers is the fact that very few farm managers in the EU have full

¹³ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farmers_and_the_agricultural_labour_force_-_statistics&oldid=431368



agricultural training, therefore they may lack the potential to look further than the traditionally used farming approaches. In addition, according to Eurostat, most farm managers in the EU only have practical experience; this was the case for seven in every ten (68.3 %) of them in 2016. Less than one in ten (9.1 %) farm managers had full agricultural training, and the rest (22.6 %) had basic agricultural training. In some Member States, the level of agricultural training among farm managers was particularly low; in Romania and Greece only 0.4 % and 0.6 % of farm managers respectively had full agricultural training, the overwhelming majority (96.7 % and 93.2 % respectively) having only practical experience.

Agricultural advisors

Agricultural advisors are valuable actors in the gaiasense ecosystem; they are the ones to provide valuable data to the system, such as observations, measurements and sampling (of plant tissues, soil and water) from the field. They are also the ones who receive the smart farming advice by gaiasense, evaluate it and guide the farmers into its proper application in the field.

Agricultural advisors need a reliable tool for recording all these different kinds of information and have access to historical data at any given time. In this sense, gaiasense is a useful tool for agricultural advisors, as it provides them with an easy and effective way to perform their tasks, using their smartphone.

At the same time, through an easy to use user interface, agronomists and agricultural advisors can access data from a wide variety of sources, the visualization of data and various other types of information that help them have a better understanding of what is taking place at each individual parcel.

Researchers

Researchers working on areas like water management, crop protection and plant nutrition need a way to validate their scientific algorithmic models and test them under real conditions. At the same time, gaiasense is based on such research outcomes and specialized scientific models for the irrigation, the fertilization and crop protection of new crops are needed for the expansion of the gaiasense services in new crops and regions.

Scientific collaborators of gaiasense have access to a wealth of data (big data) such as environmental, soil, satellite etc. and they can test their outcomes. At a later stage, when the models are mature enough, they can be tested under real conditions in selected experimental fields of producers who collaborate with gaiasense.



Developers of smart farming solutions

A small but important market segment is the one consisting of developers of smart farming solutions. In collaboration with gaiasense, they can have access to the hardware, software and data of gaiasense so that they can develop new functionalities that provide added value to the services. The gaiasense smart farming system is designed in an open way, so that third-parties can collaborate and use the existing resources, building new tools on top of them. For example, gaiasense is the Digital Innovation Hub on Smart Farming of the **agROBOfood project**¹⁴, allowing the interaction and collaboration with various stakeholders, focusing mostly on the developers of specialized hardware solutions that can be integrated in the gaiasense smart farming system.

In another case, in the context of the **SymbIoT project**¹⁵, NEUROPUBLIC and AGENSO collaborated on the development of a hardware solution regarding the integration of GNSS capabilities into the telemetric agrometeorological stations of gaiasense, in order to offer high-quality navigation and precision farming services based on the open GNSS technology.

3.2 Target country markets

The introduction of the gaiasense smart farming system to new country markets will be considered after the end of the project. The targeted countries, apart from Spain and Portugal where the pilot application of the smart farming services of gaiasense is taking place, are Cyprus and Romania. All four countries were selected based on different criteria, so that the gaiasense smart farming services are a good match to the needs identified by farmers of each country:

- **Greece** is the main market of the gaiasense smart farming system; it is developed by NEUROPUBLIC and designed in a way to meet the specific needs of Greek farmers, mostly smallholder ones, while at the same time addressing the issues of the Greek farming sector in general. The gaiasense system is being marketed in the specific country, and a mapping of the market is still ongoing.
- **Spain and Portugal**: Thanks to the participation of partners from Spain and Portugal in the LIFE GAIA Sense project, an initial introduction of gaiasense has taken place in pilot status. With the help of these partners, along with information from various sources, the corresponding markets will be mapped, so that the most appropriate marketing plan will be defined for each country.

¹⁴ <https://agrobofood.eu/hubs¢ers/gaiasense-dih-on-smart-farming/>

¹⁵ <https://www.symbiot.gr/en/home/>



- **Cyprus:** The agricultural sector of Cyprus exhibits similar characteristics with the Greek one, sharing similar climate, crop types and other parameters. In addition, thanks to the preliminary work undertaken by NEUROPUBLIC in the context of other EU projects like **IoF2020** (the IoT4 Potato Use Case) and **PLOUTOS** in which the gaisense system is applied in different crops in Cyprus, the specific market can be mapped with the help of the corresponding partners.
- **Romania:** Romania is a country with an important agricultural sector. At the same time, the country is mostly following a traditional approach regarding farm management, with the majority of the farmers not having adopted smart farming or digital farming yet. In this sense, Romania is a prominent new market for gaisense, with increased potential for a market share.

Greece: Greece is a country for which the agricultural sector has special economic interest. Farmland in Greece is 35% of the total land area. According to DG AGRI data¹⁶, the output of agricultural goods for 2019 was €10.704,5M, accounting for 2,7% of EU27. Its fruit sector (the most important one based on data) accounted for 8,9% of EU27. In the 2016 consensus there were 684.950 agricultural holdings, 77.3% of which were less than 5 ha in size, and 81.4% of the total holdings had an average economic size of less than €15.000.

Between 2011 and 2018, the agricultural land prices in Greece declined by about 17 %. At the same time, agricultural factor income per annual work unit reached a new peak level in 2019 after rising 10.2 %. As such, the index level in 2019 was 29.7 % higher than it had been in 2005¹⁷.

The Greek market has been thoroughly studied as gaisense system has already been commercially marketed in the specific country.

Spain: Spain is one of the largest agricultural countries in the EU, in terms of volume of agricultural products. According to DG AGRI data¹⁸, the output of agricultural goods for 2019 was €49.451,3M, accounting for 12,5% of EU27. Its wine sector (as a wine cooperative participates in the LIFE GAIA Sense project) accounted for 2,4% of EU27. In the 2016 consensus there were

¹⁶ https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-es_en.pdf

¹⁷ <https://ec.europa.eu/eurostat/documents/3217494/12069644/KS-FK-20-001-EN-N.pdf/a7439b01-671b-80ce-85e4-4d803c44340a>

¹⁸ https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-es_en.pdf

945.020 agricultural holdings, 51.6% of which were less than 5 ha in size, and 66% of the total holdings had an average economic size of less than €15.000.

