

AgriFoodTech in Spain 2024

Navigating Challenges and
Catalyzing Innovation in AgriFoodTech



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Spain
AgriFoodTech Nation

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The year 2024 has indeed been a challenging period for Spain's agrifoodtech sector, a reflection of broader global trends. Amid economic uncertainties and evolving market dynamics, the sector has experienced a decline in investment levels and a reduction in the number of active startups. Despite these setbacks, the resilience and innovative spirit of the industry remain noteworthy.

Spain continues to stand out as a leader in agrifood innovation, leveraging its strong agricultural heritage and cutting-edge technological integration. Startups in the sector are dynamically addressing shifting consumer demands, promoting sustainability, and driving transformative changes in food production and distribution. The restructuring of the sector has led to a strategic emphasis on building solid foundations for profitability while advancing technological adoption.

Our report explores into the dynamics of the sector, providing a comprehensive analysis of its current state. We examine key factors contributing to the observed contraction while highlighting innovations and strategies that promise recovery and future growth. The report underscores the importance of collaboration between public and private entities, the adoption of cutting edge technologies, and alignment with global trends such as sustainability.

In this context, ICEX has continued reinforcing the international projection of the sector, with two new editions of the DESAFIA FOODTECH program, in Germany and the United Kingdom, and actions specifically dedicated to giving visibility to companies in the DESAFIA community through their participation at Food4Future, FTalks and this year, for the first time, at the Plant Based World Expo fair in London. Other actions open to the entire

ecosystem, such as the participation in the Agri Food Tech Asia Expo in Singapore with a delegation of startups, corporations and technology centres, have completed and reinforced the ICEX commitment to consolidate Spain's position as an Agrifoodtech Nation.

To promote foreign investment in Spain, ICEX also offers to international companies, through Invest in Spain, all the support to set up their innovative business. ICEX Invest in Spain has been exploring especially the agritech segment and the current business opportunities for agriculture and livestock. Additionally, the soft landing program Rising up in Spain supports international startups in the sector with mentoring, lawyers and ecosystem contacts to accelerate their growth in the Spanish market.

We hope that this analysis inspires renewed confidence in the agrifoodtech sector's ability to adapt and thrive in an ever changing global market. Spain's unique blend of tradition and innovation positions it to emerge stronger, fostering an ecosystem capable of driving significant contributions to the global food landscape.

Thank you for your continued interest and support in shaping a sustainable and innovative future for agrifoodtech. We invite you to explore the full report for deeper insights.

- Elisa Carbonell, Managing Director of ICEX





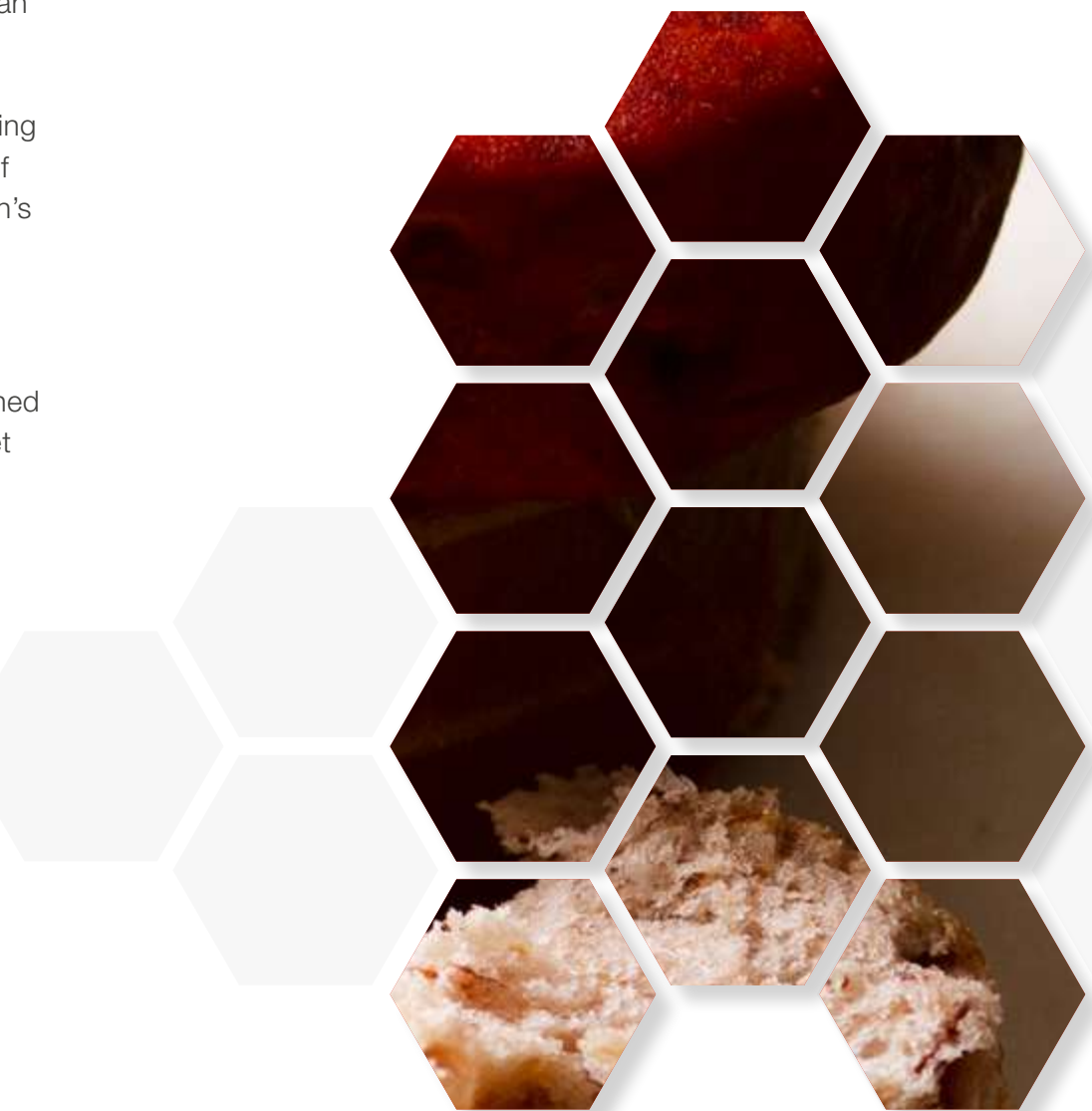
01 Introduction

Spain stands as one of the largest agricultural exporters in the European Union, maintaining its reputation as a global leader in agriculture. Renowned for its excellence in fruit, vegetable, olive oil, and wine production, the country benefits from its rich geographical diversity, ranging from fertile plains to Mediterranean climates, that supports a vast array of agricultural products. This robust foundation has paved the way for Spain's rise as a hub for AgriFoodTech innovation.

With these pillars, Spain is positioned as an **AgriFoodTech Nation**, a breeding ground for startups determined to reshape the world. The year 2024 has marked a turning point, characterized by a shift from unrestrained growth to a more conscious and sustainable approach. This new mindset emphasizes building solid foundations that ensure business profitability while advancing technology across the agricultural sector.

This year, 13 transformative projects were selected under the **PERTE initiative**, a reflection of Spain's strategic commitment to ecological, digital, and sustainable transitions in its agrifood industry. These projects underscore Spain's ambition to lead the global AgriFoodTech movement.

As we look ahead, Spain's AgriFoodTech sector is set to lead with its blend of innovation and tradition, driving forward with a clear focus on technological integration, market expansion, and sustainable practices.





02

Agrifoodtech

Spain is a significant player in the **AgriFoodTech ecosystem**, leveraging its strong agricultural heritage, innovation in food technology, and sustainability practices. The country is at the forefront of the transformation of agriculture and food production mainly due to the adoption of digital technologies, innovation in food supply chains, and sustainable agricultural practices.

Following the latest annual reports, there are four key areas of operation for **AgriFoodTech** startups. In total, **387** companies are focused on applying new technologies to the agriculture and food sectors. It is important to note that many companies fall into multiple categories due to the nature of their work. Therefore, although there are **387** companies, their involvement in multiple subsectors leads to **522** total representations.

Agritech with 146 companies

Foodtech: Food production and transformation with 292 companies

Foodtech: Logistics, distribution, and retail with 51 companies

Restaurant Tech with 33 companies

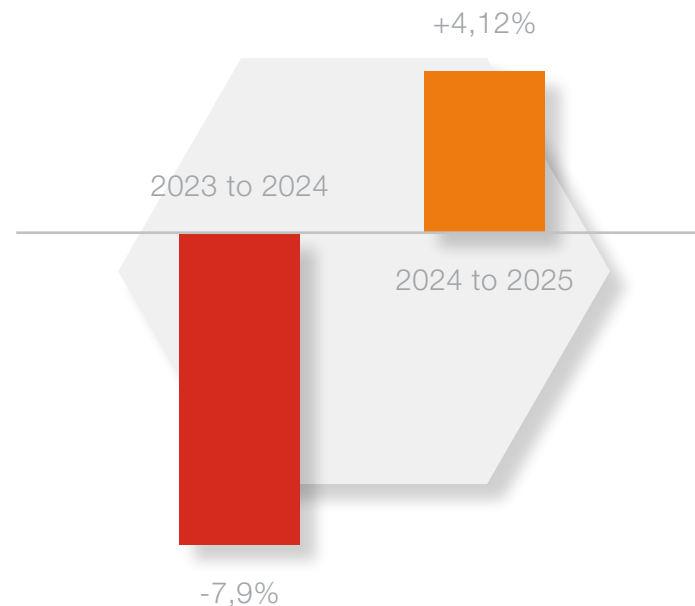


After a year of restructuring, several companies have been removed from the list, either because they have surpassed the 10th year of operation, such as Bioflytech, Hemav, Take a Chef, Foodinthebox, Eggново, Tiloom, Degustabox, and Widhoc, or due to ceasing operations, including Agrosingularity, Kilimanjaria, Deliberry, Harbest Market, and Instamaki.

However, the sector is expected to recover, with a projected **4.12% increase in the number of companies by 2025**. This projection is based on the growth of new companies in previous years, expected exits due to company age, and a reduction in the number of companies ceasing operations in 2025.

2023 to 2024: A decrease of 7.9% in the total number of AgriFoodTech companies compared to 2023

2024 to 2025: An expected growth of 4.12% in the total number of AgriFoodTech companies by 2025



The Revolution

The AgriFoodTech ecosystem encompasses diverse subsectors, including agritech, foodtech production and transformation, foodtech logistics and distribution, and restaurant tech. Each subsector plays a distinct role in revolutionizing traditional processes, enhancing efficiency, and driving sustainability. This section analyzes the distribution of startups across these subsectors and their specialization, offering insights into their technological focus and market influence.



Agritech

Spain's AgriTech ecosystem is flourishing, marked by the convergence of technology and sustainability to reshape traditional farming practices.

- **Smart Farming**

Smart farming techniques, powered by IoT, AI, and precision tools, are at the forefront of Spain's agricultural innovation. Companies like **Innogando**, with their GPS collar RUMI for livestock monitoring, and **Kaampo**, offering real time digital farm management, are leading the way. **Aotech** further enhances agricultural efficiency by integrating AI with autonomous drones and machinery for optimized planting and harvesting.

Meanwhile, **Graniot** uses satellite imagery and data analytics to provide farmers with real time insights into crop health and soil conditions. This technology aligns with the vision of the new digital farmer, who relies on smart irrigation systems, such as those developed by **Plantae**, to minimize water waste and enhance crop productivity.

- **Sustainable Agriculture**

Sustainability is a cornerstone of Spain's AgriTech movement. Companies like **Lab4Impact** employ data analytics to measure and mitigate the environmental impact of farming practices. **Ficosterra** and **Blueming Biotech** produce biofertilizers and biopesticides derived from algae and microorganisms, promoting natural soil regeneration and ecofriendly crop protection.

Naturbec pioneers green chemistry with its Natur3tech® biofertilizers, while **Ecoproten** and **Galinsect** address sustainability in protein production by utilizing agricultural byproducts and insects to create ecoefficient animal feed.



- **AgriBiotech**

Biotechnology solutions are critical in addressing climate change and reducing chemical dependencies in farming. **Biomemakers** lead in soil microbiome analysis, enhancing crop resilience and sustainability. **Neoalgae** and **Cianoalgae** develop microalgae based biofertilizers and biostimulants, improving soil health and reducing chemical input reliance.

Made in Plant stands out for its innovative use of plant biotechnology to create sustainable and functional ingredients. Its work focuses on developing ethical and vegan alternatives to traditional ingredients for food and cosmetics, aligning perfectly with modern consumer demands for environmentally friendly solutions.

Winus Bio focuses on biofertilizers to enrich soil quality, while Blueming Biotech creates sustainable crop protection products. Similarly, Cultzyme enhances organic material decomposition with enzyme based solutions for improved fertilizer efficacy.

- **Vertical and Urban Farming**

Urban and vertical farming are gaining momentum, supported by startups like **Neboda Farms** and **Instagreen**, which optimize local food production in cities like Madrid and Barcelona. These systems use hydroponics and space saving techniques to grow crops efficiently, cutting transportation emissions and ensuring fresh produce for urban populations.

