



MAPPING THE AGRITECH ECOSYSTEM IN SPAIN 2024



MINISTERIO
DE ECONOMÍA, COMERCIO
Y EMPRESA

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Presentation

The agricultural industry in Spain is highly strategic. This is firstly because the development of this industry in Spain makes it a key player in guaranteeing food security and the EU's strategic autonomy and, secondly, it does also have a significant impact on the Spanish economy. The agricultural industry in Spain has a higher relative weight than the European Union average, with a contribution in terms of value added to the Union as a whole of approximately 12%. Moreover, due to its high productivity and high level of competitiveness, the Spanish agri-food industry has the most positive trade balance of all Spanish industries.

Spain is the second European country in terms of agricultural surface area used and surface area dedicated to organic farming, as well as being the leader in the production of various agricultural products, such as citrus fruits, olive oil and nuts and dried fruit, as well as livestock products like pigs.

Despite these favourable data, in the current economic and geostrategic context characterised by instability the industry also faces complicated challenges, including those linked to climate change, those derived from international geopolitical conflicts, regulatory issues and other challenges of a social nature, which are in the case of Spain closely linked to the low level of generational replacement that is foreseen in the medium-term on farms. **Innovation and technology are essential allies for facing these challenges and maintaining the high level of competitiveness achieved by the Spanish agricultural system.**

In its work to promote and encourage foreign direct investment in Spain, one of ICEX-Invest in Spain's main challenges is to identify those segments in key industries for the Spanish economy that represent a business opportunity for foreign companies and that also generate a positive impact on local industry. In this respect, **Spain is undoubtedly an ideal location for developments in the agritech field.**

Through this first mapping of the ecosystem of technologies and innovations in the Spanish agricultural industry, we have sought to map the existing innovation ecosystem, highlighting its strengths, anticipating possible new needs and how to attract new innovative projects as a lever for the necessary transformation of Spanish agriculture and livestock farming towards a more resilient, sustainable, digitised and technologically advanced future model.

At a time of continuous and profound change in the industry, we are fully aware that it is very complicated to cover the whole spectrum in the first mapping, but we trust that this report is a good starting point to provide an initial diagnosis and to continue monitoring the industry in order to anticipate its needs and help create connections, both nationally and internationally, in a particularly fragmented and poorly structured segment.

Finally, we would like to thank the Cajamar Innova Foundation for their excellent and fruitful collaboration, and whose knowledge of the industry and daily contact with it have made it possible to carry out this mapping.

1

CONTEXT OF THE AGRITECH SECTOR IN SPAIN



1 | CONTEXT OF THE AGRITECH SECTOR IN SPAIN

Preliminary note: The difficulty of mapping an emerging sector in full expansion.

This report undertakes the challenge of quantitatively and qualitatively describing a sector that lacks a strict definition and is rapidly expanding. Cajamar's knowledge of this sector and the direct contact we have with many of its agents has allowed us to accept the challenge of describing this ecosystem and providing the most comprehensive description that has been possible to date through data and qualitative information. It is not a simple task therefore and will undoubtedly be improved, since, among other things, it will be impossible to avoid omissions. However, we consider that the result provides a quality assurance with respect to knowledge of this ecosystem. Although not all the agents that make it up will be mentioned, those that are present make up the bulk of the activity of this sector.

1.1 | Strengths of the Spanish agrifood sector

Cajamar publishes an annual [Observatory on the Spanish Agrifood System in Europe](#), from which the **main conclusions** are as follows:

- The strategic nature of the agri-food sector, which makes a contribution to the Spanish economy in terms of added value and employment that is much higher than in the EU as a whole.
- This greater importance of the agrifood chain is based on two relevant facts: greater productivity and competitiveness and export.
- In comparison with the EU, Spain stands out for the weight of its primary production, rather than its processing industry.
- Among the less positive aspects is the low level of investment, especially in RDI.



Agri-food sector on a continuous growth path.



Agri-food activity weight: 8.94%.
114.14 billion euros.



Spain is the **fourth country** in terms of contributing the most GVA to the EU after France, Germany and Italy.



The Sector's value chain employed more than **2.3 million people** in the people in 2023.



A highly **dynamic international business sector** with a clear international projection.



Weight of external activity: surplus of more than 20 billion euros.



Total factor productivity in Spanish agriculture has been **growing by 0.9% annually** in the period 2012/2022, much higher than in our economic environment.



Agricultural income in Spain reached 33.8 billion euros in 2023, making it the sixth highest in the EU.



Spain has become the leading producer of pigs (23.8% market share); fresh fruit (19.7%); olive oil (41.7%); citrus fruits (53.6%); and sheep and goats (26.4%).



Irrigated land accounts for 60% of the volume of production and 70% in terms of value.

The last major feature of Spanish agriculture is the use of labour, in a context of increasing difficulties in meeting its needs. Spanish agriculture, in comparison with European agriculture, is characterized by the high presence of paid labor. Thus, according to Eurostat data for the period 21-23, paid labour accounted for 51% of the total labour force in agriculture in Spain, compared to 30% in the EU.

The challenge of generational replacement at the executive level in Spanish farms is also somewhat more pronounced in Spain, where 86% of farm owners are more than 45 years old, while in the EU this percentage is 80%.

1.2 | Challenges of the agrifood sector

Agriculture and livestock farming face various challenges in the current context. These challenges can be classified for descriptive purposes as climatic, social and economic, although they are all interrelated.

Climate challenges stem from global warming and its effects on temperatures and water availability on farms. Spanish producers must cope with increasing temperatures, lower and more concentrated rainfall, and longer periods of drought. This affects evapotranspiration, chilling hour patterns, water availability in the soil or for livestock, whether from rainfall, irrigation or wells, as well as animal comfort. All this necessarily implies a strategy of adaptation to climate change and permanent monitoring of environmental and productive conditions in farm and livestock areas.

There are several social challenges. On the one hand, they are related to the change in society's environmental and ethical perceptions, which condition consumer demand for food, the demands of distribution and environmental policies. On the other hand, the new generations in society consider agricultural activity unattractive, making it difficult for the next generation to take over.

GREATEST CHALLENGES OF THE SECTOR



Move regulations.



Competitive products, but with a price elasticity that is difficult to manage.



Incorporation of young people and women slowing down in recent years.



Need to continue incorporating technology and professionalization in order to continue positioning our leadership.










In the last two decades, and particularly in recent years, a revolution has been taking place in all these technological areas. This is based on the capture of data in different areas of the production process and its environment. Analysis of these data has provided producers with information for more accurate and efficient decision making. In addition, with sensors capturing data automatically, we are witnessing the arrival on the market of decision support and even prescription tools. All these **new digital technologies, together with automation and robotization processes, will be the based for overcoming the aforementioned challenges.**

1.3 | Agritech technologies and areas of specialization

There is a growing demand for sustainable solutions in agriculture. In this scenario, new agritech companies are becoming key players in the development of technological innovations that improve agriculture efficiency, productivity and sustainability.

We have grouped them into the following major areas with their corresponding fields of specialization:

Agritech Technologies

Work areas	Fields of specialization
 Biotechnology	Biological solutions for agricultural and livestock use (biostimulants, biopesticides, microorganisms, natural enemies), Genetics; Genomics.
 Robotics, Mechanization and Agricultural Equipment	Agricultural machinery; Automation; Robotics; Drones: Automated and assisted steering systems; Mobile agricultural robot swarms (MARS); Unmanned aerial vehicles (UAVs); Unmanned ground vehicles (UGVs).
 Precision agriculture and livestock farming	Agricultural data capture devices (IoT); Sensors; Satellite technologies; GIS and GPS; VRT technologies; Big data; Decision support software.
 Integrated farm and livestock management platforms	Business management software (ERP), field notebooks; market information; online procurement of inputs, machinery or technology (Marketplace); machinery leasing; services to rural communities.
 New production systems	Vertical farming; Aquaculture; Insect production; Algae production; Agrivoltaics; Pharmaceutical production.
 Regenerative Agriculture	Development of sustainable agricultural and livestock technologies to regenerate, stimulate and maintain soil fertility and biodiversity.
 Technologies for CO₂ emissions reduction	Implementation of carbon capture, utilization and storage solutions that reduce greenhouse gas emissions. Reduction of methane emissions.
 Circular Economy, Bioenergy and Biomaterials	Extraction and processing of by-products; Technology for the valorization of raw materials; Alternative energy sources; Biofuels; Bioplastics, Biodegradable materials.
 Logistics, Traceability and Food Safety	Food Safety; Traceability; Logistics, storage and transport services; Technologies in food processing and distribution; Smart packaging; Smart labels; Blockchain applied to smart contracts and digital certification.

2

The Spanish agritech ecosystem

2 | THE SPANISH AGRITECH ECOSYSTEM

2.1 | Introduction

The Spanish agri-food sector is undergoing an unprecedented digital revolution in its entire value chain, both in processes and in the way we see the sector itself. We should also add continuous growth (at least some observed trend changes on some countries) and aging of the population, food and consumption changes, climate change, water scarcity and soil deterioration. All this means that more and more people are committed to finding solutions based on new technologies and making Agritech highly important.

A necessary question when analyzing the Spanish agritech ecosystem is what changes faster, the company/sector or its environment? Almost all of us agree that the majority answer is the environment, and we should also agree that we can anticipate change by making use of levers such as innovation.