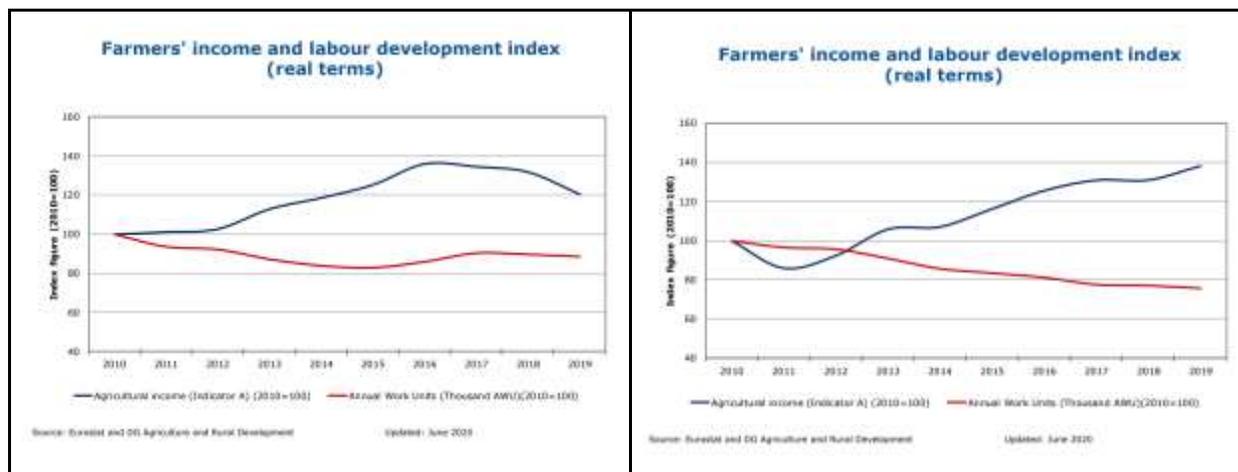


Figure 3: Farmers' income and labour development index (real terms) for Spain (left) and Portugal (right).
 Source: DG AGRI country report for Spain and Portugal for 2020. Source: Eurostat

In Spain, 23.2M ha of land were used for agricultural production in 2016. Spain and Italy are the main EU producers of fruit, but for some specific fruit other Member States were key producers. However, harvested production of grapes in Spain was down sharply in 2019, exhibiting a reduction of about 18,6%. In 2019 Spain witnessed a decline in the values of the agricultural industries by about 0,9%. The more moderate rise in agricultural income per AWU at the level of the EU as a whole reflected lower agricultural incomes in Spain by -3.2 %¹⁹.

Portugal: According to the DG AGRI country report for Portugal for 2020²⁰, the output of agricultural goods for 2019 was €7.746,6M, accounting for 2% of EU27. Its olive sector (as an olive producing cooperative participates in the LIFE GAIA Sense project) accounted for 1,8% of EU27. In the 2016 census there were 258.980 agricultural holdings, 71.5% of which were less than 5 ha in size, and 82,8% of the total holdings had an average economic size of less than €15.000.

¹⁹ <https://ec.europa.eu/eurostat/documents/3217494/12069644/KS-FK-20-001-EN-N.pdf/a7439b01-671b-80ce-85e4-4d803c44340a>

²⁰ https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-pt_en.pdf



INDICATOR	Farm - number	Utilized agricultural area	Farm area excluding spec.	Standardized output - euro	Farms whose household
Greece	3 422 339	12 380 348	12 384 319	12 190 491 339	2 416 130
Spain	942 028	23 229 738	23 012 489	23 262 325 130	22 400
France	444 014	6 303 808	6 713 236	2 374 802 916	109 400
Portugal	230 389	3 341 436	4 063 379	3 744 236 230	108 200
Cyprus	34 940	117 938	122 349	116 642 176	14 640

Figure 4: Farm indicators for the selected countries. Source: Eurostat

Cyprus: The agricultural sector of Cyprus exhibits many similarities with the one of Greece, where the gaisense smart farming system was designed and is being developed. This refers to both the soil and climatic conditions, as well as the characteristics of the small average farm size, fragmented agricultural land, low financial capacity of farmers etc. Both countries share the same language, too, an important factor that facilitates communication and potential business development in the country.

According to DG AGRI data²¹, the output of agricultural goods for 2019 was €716,9M, accounting for 0,2% of EU27. Its potato sector (one of the most important crops for Cyprus) accounted for 0,2% of EU27. In the 2016 census there were 34.940 agricultural holdings, 89,6% of which were less than 5 ha in size, and 88,3% of the total holdings had an average economic size of less than €15.000.

During the period between 2009 and 2019, there was particularly strong agricultural investment growth in Cyprus, with an average annual growth rate of 8.2 %, and in 2019 it exhibited an increase in the volume of labour input by 1.4%. In addition, in 2019 the output value of the agricultural industry in Cyprus increased (+5.9 %) to EUR 0.8 billion in 2019.

NEUROPUBLIC has already established collaborations with research organizations, agricultural cooperatives and other stakeholders in the context of other EU projects like the **IoT4Potato** Use Case of **Internet of Food and Farm 2020** Horizon 2020 project and the ongoing **PLOUTOS** Horizon 2020 project. This collaboration includes the pilot implementation of the gaisense smart farming services in different area crops, which led to the development and operation of a small-scale data acquisition infrastructure of gaisense in Cyprus. Another case study is the Internet of Grapes project, in which NEUROPUBLIC collaborates with a Cypriot wine making company as a

²¹ https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-cy_en.pdf



subcontractor providing its expertise in the application of the giasense smart farming system in vineyards.

In addition, in the context of the LIFE GAIA Sense project, a liaison was established with the “Cyprus Capacity Building for LIFE – Cyclamen” (LIFE Cyclamen)²², that aims to empower and capacitate the Cypriot LIFE NCP with personnel, competencies, skills, knowledge, experiences and networking, that will enhance the effectiveness and outreach of its services to applicants, and ultimately increase the performance of Cypriot proposals to the LIFE Programme under both the Environment and the Climate Action Sub-Programmes. Through this liaison, LIFE GAIA Sense was invited and represented in various events of LIFE Cyclamen, where it has the opportunity to present the smart farming solution of the project and get in touch with Cypriot stakeholders.

Last but not least, NEUROPUBLIC’s strategic partner and LIFE GAIA Sense consortium member GAIA EPICHEIREIN is a member of COPA-COGECA, and works with other members including the Panagrotikos Association of Cyprus. Such liaisons can help establish new collaborations in Cyprus, as they allow for direct contact with key agricultural organizations in Cyprus.

With these as the basis, and with the positive results from the application of smart farming services, farmers and agricultural advisors have expressed interest in joining giasense in Cyprus.

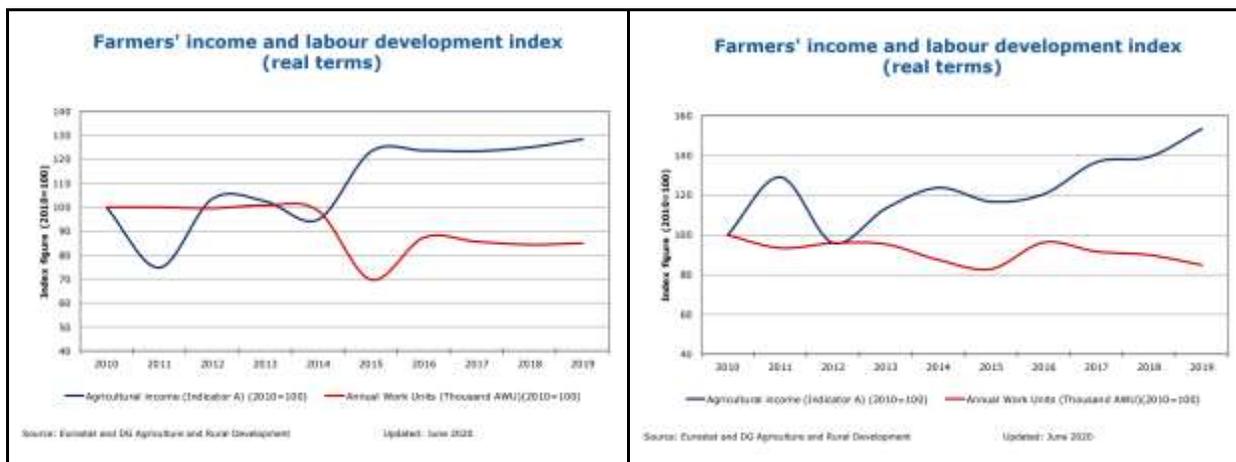


Figure 5: Farmers' income and labour development index (real terms) for Cyprus (left) and Romania (right).
 Source: DG AGRI country report for Cyprus and Romania for 2020. Source: Eurostat

²² <https://lifecyclamen.com.cy/en/>



Romania: Romania is another important agricultural country, whose agricultural sector shares similarities with the Greek one. A wide diversity of climatic and soil conditions, small average farm size, low income of farmers etc. make it look like a prominent new market for a low cost smart farming system like gaisense. It is the country with more farms by far in the EU (almost 3.5M). It is noteworthy that one third (33.3 %) of the EU-27's agricultural holdings (termed 'farms') were located in Romania. However, although Romania accounted for one third of the EU's farms, it accounted for only 3.6 % of the EU's standard output²³. At the same time, agriculture is a particularly big employer in Romania, accounting for just less than one in every four persons employed (23.3 % in agriculture, hunting and related service activities in 2017).