Niwa extends this innovation to homes and small farms with automated smart cultivation systems, while **H2Hydroponics** specializes in water efficient hybrid hydroponic systems that adapt to diverse climates.

The synergy between tradition and technology ensures that Spain's farms remain resilient while feeding a growing population responsibly

Food Production & Transformation

Spain's food production and transformation sector is at the forefront of global AgriFoodTech innovation, demonstrating a unique blend of cutting edge technology, sustainability, and health focused solutions

Technological advancements, such as AI and bioprinting, are redefining food production processes, while a strong focus on sustainability and the rise of "food as medicine" showcase Spain's leadership in addressing pressing challenges like food waste, health optimization, and alternative protein development. From leveraging agricultural byproducts to crafting plant based and cultured alternatives, Spanish innovators are shaping the future of food with a unique combination of creativity and responsibility.

- **Technological Innovation**

MOA Foodtech and Cocuus are pioneers in applying AI and advanced technology to food production. MOA Foodtech focuses on upcycling agricultural by products into sustainable proteins, tackling food waste while developing alternative food sources. Meanwhile, Cocuus specializes in creating mimetic foods, including plant based and cultured alternatives, using 3D bioprinting technology to replicate the texture and appearance of traditional foods.

- **Sustainability Focus**

Companies like Oleoway and Ingredalia lead efforts in sustainability. Oleoway transforms olive oil byproducts into functional food ingredients, adding value to the olive production chain. Ingredalia's circular bioeconomy approach repurposes vegetable byproducts, exemplified by their patented Sulforaphan Smart derived from broccoli.

- Plant-Based and Alternative Products

**Innolact
(Quescrem)**

This dairy innovator produces creative cream cheese varieties like chorizo and wakame seaweed flavors, as well as lactose free and organic options, maintaining a strong commitment to high quality ingredients.

**Zyrcular
Foods**

A leader in the alternative protein space, Zyrcular Foods distributes plant based products, paving the way for more sustainable protein sources.

**Myvegaly
and I Like**

These companies focus on plant based alternatives to traditional dairy and meat, offering a diverse range of environmentally friendly products that mimic the taste and texture of animal based foods.

**Awevo
Foods**

Specializes in plant based egg substitutes made from potato protein, such as liquid eggs, which replicate the functionality and taste of traditional eggs while being resource efficient.

**LetitV
Foods**

Focused on creating versatile plant based proteins, LetitV Foods contributes to the global push towards sustainable diets by developing alternatives that cater to both taste and nutritional needs.

- Emergence of “Food as Medicine”

Health conscious innovation is evident in companies like **Maal**, which utilizes AI to personalize nutrition plans, and **Vanetta Food**, which develops functional ingredients targeting health and wellness. These reflect a shift toward viewing food as a means to enhance overall health, aligning with consumer demand for wellness focused options.

- Blending Innovation with Tradition

Naturquinoa promotes sustainable quinoa farming in Spain, supporting local agriculture.

Kaicao Chocolate crafts premium, ethically sourced chocolate while combining traditional methods with cutting edge techniques to enhance flavor.

Logistics, Distribution & Retail

- **Spain's Role as a Key Logistics Hub**

Spain is an essential logistics center for food distribution in Europe, with numerous companies leveraging advanced technologies to revolutionize the supply chain. Companies like **TrySolved** and **VeryAgro** exemplify the drive toward optimization, offering digital platforms to streamline food and perishable goods logistics. **LogicMelt**, with its real time temperature tracking for perishable items, ensures that products like dairy and fresh vegetables maintain their quality throughout the supply chain.



- **AI and Blockchain for Transparency and Efficiency**

To address challenges in traceability and waste reduction, businesses like **Trazable** are utilizing blockchain to enhance transparency from farm to table. Meanwhile, firms such as **Vision Quality** are deploying AI powered quality control systems to identify defects and maintain compliance with stringent food safety standards.

- **Innovative Cold Chain Logistics**

Cold chain logistics keep perishable goods fresh. Companies like Botularium and Diverfruit specialize in preserving the quality of gourmet and exotic fruits, ensuring they reach customers in peak condition. Their focus on efficient logistics helps maintain product integrity while delivering top tier freshness.

Wetaca is redefining meal delivery by combining centralized, chef led kitchens with real time logistics management. This approach reduces food waste, supports local sourcing, and strengthens Spain's already impressive food distribution network. By offering a convenient and sustainable way to enjoy healthy meals, Wetaca is making high quality dining more accessible than ever.

- **Sustainability Focus**

Environmental sustainability is a cornerstone of Spain's AgriFoodTech transformation. Companies like **Pack2Earth** are leading the charge by developing compostable packaging solutions, reducing plastic waste, and encouraging natural material use.

- **Waste Reduction and Recycling**

Startups such as **Freshis** and **Zamparte** are creating B2B marketplaces that connect producers directly with buyers, streamlining logistics to reduce costs and minimize food waste. Innovations from **Oscillum**, like biodegradable labels that indicate freshness, are pivotal in preventing spoilage and ensuring timely consumption.

- **Entrepreneurship in Sustainability**

Visionary entrepreneurs are spearheading efforts to transform waste into resources. **Insekt Label**, for example, is turning insect-based protein into a sustainable food source, while **NaturCode** enhances transparency with digital labels detailing traceability and sustainability.

- **Reinventing Food with Vision**

Flax & Kale, known for its sustainable food products, combines retail with logistics to distribute healthy options efficiently. Similarly, **CrowdFarming** revolutionizes agriculture by directly connecting consumers with farmers, fostering sustainable and transparent supply chains.

- **Niche Market Expansion**

Companies like **Vegaffinity** and **Futuralga** cater to niche markets, offering vegan and algae-based products with streamlined logistics to meet growing consumer demands. **Petra Mora** emphasizes ecofriendly packaging and efficient e-commerce for gourmet food products, highlighting how premium offerings can integrate sustainability with logistics excellence.

- **TechDriven Solutions**

Tech innovations drive many initiatives, with firms like **Color Sensing** and **Deep Detection** utilizing smart labeling and imaging systems to enhance quality control. **AllRead AI** improves cargo tracking with its advanced label analysis technology, further optimizing logistical operations.

Restaurant Tech

The Spanish restaurant tech ecosystem in 2024 thrives on innovation, with numerous startups leading advancements in AI, automation, delivery, sustainability, and integrated solutions. This growth is evident in the success of specific companies driving these trends:

- **AI and Automation**

Startups like **Brobot5** and **WeTechFood** are pioneering automation technologies. **Brobot5** specializes in robotic systems that optimize kitchen workflows and inventory management, reducing human error and increasing efficiency. Similarly, **Dynameat** uses AI driven tools to analyze customer preferences, helping restaurants refine menu offerings for better profitability and satisfaction.

- **Delivery and Online Ordering**

The importance of delivery innovation is evident in startups like **Exum**, which focuses on last mile logistics for restaurants and grocery services, integrating sustainable practices into its tech. **Zinkeat**, a platform catering to high end restaurants, enhances meal delivery with real time tracking and personalized customer experiences. Additionally, **Ordatic** centralizes delivery orders across platforms like Uber Eats and Glovo, streamlining operations for restaurants managing multiple delivery channels. **Cuyna**, which operates a network of ghost kitchens, promotes efficient resource sharing and energy saving logistics.

- **Sustainability**

Sustainability is a growing priority. **Natural Machines** leads this trend with its Foodini 3D printer, allowing chefs to create intricate dishes while minimizing waste.

- **Integrated Payment Solutions**

Companies like **Proppos** are transforming payment experiences with AI powered contactless checkout systems, enhancing speed and convenience. **Foodcoin**, another innovative player, enables restaurants to accept blockchain based payments, appealing to tech savvy customers seeking secure and transparent transactions.

- **Reservation and Customer Management**

CoverManager has emerged as a leader in reservation and customer management solutions for the hospitality industry. Its platform streamlines online reservations, takeaway orders, and queue management while offering digital marketing tools and data analytics to optimize profitability and operations. With a presence in over 40 countries and serving more than 17,000 businesses, CoverManager is a key player in the digital transformation of the restaurant industry.

- Additional Industry Specific Innovations

El **Goxo** and **Vicio** revolutionize food delivery services by combining gourmet offerings with robust tech platforms, ensuring quality and consistency.

Bistrohub simplifies delivery management, automating orders from platforms like Glovo and integrating them seamlessly into restaurant operations.

Haddock offers financial management solutions that empower restaurants to track expenses, manage invoices, and optimize pricing strategies.

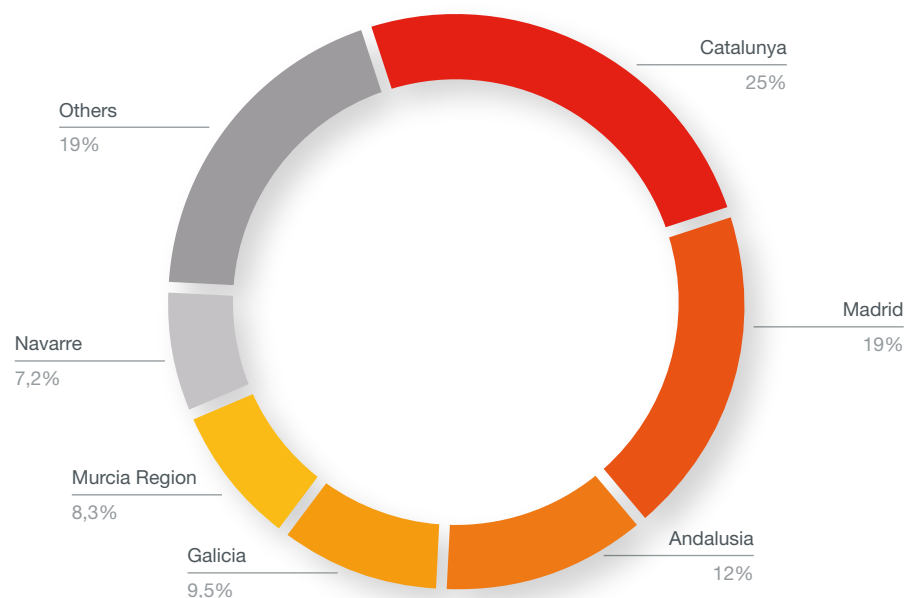
Another key player in the ecosystem is Mapal OS. While beyond the scope due to its establishment in 2009, the company continues to drive innovation in integrated management solutions for the HORECA sector. Mapal OS specializes in hospitality management software, enhancing operational efficiency and performance across various aspects of restaurant management. Its solutions include workforce management, learning and development, compliance, employee engagement, and reputation management, equipping restaurants with the necessary tools to optimize operations and support team development

Companies like **Le Room Service**, **Tipsi TPV**, and **Prezo** reflect the diversity of solutions transforming how restaurants operate, from luxury delivery services to streamlined procurement processes. This ecosystem is set to further position Spain as a hub for restaurant innovation in Europe.

03 Geographical Presence



Where Are The Agrifoodtech Startups From



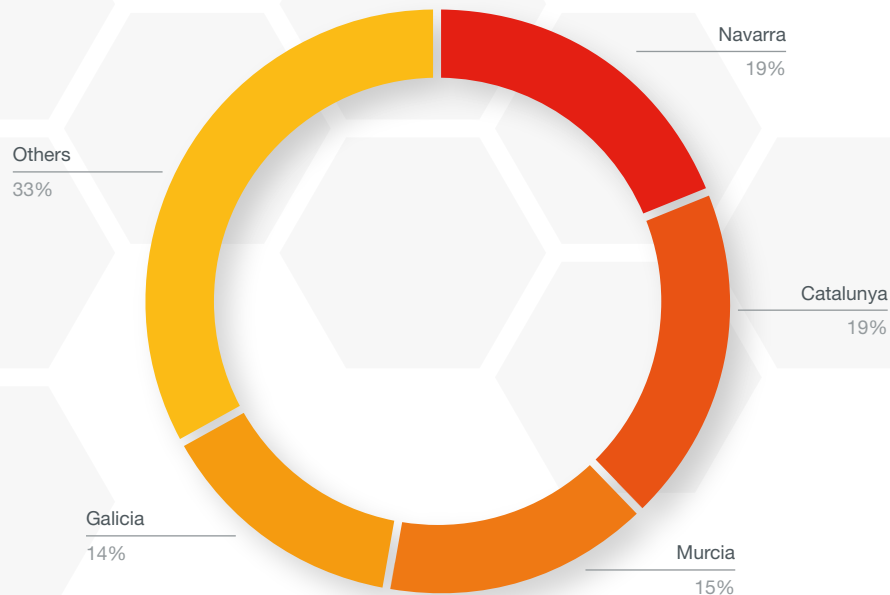
The geographical distribution of companies in 2024 has undergone significant changes, highlighting key regional dynamics. **Catalonia** leads the ranking this year, accounting for 25% of all companies, solidifying its position as a strategic hub for the business ecosystem. **Madrid** follows in second place with 19%, standing out for its ability to attract investments and its robust business infrastructure.