Our agritech ecosystem is currently subject to two simultaneous and conflicting poles: the need to protect the core business (the first and essential obligation of any organization) and the need to expand its scope to new future business opportunities. In other words, they are required to maintain the day-to-day business and income in the short term and at the same time ensure the medium and long-term future through innovation.

Therefore, our agritech ecosystem needs to be based on four pillars to consolidate its success: **strategy, structure, teams and ecosystems** in order to innovate systematically and efficiently.

Strategy

Every company, cooperative, and/or farmer must initially, in the first instance, its core business, its base business. This is the first mission of any organization.

- What new business opportunities can we explore in our ecosystem?
- Where will the agritech ecosystem be in five/ten years?
- What budget will we allocate to new business exploration activity within our ecosystem?

All these questions belong to the strategic area. We are talking about emerging strategies directed by opportunities and where our agri-food sector, according to the known realities, is showing clear signs of adaptation and potential.

Structure

Every company, cooperative and/or farmer must have a systematic, structural methodology for evaluating these opportunities, analyzing the related market, quantifying the risk and dosing it. In other words, an innovation funnel where projects go through different phases.

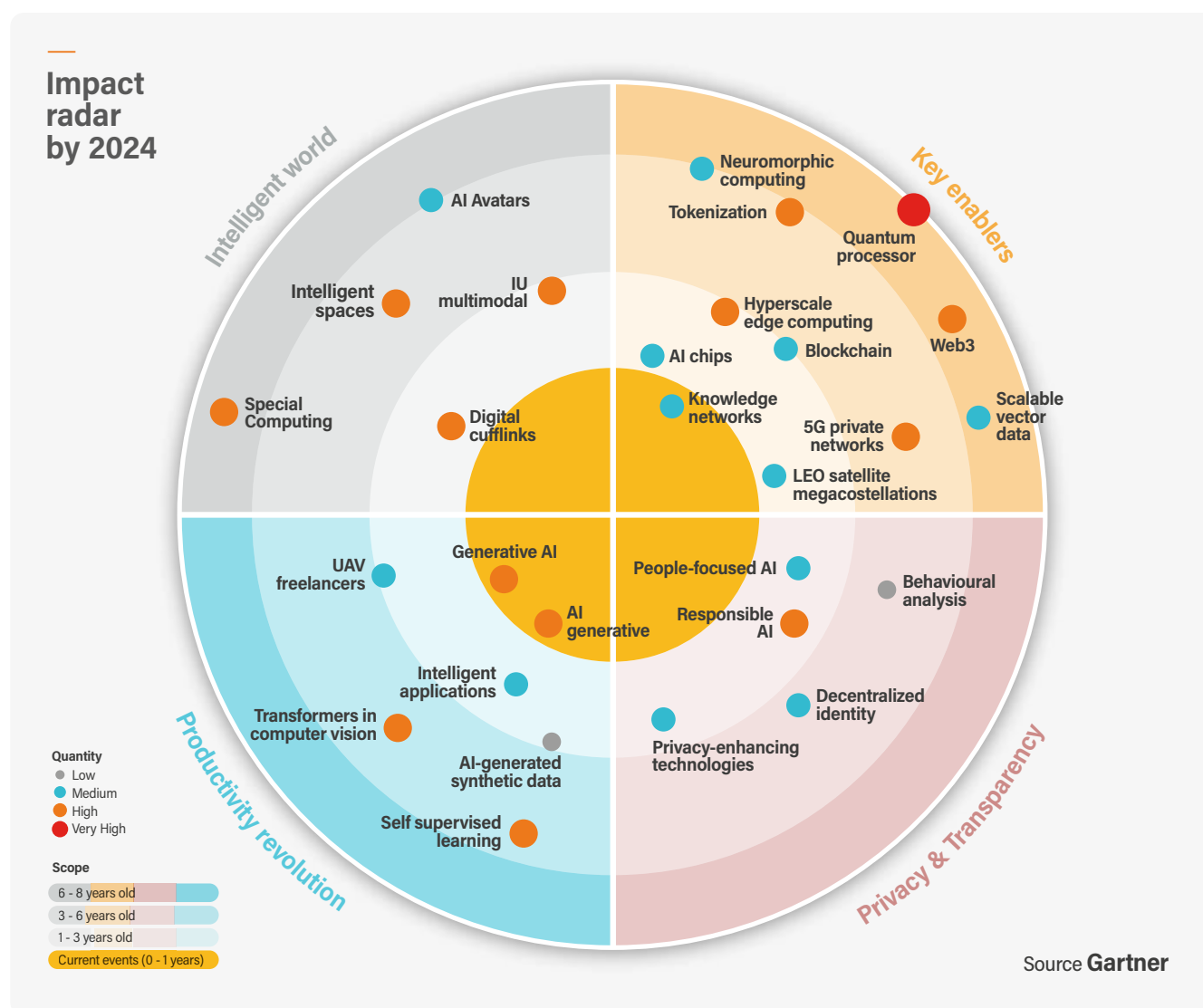
The initial phases of any project should be related to uncertainty reduction. Any ecosystem must have managers, protocols, organizational discipline, support systems, indicators and objectives.

Equipment

The teams, talent and/or human capital involved in these types of technology-based companies/projects are responsible for turning an idea into a real business opportunity through the implementation of startups. They are technical teams, formed by talented professionals with a measured risk orientation.

Ecosystem

Any ecosystem is a process that requires open innovation. It is a mistake to think that great ideas or great knowledge, the driving force of our industry competitiveness, will come from within the organization. We need more connected and receptive organizations, as well as continuing to consolidate an agritech ecosystem (startups, universities, technology centres, corporations, consultants, experts, etc.) that systematically provides us with information on new technologies, new trends or market opportunities that can be the basis of future competitiveness.



As we have seen, the existence of a favourable institutional framework, public-private collaboration and efficient public policies allow sectors and their innovative ecosystems to compete in a changing environment and reality. We believe that the Spanish agri-food sector and its agritech ecosystem are ready for this challenge.

AI, digital twins, blockchain, big data, quantum computing, sensor systems and an endless number of new technologies are changing the agri-food ecosystem and its main actors are startups. In this regard, in the latest report published by Agfunder (one of the most influential private equity investment firms in global agri-food ecosystems) regarding the ranking of the top 20 countries worldwide, Spain occupies 12th position in investment directed to companies in the agritech sector .

On the other hand, Europe has developed the Digital Innovation Hubs (DIH), organizations with a high level of knowledge in digital technologies that help companies to increase their productivity through digitization. Here we find Spain at the top of the ranking in Europe with 82 DIHs and they are undoubtedly an important tool for public-private collaboration to position the adoption of technologies that will set the trend in the coming years, and that will end up defining the ecosystem as a whole.

Although there is some disparity of criteria according to the sources analyzed, Spain already has more than 800 agritech companies, including startups, scaleups and SMEs, which shows the maturity and consolidation of the ecosystem throughout the value chain, from farmer to retailer. In recent years there has been a striking growth in the number of agritech startups in Spain, and that reality should be a trigger to continue working in the line set out, the emergence of startups the importance being critically important for the transformation of the sector, and where access to capital available to entrepreneurs is allowing the implementation of procedures, technologies or resources that were not previously available.

The balance is positive in terms of the evolution of the Spanish agritech sector to date with Spain having the ideal conditions to become a benchmark in the agritech field. The land, the climate, the training and the agricultural tradition are all there, just awaiting institutional and financial support to boost innovation and entrepreneurship in the sector.

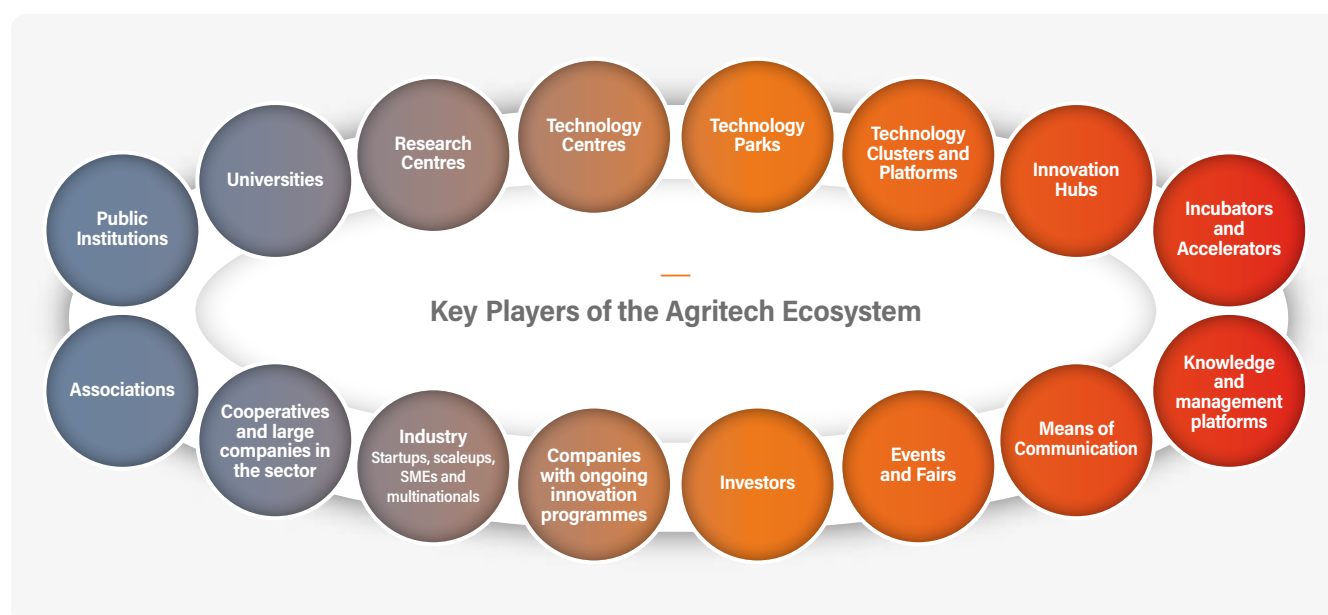
In short, our agritech sector has a considerable volume of incipient startups of major international weight, and Spain can be considered a power in the agritech ecosystem.