According to DG AGRI data²⁴, the output of agricultural goods for 2019 was €17.641,2M, accounting for 4,4% of EU27. Its cereal sector (the most important crops for Romania) accounted for 10% of EU27. In the 2016 census there were 3.422.030 agricultural holdings, 91,8% of which were less than 5 ha in size, and 97,8% of the total holdings had an average economic size of less than €15.000.

Between 2005 and 2016, Romania witnessed a significant reduction in the number of farms, with an indicative loss of 0.8 million farms, or 20 %, along with the loss of 1M annual working units (AWUs), the biggest loss in the EU²⁵.

Conclusions

Based on the aforementioned data about the selected countries, it becomes obvious that their agricultural sectors are characterized by a high number of agricultural holdings, the vast majority of which is small in area and with less than average economic size. In addition, the financial status of the majority of the farmers in these countries is relatively low, and this indicates their inability to invest in expensive agricultural solutions. These characteristics highlight the need for a smart farming solution that is affordable and appropriate even for smallholder farmers.

3.3 Demographics

An important factor that affects the adoption of smart farming services is the age and the digital skills of the end users, mostly farmers. Even with the simplified approach of gaisense, elderly

²³ <https://ec.europa.eu/eurostat/documents/3217494/12069644/KS-FK-20-001-EN-N.pdf/a7439b01-671b-80ce-85e4-4d803c44340a>

²⁴ https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-ro_en.pdf

²⁵ <https://ec.europa.eu/eurostat/documents/3217494/12069644/KS-FK-20-001-EN-N.pdf/a7439b01-671b-80ce-85e4-4d803c44340a?t=1608139005821>

farmers who are not using smartphones or computers might be harder to reach than the younger ones for whom a smartphone and a laptop are essential tools of their life.

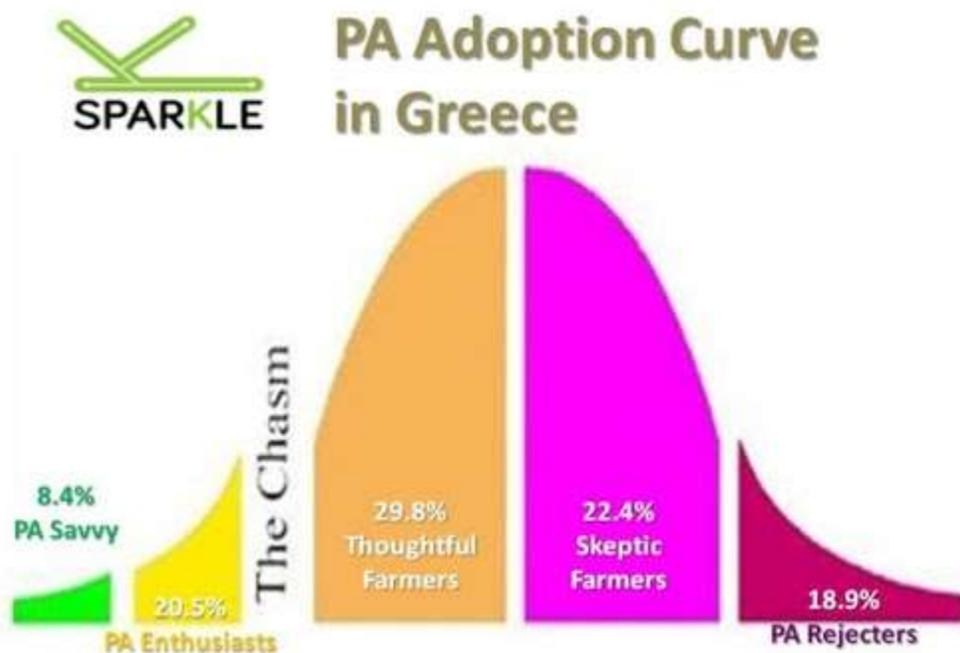


Figure 6: Adoption of Precision Agriculture technologies in Greece.

Source: <http://sparkle-project.eu/farmers-typology-on-precision-agriculture-adoption-evidence-from-greece/>

The **SPARKLE Erasmus+ project** carried out research²⁶ in order to determine to what extent farmers are adopting and using Precision Agriculture technologies in Greece. The results of the research showed that the older farmers follow a more traditional approach, managing their farms and the use of inputs based on their experience. Sometimes they follow the advice of old-school agricultural advisors, who also make limited use of new technologies and modern farm management approaches.

The high age of the majority of farmers in the EU is one of the factors that affects the adoption of smart farming technologies in most EU member states: According to Eurostat²⁷, the average age of farmers is very much at the older end of the age spectrum; one third (32%) of farm managers in the EU were 65 years of age or more. Only 11% of farm managers in the EU were young farmers under the age of 40 years. On the other hand, Young farmers were particularly few and far between in Cyprus (3.3% of all farm managers) and Portugal (4.2%).

²⁶ <http://sparkle-project.eu/farmers-typology-on-precision-agriculture-adoption-evidence-from-greece/>

²⁷ <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20180719-1>



Younger farmers, who are more familiar with technologies and more concerned about the environmental footprint of their agricultural activities, are the ones more likely to adopt the smart farming approach of gaiasense. A relevant research showed that young and better-educated farmers are more inclined to implement new technologies in their farms, highlighting the need for external extension and training services for less-educated farmers²⁸. In general, regarding the willingness of adopting modern tools in agriculture, young farmers show a more positive attitude than elder ones, as the former can support their not-so-large experience in the field with new smart tools providing key information²⁹.

In addition, younger farmers tend to work closely with their agricultural advisor, who acts as the “innovation broker”, bringing new, innovative farm management approaches to their farms. They use their smartphones as tools for their work, recording information and data about their fields and crops and accessing information that is crucial for the management of their farms.

A survey conducted by Barnes et al.³⁰ found that advisory services based on smart farming contribute more to the adoption of precision agriculture methods than financial incentives and lack of information is the third most frequently cited reason for non-adoption. This is also an issue mostly for elderly farmers, who have limited access to sources of information regarding the management of their farms.

Another factor that affects the adoption of smart farming is that farmers often do not have sufficient information about current smart farming technologies and do not have access to individualized advisory services. In addition, operating modern hardware and software often needed for smart farming poses major challenges for many farmers³¹.

²⁸ Paustian, M.; Theuvsen, L. Adoption of precision agriculture technologies by German crop farmers. *Precis. Agric.* 2017, 18, 701–716.