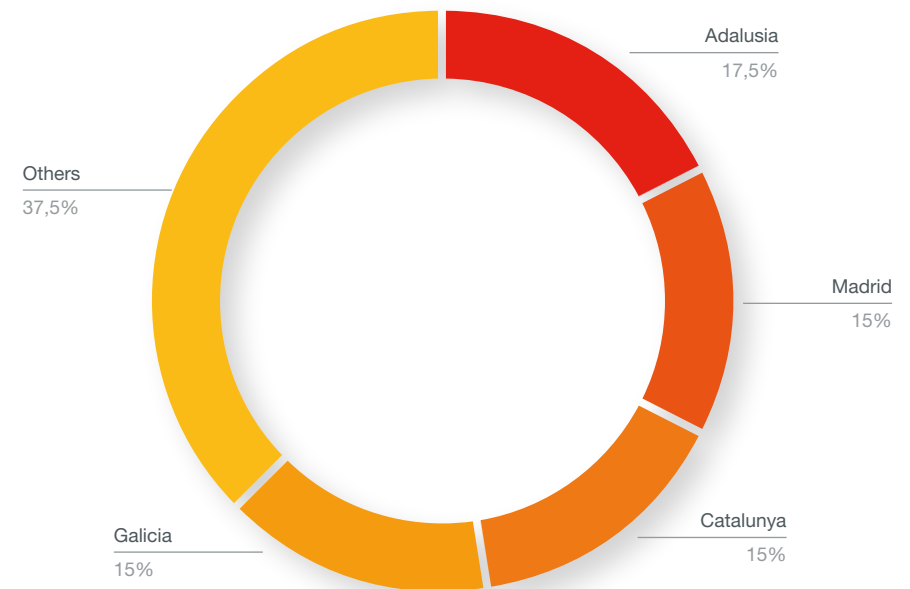
Andalusia takes third place on the podium after an exceptional year with a 32% increase in the number of companies. This growth allowed the region to boost its national share from 9.1% to **12%**, representing a 3.9% increase in its relative weight. Andalusia's progress has been supported by local initiatives fostering entrepreneurship and innovation.

Another noteworthy region is **Galicia**, which accounts for **9.5%** of the total companies, underscoring its growing relevance in the national business landscape. **Murcia Region** and **Navarre** follow closely, representing **8.3%** and **7.2%**, respectively, while the remaining **19%** of companies are distributed across other autonomous communities.

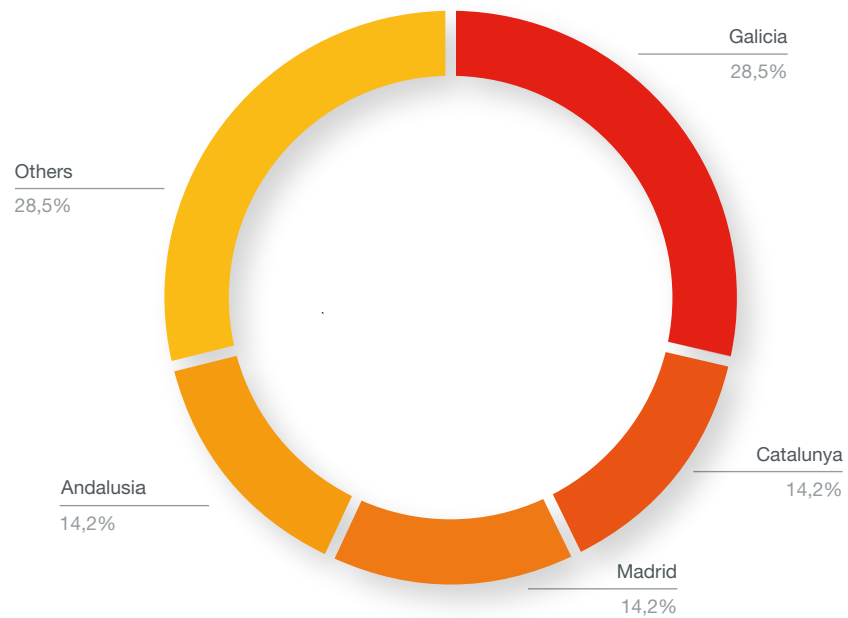
Agritech



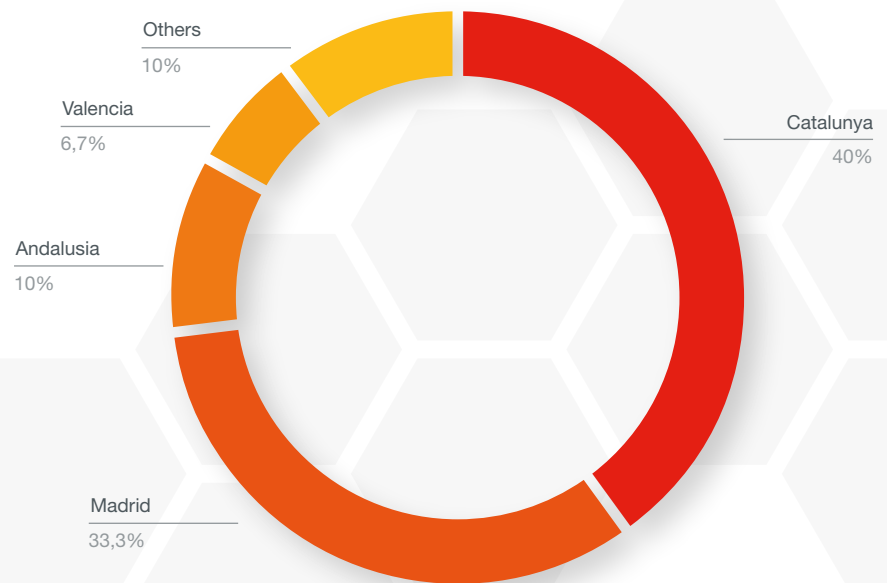
Food Production & Transformation



Logistics, Distribution & Retail



Restaurant Tech



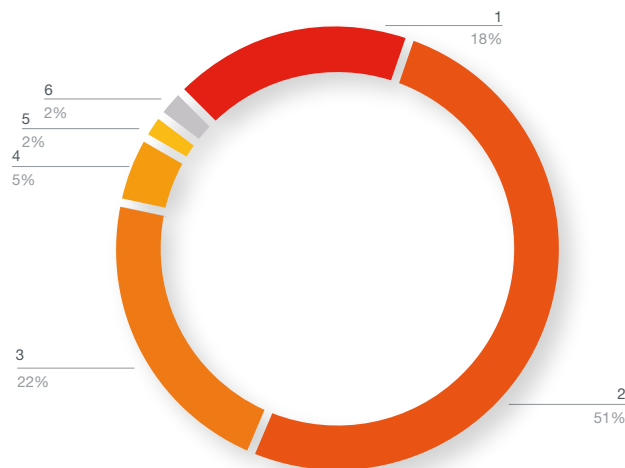
04 People



Founders

In 2024, Spain is home to **1,063 talented founders** of AgriFoodTech startups, reflecting the commitment and dynamism of entrepreneurs in this thriving sector..

Regarding team composition, a **majority (51%)** of AgriFoodTech startups in Spain are founded by **two individuals**, a configuration often linked to complementary skillsets and balanced decision making. Startups with **three founders account for 22%**, reflecting the potential benefits of expanded expertise and workload sharing, while those with a **single founder make up 18%**. Beyond these common configurations, startups with **four or more founders collectively represent 9%**, highlighting a minority approach that may face challenges in equity distribution and alignment but can offer diverse perspectives.



1063
Total Founders



Gender Distribution

- **Gender Diversity**

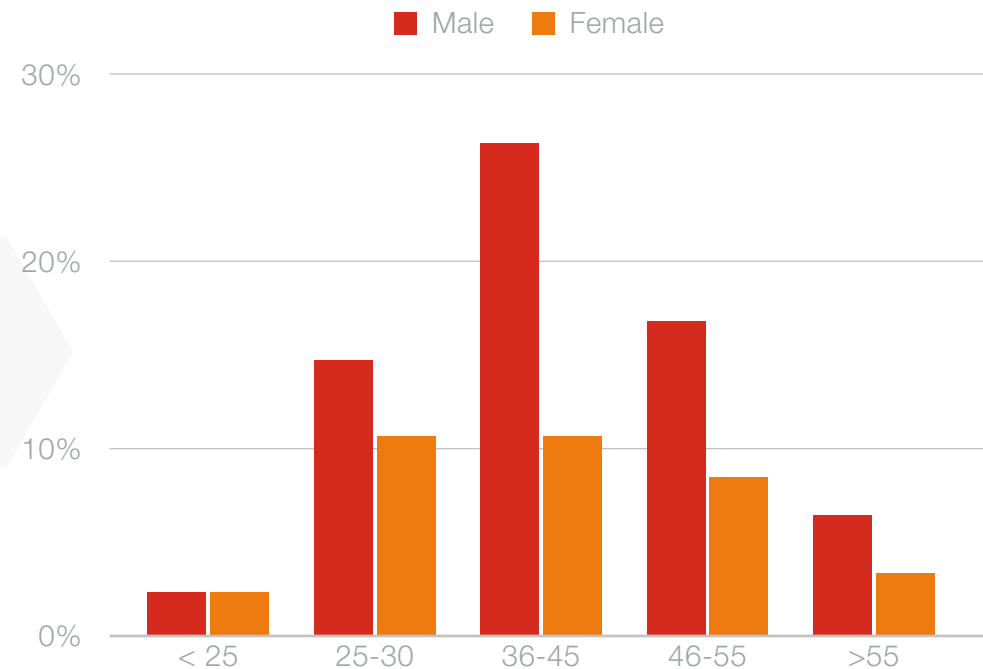
53% of startups have at least one woman among their founders, while 96% include at least one man.

- **FEMALE**

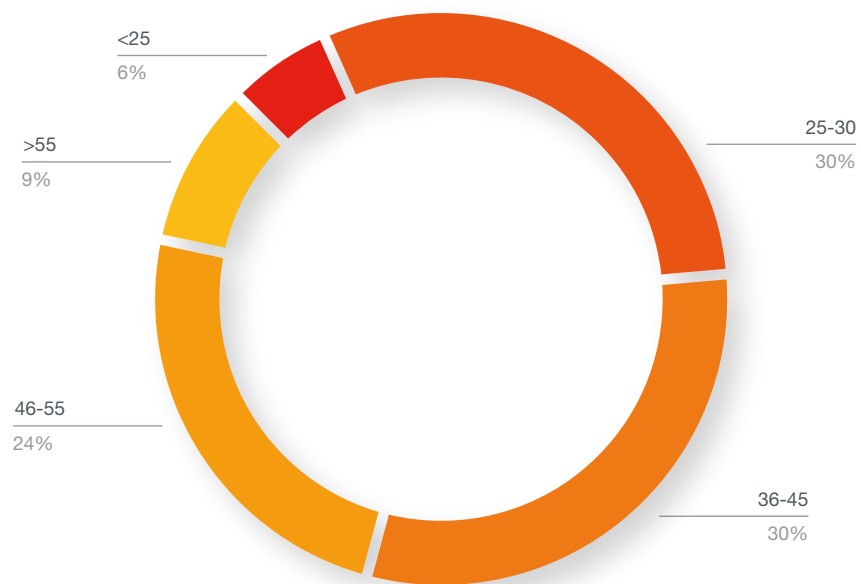
The data highlights that females in Spain are well represented across a wide range of ages, with a strong presence among both younger founders who stand out as a driver of innovation (**25-30 years**) and those with more professional experience, knowledge, and resources (**36-55 years**). There is still a gap in the youngest (<25) and oldest (>55) groups, although they still contribute to the entrepreneurial ecosystem.

- **MALE**

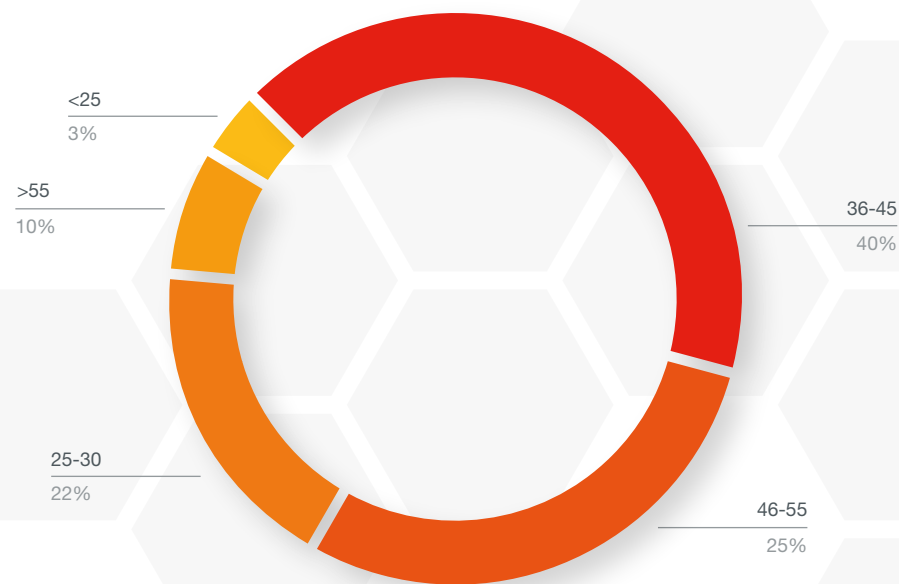
The age distribution reflects that male entrepreneurship in Spain is predominantly driven by individuals between the ages of **36 and 55**, who combine experience, knowledge, and resources. However, the significant presence of younger founders (25-30 years) stands out as a driver of innovation, while the extreme profiles (<25 and >55) face specific challenges, although they still contribute to the entrepreneurial ecosystem.