2.2 | Key Players in the Agritech Ecosystem

Spain has become the leading European agritech ecosystem

The Spanish agritech ecosystem has a large number of agents that play key roles in driving the development of innovations. These include companies, knowledge-generating agents, public institutions, business support organizations and investors.

The following infographic shows the main players in the Spanish agritech ecosystem:




2.2.1 | Government

Public bodies: promoting innovation ecosystems

Public authorities exercise a leadership role with respect to innovation, acting as a facilitator and promoter of innovation. Their responsibilities include establishing policies that encourage innovation, creating appropriate regulations, supporting research and development infrastructure, as well as providing funding and resources. The main national public authorities include:

Public Authorities

 Ministry for Ecological Transition and Demographic Challenge www.miteco.gob.es	 Ministry of Agriculture, Food and Fisheries www.mapa.gob.es
 Public Innovation Company www.enisa.es	 Ministry of Science, Innovation and Universities www.ciencia.gob.es
 Official Credit Institute www.ico.es	 Centre for Technological Development and Innovation www.cdti.es
 ICEX, Spain Trade and Investment www.icex.es	 Ministry for the Digital Transformation and Civil Service, Red.es www.red.es

ICEX Spain Trade and Investment helps companies by offering information, training, promotion and support programs for their internationalization. [Invest in Spain](#) is an Executive Directorate of ICEX Spain and Investment that promotes the [Rising Up in Spain](#) program, an initiative aimed at attracting foreign startups to Spain.

In addition, the regional administrations also carry out activities to support research, innovation and entrepreneurship. Some of them do so through annual or open grant calls in innovation, public-private partnerships for applied research, or specifically for research. Occasionally there are also specific calls, as recently the case of PERTE (Strategic Projects for Economic Recovery and Transformation), supported by EU Next Generation funds.

2.2.2 | Universities

Universities: leaders in knowledge generation

Spain has a solid network of universities, many of them with a high degree of specialization in agronomy, which play a fundamental role in the ecosystem, fostering entrepreneurial culture and innovation through education, research and collaboration programmes with companies.

In addition, universities train highly qualified professionals who can contribute to innovation in the agri-food sector. A list of all

Spanish universities, both public and private, can be found on the website of the Ministry of Science, Innovation and Universities (www.universidades.gob.es/listado-de-universidades). Many of these have departments specialized in agricultural activities.

Closely linked to the universities are the Agri-Food Campuses of Excellence. The Triptolemos Foundation coordinates the [CEIAA NETWORK](#), a network of 17 Campuses of Excellence with agri-food activity.

The following map shows all the national Campuses of Excellence.



2.2.3 | Research centres

Research centres: specialized research

Research centres are responsible for generating new knowledge that can later lead to the development of innovative solutions. Spain has a large number of research centres specialized in agri-food.

The **Higher Council of Scientific Research (CSIC)** is the largest public institution in Spain dedicated to scientific and technical research and one of the most important in the European Research Area. It is attached to the Ministry of Science and Innovation through the General Secretariat for Research.

The CSIC currently has 121 research institutes, of which 69 are self-owned, 50 are mixed and two are related organizations. There are also three national centres (INIA, IGME and IEO). Among the most important lines of research are Agriculture and Food. In Agriculture, it focuses on the physiology, biochemistry, genomics and biotechnology of plants and animals.

Those CSIC centres whose activity is mainly focused on the agri-food sector are listed below:



Source: www.csic.es

CSIC - CEBAS / Centre for Soil Science and Applied Biology in the Segura River	Murcia	www.cebas.csic.es
CSIC - CNB / National Centre for Biotechnology	Madrid	www.cnb.csic.es
CSIC - IRTA-UAB-CRAG / Centre for Agrigenomic Research	Barcelona	www.cragenomica.es
CSIC / Aula Dei Experimental Station	Zaragoza	www.eead.csic.es
CSIC / Zaidín Experimental Station	Granada	www.eez.csic.es
CSIC - IAS / Institute of Sustainable Agriculture	Córdoba	www.ias.csic.es
CSIC - IATS / Torre de la Sal Aquaculture Institute	Castellón	www.iats.csic.es
CSIC - IBMCP / Institute of Molecular and Cellular Plant Biology	Valencia	www.ibmcp.upv.es
CSIC - ICA / Institute of Agricultural Sciences	Madrid	www.ica.csic.es
CSIC - ICMAN / Institute of Marine Sciences of Andalusia	Cádiz	www.icman.csic.es
CSIC - ICVV / Institute of Vine and Wine Sciences	La Rioja	www.icvv.es
CSIC - IdAB / Institute of Agrobiotechnology	Navarra	www.idab.csic.es
CSIC - IGM / Mountain Livestock Institute	Leon	www.igm.ule-csic.es
CSIC - IHSM-UMA / Institute of Subtropical and Mediterranean Horticulture "La Mayora"	Málaga	www.ihsma.uma-csic.es
CSIC - INIA / National Institute for Agricultural and Food Research and Technology	Madrid	www.inia.es
CSIC - IPNA / Institute of Natural Products and Agrobiology	Tenerife	www.ipna.csic.es
CSIC - IRNAS / Institute of Natural Resources and Agrobiology of Seville	Sevilla	www.irnas.csic.es
CSIC - IRNASA / Institute of Natural Resources and Agrobiology	Salamanca	www.irnasa.csic.es

Network of regional research centres: more applied research

Spain has an extensive network of regional public research centres:

Regional Research Centres

CICYTEX / Extremadura Centre for Scientific and Technological Research	Extremadura	www.cicytex.juntaex.es
CITA / Centre for Agri-Food Research and Technology of Aragon	Aragón	www.cita-aragon.es
CIAM / Mabegondo Agricultural Research Centre	Galicia	www.ciam.gal
CIFA / Centre for Agricultural Research and Training Cantabria	Cantabria	www.cifacantabria.org
CIDA / Agri-Food Research and Technology Development Service - La Rioja	La Rioja	www.larioja.org
ICIA / Canary Islands Institute of Agrarian Research	Canary Islands	www.icia.es/icia/
IFAPA / Andalusian Institute of Agricultural, Fisheries and Food Research and Training	Andalusia	www.juntadeandalucia.es
IMIDA / Murcia Institute for Agricultural and Environmental Research and Development	Murcia	www.imida.es
IMIDRA / Madrid Institute of Rural, Agrarian and Food Research and Development	Madrid	www.comunidad.madrid.es
INTIA / Navarre Institute of Agri-Food Technologies and Infrastructures	Navarra	www.intiasa.es
IRFAP / Institute for Agri-Food and Fisheries Research and Training - Bal. Islands	Bal. Islands	www.caib.es
IRIAF / Regional Institute for Agri-Food Research and Development Castilla la Mancha	Castilla La Mancha	www.iriaf.castillalamancha.es
IRTA / Institute of Food and Agricultural Research and Technology	Cataluña	www.irta.cat/es
ITACYL / Agricultural Technology Institute of Castilla y León	Castilla y León	www.itacyl.es
IVIA / Valencian Institute of Agrarian Research	Valen. Comm.	www.ivia.gva.es
NEIKER / Basque Institute for Agricultural Research and Development	B. Country	www.neiker.eus/es
SERIDA / Regional Service for Food Research and Development	Asturias	www.serida.asturias.es

Other well-known research centres are [CEIGRAM](#) (Madrid) and [CIHEAM](#) - International Centre for Advanced Mediterranean Agronomic Studies (Zaragoza).

As support structures for agricultural research and innovation, the European Commission has launched a pan-European network of controlled infrastructure and testing facilities, [Agrifood TEF](#) (Testing and Experimenting Facilities), for the incorporation of artificial intelligence and robotic technologies in to the agri-food and forestry sector. The project plans to mobilize an investment of 60 million euros over the next four years, distributed in main nodes and satellite nodes, deployed in nine member states, including Spain.

Within this network, [the AgriFoodTEF Spain Satellite Node network, co-financed by the Ministry of Agriculture, Fisheries and Food](#), will offer technological services to companies, especially SMEs, to test, validate or certify their products and services before they are launched on the market, on both physical facilities and virtual testing platforms. There will be three geographical areas that will concentrate most of the physical infrastructures offered by the Spanish satellite node and will serve different subsectors:

Córdoba / University of Córdoba, will offer a range of services oriented towards arable crops, horticulture and fruit trees, extensive livestock farming and food industry, with the support of Hispatec.

A Coruña / Mabegondo Centre for Agricultural Research, will be supported by DIH Datalife and Gradient equipment, and will be oriented towards fodder and dairy production.

Lleida / University of Lleida, Agrotecnio together with the Center for Pig Studies and the Agrobiotech Park of Lleida, will focus mainly on the pig sector, fruit growing and agri-food data spaces.