²⁹ Saiz-Rubio, Verónica, and Francisco Rovira-Más. "From smart farming towards agriculture 5.0: A review on crop data management." *Agronomy* 10.2 (2020): 207.

³⁰ Barnes, A.; Soto, I.; Eory, V.; Beck, B.; Balafoutis, A.; Sánchez, B.; Vangeyte, J.; Fountas, S.; van der Wal, T.; Gómez-Barbero, M. Exploring the adoption of precision agricultural technologies: A cross regional study of EU farmers. *Land Use Policy* 2019, 80, 163–174.

³¹ Kernecker, M.; Knierim, A.; Wurbs, A.; Kraus, T.; Borges, F. Experience versus expectation: Farmers’ perceptions of smart farming technologies for cropping systems across Europe. *Precis. Agric.* 2020, 21, 34–50.



4. Proposed solution: The gaiasense smart farming system

4.1 The current status of smart farming offerings

The gaiasense smart farming system lies at the core of the smart farming market, a market that needs innovative tools and systems in order to help farmers achieve the environmental and financial sustainability of their farms at a low cost.

Different types of farmers use different solutions in order to meet the sustainability goals for their farms, while at the same time meeting the requirements of the new Common Agricultural Policy for more sustainable food production. At the moment, the smart farming solutions available in the market are still fragmented in terms of geographical coverage, number of different crops supported and services offered (e.g. weather forecast, irrigation, fertilization and crop protection advice). A common characteristic of the smart farming offerings, as described later in this document, is their lack of adaptability in the case of new crops and new geographical areas with significant differences in soil and climatic conditions.

At the same time, the cost for accessing these services is relatively high and the same applies to the hardware that is often needed for making use of these services. As the majority of EU farmers are smallholder ones, with low income and profitability, such solutions are not affordable by them, and therefore they cannot reap the benefits of smart farming.

4.2 The gaiasense smart farming system as the key component of the market

In this context, the need for a low cost and efficient smart farming solution is highlighted, so that even smallholder farmers can access such services. With smallholder farmers in mind, NEUROPUBLIC designed the gaiasense smart farming system in order to fully meet their needs. The gaiasense smart farming system introduces the “Smart Farming as a Service” model, meaning that farmers can access the smart farming services of gaiasense through an annual subscription fee, without having to invest in the necessary technological infrastructure, such as the telemetric agrometeorological stations.

The gaiasense smart farming system is a holistic approach to sustainable farm management. It provides smart farming advice by acquiring data from four (4) different sources:

1. Satellite images of each parcel, properly processed to visualize the NDVI index;



2. Agrometeorological and soil data from the gaiasense telemetric stations;
3. Various observations, measurements, soil and plant tissue sampling notes taken by the agronomist during his visit to a given field, and
4. Information about the agricultural activities that the farmer performs in the field (irrigation, crop protection, fertilization, harvesting, pruning etc.).

NEUROPUBLIC's researchers in collaboration with experienced scientific associates work on the development of scientific models for the fertilization, irrigation and crop protection for each crop. These models are then fed with the aforementioned data, and this leads to the formulation of the smart farming advice for the corresponding activity. The role of the agronomists and agricultural advisors are of high importance in this process, as they significantly contribute to both the data recording and the provision of the smart farming advice to farmers.

At the moment, gaiasense supports more than 30 different crops and covers a constantly growing agricultural area in Greece and abroad. The development and adaptation of the smart farming services in the case of new crops is constantly considered, based on the interest expressed by the farmers and agricultural cooperatives.

4.3 The value proposition of gaiasense

Traditional agricultural systems have an important impact on the environment due to the excessive use of agrochemicals, the depletion of natural resources like irrigation water, the increasing use of energy and the disruption of the natural ecosystem.

During the last years, farmers face a significant challenge, as they need to produce "more with less". This means that they need to improve the quality and quantity of their production, while at the same time minimizing the use of agrochemicals and natural resources like irrigation water. The transition from traditional farming to more environmentally-friendly food production systems is highlighted by the recently announced EU Green Deal, the "Farm to Fork" strategy and other related initiatives and directives of the EC.

In this context, the gaiasense smart farming system comes to help farmers address this challenge, by offering them the tools they need in order to produce sustainably, minimizing the impact of agricultural activities on the environment. In addition, the smart farming services of gaiasense allow farmers to be compatible with the new directives of the EC towards a "greener" food production system, and therefore eligible for receiving subsidies and financial aid related to the new Common Agricultural Policy. This is only a fraction of the financial benefits that farmers reap



through the adoption of gaiasense in their farms, as the improved yields in terms of quantity and quality, the reduced production costs and the digitization of their work allowing them have a significant positive effect on their financial profit.



5. Competition

The constantly growing smart farming ecosystem results in a competitive environment. There are various companies which develop and offer a wide variety of smart farming offerings, with a diverse set of characteristics.

As described in the deliverable D8, there are two kinds of competitors in the market: Direct and Indirect. Direct competition refers to the companies which provide smart farming, digital farming and in some cases precision agriculture services while indirect refers to the companies which offer components that can fill some gaps in the smart farming sector, such as technologically-enhanced agricultural equipment/machinery, satellite-based services such as processed satellite images, providers of agricultural advice (both public and private), etc.

At a global level, there are agtech giants working on the digitization of agriculture, including but not limited to, Bayer, John Deere, Bosch, Trimble and other global companies. Their offerings might be a great match for specific countries, like United States, Germany, France and Australia, where the agricultural sector is totally different than the one of the target markets of gaisense. These countries have much larger average farm size, a less diverse geographical status with more homogenous climatic and soil conditions etc., and the financial status of the farmers are significantly better. As a result, the high cost of these smart farming solutions is not a problem for such farmers, who have the ability to invest and significantly grow their business.

These smart farming solutions usually depend on expensive hardware and infrastructure, while in other cases they have the use of specific agrochemicals as a prerequisite for their operation. They work great on larger scale and have limited options for adapting to diverse conditions.

On the other hand, in countries like the ones targeted by gaisense, the small and fragmented agricultural land, the small average farm size, the high diversity of climatic and soil conditions along with the low income of farmers, such solutions are hard to be widely accepted. This provides an opportunity for modular and low cost approaches like the one of gaisense to be widely accepted and implemented.

Porter's Five Forces Framework³² is a method for analysing competition of a business. Those five forces, that shape industry competition as well as strategy, are:

³² <https://hbr.org/1979/03/how-competitive-forces-shape-strategy>

1. the bargaining power of suppliers,
2. the bargaining power of buyers,
3. the threat of new entrants,
4. the threat of substitute products or services and
5. the rivalry between existing competitors.

The framework serves as a useful tool for managers to better understand competition in their sector and the potential impact on their strategies.



Figure 7: Porter's Five Forces Framework. Image source: Oxford College of Procurement and Supply

6. Marketing Strategies

NEUROPUBLIC's strategy regarding the promotion of the gaiasense smart farming system has already been developed and adapted with the special characteristics of Greek farmers (and the Greek farming sector) in mind. At the same time, the marketing strategy in Greece takes into consideration various factors, such as the main communication channels used by farmers, such as printed and digital press (e.g. newspapers and magazines), online media like websites, news portals and blogs, TV and radio channels etc.

This tested approach will be used as the basis for the marketing strategies to be applied in the target markets, with the necessary adaptations based on the specificities of each country market, in order to better meet the needs of farmers in each country.