• Female



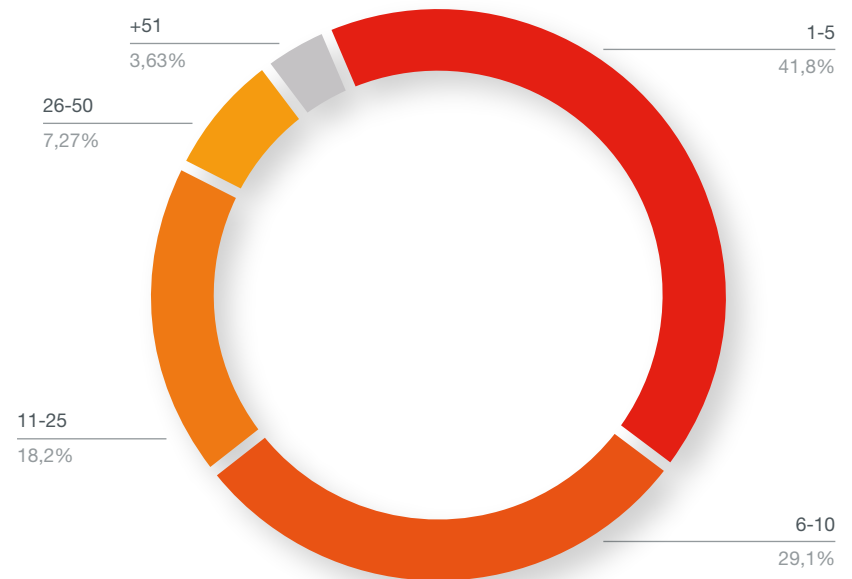
• Male



Workforce Composition

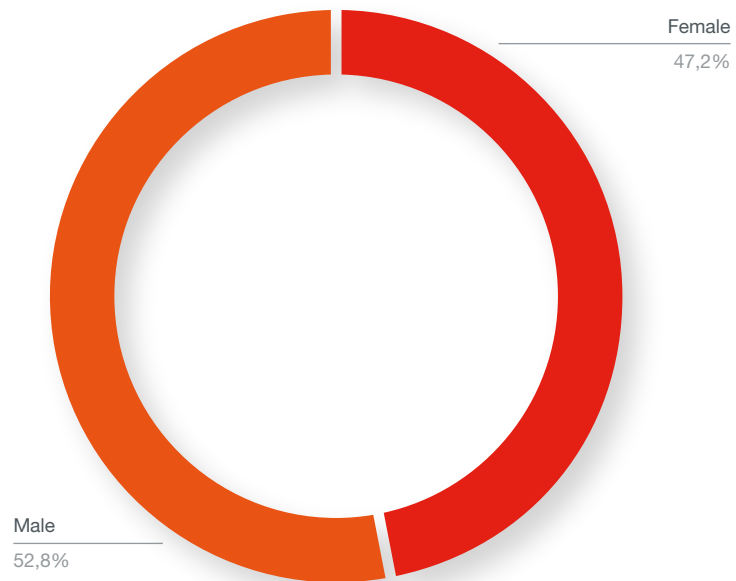
The data on the number of employees in companies reveals that the **majority are small**, with **41.80%** employing between 1 and 5 people. Around **29.10%** of companies have between 6 and 10 employees, suggesting a moderate level of growth. Only a small percentage of companies have more than 10 employees, with **7.27%** employing 26 to 50 people and **3.63%** having more than 51 employees. This distribution highlights that the sector is predominantly composed of small companies, with few reaching larger scales.

In **Agritech**, 41.80% of companies employ 1-5 people, with most businesses being small or in early growth stages. Only a small percentage have more than 25 employees. **Food Production & Transformation** shows a similar pattern, but with slightly more companies in the 11-25 employee range, indicating moderate scalability. **Logistics, Distribution & Retail** has a more even distribution, with fewer small businesses and a higher proportion of medium and large companies, suggesting greater scalability in this sector.



Gender Distribution

The gender distribution within the workforce is nearly balanced, with women representing 47.2% and men 52.8%. This slight disparity makes the AgriFoodTech sector one of the most equitable in terms of gender distribution among various startup sectors.



05 Investments

CNTA 





In 2024, AgriFoodTech startups in Spain secured **€179 million** in funding. While this figure might initially seem concerning, it reflects a global trend of reduced investment during a transitional period. Worldwide investment fell by 6.7%, from €13.47 billion in 2023 to €12.57 billion in 2024, with Europe and Asia seeing declines of 18.7% and 11.1%, respectively. In contrast, the U.S., having already undergone a period of adjustment in 2023, experienced an 18% rebound in 2024.

€179 million in funding.

This year of efficiency marks a shift in focus for startups, emphasizing operational optimization, financial sustainability, and productivity. Startups are transitioning from rapid, inorganic growth to sustainable practices such as achieving profitability and breaking even. Factors driving this shift include tighter market conditions, heightened investor demands for viable business models, technological advancements like AI and automation, and an emphasis on sustainability.

Startups are adopting strategies such as bootstrapping, building smaller yet more efficient teams, and optimizing returns on investment. This period represents a strategic evolution in which success is increasingly dependent on balancing sustainable growth with operational efficiency, marking a departure from the growth at all costs models of previous years.

Bootstrapping

Startups are turning to self financing to reduce their dependence on external investment and maintain greater control over their growth.

Smaller, more efficient teams

Agile and multidisciplinary teams that maximize productivity and efficiency are prioritized.

Maximizing return on investment

Startups focus on projects and strategies that generate a tangible return on investment in the short term.

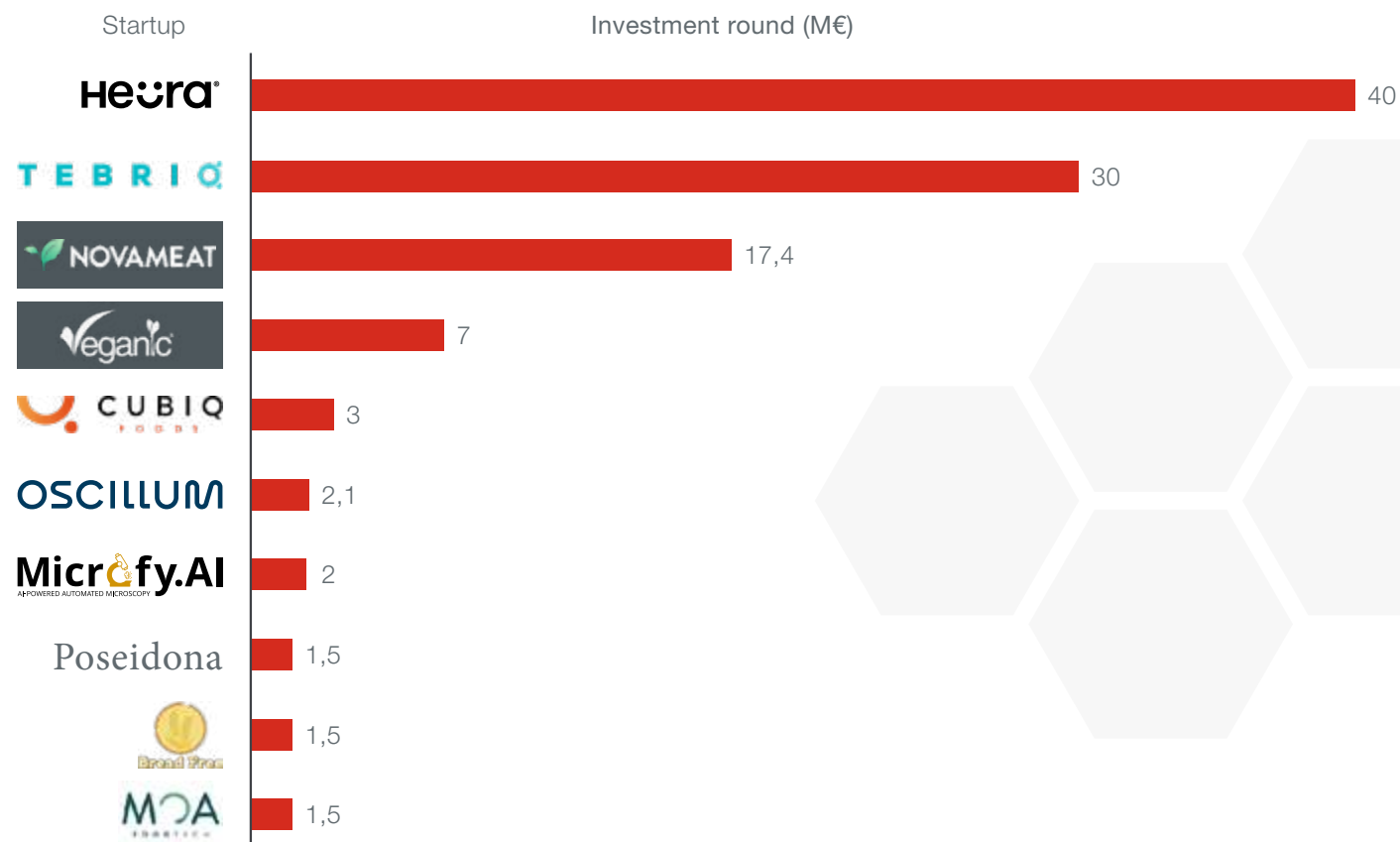
• Startup strategies

Spain ranks 6th in Europe and 14th globally for AgriFoodTech investment in 2024.

Spanish startups reflect its ability to consistently attract investor interest. This strong position highlights the vibrancy and innovation of its ecosystem, which continues to evolve as a key hub for food and agricultural technology.

Rounds

Leading Rounds



- The top 10 companies leading investment rounds in 2024 represent a wide range within AgriFoodTech sectors.

Many companies in the AgriFoodTech sector are deeply committed to sustainability, incorporating it into their core strategies. This reflects the growing awareness among consumers and the rising demand for environmentally friendly solutions. Spanish startups have shown an increasing ability to attract significant investment, which highlights the maturing ecosystem of the sector. These companies are demonstrating their capacity to secure funding and expand their operations efficiently. Innovation plus the adoption of advanced technologies such as biotechnology, artificial intelligence, and 3D printing emphasizing the sector's dedication to staying at the forefront of progress.

Alternative Proteins

Heura (€40 million), Tebrio (€30 million) and Novameat (€17.4 million) highlight the growing importance of sustainable alternatives to traditional meat products.

Sustainable Agriculture

Veganic (€7 million) focuses on biosolutions for eco friendly farming, addressing the rising demand for sustainable practices.

Biotechnology

Cubiq Foods (€3 million) and MOA Foodtech (€1.5 million) leverage biotechnology to develop healthier and more sustainable ingredients, optimize production processes, and value products.

Packaging Innovation

Oscillum (€2.1 million) is developing smart packaging solutions that extend product shelf life and enhance sustainability.

Artificial Intelligence

Microfy (€2 million) offers affordable AI powered automated microscopy solutions to optimize processes in the AgriFoodTech sector.

Gluten Free Foods

Bread Free (€1.5 million) specializes in gluten free bakery products, catering to consumers with specific dietary needs.

Algae Based Proteins

Poseidona (€1.5 million) supplies protein rich ingredients derived from algae, driving circular economy practices.

These companies align closely with key market trends. Health and wellness solutions are more and more important, with Bread Free addressing the increasing demand for foods tailored to specific dietary needs. The search for sustainable protein sources is led by Tebrio and Novameat, which are advancing innovative alternatives such as insect derived proteins and 3D printed meat substitutes. Companies like Veganic, Oscillum, and Poseidona are spearheading efforts in sustainable agriculture and food production. Innovation remains central, as the adoption of cutting edge technologies continues to drive the evolution of the industry.

It is also worth noting that **Hemav**, another company in the agri-food sector, recently raised €8 million. However, it was not included in the list as it falls outside the scope of AgriFoodTech companies surpassing their 10th year of existence.

The leading companies share common traits for success. A strong focus on profitability, especially during a year of global investment challenges, signals investor confidence in their business models and marks a transition from prioritizing growth alone to achieving sustainable returns. Industry expertise further strengthens their position, as experienced teams with a deep understanding of the food sector are better equipped for the complexities of the market and the industry players.

Other Rounds

These companies have secured modest investment fundings, while representing just a subset of the total number of startups in the sector, have collectively secured **more than €3.3 million in investments**. Their funding highlights their role in enriching the AgriFoodTech sector with innovation, niche focus, and new value propositions.

Plant Based and Alternative Foods: Hello Plant Foods and Vanetta Food

Sustainable Agriculture: Very Agro

Biotechnology and Ingredients Innovation: Cultzyme, Mediterranean Algae and Natural Fonan

Robotics and Automation: Macco Robotics.