Private research: seeking answers to the needs

In this area, we also count on the support from private bodies, which every day are more aware of the need to research and innovate to improve their competitiveness. Some of them are collected in the following table, trying to represent different types of initiatives, both public and private or public-private initiatives:

Private and Public Research Centres

Masía del Doctor Experience Camp (Anecoop)	Valencia	www.anecoop.com
Cajamar Experience Centre in Valencia	Valencia	www.fundacioncajamarvalencia.es
CIT COEX / COEXPHAL Centre for Technological Innovation	Almería	www.coexphal.es/cit-coex/
CIT Trops / Trops Innovation Centre	Málaga	www.trops.es
Cajamar Experimental Station "Las Palmerillas"	Almería	www.fundacioncajamar.es
UAL Experimental Farm Foundation UAL Anecoop	Almería	www.fundacionualanecoop.com
Provincial Agricultural Technical Institute Albacete	Albacete	www.itap.es
MAAVi Innovation Centre - KIMITEC	Almería	www.maaviic.com
OVIEN / Sheep and Goat Genetic Selection and Improvement Centre - Castilla y León	Zamora	www.ovigen.es

It is also necessary to highlight the [DEMOFARM Andalusia PROJECT](#), an initiative by the Regional Government of Andalusia's Ministry of Agriculture, Fisheries, Water and Rural Development. It is a network of demonstration farms: citrus fruits, traditional olive groves, greenhouse crops, strawberries and red fruits, dairy cattle, extensive cattle farming, extensive sheep farming, in which digital technology solutions are shown in real farms run by collaborating farmers, in order to demonstrate the benefits and advantages of digitization.

2.2.4 | Technology centres

Technology Centres: Drivers of Technological Development

Technology centres play a fundamental role in improving the competitiveness of companies. They are key bodies for companies to develop their RDI, facilitating formulas and resources for this purpose. They provide a clear market orientation, and offer a differential value compared to other knowledge-generating agents. Some of the main national technology centres are listed below.

Technology Centres

AIMPLAS / Institute of Plastics Technology	Valencia	www.aimplas.es
AINIA / Agri-Food Industry Research Association	Valencia	www.ainia.com
ANFACO-CECOPESCA	Pontevedra	www.anfaco.es
AZTI / Centre for Marine and Food Research	Basque Country	www.azti.es
BRITA / Basque Research & Technology Alliance	Basque Country	www.brta.eus/es
CARTIF	Valladolid	www.cartif.es
CENTER / National Centre for Irrigation Technology	Madrid	www.mapa.gob.es
CETECE / Cereal Technological Centre of Castilla y León	Palencia	www.cetece.net
CICAP / Centre for Agri-Food Research and Quality of Pozoblanco	Córdoba	www.cicap.es
CITOLIVA / Olive and Oil Technological Centre	Jaén	www.citoliva.es
CNTA / National Centre for Food Technology and Safety	Navarra	www.cnta.es
CTAEX / National Agri-Food Technology Centre - "Extremadura"	Badajoz	www.ctaex.com
CTNC / National Canning Technology Centre	Murcia	www.ctnc.eu
CARTIF	Valladolid	www.cartif.es
EURECAT / Technology Centre of Catalonia	Barcelona	www.eurecat.org
FUDin	La Rioja	www.fudin.es
GRADIENT / Galician Centre for Advanced Telecom Research and Development	Pontevedra	www.gradient.org
I+DEA	Segovia	www.imasdea.eu
ITAGRA / Agricultural and Agri-Food Technology Centre	Palencia	www.itagra.com
ITECAM / Industrial Technology Centre of Castilla-La Mancha	Ciudad Real	www.itecam.com
LEITAT / Leitat Technological Centre - Managing Technologies	Barcelona	www.leitat.org
TECNALIA	San Sebastián	www.tecnalia.com
TECNOVA / Foundation for Auxiliary Technologies for Agriculture	Almería	www.fundaciontecnova.com

2.2.5 | Science and technology parks

The best environment for business creation

Science and technology parks play an essential role in university entrepreneurship, acting as accelerators of innovation, and providing entrepreneurs, spin-offs and startups with access in the initial stages to both physical infrastructure and advisory and training services.

The Association of Science and Technology Parks of Spain ([APTE](#)) is a non-profit association whose main objective is to collaborate, through the promotion and dissemination of science and technology parks, to the renewal and diversification of productive activity, technological progress and economic development.

2.2.6 | Technology Clusters and Platforms

The networking impulse

Clusters are another fundamental element of the innovation ecosystem. They are binding agents that enhance the dynamics of collaboration among its members, either to develop RDI projects, technology transfer, networking actions or even to share resources and minimize market access risks.

Many of them have been recognized as [Innovative Business Groups](#) (AEI). A combination, in a geographical area or productive sector, of companies and public or private research and training centres involved in a collaborative exchange process aimed at obtaining advantages and/or benefits derived from the execution of joint projects of an innovative nature.

The activity of the AEI must be organized around a scientific or technological branch or sector and/or a target market or market segment.

Cluster

Acuipius / Aquaculture Cluster	Pontevedra	www.acuipius.org
Agritech Murcia / Murcia Region Agricultural Technology Platform	Murcia	www.agritechmurcia.com
Agrofood / Murcia Region Cluster Foundation	Murcia	www.agrofoodmurcia.com
Aragón Food & Nutrition Clúster	Zaragoza	www.aragonalimentacion.com
ASINCAR / Meat Industry Research Association, Principality of Asturias	Asturias	www.asincarc.com
Basque Food Clúster	Vizcaya	www.basquefoodclúster.com
CIMA	Albacete	www.mercacei.com
CINNOAGROCV / Valencian Agrifood Innovation Cluster	Valencia	www.cinnoagrocv.com
CLUSAGA / Galician Food Cluster Association	Sant. Compostela	www.clústeralimentariodegalicia.org
Extremadura Agri-Food and Agriculture Cluster	Badajoz	www.clústerfoodservice.org
ASINCAR / Agri-food cluster	Asturias	www.asincarc.com
CAMPAG / Aragonese Agricultural and Livestock Production Cluster	Zaragoza	www.campag.es
CTA / Technological Corporation of Andalusia	Sevilla	www.corporaciontecnologica.com
FEMAC / Machinery and Agricultural Production Cluster	Lleida	www.femac.org
i+Porc / Spanish Pig Producers Cluster (AEI)	Zaragoza	www.imasporc.com
Food +i Clúster / Ebro Valley Food Cluster (AEI)	La Rioja	www.clústerfoodmasi.es
Foodservice Clúster (AEI)	Barcelona	www.clústerfoodservice.org
INNOVACC / Catalan Meat and Alternative Protein Sector Cluster (AEI)	Girona	www.innovacc.cat
INNOVI / Catalan Wine Cluster (AEI)	Barcelona	www.innovi.cat
INOLEO / Innovative Business Grouping of the Olive Sector (AEI)	Jaén	www.inoleo.es
LANDALUZ / Andalusian Agri-Food Cluster Business Association (AEI)	Sevilla	www.landaluz.es
Madrifood / Agrifood Cluster of the Community of Madrid	Madrid	www.madrifood.com
NAGRIFOOD / Agri-Food Cluster of Navarra (AEI)	Navarra	www.nagrifoodClúster.com
Vitartis / Castilla y León Food Industry Association (AEI)	Valladolid	www.vitartis.es

Technology Platforms are public-private structures led by industry, whose main objective is to achieve scientific and technological advances that ensure the competitiveness, sustainability and growth of the business fabric, aligning the strategies of the different agents and concentrating RDI efforts.

Technological Platforms

APLTA / Dairy Products and Food Technologies Workshop	www.aplta.es
Food for Life / Spain	www.foodforlife-spain.es
BIOVEGEN / Spanish Technological Platform for Plant Biotechnology	www.biovegen.org
PTEPA / Spanish Technological Platform for Fisheries and Aquaculture	www.ptepa.es
VET+I / Animal Health Technology Platform	www.vetmasi.es
PTV / Wine Technology Platform	www.ptvino.com/es
Knowledge platform for the rural and fishing environment	www.mapa.gob.es

[Food for Life"- Spain \(PTF4LS\)](#) is the largest technology platform of the Spanish agri-food sector, led by the Spanish Federation of Food and Beverage Industries (FIAB). Among its objectives is promoting the transmission of research, scientific and technological advances through public-private collaboration of the main agri-food sector agents and the detection of new demands, ensuring the competitiveness and growth of the Spanish agri-food sector.

[BIOVEGEN](#), the Spanish Technological Platform for Plant Biotechnology, is a national public-private partnership that brings together companies, technology centres and public research centres leading in the research and development of new disruptive technologies based on the various applications offered by Plant Biology. BIOVEGEN currently has 185 [associated entities](#): 148 companies, 12 associations/technology centers and 25 research centers. Most of its members are small and medium-sized companies (76.4%), spin-offs (4.4%) and startups (5.3%), although the technology platform also includes large companies (14%). Initiatives developed by BIOVEGEN members include the implementation of circular economy strategies, the development of new technologies, technological advice, the production of molecules of interest from plant organisms and the obtaining of new plant varieties more productive or resilient to adverse climatic conditions stand out. Source: Data provided by Biovegen - Characterization and sizing of the Spanish agribiotechnology sector (BIOVEGEN).