6.1 Marketing plan

A fundamental part of a marketing plan is the consideration of the 4 Ps of marketing; Product, Price, Place, and Promotion. These are the key elements that must be united to effectively foster and promote a brand's unique value, and help it stand out from the competition. Considering all these elements is one way to approach a holistic marketing strategy.

The following sections describe each one of the 4 Ps in the case of the gaiasense smart farming system:

1. **Product:** The gaiasense smart farming system is a holistic approach to sustainable farm management. It provides a wealth of services to farmers, so that they can optimize their farming activities like irrigation, fertilization and crop protection. The gaiasense system is diverse and easy to adapt to new crops and microclimatic conditions, currently supporting more than 30 crops. Thanks to its modular design, it can also support different functionalities, according to the needs of each case. The gaiasense system has been acknowledged as an innovation at European level, thanks to its unique features and its "Smart Farming as a Service" model. Last but not least, the recent launch of the gaiasense mobile app for Android and iOS smartphones makes gaiasense even more accessible to farmers.
2. **Price:** NEUROPUBLIC developed the "Smart Farming as a Service" model in order to make smart farming affordable to all farmers, even smallholder ones. With this approach, farmers do not need to invest in expensive technological infrastructure; instead, they can



access the smart farming services of gaisense through a relatively small annual fee based on various factors. Detailed information about the pricing of gaisense is available later in this document.

3. **Place:** Place refers to providing customers access to the product. NEUROPUBLIC provides a variety of means to farmers for accessing the gaisense smart farming system. For example, in Greece the gaisense system is available directly through NEUROPUBLIC, in collaboration with NEUROPUBLIC's strategic partner GAIA EPICHEIREIN as well as through a PanHellenic network of agricultural advisors called Agrotiki Kainotomia (Agricultural Innovation). A similar approach is expected to take place in the target countries, in collaboration with local partners. The gaisense website with constantly updated information, along with multiple contact options via email, phone or a contact form facilitates the communication with potential customers of gaisense.
4. **Promotion:** The promotion of the gaisense smart farming system makes use of a variety of means for reaching out to potential customers. Different channels and customized messages are used for different target groups, taking into consideration special characteristics. Events, both virtual and physical, also play a key role in bringing gaisense closer to its potential customers. The promotion means are described in the following section.

6.2 Traditional marketing strategy

In order to ensure the outreach of gaisense to the traditional farmers, usually of higher age, a more traditional marketing approach and tools are used. This includes printed versions of newspapers, both of agricultural and more generic interest, participation in panels of agricultural TV broadcasts and radio interviews.

Printed media: Farmers, especially the elderly ones, are avid readers of printed media. The gaisense smart farming system is heavily promoted through printed version of newspapers and magazines of interest to the agrifood sector. This includes articles and interviews, full-page ads, paid content and other forms of content that provides information about gaisense, such as press releases.

TV and radio: There are various TV broadcasts of interest to farmers, focusing on the primary section and innovation in agriculture. NEUROPUBLIC has taken the opportunity to present gaisense, its innovative character and results from its application in the field in the context of various broadcasts.



The recent launch of the gaiasense mobile app was promoted by a TV advertisement which was played by all major Greek TV channels, mostly in prime time. This activity, combined with a combination of radio ads, interviews and sponsored content gave a significant boost to gaiasense, raising awareness about the system and increasing the interest expressed in the form of communication with the sales team. A similar approach will be followed in the target countries, after identifying the key TV and radio channels with the help of national marketing agencies.

Participation in physical events: The strategy also includes the participation of NEUROPUBLIC and/or gaiasense in major agricultural events like exhibitions, fairs, conferences and workshops. These physical events allow the interaction with potential customers, who are engaged in discussions and have their questions answered by specialized staff. Examples of such events in Greece are the Agrotica and Zootechnia fairs, AgroThessaly, the Panhellenic Congress on the Development of Greek Agriculture organized by NEUROPUBLIC's strategic partner GAIA EPICHEIREIN. AgroSemana, National Agricultural Fair and SFCOLAB in Portugal etc.

Core events that were described in deliverable D2 "Policy Uptake Activities Report and Material", will also be considered as key events for serving marketing purposes. Even though they mostly aim at reaching out to policy makers, such prestigious events will significantly contribute to the status of gaiasense as a key smart farming solution presented at high-level policy events. In this context, the participation of the LIFE GAIA Sense project in such events will be properly communicating through various communication channels, as described earlier in this deliverable.

Table 1 Policy Uptake sub-actions of the LIFE GAIA Sense project

<p>D2.1 Forum with Copa Cogeca [M19-M48]</p> <p>Considering the fact that GAIA is a member of both the Committee of Professional Agricultural Organisations (COPA) and the General Committee for Agricultural Cooperation in the European Union (COGECA) it is plausible that the project's outcomes are communicated to Copa and Cogeca's the Working Party on Environment and Climate Change and the Task Force on Agricultural Technology, during their regular meetings.</p> <p>D2.2 Policy uptake event at the GAIA Conference on agri-food [M39-M41]</p> <p>GAIA's Panhellenic Congress on the Development of Greek Agriculture which is organised annually during autumn, will be exploited. It's a reference point for the Greek agri-food sector, engaging more than 500 representatives of the farming community, the academic & research community, regional, national and EU authorities from the agri-food chain, who exchange views on trends and policies affecting the development of Greek & EU agriculture. A special track focusing on policy makers, will be organised in the context of the conference that will be organised in the autumn of 2021.</p>

D2.3 Lobbying activities with policy makers at EU level [M19-M48]

Intensive lobbying activities with policy makers at EU level are going to be an integral part of LIFE GAIA Sense policy update activities. The overall aim of those activities is to raise awareness on the project and its significant policy relevance and create linkages with key policy makers. In the context of the project, the following related activities are expected to take place:

- Establish contacts with key members of various EU institutions, such as EC's DG AGRI, DG ENVIRONMENT and DG GROW, the European Parliament (staff from Committees of interest, STOA panelists etc.) and the European Council;
- Enhance existing connections with EU bodies, including but not limited to ESA, EIP-AGRI and AIOTI;
- Engage with key stakeholders at EU level, such as COPA COGECA, Farm Europe, DIGITALEUROPE, the European Association of Remote Sensing Companies (EARSC) and the European Regions for Innovation in Agriculture, Food and Forestry (ERIAFF), among others.

D2.4 Event at the European Parliament [M43-M46]

The project plans to organize a LIFE GAIA Sense event at the European Parliament approximately three months before the end of the project. By that time, LIFE GAIA Sense will have tangible outcomes to showcase and communication impact will be very important considering the scheduled EU policy developments (reform of the Common Agricultural Policy, discussions on the EU's Multiannual Financial Framework 2020-2027 or the Roadmap to a Resource Efficient Europe, etc). The event will be organized by the LIFE GAIA Sense consortium with the support of its GAIA's Brussels offices and will be hosted by Members of the European Parliament. The objective of the event will be to raise awareness on the project results by underlining its significant policy relevance and present its recommendations for new policies. The LIFE GAIA Sense event will bring together all the interested parties from the targeted policy areas related to the project (agriculture and environment).

Marketing through brick and mortar stores: NEUROPUBLIC's strategic partner GAIA EPICHEIREIN operates a network of more than 100 Farmers' Service Centers all over Greece. These are usually located in the premises of Farmers' Cooperatives, so they operate as point of reference for farmers who need to fulfill a number of administrative procedures regarding their farms. The constant visits of farmers to these FSCs make them ideal for the promotion of gaiasense. In this context, promotional material for gaiasense is available in the majority of FSCs and specialized



agents are available to inform farmers about the benefits of smart farming and the way in which they can benefit from the services of gaiasense.