Culinary Experiences and Niche Products: Le Room Service and Las Jellys

Sustainable Oils: Blue Marine Oil

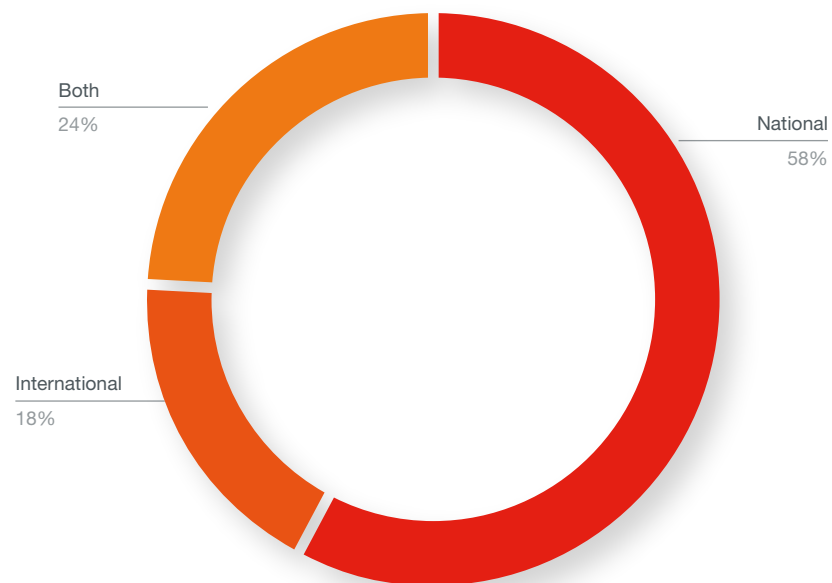
A significant portion of the recent investments is concentrated in seed stage or pre seed funding, reflecting that many startups are in the early phases of market validation and product development. These early stage initiatives underscore the ecosystem's potential for growth and innovation.

A key observation is the diversification within AgriFoodTech subsectors. Startups are targeting specialized niches such as plant based foods, algae based solutions, culinary robotics, and sustainable oils. This diversity not only enriches the ecosystem but also paves the way for future breakthroughs in areas that address emerging consumer and industry needs.

Together, they contribute to the continued growth and diversification of the AgriFoodTech ecosystem.

Origin Of Funds

58% of investments come from national investors, reflecting strong local support for innovation. Meanwhile, 18% originate from international investors, highlighting growing global interest in the Spanish market. The remaining 24% represents a balanced combination of both national and international funding, showcasing a diverse and collaborative investment landscape.



06 Technology



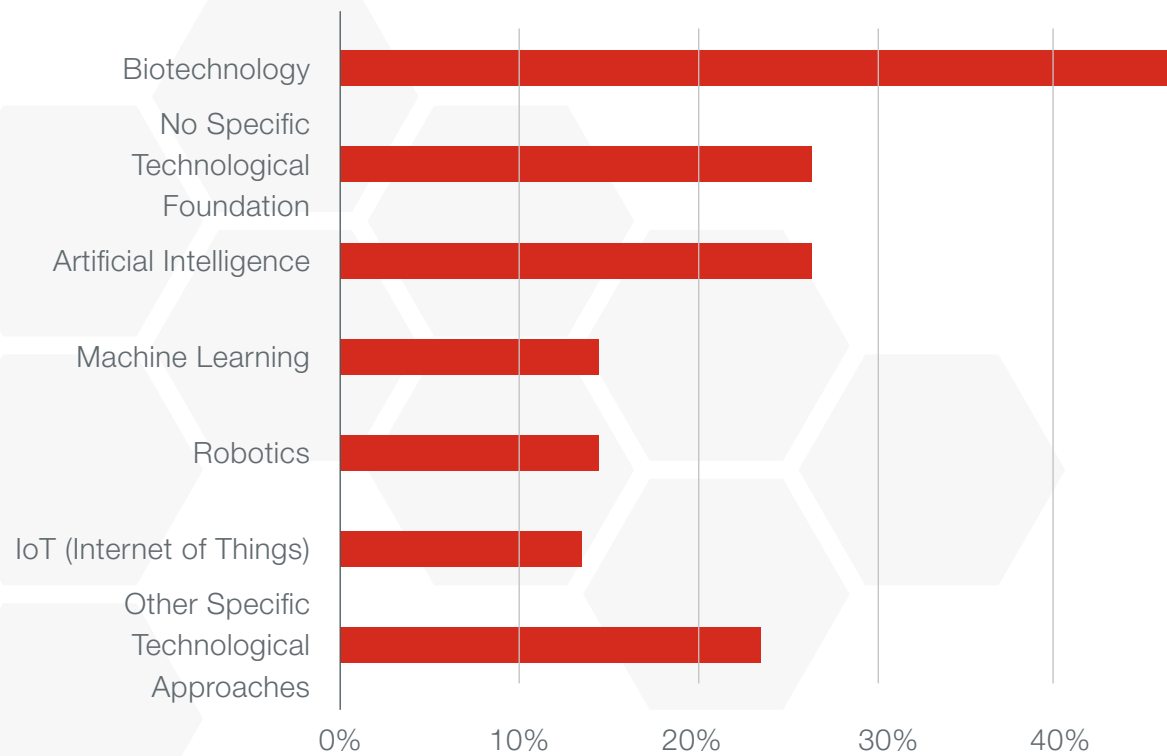
Looking ahead to the future of food technology, it is clear that the adoption of cutting edge innovations is rapidly reshaping the AgriFoodTech landscape. **Biotechnology is at the forefront, with 47% of startups incorporating this technology**, signaling a significant shift towards biological innovation. This trend is driven by the increasing demand for novel food products, more efficient production processes, and sustainable agricultural practices. However, not all startups are concentrating on high tech solutions, **26% of companies are focusing on refining their business models, optimizing logistics, and offering service based solutions**, rather than directly integrating advanced technologies.

Emerging technologies such as **Artificial Intelligence (AI) and Machine Learning (ML)** are being adopted by **41% of startups**, often alongside the Internet of Things (IoT), robotics, and spectroscopy, showcasing the growing reliance on predictive analytics, data driven insights, and automation to boost operational precision. While **IoT is featured in 13% of companies**, it is most commonly integrated with AI or robotics to optimize agricultural processes through real time monitoring. Robotics, used by 14% of startups, is also frequently combined with AI, IoT, and 3D printing, reflecting the sector's push toward advanced automation and hardware solutions to tackle complex challenges.

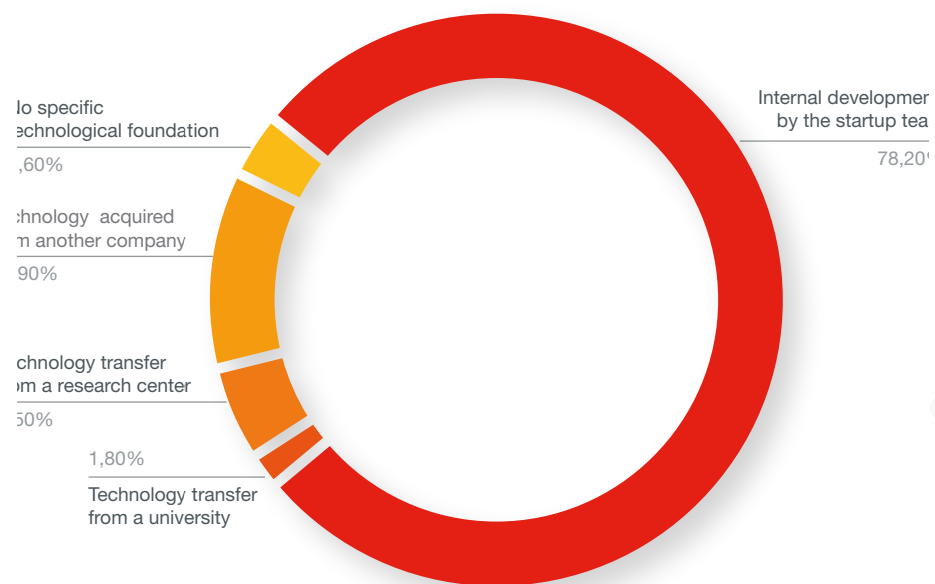
The AgriFoodTech sector is evolving beyond traditional technologies, with innovative approaches such as e-commerce and the development of eco friendly industrial materials gaining traction. These non traditional methods offer sustainable alternatives to conventional practices. In addition, specialized technologies, including high pressure processing, electrochemistry, microencapsulation, and advanced extraction techniques, are providing targeted solutions to key challenges in food production and sustainability.

As these technologies continue to shape the future of the industry, startups are diversifying their approaches to sourcing and developing innovations. While the majority (**78.2% of companies are developing technologies internally**), others are adopting strategies such as **technology acquisition (10.9%)**, collaborations with research centers (5.5%), and partnerships with universities (1.8%) to access specialized knowledge and accelerate their advancements. A smaller but notable segment (3.6%) operates without a specific technological foundation, focusing instead on executing business models or utilizing existing technologies. This diverse array of approaches underscores the AgriFoodTech sector's dynamic and rapidly evolving nature, where continuous innovation and adaptability are key to success.

Main Technologies



Origin Of Technology

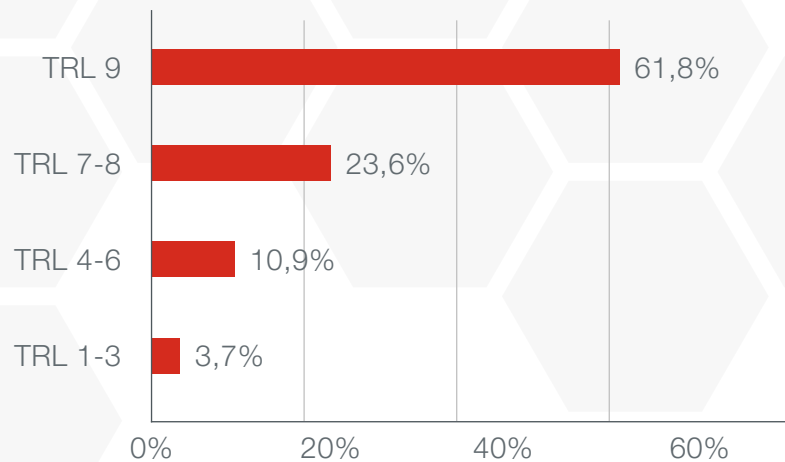


Heavily
reliant
on original
innovation



Development Stage

The AgriFoodTech sector has over 60% of companies in TRL 9, demonstrating a clear focus on execution and scalability, with practical solutions that deliver real world impact. Additionally, 23.6% of startups are in TRL 7-8 which represent a steady flow of emerging technologies nearing commercialization, ensuring continuous innovation within the sector.

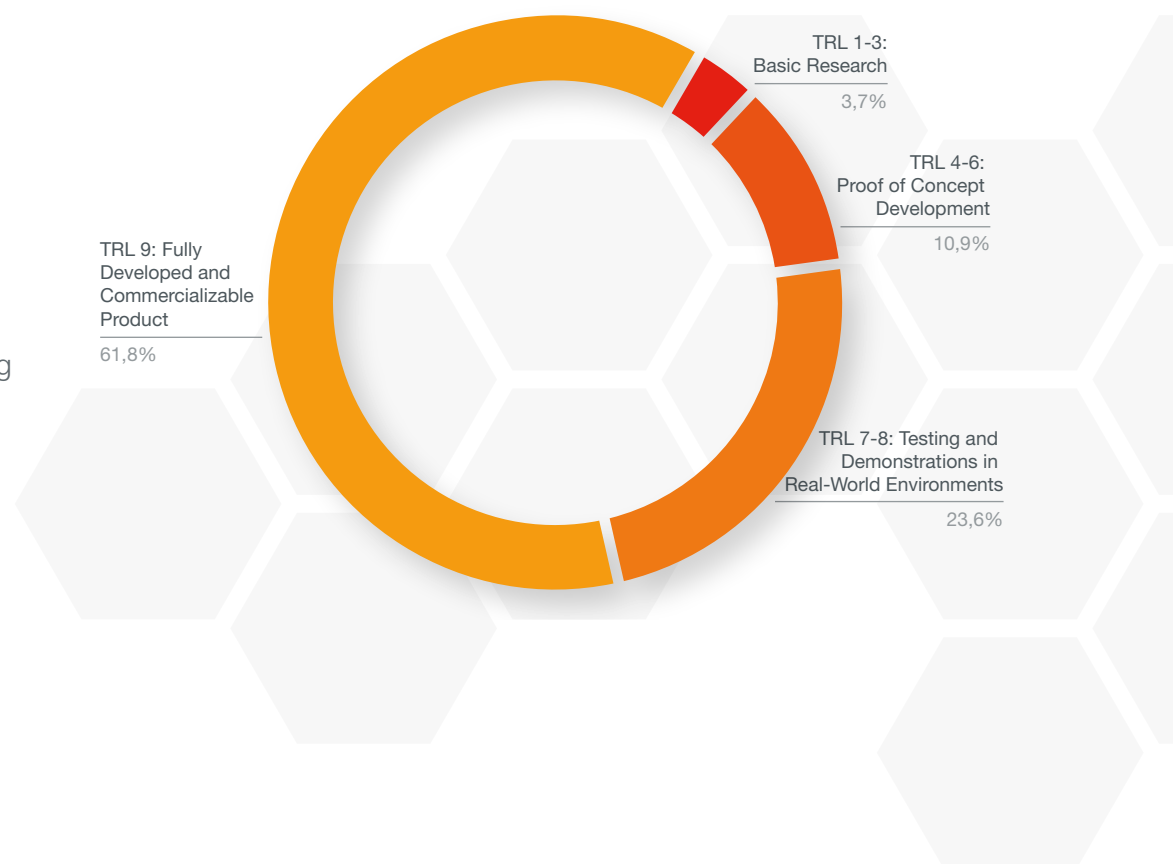


85 out of every 100 AgriFoodTech startups in Spain are actively marketing their products



- **TRL 9: Fully Developed and Marketable Products (61.8%).** Over 60% of startups have achieved a level of technological development that allows them to commercialize their products. These startups have successfully transitioned innovations from early stage concepts into viable, market ready products. As a result, their primary focus now lies in optimizing market presence, attracting customers, and securing investment to fuel further growth and expansion.
- **TRL 7-8: Testing and Demonstration in Real World Environments (23.6%).** A notable percentage of startups are currently in the real world validation phase. This stage represents companies with advanced technologies that still need refinement before reaching full commercialization. These startups face challenges in validating their solutions technically, ensuring user adoption, and securing sufficient funding to support further testing and scaling efforts.
- **TRL 4-6: Proof of Concept Development (10.9%).** Startups at this stage are transitioning from research to technical validation. These companies are exploring potential for disruptive innovations, but face higher technical and market risks. At this point, they require financial and technical support to advance to more commercially viable stages. The future of these companies holds significant promise, depending on their ability to move past these early hurdles.