2.2.7 | Innovation hubs

Hubs - Accelerating innovation

Innovation Hubs have become key spaces to promote co-creation and cooperation between entrepreneurs, universities and companies. Europe is promoting the creation of [European Digital Innovation Hubs](#) (EDIH), one-stop shops that support companies and public sector organizations to respond to digital challenges and become more competitive.

EDIHs help companies to improve processes, products or using digital technologies by:

- Providing access to technical expertise and testing, as well as the ability to "try before you invest".
- Providing innovation services, such as financial advice, training and capacity building, which are critical to the success of digital transformation.
- Helping companies to address environmental issues, in the use of digital technologies for sustainability and, in circularity.

There is a [European Network of Digital Innovation Hubs](#) (EDIHs), which in general offers four types of services: networking, financial advice, skills development and pre-investment testing. EDIHs from the [European list of EDIHs](#) are present in all the Autonomous Communities. Many of them are related to the agri-food sector and in particular there is one specific to this sector, the Andalucía

Agrotech DIH, a public-private partnership led by the Andalusia Regional Government Ministry of Agriculture, Fisheries, Water and Rural Development, whivh aims to promote digital transformation in the agri-food sector.

The following map shows all the national [Digital Innovation Hubs](#) (EDIHs):



Below is a compilation of some of the national Hubs:

Hubs

Asturias Digital Innovation Hub	Asturias	www.agrofood.cein.es
BIOHUBCAT / Bioeconomy Hub of Catalonia	Lleida	www.biohub.cat/es
EATEX Food Innovation Hub	Navarra	www.eatexfoodinnovationhub.com
Hub Foodtech & Nutrition	Tarragona	www.hubfoodtech.com
National Digitalization and Wine Hub	Madrid	www.fev.es
iHub La Vega Innova	Madrid	www.lavegainnova.es
Km Zero Food Innovation Hub	Valencia	www.kmzerohub.com
Madrid Food Innovation Hub	Madrid	www.madridfoodinnovationhub.com
Zakut Innovation HUB	Murcia	www.zakut.es

La Vega Innova iHub - MAPA has launched La Vega Innova, a digital innovation Hub designed to promote the transformation and competitiveness of the agri-food sector through experimentation in real environments, challenge solving and training. It is a space where agri-food innovation and entrepreneurship converge, with a wide range of services and infrastructure, where startup acceleration programs, technology testing to respond to innovation challenges, development of pilot projects and exhibition of technologies that are already present in the market, as well as training activities and events, all carried out.

The [National Digitalization and Wine Hub](#) is a working group created by the Spanish Wine Federation (FEV) and the technology company JIG to implement, accelerate and facilitate the digital transformation of the wine industry, being the meeting space between the main digital players and the wine sector.

[Km Zero Food Innovation Hub](#) is an innovation hub specialized in the food sector based in Valencia, created to promote startups, support companies and generate and share information and trends, with the mission to accelerate the transformation of the sector towards a healthier and more sustainable.

In this regard, it is worth highlighting the work of [BALAM Agriculture](#), a service company that is committed to a new model of agricultural transformation, based on experimentation and value generation through its network of Rural Innovation Hubs: [El Valenciano](#) (Sevilla), [La Vera, and Campo Arañuelo](#) (Cáceres), [Ricote Valley](#) (Murcia) and [Ceres](#) (Palencia). The greatest added value comes from the collaboration between farmers, cooperatives, companies, technology centers and universities.

2.2.8 | Incubators and accelerators

Incubators and accelerators: driving the development of agritech startups

Entrepreneurship, innovation and knowledge transfer are the levers for increasing the competitiveness and sustainability of the Spanish agri-food sector.

Incubators and accelerators are another very efficient way to support entrepreneurship. These programmes provide support to startups in their early stages, offering mentoring, resources and networking opportunities that can help them grow and scale their businesses.

The [INCYDE Foundation](#) (Institute of Chambers of Commerce for the Creation and Development of Businesses) has set up the largest Network of Incubation Centres in Europe. This network has 20 sectorial High Technology Incubators (IAT). These are specialized centres in strategic sectors, whose objective is to carry out the transfer of the latest technological advances and R&D&I to companies, entrepreneurs and spin-offs, to strengthen and boost their competitiveness, and promote their scalability.

This project, which has been launched and co-financed within the Multiregional Operational Program for Spain (POPE) ERDF 2014-2020, area 3 "improving the competitiveness of SMEs", has again been approved by the European Commission for continuation and co-financing in the Multiregional Program for Spain (POPE) ERDF 2021-2027. The [Cajamar Innova](#) High Technology Incubator project, specialized in technological innovation in water, and promoted by the Cajamar Foundation, and cofinanced by the European ERDF Fund, was recognized by the European Commission as the Best Project financed by European funds of the year 2023 with the Gold Star category, within the #EuropaSeSiente 2023 competition. Source: [IAT Network Book](#)

Within the high-tech incubators network, more than half of them are directly related to the agri-food sector, among which we can highlight the following:

— [IAT Agrotecuv](#) – Healthy Food, based in Valencia and promoted by the University of Valencia and the Foundation Scientific Park at the University of Valencia, hosts projects focused on the agri-food sector in the agritech and foodtech verticals.

— [IAT Incubadora Cajamar Innova](#), based in Almeria and promoted by the Cajamar Foundation, is a space where innovative businesses and technology projects based on water from all sectors (agricultural, industrial or urban) rely on the infrastructures, resources and technical and technological support of the experimental centres for the development and validation of their projects in real environments. In addition, the companies actively participate in all technology transfer activities organized by Cajamar. Technological developments are in fact permanently on display at its experimental stations, and numerous technology transfer meetings are also organized to put users in contact with technology supplier companies, i.e. startups. Each year, more than 2,000 people visit Cajamar Experimental Centres.

There have been four calls for projects at Cajamar Innova since 2021, supporting more than 200 companies. 73 of them have followed the incubation and acceleration programmes with a direct impact on the real economy, creating more than 200 jobs.

IAT Porcinnova - based in Egea de los Caballeros (Zaragoza) and promoted by the Fundación Científica Park Aula Dei (PCTAD) and the Centre for Agri-Food Research and Technology of Aragon (CITA), it seeks innovative solutions based on technology applied to the pig sector.

The **IAT Talavera Tecnológica** which promotes the growth of companies through advanced technologies, has launched its first call for agrotech projects.

La Vega Innova - Is also an incubation and acceleration programme developed in collaboration with Telefónica España, which aims to promote those projects of entrepreneurs or start-ups that can contribute to the promotion of digital innovation and its adoption in the agri-food sector.

AgroBank Tech Digital INNOvation - Acceleration program aimed at supporting technological entrepreneurship Agrotech, within the framework of the collaboration agreement between the Ministry and CaixaBank.

START-BEC - Technological support programme for technology-based startups in the field of bioeconomy that promotes innovative value chains linked to the agri-food sector, contributing to boosting the innovation ecosystem and generating new business opportunities for emerging companies. This programme is developed within the framework of a collaboration agreement between the MAPA and the AINIA technology center to develop various activities in the bioeconomy.

Food (Tech) Challengers - Programme to promote foodtech startups, which supports food startups with a well-defined technological challenge, to be developed with the support of CNTA.

Source: www.mapa.gob.es

Incubators/Accelerators

CEIN AgrofoodTech	Navarra	www.agrofood.cein.es
Álea Green Tech	Sevilla	www.espaciores.org
BFF Business Food Factory	A Coruña	www.bffood.gal
Cajamar Innova Agrotech	Almería	www.plataformatierra.es
CreceStartup AgrifoodTech	Murcia	www.crecestartup.com
Eatable Adventures	Madrid	www.eatableadventures.com
EIT Food	Madrid	www.eitfood.eu
Emprende Agro Cat	Lleida	www.emprenagro.cat
Fishing Tech	Pontevedra	www.fishing-tech.com
IAT Agrotecuv / Healthy Eating	Valencia	www.uv.es
IAT Bioasis / Blue biotechnology and Aquaculture	Las Palmas	www.bioasisgrancanaria.com
IAT Bioincubatech / Biotechnology	A Coruña	www.bioincubatech.com
IAT Cajamar Innova / Water	Almería	www.cajamarinnova.es
IAT Cordoba Biotech / Biotechnology	Córdoba	www.cordobabiotech.es
IAT IATEX / Circular Economy	Badajoz	www.iatex.es
IAT Incubazul / Blue Economy	Cádiz	www.incubazul.es

Incubators/Accelerators

IAT Matriz / Green and Digital Transition	Jaén	www.geolit.es
IAT Porcinnova / Pigs	Zaragoza	www.porcinnova.es
IAT UCAM HiTech / Health, Sports and Nutrition	Murcia	www.hitech.ucam.edu
IAT Talavera Tecnológica / Cybersecurity and Data Intelligence	Toledo	www.talavatecnologica.es
Innsomnia	Valencia	www.innsomnia.es
Km Zero Food Innovation Hub	Valencia	www.kmzerohub.com
La Vega Innova	Madrid	www.lavegainnova.es
Menttoriza Hub	Madrid	www.menttoriza.com
Orizont	Navarra	www.orizont.es
StartBEC - AINIA	Valencia	www.startbec.com
Spain Foodtech Startups	Madrid	www.spainfoodtech.es

The **AgrofoodTech** accelerator of the European Business and Innovation Centre of Navarre (CEIN) is a programme designed to transform innovative ideas in the agri-food sector (Agritech and Foodtech) into successful and sustainable startups.