In the context of the LIFE GAIA Sense project, a similar work is undertaken by the project partners in Spain and Portugal respectively, as they have been properly informed and trained so that they can discuss about the gaiasense smart farming system and promote its services to potential end users.

6.3 Digital Marketing

In order to reach the younger farmers, who use digital platforms and mobile apps on a regular basis, NEUROPUBLIC has launched a digital marketing approach. This approach includes the use of social media platforms like Facebook, LinkedIn and Twitter, the production of multimedia content like videos and publishing of content on the digital version of newspapers, portals and websites of interest to the agricultural stakeholders.

Website: The point of reference for gaiasense is its website; it is available in Greek and English and provides useful information about the system, the technology, the functionalities and the gaiasense mobile app, among others. In addition, the news section is frequently updated with related news and press releases.

Social media: As regards social media, NEUROPUBLIC has a constantly growing community of followers on Facebook, LinkedIn and Twitter, through which news about gaiasense are shared. On top of that, gaiasense has its own, branded accounts on Facebook, LinkedIn and Twitter, which play an important role on the brand identity as a whole and serve communication and informational purposes.

Paid campaigns: In order to enhance the outreach of these posts, NEUROPUBLIC frequently run campaigns with promoted posts such as Facebook Ads, while Google Ads contribute to increased traffic towards the website of gaiasense. This allows the outreach to potential users of gaiasense who are not engaged yet.

Mailing list: NEUROPUBLIC maintains a constantly growing GDPR-compliant mailing list of contacts, including farmers and agricultural cooperatives, agronomists and agricultural advisors, agricultural researchers, media etc. Through the mailing list a direct communication with stakeholders is achieved, sharing news, updates, newsletters etc.



Virtual events: An important tool of NEUROPUBLIC’s digital marketing strategy for gaisense is the participation in virtual events like online workshops, conferences and meetings. This allows gaisense to reach a wide audience, even from geographically remote rural areas, and get in touch with its stakeholders in an interactive way. The gaisense smart farming system is presented in various online events, which are attended by a wide variety of stakeholders. This is facilitated by the fact that gaisense is a component of various EU projects, like Horizon 2020 ones, in which NEUROPUBLIC participates. In the context of these projects, gaisense is further developed and applied under different conditions, and as a result the dissemination activities of the projects usually make a reference to the gaisense system.

The participation of project partners in scientific events, where the work and outcomes of the project are presented among researchers, is also important as it communicates the project to potential collaborators of the project, and later at a commercial basis. Examples of scientific events where the project was presented, are the 6th International Symposium on Green Chemistry, Sustainable Development and Circular Economy, the 12th International Conference on Air Quality etc.

6.4 Combining marketing techniques

The combination of different marketing techniques will allow us to reach both traditional and innovative farmers, elderly and young. The selection of the most appropriate marketing tools and channels will be based on the requirements and characteristics of each country, case and audience.

For example, feedback received from the Portuguese partners of the project highlighted the main marketing channels used by agtech companies in Portugal, including but not limited to internet, technical events, agricultural technical magazines, and farming organizations. A TV program called “Faça chuva ou faça sol”, on the National TV Station RTP Channel 2, is popular among farmers and promotes precision farming solutions and companies.

In addition, the marketing of agtech solutions take place through specialized websites like the SFCOLAB - Smart Farm Collaborative Laboratory (www.sfcolab.org), a private-public consortium supported by public funds to work on research in precision farming: Last but not least, the most important fair in Portugal for technology and innovation in agriculture is Agroglobal



(www.agroglobal.pt), and is identified as the best place to promote solutions for precision farming.

Last but not least, an important aspect is the participation of gaiasense contributors in international, high level fora. An example is the participation of GAIA EPICHEIREIN in COPA-COGECA, the united voice of farmers and agricultural cooperatives in the EU, representing 22 million farmers, and Farm Europe – the European think tank for the agricultural sector, among others.

6.5 Marketing Goals

The marketing strategy to be developed and implemented for the introduction of the gaiasense smart farming system in the new markets has the following 5 main goals:

1. to raise awareness about gaiasense,
2. to generate high-quality sales,
3. to grow and maintain market leadership,
4. to increase customer value, and
5. to empower colleagues to become brand ambassadors.

1. Raising awareness about gaiasense

As gaiasense can be considered a new entry in all these countries, the first step is to raise awareness about the system and its benefits for farmers. In the case that farmers are not yet familiar with smart farming and digital farming in general, the approach will not only have to be informative but also educational. Simply put, gaiasense should be on the list when people are looking for smart farming solutions - or in general, solutions to improve the efficiency and competitiveness of their farms.

Even though brand awareness is not always easy to track and measure, the effectiveness of relevant activities can be assessed by looking at quantitative metrics such as social engagement, organic traffic, website traffic, etc. While these metrics may reveal different information about how visitors are discovering and interacting with gaiasense, for example traffic increase should be observed as progress is made on brand awareness strategy.

2. Generating high-quality leads (and sales)

Probably the most important expected result of the marketing strategy is the generation of leads that will eventually lead to sales. This refers to the percentage of the people acquainted with gaiasense who decide to become customers (or at least have an increased potential). This



requires the creation of a contacts' database, with all related information needed (i.e. contact information, customer type, specific needs/requests, crop types etc.) in one place.

In order to measure the leads, trends across the leads who eventually turn into customers can be analyzed, with the creation of goals and custom reports, customized dashboards, reports on revenue helping towards this direction.

3. Growing and maintaining market leadership

On top of raising awareness about gaisense, we need to ensure that gaisense is being recognized as the best and most trustworthy and reliable solution in the field, characterized by a high level of knowledge and credibility. This will provide a significant competitive advantage over existing competition. One of the ways in which this can be achieved is by publishing and sharing content that inspires the potential customers of gaisense and stakeholders in general, clearly describing the solution it provides to their problems.

The impact of market leadership-related activities might be tricky to measure. However, it can be measured through the success of individual campaigns related to market leadership. For example, the traffic to a related news item or blog post on a website can be measured, along with potential interactions on the specific post (likes, shares, comments etc.).

4. Increasing customer value

It is important to keep existing gaisense customers pleased and let them enjoy an after sales service that meets their expectations. By keeping existing customers satisfied, we can expect a referral to friends and colleagues, thus enhancing the customer base of gaisense. This includes periodic communication activities like customized newsletters or short relevant news delivered to their inbox (instead of generic ones), based on their preferences and attributes. The newsletter could feature real use cases and user stories that strengthen the relationship with existing customers, information about new features, releases, updates, offers etc.

For evaluating the increased customer value and loyalty over time, we can closely monitor the content shared with customers that influenced the most deals, or even the most recent content they interacted with before a new deal, if possible. This will help us identify the most valuable content for existing and new customers

5. Empowering colleagues



This is especially important when the gaiasense system will grow so much that different local teams will have to communicate and be responsible for internal communications and for educating colleagues on the tools and resources they need for providing service to customers. All colleagues should be familiar with the operation of the gaiasense system, its key features, benefits for farmers etc. They also need to have in place what they need in order to talk about gaiasense with confidence to prospects and customers and become brand ambassadors.