- **TRL 1-3: Basic Research (3.7%).** A small percentage of startups (3.7%) are in the early stages of basic research. These companies are exploring unproven technologies, which indicates a more limited focus on early stage scientific exploration.



Intellectual Property

Trademark Registration is the most widely used form of intellectual property protection, appearing in 63.6% of companies.

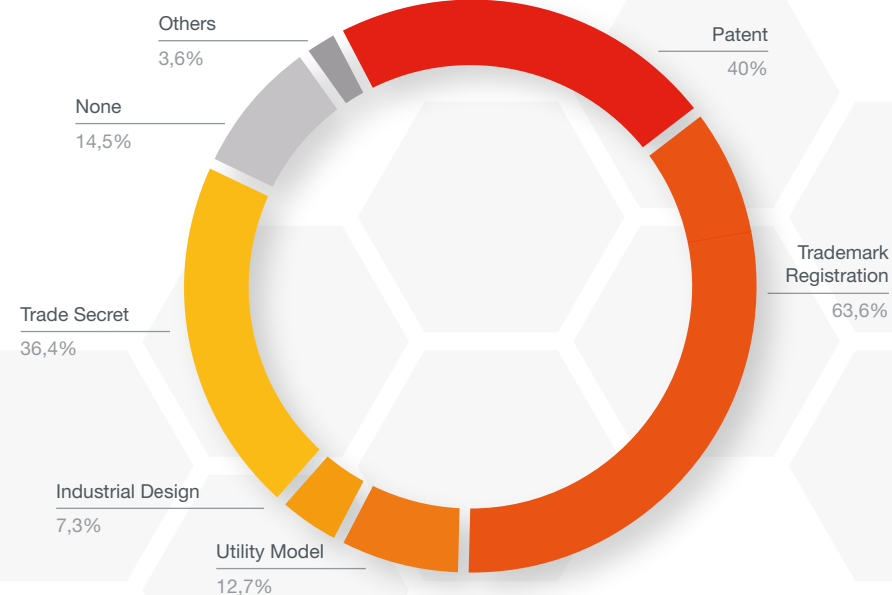
Patents are present in 40% of companies, indicating a significant investment in the creation of innovative technologies that are legally protected, particularly in sectors where competitive advantage is sought through unique inventions.

Trade Secrets are employed by 36.4% of companies and represent a common strategy, especially in projects that seek to protect technical knowledge, processes, formulas, or sensitive information without publicly disclosing details, as is the case with patents.

Utility Models appear in 12.7% of companies, highlighting the importance of protecting minor technical innovations or practical improvements on existing inventions.

Industrial Designs are found in 7.3% of companies, primarily used to protect the aesthetic or functional aspects of products that may be relevant in specific niches, such as packaging or technological devices.

No Intellectual Property applies to 14.5% of companies. This suggests that some startups may not utilize formal IP strategies, either because they do not deem it necessary, lack the resources, or prefer other forms of competitive advantage such as execution speed or continuous innovation.



07

Market



The Spanish **AgriFoodTech** sector is rapidly evolving, characterized by its innovative approach to meeting global food industry demands. The market is marked by a predominant focus on B2B models, strong international market presence, and a diverse array of products and services.

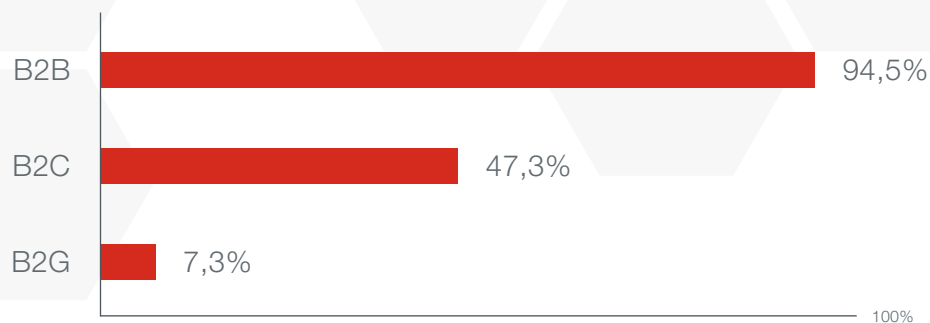


Clients

The business models of Spanish AgriFoodTech startups reveal a strong dominance of the **B2B model**, with **94.5% of companies** primarily targeting other businesses as their customers. This strategic focus centers on delivering specialized solutions to key stakeholders in the AgriFoodTech value chain, including producers, distributors, and processors. B2B startups emphasize technologies and services that optimize processes, enhance productivity, and reduce operational costs.

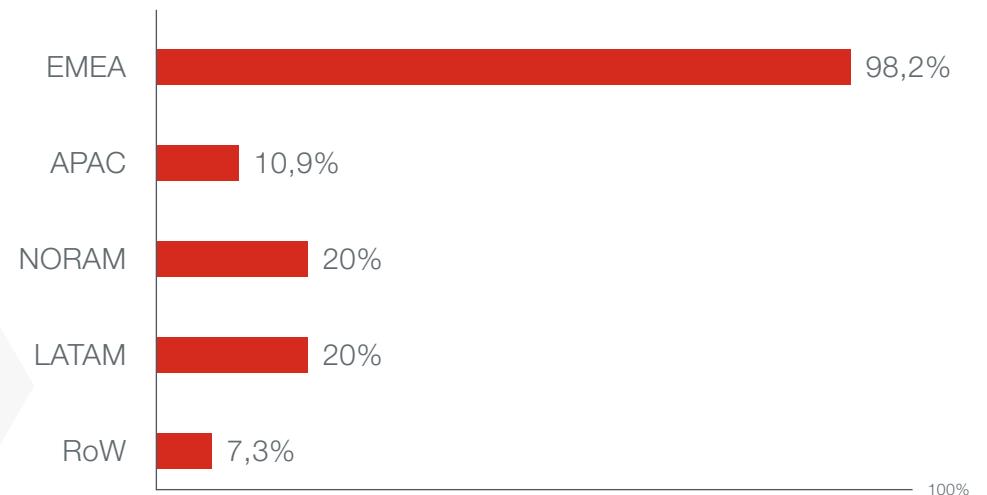
Additionally, **47.3% of startups engage directly with consumers through B2C strategies**, exploring consumer oriented products and services such as e-commerce platforms, innovative food products, and sustainable solutions.

In contrast, the **B2G model remains less prevalent**, with only 7.3% of startups collaborating with government entities. This limited engagement reflects the relatively small role of public sector projects, which often rely on government regulations, infrastructure, or policies.



Market Presence

Spanish AgriFoodTech startups have a strong international presence, with **98.2% operating in Spain and the broader EMEA region**. Additionally, **20% of these companies have a presence in both LATAM and NORAM**, while **10.9% target the APAC region**. **7.3% of companies are present in other countries**.



Products And Services

The AgriFoodTech sector in Spain showcases a diverse portfolio of products and services, reflecting continuous innovation and adaptation to global food trends.

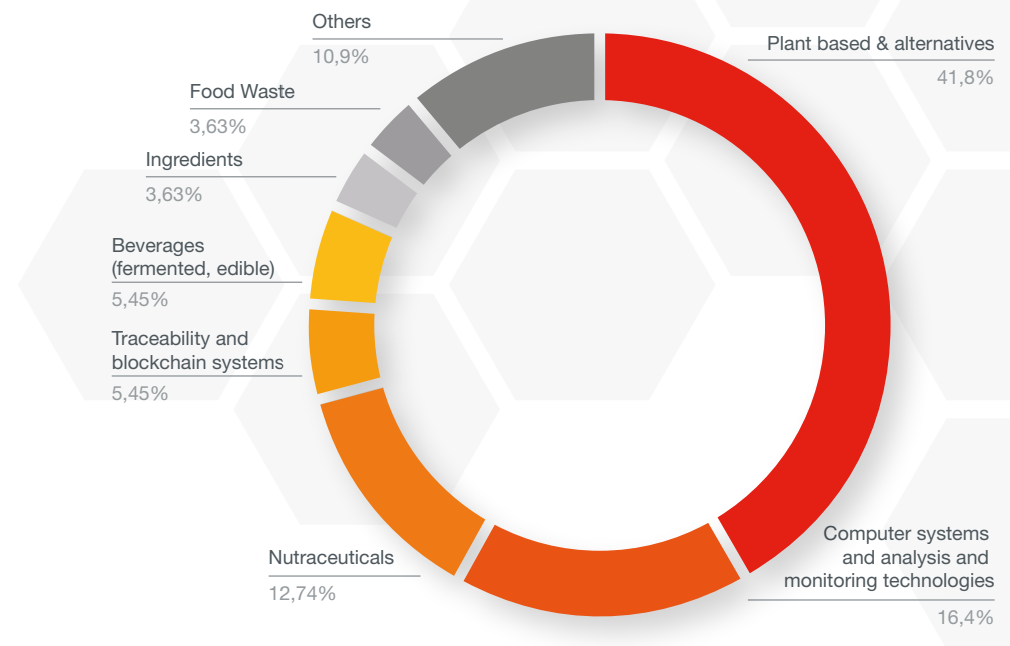
Plant based and Alternative Proteins and Substitutes for Meat, Fats, and Dairy (41.80%): This leading sector underscores a robust response to the demand for sustainable and ethical food alternatives that aligns with global efforts to promote environmental sustainability and healthier food options. The sector offers a wide variety of products, from snacks to complete meal replacements, catering to vegetarians, vegans, and flexitarians.

Computer Systems and Analysis and Monitoring Technologies (16.40%): This significant share points to the growing integration of technology in agriculture. Precision farming, real time crop monitoring, and data analytics are becoming indispensable tools for improving productivity and ensuring sustainability within the agricultural supply chain.

Nutraceuticals (12.74%): The rising development of nutraceuticals, foods providing health benefits beyond basic nutrition, mirrors increasing consumer interest in functional foods. This sector is influenced by Spain's expertise in the Mediterranean diet, emphasizing wellness and disease prevention.

Traceability and Blockchain Systems (5.45%): Although a smaller segment, the adoption of blockchain and traceability technologies are key for enhancing food safety and consumer trust.

Beverages (Fermented, Edible) (5.45%): Representing Spain's traditional expertise in fermented products like wine and beer, this niche is ripe for innovation. Health oriented beverages and novel flavor profiles are likely areas of growth to meet evolving consumer preferences.





08 Innovative Environment

Investors

Global Investors



European Investors



Spanish Investors



Corporate Venturing



Public Investors



Public Funding

Provided by both the Spanish government and the European Union, it plays a key role in driving innovation within Spain's AgriFoodTech sector. The focus lies on sustainability, digitalization, and modernizing agriculture and food production. This support materializes through strategic plans, European programs, and collaborative projects designed to transform the sector by aligning public and private objectives.

For instance, the Strategic Projects for Economic Recovery and Transformation (PERTEs) not only fund individual activities but also encourage collaborative consortia. These consortia bring together startups, SMEs, large companies, and research centers to tackle key challenges, ensuring that the solutions developed are both specialized and scalable.

• Strategic Alignment and Common Objectives

Precision Agriculture

Promoting technologies like IoT, drones, and automated irrigation systems to boost productivity and reduce resource usage. Companies such as Aotech integrate AI with drones and autonomous machinery, while Agrow Analytics leverages sensors, satellites, and algorithms for detailed crop analysis.

Sustainable Agriculture

Supporting practices like regenerative and organic farming to reduce carbon footprints. Algaloop, for example, produces microalgae to reduce dependence on chemical fertilizers.

Alternative Proteins

Advancing plant based proteins, insect farming, and cultured meat production. Heura Foods is globally recognized for its plant based meat products, Iberinsect specializes in insect farming for animal and human consumption, and Origen Farms produces cricket flour for human diets

Agricultural Biotechnology

Investing in solutions that enhance crop resilience and reduce chemical input reliance. Blueming Biotech develops biofertilizers and biopesticides, while Nulab creates bioinoculants and microbiological solutions to improve crop quality sustainably.

Vertical and Urban Farming

Supporting startups focused on local and efficient urban farming. Neboda Farms offers vertical farming solutions, and Instagreen specializes in hydroponic vertical cultivation systems.