Emprende Agro Cat - is an accelerator of agri-food entrepreneurship accelerator driven by the Fruit Business Association of Catalonia (AFRUCAT) and the agricultural machinery and production means Cluster (FEMAC).

The vertical accelerator of the Galician food sector, **Business Factory Food** (BFFood) is promoted by the Xunta de Galicia, the Galician Food Cluster (Clusaga) and leading companies in the Galician industry.

CreceStartup is an incubator and accelerator for AgriFoodTech, health and logistics startups, promoted by CEEIC European Centre for Food and Agriculture and the Support Institute of the Region of Murcia (INFO), which connects startups with strategically important national and international partners in this agro vertical.

The public startup accelerator, **Wolaria**, is creating a network of vertical accelerators in Castilla León, with the one in Palencia involved in agri-food projects.

Cajamar Innova Agritech, After the success obtained with the water programme, the Cajamar Group Foundation has launched its first water support programme for agritech companies.

Km Zero Food Innovation Hub - It is an open innovation and strategic investment program where leading companies in the food and beverages industry collaborate with startups to help scale solutions to the challenges facing the sector.

The **Ministry of Agriculture, Fisheries and Food (MAPA)** has promoted the implementation of the following acceleration programs:

Spain Foodtech - Acceleration program for Spanish startups in the Agri-Food-Tech field, promoted by Eatable Adventures, which has the technological support of CNTA and the support of ICEX Spain and Investments in its internationalization.

Zakut Innovation HUB, for its part, has an acceleration program for technology-based startups, which connects Spanish entrepreneurs with Israel's innovative ecosystem.

EIT Climate-KIC Spain is the Spanish Center for Climate Change Innovation. It is part of the European Climate-KIC initiative, one of the Knowledge Innovation Communities, promoted by the European Institute of Innovation and Technology (EIT), which has more than 300 associated organizations, including universities, research centers, companies and public bodies and is present in 26 European countries, including Spain, and whose headquarters are in Valencia.

The mission of EIT Climate-KIC Spain is to promote the development of a low-carbon economy with the aim of facilitating climate change adaptation and mitigation actions. This takes place through various programmes of talent recruitment, higher education and acceleration of innovative ideas to address global warming.

For its part, **EIT Food** is a benchmark agri-food innovation initiative in Europe. They work to make food more sustainable and healthy. It is an innovation community created by the European Institute of Innovation and Technology (EIT) to promote innovation and entrepreneurship. It promotes Seedbed Incubator, a programme to support science and technology-based entrepreneurship in the European agri-food sector.

2.2.9 | Agri-food companies with open innovation programmes

Large agri-food companies are committed to open innovation

Many of the leading companies in the agri-food sector are committed to open innovation, both through Agritech and Foodtech programmes. This collaboration formula allows them to access talent and technologies in a much more agile way and with less investment.

COVAP - Livestock Cooperative Predoches Valley has its own open innovation program **GEN_**, aimed at startups and that incorporate solutions and business models into their value chain. Thus, entrepreneurs can grow their projects together with COVAP, adding value to the cooperative and forming part of its ecosystem. One case of success has been the collaboration between COVAP and the technology startup Innogando to promote the digitization of livestock farms, through real-time monitoring of the location, activity and health status of the animals. The collaboration between the two has been so successful that a commercial and strategic alliance has been established and COVAP has become a shareholder of Innogando.

Ebro Talent Caring for Innovation is an open innovation program promoted by Ebro Foods in partnership with the Loyola University, which seeks to identify innovative talent, as well as to promote the development of sustainable solutions that can be applied to the food value chain.

Corteva Agriscience, a multinational company dedicated to the development of seeds, crop protection and digital services for agriculture, promotes an open innovation program through the Corteva Chair in Digital Agriculture and Sustainability at the University of Seville.

Cajamar Innova Agrotech – is an initiative promoted by the Cajamar Group Foundation that fosters open innovation in the agri-food sector. The company has strategic partners in the agri-food sector such as ANECOOP, BODEGAS MATARROMERA, COVAP, DCOOP, RITEC, TROPS, UNICA and VICASOL.

Agrotech Conecta is an initiative promoted by Andalucía Agrotech DIH, with the objective of offering the possibility of connecting bodies in the agri-food world with the technological solutions of start-ups, promoting the implementation of these solutions in the real environment. The programme is aimed at the agri-food sector, focussing on digitization needs and startups that provide solutions to these challenges. Some of the agri-food companies that have launched challenges are: AGROSEVILLA, CAPARROS NATURE, CAPRICHIO ANDALUZ, DONPAL, FACCSA-PROLONGO, LA UNION, NATURCODE and TROPS.

Km Zero Food Innovation Hub – Is an open innovation and strategic investment initiative where Mahou San Miguel, Makro, Incarlopsa, Helados Estiu, Embutidos Martínez, Platos Tradicionales, CAPSA VIDA, Vicky Foods and Grupo Arancia will collaborate with startups to help those selected to scale solutions to the challenges facing the sector.

John Deere - The agricultural machinery manufacturer has launched in Parla (Madrid) its first European innovation centre in Parla (Madrid), the John Deere Parla Innovation Center, with the aim of promoting innovation in the agritech segment in five main areas: automation, electrification, connectivity, artificial intelligence and integrated agricultural systems. More than 25 bodies from the sector, from startups to other companies and public and private institutions, work in the centre, which is a workspace where each of the agents involved will contribute with their knowledge to develop advanced solutions for the sustainability and productivity of the agri-food industry.

Vicky Foods - The international food group has launched its innovation center, **ARI Hub - Agro-Rural Innovation Hub**, to promote innovative projects in the agri-food sector and focused on rural development in two main areas: an incubator and accelerator for startups and a cluster of innovative companies (AEI).

2.2.10 | Associations

Partnerships - Alliances to foster innovation

Associations, as representatives of the different sectors, play a fundamental role within the ecosystem. They structure and articulate innovation actions, fostering collaboration and networking among their associates. Below is a list of some of the most significant national associations:

Associations

AEFA / Spanish Agronutrients Manufacturers Association	Valencia	www.aefa-agronutrientes.org
AEPLA / Business Association for the Protection of Plants	Madrid	www.aepla.es
AGRAGEX / Spanish Agricultural Machinery Manufacturers - Exporters Association	Vizcaya	www.agragex.es
AgroTech ESPAÑA / Spanish Association for the Digitalization of Agriculture	Valencia	www.agro-tech.es
ALIMPO / Interprofessional Association of Lemons and Grapefruit	Murcia	www.alimpo.com
ANPROGAPOR / National Association of Swine Producers	Salamanca	www.anprogapor.es
ASINCAR / Meat Industry Research Association of the Principality of Asturias	Asturias	www.asincar.com
Agrifood Cooperatives of Spain	Madrid	www.agro-alimentarias.coop
FEPEX / Spanish Fruit and Vegetable Producers-Exporters Associations	Madrid	www.fepex.es
FEV / Spanish Wine Federation	Madrid	www.fev.es
FIAB / Spanish Federation of Food and Beverage Industries	Madrid	www.fiab.es
RFEAGAS / Royal Spanish Federation of Select Cattle Associations	Madrid	www.rfeagas.es
ASAJA / Young Farmers' Association	Madrid	www.asaja.com
COAG / Coordinating Committee of Farmers and Ranchers Organizations	Madrid	www.coag.org
UPA / Union of Small Farmers and Cattle Raisers	Madrid	www.upa.es
Union of Farmers and Ranchers Unions	Madrid	www.uniondeuniones.org
General Council of Official Agricultural Engineers Associations	Madrid	www.ingenieroagronomo.org
General Council of Official Technical Agricultural Engineers Associations	Madrid	www.agricolas.org
General Council of Veterinary Associations	Madrid	www.colvet.es
AMETIC / Multisector Association of Information Technology Companies	Madrid	www.ametic.es
ANFFE / National Association of Fertilizer Manufacturers	Madrid	www.anffe.com
ANOVE / National Plant Breeders' Association	Sevilla	www.anove.es
ANSEMAT / National Association of Agricultural, Livestock, Forestry and Green Spaces Machinery	Madrid	www.ansemat.org
ASEBIO / Spanish Association of Biocompanies	Madrid	www.asebio.com
ASINCAR / Meat Industry Research Association of the Principality of Asturias	Asturias	www.asincar.com
FEMAC / Catalonia Association of Manufacturers Agricultural Machinery Manufacturers and Exporters	Lleida	www.femac.org

Cooperativas Agro-alimentarias de España is the organization that represents the agri-food cooperative movement before national and European institutions and associations related to the agri-food sector and the social economy. It is made up of the regional federations and associations of cooperatives that exercise their representative activity and provide services within the scope of each Autonomous Community.

FEPEX is the Spanish Federation of Exporting Producer Associations for Fruits, Vegetables, Flowers and Live Plants, a private sector organization whose main functions are to contribute to and promote the competitiveness of the sectors it represents. This is as well as providing services in production areas and markets to the 30 associations that go to form it (more than 1,800 companies), as well as exercising representative and interlocution functions before the different authorities, institutions and decision-making bodies.

AEPLA – Asociación Empresarial para la Protección de las Plantas, is the sector organization that represents companies manufacturing phytosanitary products in Spain and includes both multinationals and Spanish companies.