There are simple ways to measure the impact of such activities. For example, a short survey can identify the impact of a recent communication to colleagues about the launch of a new feature of gaiasense and provide valuable feedback in terms of how well your communication has been received and understood.

6.6 Monitoring of results

The monitoring of the results of the marketing strategy we allow us to assess the effectiveness of the selected approach and take the necessary steps for further improving it. More specifically, such monitoring will allow us to identify the strengths and weaknesses of our approach and at the same time identify opportunities for improvements or revisions.

The monitoring of the results will take place with the use of appropriate tools, according to each case. For example, the main marketing goals will be assessed with the methodology described in the previous section.

Key performance Indicators (KPIs) and appropriate metrics will be used for assessing the effectiveness of our approach. In the case of digital means, such as social media, online posts and digital campaigns that will take place in each country, we plan to make use of the available metrics such as followers per social media channel, number of likes, shares and comments per post and the Click-Through-Rates of sponsored content. On the other hand, in the case of traditional / printed material, such as newspaper articles, we will monitor the visits on a specific gaiasense webpage that will be mentioned in the article.

Surveys are also a valuable tool that we plan to use for getting feedback from the end users of gaiasense. Customized questionnaires will be shared with existing customers in order for us to measure the satisfaction level from the use of the gaiasense services. Other types of questionnaires will be shared with potential end users of gaiasense, and will help us get a better



understanding of their exact needs, so that we can work on adapting our offerings in different countries.

In this sense, in the context of the LIFE GAIA Sense project, surveys for different types of potential customers will be designed and shared with them with the help of key partners in Greece, Spain and Portugal.



7. Communication strategy

7.1 Aims of the communication strategy

The communication strategy of gaisense will have a triple target: to **inform**, **persuade** and **remind**.

As the gaisense smart farming system will be a newcomer to the target markets, it is important to communicate it properly, so that potential customers will have a clear image of gaisense, its concept, services, crops covered etc.

The next step is to persuade the potential users about the benefits of gaisense, so that they become customers. This part of the communication will highlight its benefits, advantages over the competition etc.

Last but not least, the communication will aim at reminding potential users about the benefits of gaisense, so that they will eventually decide to purchase the offerings of gaisense, turning into paying customers.

NEUROPUBLIC will make use of all available contacts, connections and channels for introducing and communicating the gaisense smart farming system in the targeted countries. GAIA EPICHEIREIN, NEUROPUBLIC's strategic partner, will also have a crucial role in this effort, thanks to its established position at EU level. GAIA EPICHEIREIN is a full and permanent member of the European farmers and agri-cooperative organizations COPA & COGECA. Furthermore, it is a member of the European think-tank FARM EUROPE as well as of the European Forum for Agricultural & Rural Advisory Services (EUFRAS), the network representing private and public agricultural advisors at the EU level. These connections are expected to have a significant positive impact on the marketing activities of gaisense, with members of the aforementioned networks that are located in the targeted countries to be informed and reach at a higher level through each network and at a national level individually.

7.2 Use of selected messages

The use of selected messages, as part of NEUROPUBLIC's communication strategy for gaisense, will aim at:



- **Meeting the need for formulating a category:** NEUROPUBLIC will try to establish a new product category in the market but also to identify it with the company name in order to anticipate competition.
- **Raising brand awareness:** This refers to making the gaisense system easily identifiable by farmers by building an attractive branding. The messages communicated for this purpose will function as an advertisement for gaisense.
- **Intention to purchase the product:** This aims at leading the customer towards the purchase of the product, also functioning as a “call to action” message to motivate the consumer to complete the purchase.
- **Remarketing:** With the use of digital tools, a company can now approach potential customers who searched for a product or expressed interest in it after the company targeted these individuals online. Constantly reminding a consumer about a product is a commonly used and effective marketing method.

The aforementioned approach is already applied in the Greek market, and its results are constantly monitored in order to evaluate the effectiveness of the approach, providing feedback for necessary adjustments.

As regards the messages themselves, they will be properly adjusted in order to “speak the language” of each targeted user group; for example, simpler messages with more practical information will be targeted to farmers and agricultural cooperatives, while more sophisticated ones will be addressed to researchers, policy makers, etc.

The definition of the framework for the specific messages will take into consideration relevant existing work undertaken by the LIFE GAIA Sense project. For example, the deliverable D2 “First policy uptake activities report and material” has already defined a tone for the messages that were (and will be) communicated.

Among other, the selected key messages will make a reference to:

- Specific objectives of the EU Green Deal, the Farm to Fork & Biodiversity strategies (such as reducing by 50% the use and the risk of chemical pesticides by 2030 and by 50% the use of high-risk pesticides) and the new Common Agricultural Policy measures. These highlight the need to produce our food in a more sustainable way, and will introduce the gaisense smart farming system as the most appropriate tool to achieve this goal.



- The ongoing challenge of the green and digital transformation of the agricultural sector, highlighting the ways in which gaia sense can help farmers address this challenge in an easy and low-cost way.
- The relevant Sustainable Development Goals (SDGs)³³ as defined by the United Nations, and how gaia sense can help farmers achieve each goal.
- The way that gaia sense addresses concepts such as Circular Economy, Bioeconomy and Sustainability.

Deliverable D2 has summarized a selection of key messages that will be used, both as-is and properly modified to the needs of each case, for the marketing purposes of gaia sense:

Table 2: Key Messages (KMs) of policy uptake activities

<p>KM 1 - Smart farming can bring concrete sustainability benefits to all EU farmers, whichever the size & production orientation of their farm;</p> <p>KM 2 - Smart Farming needs to be understood as a holistic process that involves Precision Farming as part of the process. Smart Farming regards the use of digital technology to improve the overall decisions taken in a farm while Precision Farming focuses on application methods;</p> <p>KM 3 - Smart Farming is closely linked with the provision of smart advice to farmers: it is a human-centered approach where the agricultural advisor plays a key role in the systematic diffusion of knowledge to the farmer, accompanying his sustainability efforts all along the way, based on accurate data and scientific knowledge. The agricultural advisor also acts as innovation broker bringing together knowledge & data from all involved stakeholders & machinery (scientists, agronomists, farmers);</p> <p>KM 4 - Smart Farming is not competitive but compatible to other sustainable agricultural practices (ie organic farming);</p> <p>KM 5 - Collective farmers' schemes (agri-cooperatives, producer organizations) are advantageous platforms for the diffusion of knowledge & innovation to farmers in an environment of trust, thus contributing to speeding up the digital transition of the EU farming sector;</p> <p>KM 6 - Smart Farming needs to be explicitly recognized as a sustainable practice & be supported with suitable policy tools and financing as such;</p> <p>KM 7 - Smart Farming should be enabled and supported not only within the CAP policy toolbox, but also in the context of other EU policies.</p>

³³ <https://sdgs.un.org/goals>



7.3 Direct and Indirect Communication

The communication approach followed as part of the marketing strategy can be either direct or indirect.

Direct communication: This is mostly achieved with the use of digital marketing, by shaping personalized messages depending on the personas that the company has identified. Direct communication has some key benefits that can work positively for the product market. The data is measurable and the message can be optimized. In addition, the messages are adapted to the needs of the potential consumer, while reminding the consumer about the completion of the purchase.

Indirect / mass communication: With indirect communication, the message aims to reach most of the audience en masse, as in this case the message cannot be personalized. The advantage of indirect communication is that the potential base of message recipients is much larger (mass audience), as well as an audience that is not online, such as older potential customers.