Logistics and Distribution

Encouraging technologies like blockchain and AI to improve traceability and minimize food waste. TrySolved optimizes supply chain management, while Trazable provides traceability solutions for food supply chains

Restaurant Technology

Promoting digitalization and efficiency in food service through AI platforms, automation, and integrated payment solutions. Brobot5 develops robotics and AI systems for kitchen operations and inventory management, while Natural Machines innovates with 3D food printing for customization and efficiency

Food Production and Transformation

Supporting innovation in food production, waste reduction, and “food as medicine” concepts. MOA Foodtech transforms AgriFoodTech byproducts into sustainable proteins through biotechnology, Cocuus develops “mimetic foods” using bioprinting, and Zyrcular Foods leads in plant based protein alternatives.

• Funded Projects

The funded projects encompass various strategic initiatives and public & private collaborations aimed at fostering innovation and sustainability in the AgriFoodTech sector. Through EU programs like Horizon Europe, particularly Cluster 6, projects related to sustainable agriculture, food systems, and the bioeconomy are financed, such as FutureFoodS, which promotes innovation in these systems.

Strategic Projects (PERTEs) address specific sector challenges, such as the ecological transition in the meat industry with CARNITY, led by Grupo Argal, or enhancing the AgriFoodTech value chain with FG2H, led by Teresa Carles Flax & Kale Group. AGROSMED, led by Ametller Origen, focuses on decarbonization and circular processes, while AccelerEAT, driven by the Ainia Technological Institute, fosters sustainable food production. Spain Food Valley, led by CNTA, unites 17 companies to enhance competitiveness through digitalization and food safety. Similarly, ECOFOOD, led by AVS, involves 70 companies in R&D projects, and ALIMTECH, led by TSK, includes 15 companies working on technological solutions.

Associations



Accelerators



Foundations



Technology Centers



Universities



Events, Expo, Congress And Summit



Media



ICEX Support

In 2024, ICEX is committed to supporting agri-food companies through various initiatives, including the DESAFÍA program and related community activities. The events organized under this program include:

DESAFÍA UK Program

DESAFÍA Germany Program

DESAFÍA Pavilion at the Plant Based World Expo (PBWE)

DESAFÍA Stand and Future Market DESAFÍA at the Food 4 Future Bilbao Fair (F4F)

Future Market DESAFÍA at the Food Talks Summit Valencia (FTALKS)

In addition, ICEX reinforces sector support by hosting an official Spanish pavilion at major international fairs, such as the Natural Products Expo West in the USA and the Agri-Food Tech Expo Asia (AFTEA) in Singapore.

Furthermore, through its Invest in Spain initiative, ICEX assists international companies in establishing innovative businesses in Spain. This support is particularly focused on promoting foreign investment in the agritech segment and fostering business opportunities in agriculture and livestock through two key initiatives:

Rising Up in Spain: A soft landing program designed to accelerate the growth of international startups in the Spanish market by offering mentoring, legal advisory, and ecosystem connections.

Expo AgriTech: An event aimed at attracting investors and enhancing the competitiveness of the Spanish agricultural sector through innovation, technology, and sustainability.

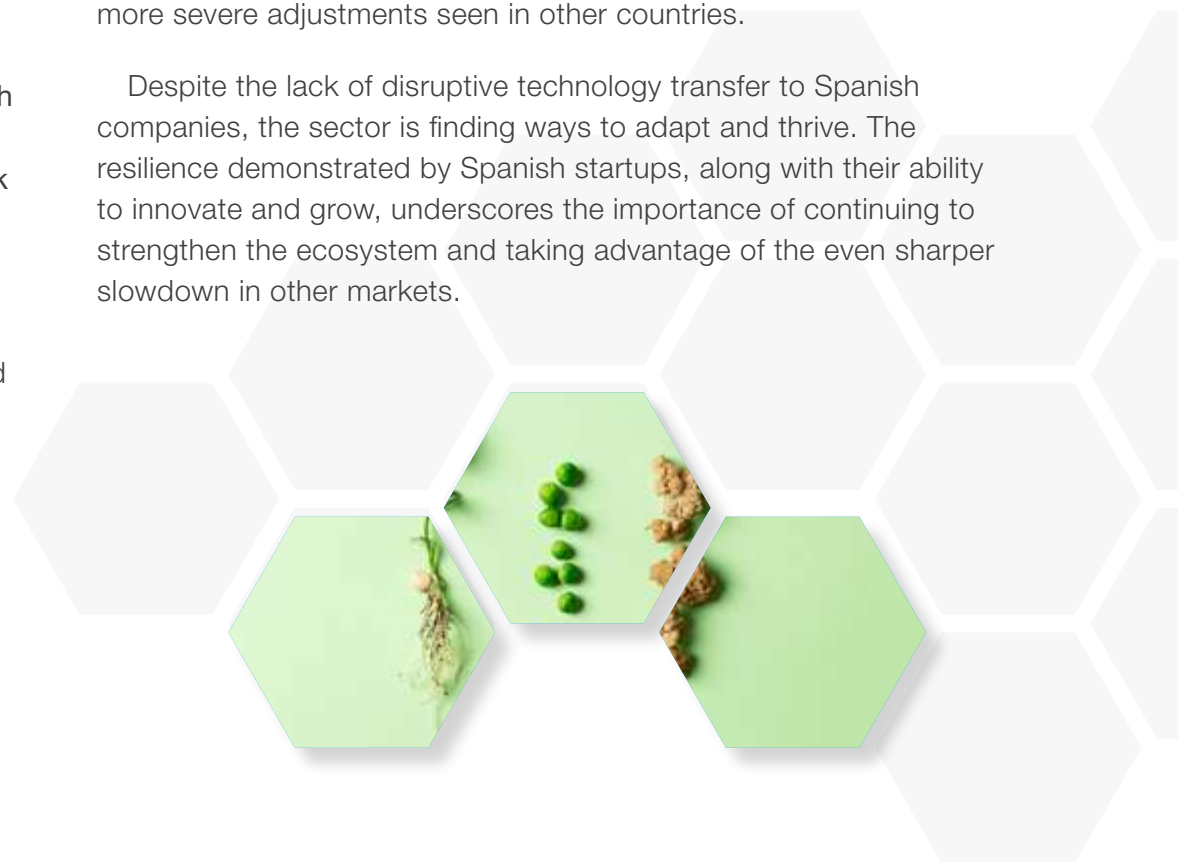
Comments From Startups

According to the AgriFoodTech companies surveyed for this report, the ecosystem in Spain faces significant challenges but also demonstrates clear signs of resilience and adaptability. While **53% of companies express concern over the decline in investment**, which could impact the sector's future growth, there are reasons for optimism. For instance, **18% of companies believe that the Spanish ecosystem is in better shape than other markets**, highlighting its relative strength amidst the global slowdown. Additionally, **17% think that Spanish startups are well positioned to continue growing**, pointing to an encouraging outlook.

The “bubble” of valuations based on emerging technologies has given way to a focus on startups with validated business models and high growth potential. This shift is driving a “natural selection” that favors the most efficient and resilient companies.

In terms of investment, **12% of startups perceive stabilization in the sector**. While investment figures are not as high as in previous years, Spain maintains a degree of stability that contrasts with the more severe adjustments seen in other countries.

Despite the lack of disruptive technology transfer to Spanish companies, the sector is finding ways to adapt and thrive. The resilience demonstrated by Spanish startups, along with their ability to innovate and grow, underscores the importance of continuing to strengthen the ecosystem and taking advantage of the even sharper slowdown in other markets.



Spain Compared To Other Countries

Spain in 2024 reflects a solid and competitive performance at the European level, although with significant challenges to stand out on the global stage.

Spain excels in technological maturity, with a high percentage of startups reaching advanced development stages (TRL 9) and a **strong commitment to internal innovation (78.2%)**, ensuring market ready products. Additionally, **new trends such as influencer born startups** demonstrate the ecosystem's ability to adapt to market evolution. However, the **decline in investment (€179 million)** highlights the need to strengthen funding to keep pace with global leaders such as the United States, Israel, and the Netherlands.

- In comparison with other countries:

Europe

Spain ranks behind countries like Germany or the Netherlands in terms of investment and global reach but benefits from a more cohesive ecosystem and higher technological maturity indexes.

Latin America

Spain significantly outperforms emerging markets like Colombia and Mexico in terms of technological innovation and ecosystem sophistication

Global leaders

The United States and Israel stand out for their levels of investment and diversification into subsectors such as alternative proteins, automation, and cultivated meat, setting the benchmark to follow

- Spain has clear opportunities for growth:

Strategic investment

Leverage its innovative capacity and reputation as a high quality producer to attract foreign capital.

Focus on sustainability

Continue aligning its startups with global trends such as the circular economy and food waste reduction.

International collaborations

Expand its network of partnerships with European and global innovation hubs to boost the competitiveness of its ecosystem.

Spain has a solid foundation and promising potential. Its ability to strengthen investment, consolidate technological advantages, and align with global trends will be key to competing with sector leaders and emerging as a benchmark in AgriFoodTech in the near future.



Global Recognition

- **Plant Based Excellence Awards 2024**

Held during the Plant Based World Expo Europe at ExCeL London, celebrated outstanding innovations in the plant based sector. Let it V Foods secured the prestigious Best Product of 2024 award for their Veikon Bacon, a smoky and crispy plant based alternative that impressed the judges and Levprot Best Innovative Ingredient 2024 with Brazzeina.

- **Agri Food Tech Expo Asia**

The inaugural Agri Food Tech World Championship, held during the Agri-Food Tech Expo Asia (AFTEA) from November 19 to 21, 2024, at the Sands Expo & Convention Centre in Singapore, showcased groundbreaking innovations in the agri food tech sector. **Levprot was awarded in the Best Technology Integration category, while Oscillum triumphed in the Best Packaging Solution category.**

- **K-Startup Grand Challenge**

Gimme Sabor, a Murcia based startup specializing in plant based protein products, has been selected to participate in South Korea's prestigious K-Startup Grand Challenge acceleration program. This program, supported by the South Korean government and located in Pangyo Techno Valley (often referred to as the Korean Silicon Valley), aims to foster international startups by facilitating collaboration with local companies and venture capital investors.

Gimme Sabor, which **secured 4th** place in this highly competitive program, is the sole Spanish company among the 1,716 applicants from 114 countries chosen for this opportunity. Their innovative range of products, including plant based seasonings and a novel 100% plant based canned tuna free from allergens, additives, mercury, and microplastics, has garnered significant interest in the Asian market. This achievement underscores the global potential of Spanish startups in the AgriFoodTech sector and highlights the importance of international collaboration in driving technological entrepreneurship.



09

Trends



Trends And Products Variation

Revitalization of Venture Capital

There is an expected increase in venture capital investment, particularly in the foodtech segment, driven by the relaxation of monetary policies.

Public & Private Collaboration

There is a push for closer collaboration between startups and corporations, along with increased public investment, following models like that of Israel to boost the sector

Increase in Investment Funds

New funds such as Swanlaab AgriFood Tech and The Foodtech Lab are launching, focusing on technologies and products impacting the entire AgriFoodTech value chain





Success Stories and Strategic Collaborations

Creating success stories is essential for the ecosystem's growth. Companies like Heura and Novameat are leading with significant investment rounds, while corporations like Pascual and Capsa Foods are initiating efforts to foster innovation in the sector.

Ingredients Take Center Stage

Globally, one in three consumers claims to always pay attention to ingredients, with protein being highlighted as the most important by 42% of consumers

Prevention Takes Priority.

Consumers are increasingly choosing products that meet personal wellness needs. Older consumers focus on heart, bone, and joint health, while younger consumers are more interested in skin health, cognitive function, and energy boosting products.

Commercial Formats

Conventional formats must evolve into family formats, as 50% of global consumers prefer family sized options when purchasing plant based products, according to Innova Market Insights.

Local Goes Global

The consumption of locally produced goods is becoming a global trend, with local products prioritized even when new or international flavors are produced locally, such as pak choi, now grown in Spain.

Health

Health is blending with indulgence, as small pleasures now come with added wellness benefits. Consumers are looking for healthy food without compromising on taste or enjoyment.

Opportunities from the Sea.

The oceans are becoming the farms of the future, inspiring the use of novel sustainable ingredients like seaweed and microalgae to develop new food products

H2.0

Research shows promising opportunities in hydration products, divided into two trends: one focused on functional health and another on simplicity, aimed at daily hydration.



- **Nutraceuticals**

The global market for these products is expected to grow by 17.4% by 2026, driven primarily by the rise in botanical derivatives and supplements aimed at enhancing mood, reducing stress, and promoting mental well being, energy, and skin health, with a particular focus on women. Demand in this market has increased at a compound annual growth rate (CAGR) of 16.4% for women, and 19.8% for pregnancy and lactation products over the past five years.

2024 Data from: Amazon Fresh, Kantar Worldpanel, CNTA, Glanbia, Delectatech and Alimarket



Interviews



Pedro de Álava

Venture Capital Fund Manager



Key Trends Driving the Sector:

- **Health and Wellness:** Consumers increasingly seek food that supports physical and mental well being, preferring products with lower fat, sugar, and salt to help manage stress and prevent diseases.
- **Superfoods:** Demand is growing for climate resilient, nutrient rich food like algae and insects.
- **Product Reformulation:** There's a push for "cleaner" products with transparent labels and healthier, sustainable options.
- **Sustainable Production:** Emphasis on optimizing logistics and technologies to ensure food safety and sustainability.