AEFA - Asociación Española de Fabricantes de Agronutrientes (Spanish Association of Agronutrients Manufacturers), has 59 associated companies, specialized in the manufacture and commercialization of agronutrients, agricultural biostimulants and microorganisms.

ASEBIO - Asociación Española de Bioempresas, in which the majority of the 300 members are biotechnology companies, 26% working on developing sustainable solutions related to industrial and agri-food biotechnology.

ANOVE - Asociación Nacional de Obtentores Vegetales (National Association of Plant Breeders), is the association that brings together the companies and public centres involved in the breeding of plants to generate added value in the agri-food sector through research, development and exploitation of new plant varieties. Anove is made up of 60 entities, 57 being private companies and three being public research centres. The total turnover of Anove members exceeds 1 billion euros per year, of which around 800 million euros correspond to the seed industry.

AGRAGEX - Agragex is the Spanish Association of Manufacturers-Exporters of Agricultural Machinery and Components, Greenhouses, Plant Health and Nutrition, Irrigation Systems, Livestock Equipment, Animal Health and Nutrition, Forestry, Biomass and Post-Harvest Machinery, Handling and Storage. It currently has 112 member companies from different subsectors.

AMETIC - Asociación Multisectorial de Empresas de Tecnologías de la Información, Comunicaciones y Electrónica (Multisector Association of Information Technology, Communications and Electronics Companies), has 21 committees organised under different working groups. This is the case of the **Smart Agro Working Group**, which aims to position AMETIC as an Agrifood-tech business association by organizing conferences, briefings, and by giving visibility to the companies that make up the group, both nationally and internationally.

It is also necessary to highlight the role played by farmers' associations as vectors of innovation, such as ASAJA, COAG, Unión de Uniones de Agricultores y Ganaderos and UPA, as well as the professional associations of Agricultural Engineers, Agricultural Technical Engineers and Veterinarians, as vectors of innovation, as they are the agents closest to the producers and to whom they usually turn for advice.

2.2.11 | Multinationals

Multinationals - Spain as a leading European centre for the agri-food industry

The agri-food industry is considered a business that is growing unstoppably worldwide. Spain is managing to attract multinationals operating in the global agri-food sector, not only to the potential of its own agri-food sector but also because of its strategic position to establish itself as a base for the development of new products and services to be exported to the rest of the world.

Spain is an international benchmark for RDI in agricultural seeds

A clear example is the agricultural seeds subsector. All the agricultural seed multinationals choose Spain as a base for their future developments, establishing their research and development centers here, most of them located in Almeria and Murcia. This means that a large part of the agricultural seeds used in the world are developed in Spain.

It is very common to see news referring to this. We have, for example, in recent years we have seen how leading companies such as KWS has opened two new centers in Almeria and Murcia, and how others have expanded their facilities in recent years, such as BAYER, RIJK ZWAAN or SYNGENTA.

Strategic alliances between multinationals and Spanish technology companies are gaining strength, becoming a formula to grow and gain competitiveness in a global economy. We can in this respect, as an example, highlight the strategic agreement to accelerate the development and commercialization of biological solutions that contribute to the protection and biostimulation of crops, reached between the German company BAYER and the Spanish group KIMITEC.

2.2.12 | Events and fairs

Events and Fairs - Networking, an essential tool for driving innovation

Networking is an essential tool for any company that wants to expand its network of contacts, generate new collaborations, make alliances and explore new business opportunities. Agricultural events and fairs are the perfect scenario, since they bring together all professionals, from farmers to suppliers of products and services. There are various events in Spain where Agritech technological developments are on show, such as Datagri, Expo AgriTech or Smart Agrifood Summit.

Event	Sector		
Datagri	Agritech	Itinerant	www.datagri.org
Expo AgriTech - The 4.0 Trade Fair for the Countryside	Agritech	Málaga	www.expoagritech.com
Smart Agrifood Summit	Agritech	Sevilla	www.smartagrifood.org
Biospain	Foodtech	Barcelona	www.biospain2023.org
Ftals Food Summit	Foodtech	Valencia	www.ftalsfoodsummit.com

This year saw the 7th edition of [Datagri](http://www.datagri.org), a forum that aims to promote digital transformation in the agri-food sector. It is the annual meeting point for the agri-food chain, where field demonstrations of the most outstanding success stories are held. It has established itself as the benchmark event in Spain and Latin America to analyze technological trends in the sector.

[Expo AgriTech](http://www.expoagritech.com) - La Feria del Campo 4.0 also celebrated its first edition. It is a new technology fair dedicated to improving the competitiveness of the Spanish countryside thanks to innovation, technology and sustainability.

In Spain, several trade fairs are held, many of them of international scope, which are also a meeting point between the sector and the new technological advances. They are the ideal forums for establishing contacts or presenting new products to the market.

Fairs	Sector		
Agroexpo Feval	Agro - Indi Auxiliary	Don Benito (Badajoz)	www.feval.com
Conxemar	Fish Product	Vigo (Pontevedra)	www.conxemar.com
Expolevante	Intensive Agriculture	Níjar (Almería)	www.expolevantenijar.es
Expoliva	Agro - Olive	Aceite de Oliva	www.expoliva.com
Fame Innova	Agritech	Murcia	www.ifepa.es
Agroexpo International Fair	Agro - Ind Auxiliary	Don Benito (Badajoz)	www.feval.com
Figan	Livestock	Zaragoza	www.feriazaragoza.es
Fima Agrícola	Machinery	Zaragoza	www.feriazaragoza.es
Fruit Attraction	Fruit and Vegetables	Madrid	www.ifema.es
Infoagro Almería	Intensive Agriculture	Almería	www.infoagroexhibition.com
Meat Attraction	Meat Sector	Madrid	www.ifema.es
Sepor	Livestock	Murcia	www.seporlorca.com

The international fair [Fruit Attraction](#), organized by IFEMA Madrid and FEPEX, becomes the global setting every year for the marketing of fresh products, with the participation of more than 2,000 exhibitors from 56 countries. Every year it hosts the Innovation Hub Awards, whose objective is to highlight the innovative efforts of the sector.

[Fima Agrícola](#), the International Fair of Agricultural Machinery, has established itself as one of the most prominent and internationally recognized events in the agricultural sector. This year it celebrated its 41st edition.

[Alimentaria FoodTech](#) is the equipment, technology and ingredients show that integrates the value chain for the production and preservation of food and beverages. It is a global benchmark in food and beverage trade fairs, presenting the latest developments in the industry and also being the meeting point of innovation for the major companies in the sector, SMEs, exhibitors and international visitors, industry associations, technology centers and institutions.

2.2.13 | Knowledge platforms

Platforms - New tools to disseminate knowledge

Digital knowledge management platforms have become the best formula for disseminating and giving visibility to scientific and technical knowledge, making all existing information available to users in a single place. The following is a compilation of the main national knowledge platforms:

Platforms	Promoter	
AKIS Platform	Ministry of Agriculture, Fisheries and Food	www.akisplataforma.es
Knowledge platform for rural and fishing environment	Ministry of Agriculture, Fisheries and Food	www.mapa.gob.es
CAP Network	Ministry of Agriculture, Fisheries and Food	www.redpac.es
Platform Earth	Cajamar Cooperative Group	www.plataformatierra.es
RuralCat	Generalitat de Catalunya	www.ruralcat.gencat.cat
Sativum	Junta de Castilla y León	www.sativum.es
SERVIFAPA	Junta de Andalucía	www.juntadeandalucia.es

The National Rural Network (RRN) has evolved into the [CAP Network](#), which continues to be a platform that connects all the people and bodies related to the rural environment: organizations, administrations, advisors, researchers, innovation agents, producers and other representatives of the agricultural sector, in order to promote knowledge transfer and cooperation. But, in addition, it is now also the meeting point for agents linked to agricultural activity, as it also covers the policies of the first pillar of the Common Agricultural Policy (CAP) during this period. All this, in order to disseminate and ensure compliance with the objectives of the CAP Strategi Plan for Spain (PEPAC) and facilitate its implementation throughout the territory.

The [AKIS Platform](#) is a platform created by the Ministry of Agriculture, Fisheries and Food in order to serve as a meeting point and knowledge exchange between the actors of the Agricultural Knowledge and Innovation Systems (AKIS) in Spain. The AKIS Advisors Platform offers information of interest, useful knowledge, a collaborative environment and a space with information and tools for advisors.