A combination of both direct and indirect communication is used for the communication of gaiasense in Greece, and the results have been positive so far. Both approaches will also be used for the communication of gaiasense in the target countries, with the necessary adjustments according to the characteristics of the target audience.

8. Pricing, Budget, Positioning and Branding

8.1 Pricing

Farmers, especially smallholder ones, do not always have the financial capacity to invest in new technologies that aim to improve their production. In the case of Greece, where the gaiasense smart farming system is designed and developed, most farmers are characterized by low income due to various factors, such as their small and fragmented agricultural land, the production of different crops, the increased competition and low added value of their products. In this context, gaiasense provides an affordable means for farmers to reap the benefits of smart farming without having to invest in expensive technological tools.

NEUROPUBLIC introduced the “Smart Farming as a Service” model, in order to ensure the affordability of gaiasense even to smallholder farmers. In this way, the smart farming services of gaiasense become available to farmers with a relatively low annual fee. The fee is calculated per case, as it depends on various factors, like the crop, the coverage of the area by the gaiasense telemetric stations, the different microclimatic and soil zones in the area etc.

In general, the pricing strategy of gaiasense in the targeted new markets will focus on large-scale sales and discouraging the competitors by offering the gaiasense services at low prices. The combination of market features, such as high elasticity of demand, economies of scale, high acceptance of the product, the lack of direct competition and of substitute products will allow gaiasense to benefit from such pricing policy.

Based on the specific characteristics of each market, along with the potential for expansion, gaiasense may follow a differentiated pricing policy both compared to Greece and compared to each targeted country.

8.2 Budget

As already mentioned in the Deliverable **B9 Initial Business Model**, the cost analysis for providing the service in all cases (with or without infrastructure costs) includes the following:

- a. Development, deployment & operation of gaiasense
- b. Sales, marketing, dissemination & communication
- c. Service provision & support



The gaiasense smart farming system requires the availability of technological hardware components like the specialized sensors and the agrometeorological telemetric stations, a cloud computing infrastructure for the storage and processing of huge volumes of heterogeneous data, scientific models for the fertilization, irrigation and crop protection of different crops, etc. In addition, for the successful entrance of gaiasense to new markets, the availability of

In-house development

NEUROPUBLIC's **Research & Development Lab** is responsible for the design and development of the required sensors and the telemetric stations. This in-house design and development allows for a higher level of flexibility and control over the evolution of the hardware, including minor and major improvements, while at the same time reducing the corresponding costs.

As regards the cloud computing infrastructure, gaiasense makes use of NEUROPUBLIC's infrastructure, which is certified for meeting the requirements of relevant international standards: **EN ISO 9001:2015** (Quality Management Systems) and **ISO/IEC 27001:2013** (Information Security Management Systems) and updated on a regular basis. This allows for more control over the security of the data and ensure the constant availability of data when needed. In addition, this allows for significant savings compared to the use of data infrastructure of third parties.

Last but not least, NEUROPUBLIC in collaboration with its strategic partner GAIA EPICHEIREIN, have direct access to the Greek market, referring to potential end users of the gaiasense smart farming system, such as farmers, agricultural cooperatives and agronomists.

Outsourcing

While gaiasense has already been commercially available in Greece and its market share is constantly increasing, its application abroad is only taking place at a pilot level, at small-scale and in collaboration with selected partners.

The expansion of the gaiasense smart farming system in foreign countries will require country, region and even local level knowledge of the market in order to become successful. In this context, we consider the possibility of asking for external help for the development of a detailed market analysis per country, which will eventually lead to the formulation of the corresponding marketing strategy.



The evaluation of the initial data from each targeted market will provide useful insight for the components of the gaiasense smart farming system – not limited to the hardware ones – to be outsourced to local or international partners. Factors that will affect such decisions include the transportation cost of hardware vs. the supply from local providers, the cost of collaboration with local researchers vs. existing collaborations with Greek ones etc.

8.3 Positioning

There are various different smart farming and precision agriculture offerings in the market, with a high degree of heterogeneity. The most commonly found offering is a typical farm management app that works as a digital diary. It allows farmers to record static information about their farms (e.g. size, location, irrigation system etc.), along with dynamic (crops per parcel, irrigations, application of fertilizers and crop protection). In other cases, smart farming offerings are applications that provide various types of information and data to the farmers without providing guidance on how to make use of them nor an easy to use advice to help them get the most out of this information.

However, what farmers need is a science- and data-driven approach that not only will help them better understand the needs of their crops, but will also advise them on how to meet these needs in the best possible way. A way that will help them optimize the use of inputs in their farms, allowing them to increase their profit and meet the environmental goals for a more sustainable food production.

The gaiasense smart farming system is placed at the heart of the smart farming market, close to the end users of the smart farming offerings. The services are offered through various channels, including agricultural advisors and agricultural cooperatives. These channels enable gaiasense to reach farmers of higher age, who visit both their agronomists and their agricultural cooperatives quite often. In addition, the smart farming app places gaiasense among younger farmers, who are more familiar with technology and the use of mobile apps.

In the context of the EU Green Deal and the more specific Farm to Fork strategy, gaiasense is positioned at the core of the market offerings that aim to help farmers be compliant with the new era of agriculture, which requires more sustainable food production and optimized use of agrochemicals and natural resources.

8.4 Branding

Branding is important for all marketed products, as it defines the visual identity of the product. A successful branding allows the correlation of the product with colors, shapes and mottos.

NEUROPUBLIC has worked on the branding of its gaiasense smart farming system in Greece. The gaiasense system has established its visual identity with its own logo with characteristic colors and distinctive fonts, while its brand identity is supported on its website at www.gaiasense.gr/en.



Figure 8: The gaiasense logo

NEUROPUBLIC is active at European level, through its participation in EU-funded projects and collaboration with established organizations like the European Space Agency (ESA). It is also a member of high-profile networks, like the European Association of Remote Sensing Companies (EARSC), the Big Data Value Association (BDVA), the Global Open Data for Agriculture & Nutrition (GODAN) and the Hellenic Emerging Technologies Industry Association (HETiA), among others. Through its participation in these networks, NEUROPUBLIC promotes the smart farming services of gaiasense, seeking collaborations that would contribute to its technological advances and collaborating on testbeds that would allow their application under different conditions. The same applies for GAIA EPICHEIREIN, NEUROPUBLIC's strategic partner, which participates in various international organizations and for a, like COPA COGECA and Farm Europe. The activities taking place in the context of these collaborations allow NEUROPUBLIC, GAIA EPICHEIREIN and other partners to present updates about gaiasense and make the corresponding audiences familiar with the visual identity of gaiasense through digital and printed material used in each case.

Generally, the branding identity of gaiasense is used in all communication activities in printed and digital formats, like newspaper articles, social media, website posts etc.

9. Conclusions

The gaiasense smart farming system is an integrated approach to sustainable farming, contributing to the financial and environmental sustainability of agricultural production. It has



been designed in a way that allows even smallholder farmers to benefit from its services at a low cost, removing the need for investment in technological equipment and infrastructure.

The initial marketing plan described in this deliverable will focus on the unique features of gaia sense that help it stand out of the existing competition. The ongoing marketing activities taking place in Greece will be used as the basis and provide insights for the marketing plan to cover the target markets. The marketing plan for the target countries will include all necessary adjustments in order to increase its effectiveness and bring it closer to potential customers in each country.

The next version of the deliverable will elaborate on the initial marketing plan, providing more specific information about each country and a more refined approach to be used at each target market.