Transition from Scalability to Profitability: The sector has shifted focus from rapid growth to sustainable, profitable models.

Industry Experience as a Key Factor: Pedro de Álava stresses the importance of AgriFoodTech entrepreneurs having industry experience, especially in market dynamics and production processes.

Investment Opportunities: Despite the slowdown, there are opportunities for companies offering differentiated, profitable products. B2B remains a key area, and Spanish SMEs are significant, though many may be acquired by multinationals.

- **B2B:** Focus on companies with innovative solutions like polyphenol separation or whey valorization.
- **B2C:** Interest in differentiated consumer products that offer added value.

Success Example:

- Deep Detection, a Clave Capital portfolio company, developed an artificial vision system for detecting food defects, ensuring safety and collaborating with multinationals.

The Future of FoodTech in Spain:

- Pedro de Álava is optimistic, highlighting growth driven by innovation, sustainability, and consumer demand. Investment is expected to surge in the next two years.

Personalization as a Future Driver:

- Customizing food to individual needs will be crucial for future success.

Emerging Sectors:

- The pet food sector is poised for growth due to the rising trend of pet humanization.

Three Key Factors Guiding Investments:

- Trends: Identifying global and local trends, like the differing growth of the “Plan B” market between Spain and France.
- Profitability: The focus has shifted from scaling to ensuring long term profitability, as seen with Eura’s pivot in strategy.
- Team Experience: Preference for teams with industry experience, aiding in navigating market challenges.

Sector Challenges:

- Competition: Increasingly crowded market.
- Funding: Decelerated investment making financing a greater challenge.
- Scalability: Difficulty in achieving long term profitability.
- Integration: Collaboration with traditional industries remains challenging.

François Chartier

President Chartier World LAB



Spain's Openness to Technology:

- Spain is more receptive to integrating technology into gastronomy compared to countries like France. Pioneers like the Roca brothers and Mugaritz have led this trend by adopting innovative technologies early on.

AI's Impact on FoodTech:

- AI is transforming the food industry across agriculture, production, distribution, and dining. It enhances resource management, climate predictions, and sustainability.

Investment in AI:

- Spanish companies are investing in AI, but François calls for more government support and stronger collaboration between universities and businesses to drive innovation.

Future of FoodTech:

- AI is essential for the future of the food sector. Companies need AI expertise to boost efficiency and profitability, and professionals must adopt a multidisciplinary and innovative approach.

Synergies Between Universities, Research Centers, and Businesses:

- The president of Chartier World LAB, stresses the importance of robust partnerships to accelerate technological development in FoodTech.

Spanish Openness to Innovation:

- Despite global challenges, Spanish companies are proactive in embracing innovation, which positions Spain as a leader in FoodTech.

Historical Influence of El Bulli:

- El Bulli's innovations in the 90s, in collaboration with companies like Nestlé, paved the way for technology's integration into gastronomy.

Influential Spanish Chefs:

- Chefs such as Ferran Adrià and the Roca brothers have normalized the use of technology in gastronomy, demonstrating its value in creativity and production.

Trends, Challenges, and Opportunities in the Food Industry**Trends:**

- **AI as a Driving Force:** AI is shaping the food industry, affecting everything from agriculture to customer experiences.
- **Technology Adoption in Spain:** Spanish companies' openness to technology gives them a competitive edge.
- **Authenticity and Experiences:** Consumers now prioritize authenticity, artisanal products, ethics, and sustainability.

Challenges:

- **Support and Investment:** SMEs need more funding and government backing to integrate AI.
- **Resistance to Change:** Overcoming resistance and training teams to use AI effectively is crucial.
- **Multidisciplinary Collaboration:** Strong collaboration across sectors is essential for innovation.

Opportunities:

- **Precision Agriculture:** AI optimizes resources, crop planning, and sustainability in agriculture.
- **Innovative Products:** AI aids in developing new products, improving processes, flavors, and nutrition.
- **Efficiency and Sustainability:** AI enhances supply chain efficiency, reduces waste, and boosts sustainability.

Anne Marie Butler

*Global Director of Innovation
and Commercial Development, EDLONG*



Startups Drive Innovation: Startups are crucial for introducing new ideas and technologies, especially in addressing challenges like sustainability. They focus on innovation, while large companies, particularly CPGs handle large scale production and marketing.

Collaboration Between Startups and CPGs: Collaboration is growing between startups and CPGs. Startups bring innovation, and CPGs facilitate market entry. These companies are creating innovation research divisions to identify new technologies, emphasizing the need for shared vision and investment in scalability to reach consumers.

Key Trends for the Future:


- Personalization: Growth in personalized nutrition is expected.
- 3D Printing: 3D printing may become common for personalized food at home.
- Optimized Supply Chains: AI and blockchain will drive supply chain efficiency.
- Reduction of Food Waste: Innovations like smart labels and B2B platforms will help reduce waste.

The Spanish Case: Spain excels in cellular agriculture and innovative companies like OSCILLUM and Breadfree, addressing food waste and dietary needs, respectively.

Additional Considerations: Sensory validation and long term impact analysis of new technologies ensures that products meet consumer expectations and health standards.

Key Differences Between Innovation in CPG Companies and Startups

- Startups: Agile, disruptive, focus on new technologies and quick adaptation.
- CPGs: Focus on optimizing existing processes and brand expansion, with larger resources but less agility.



Startups excel in flexibility and creativity, often relying on external funding. CPGs benefit from extensive infrastructure but may struggle with slower adaptation to trends. Both play important roles in the food innovation ecosystem, with startups driving disruption and CPGs enabling scalability.

Challenges and Opportunities in Collaborations Between Startups and CPGs

Opportunities:

- **Innovation and Speed:** Startups innovate rapidly without the constraints of large companies.
- **Market Access:** CPGs offer infrastructure and distribution networks.
- **Synergy:** Both parties can learn from each other, blending innovation with experience.
- **Funding:** Startups gain financial support through partnerships or investments.

Challenges:

- **Cultural Differences:** Startups' flexibility contrasts with CPGs' bureaucracy.
- **Integration:** Adapting startup solutions to CPG processes can be difficult.
- **Intellectual Property:** Clear agreements on IP are necessary.
- **Patience:** Large companies must allow time for startups to develop their ideas.

Successful Collaborations:

- **Cultivated meat and personalized nutrition** 3D printing are advancing through startup/CPG partnerships, demonstrating the benefits of combining innovation with market reach.

Beatriz Romanos

Founder of TechFood Magazine



Beatriz Romanos, a FoodTech expert with extensive experience, outlines the sector's global evolution and Spain's prospects for 2024.

Global FoodTech Evolution:

- **Stage 1 (2014-2018):** Dominated by delivery services and grocery.
- **Stage 2 (2018-2021):** Rise of alternative proteins like Impossible Food and Heura Foods in Spain.
- **Stage 3 (2021):** Fermentation becomes key for protein production.
- **Stage 4 (Present Day):** Focus shifts to upstream, functional ingredients, upcycling, bioeconomy, and food safety due to reduced investment.

Spain's Challenges and Opportunities:

One of Spain's primary challenges is the difficulty in scaling from early stages to large scale production. Additionally, there is a need for greater collaboration among startups, institutions, the government, and academia to drive sector growth.

However, **Spain boasts significant competitive advantages**, including strong research and development talent, a large domestic market ideal for testing, and an innovative food industry, with prominent companies like Estrella Galicia and Campofrío leading the way.

Future Trends:

The development of functional ingredients, providing alternatives to sugar, fats, and preservatives, is expected to grow. Hybridization, which merges technologies such as plant based products and 3D printing, as seen with companies like Cocuus, is gaining momentum. Artificial intelligence applications are transforming food formulation, trend analysis, and supply chain management. Additionally, upcycling and the bioeconomy, focusing on the use of by products and waste, are becoming increasingly important.

Recommendations:

It is essential to support startups in scaling through dedicated programs. Promoting an ecosystem that fosters collaboration among various stakeholders can further enhance growth. From the outset, encouraging a global outlook is vital for successful internationalization. Attracting investment will require demonstrating profitability and solid key performance indicators.

Outlook for 2025:

The sector is expected to consolidate, with stronger public private collaboration and startups becoming more market ready.

Advantages of Spanish FoodTech Startups for International Success

Spanish FoodTech startups benefit from a strong foundation in research and development, supported by a thriving academic and technological ecosystem that fosters innovation. The domestic market offers ample opportunities to test and refine early stage products, while the country's established food industry provides a fertile ground for collaboration and validation. Partnerships with major companies further enable these startups to scale effectively.

However, challenges remain, such as the need to better translate research into commercially viable products and to foster a mindset geared toward international expansion. Additionally, achieving more successful exits could enhance investor confidence and fuel further growth.

José Luis Malo

*Strategic Accounts & Initiatives Manager
at TECNALIA Research & Innovation*



Key Points:

- **Agro Food Sector's Importance:** A significant driver of Spain's economy, the agro food sector, particularly food processing, leads European innovation.
- **Innovation Trends:** Sustainability and digitalization are driving forces. Companies focus on reducing carbon and water footprints with technologies like AI. Tools such as digital passports and data spaces enhance traceability and transparency.
- **Startups and Investment Funds:** Startups, supported by investment funds and corporate programs, play a critical role in fostering innovation in FoodTech.
- **Market Opportunities:** Emerging areas include agri food decarbonization, digital passport data collection, precision agriculture, vertical farming, and alternative proteins. While sustainable and healthy products grow in demand, private label brands are gaining due to economic pressures.

Recommendations for FoodTech Companies:

Engage in corporate challenges, monitor investment and patent trends, and identify market opportunities.

Ekonoke and **Insektlabel** stand out for their innovations in vertical farming and insect based proteins, respectively. Key areas of innovation in the sector include sustainability efforts to reduce environmental impact, improve resource efficiency, and develop healthier food products with alternative proteins. Digitalization with AI optimizing processes are cutting costs, and supporting technologies like digital passports and data platforms, alongside advancements in agricultural automation.

Digital passport

The digital passport is a current topic in the agri food sector, aimed at ensuring product traceability through blockchain technology, allowing detailed tracking from origin to destination. It involves data collection throughout the production chain, with auxiliary companies expected to play a significant role, as this process is unlikely to be handled by individual companies alone. Although still in its early stages, the digital passport is being gradually implemented by law and is expected to become mandatory. Tecnia is well positioned to offer solutions in this area. Other notable innovations include sustainable packaging, cultivated meat, and 3D food printing.

Motivations Behind Tecnia's Strategic Shift

Tecnia's strategic shift toward the agri food sector is driven by its economic significance, leading to internal restructuring for cohesive solutions and a focus on **high growth areas like transformation and packaging.**

- **Sector Potential:** The agri food industry's economic significance prompted Tecnia to focus on this sector for growth.
- **Internal Alignment:** Restructuring teams across the value chain ensures cohesive solutions for the agri food industry.
- **Market Focus:** Tecnia targets high growth areas like transformation and packaging within the agri food sector.
- **Private Project Demand:** Growing interest in non subsidized projects

Enrique Rodríguez

Commercial Representative, Vichy Catalan



Enrique's expertise in the food and beverage sector, provides examples of spanish companies that are making significant strides in the Foodtech sector

The EATEX Program, highlighted by CNTA, offers zero cost development for feasible projects and prepares financial proposals for successful MVPs. Precision fermentation is seen as a transformative technology for producing proteins and ingredients from non animal sources like air or industrial gases. Innovations in food safety include smart packaging that detects safety levels and non thermal pasteurization methods. Clear communication is important to justify the added costs of technological advancements, helping consumers understand their value. Companies like Estrella Galicia are investing in new technologies, with universities fostering spin offs, reflecting optimism in the FoodTech sector.

Examples of Innovative Spanish Companies in FoodTech:

- **NuCaps:** Specializes in probiotic encapsulation with applications in the water sector.
- **Estrella Galicia:** Known for innovative initiatives like Custom Drinks and AI-driven flavor trend predictions.
- **CNTA:** Runs the EATEX program supporting FoodTech projects.

Strategies for FoodTech Startups:

Team Professionalization:

- Focus on management and complement technical skills with business training.

Internationalization:

- Adopt a global mindset and build international connections early.

Consumer Communication:

- Clearly convey the benefits and justify the price of innovations.

Leverage University Support:

- Use spin offs, acceleration programs, and resources from research centers.

Adaptation to Trends:

- Stay flexible, embrace emerging technologies like AI, and identify niche opportunities.





10 Methodology

Where is the data from?

This report has been enriched through an internal study and direct engagement with AgriFoodTech startups. All data were provided by the companies via a survey conducted in 2024, which concluded in December.

What is an AgriFoodTech startup?

The startups are companies designed to grow fast. Generally, such companies are VC investable businesses. AgriFoodTech identified for this report are companies established within the last 10 years in the agri food sector and with a technological foundation.

Who are the experts?

For the interviews, we reached out to internationally relevant profiles in the food sector with recognized experience and expertise, they are the ones able to reflect the creativity and diversity of the Spanish AgriFoodTech sector.



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