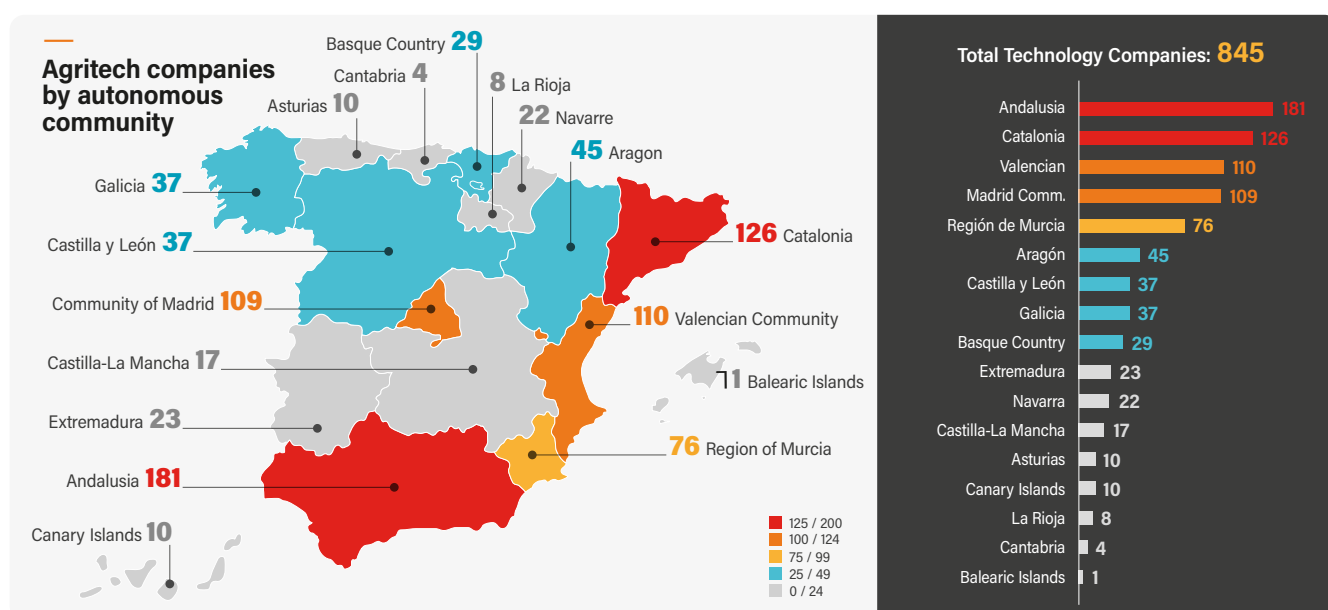
[Plataforma Tierra](#) is the Digital Community of Agro Knowledge at the Cajamar Group which makes available all the activity of its Innovation Ecosystem available to the sector, acting as a reference body for agri-food companies and the professional: providing analysis, news, innovation, entrepreneurship, publications, events, training and digital tools to further progress towards a more efficient, profitable and sustainable sector. The purpose of Plataforma Tierra is to create a community of farmers, technicians, specialists and managers where knowledge and experiences are exchanged and joint technological projects are carried out. As a result, different digital tools have been developed to assist in decision-making. The include CX Tierra, a digital farm notebook that is supported by fertilizer and irrigation plan tools designed by specialists from the Cajamar Group's Experimental Centres.

2.3 | National distribution of agritech companies

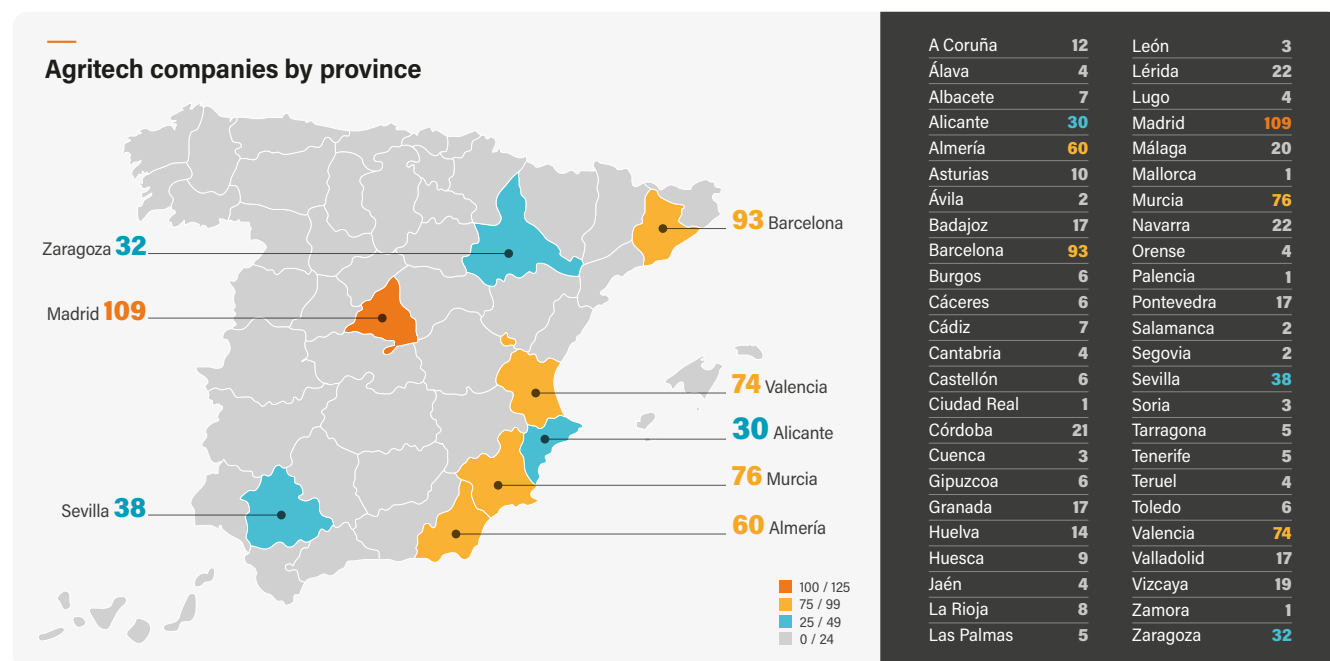
More than 800 Agritech companies

In Spain a great amount of scientific knowledge is generated and there is a lot of talent, which leads to the creation of technology companies in the agri-food field. In fact, there are already more than 800 agritech companies. Specifically, in this study we have located 845 companies, including startups, scaleups and SMEs. This is a clear example that the sector is undergoing a transformation, thanks to the use of new technologies.

In this line, the Observatory of the Digitalization of the Spanish Agri-Food Sector has developed the [digital tool DigiMAPA](#), a digital tool that connects the agri-food sector with agrotech companies, currently having 707 companies. As for the distribution by autonomous communities, Andalusia, Catalonia, Madrid, Valencia and Murcia stand out.

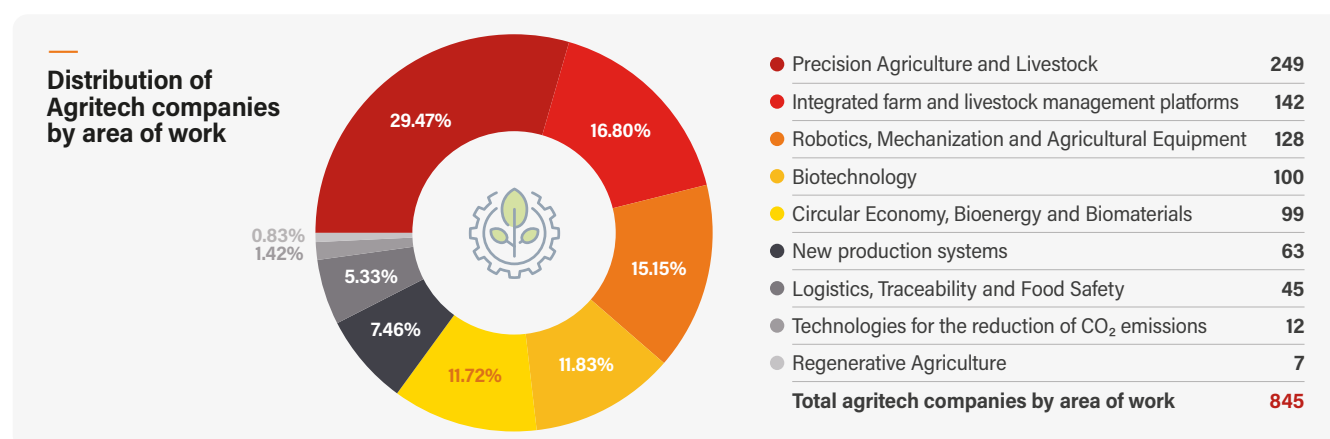


At a provincial level, the main national agritech innovation poles are Madrid, with 109 agritech companies, followed by the Mediterranean, Barcelona (93), Murcia (76), Valencia (73) and Almería (60). Below is a map showing the distribution of agritech companies by province:



2.4 | Agritech companies by specialization

The agritech sector has undergone a positive evolution in recent years and we can see that these companies are bringing innovations to all stages of production. In fact, new innovative solutions are constantly emerging in the sector. The following figure shows the distribution in percentage of agritech companies by area of work:



Focussing on the different areas, Precision agriculture and livestock farming stands out with 29.47% of the companies (249 companies), followed by Integrated agricultural management platforms with 16.80% (142 companies) and Robotics, mechanization and agricultural equipment with 15.15% (128 companies).

In an intermediate position would be biotechnological solutions applied to agriculture and livestock with 11.83%, those related to the Circular Economy, bioenergy and biomaterials with 11.72% of the companies, and new production systems with 7.46% of the companies.

3

Investments



3 | INVESTMENTS

3.1 | The potential of the agritech

This is the New Economy in Spain: more than 3,640 startups, more than 19,000 jobs and 9 billion in turnover. An economic wealth that denotes the potential of our enterprises in general terms, and where agritech is gaining weight.

Spain has consolidated its position in Europe as an intermediate entrepreneurial ecosystem during 2023, according to the report *"The Spanish tech ecosystem report"*, conducted by Dealroom in collaboration with BBVA Spark. The study highlights how our country ranks 7th on the continent in terms of attracting venture capital and 4th in terms of the number of rounds. It also confirms the maturity of the sector, with trends such as the multiplier effect of entrepreneurs who create new startups after passing through successful companies.

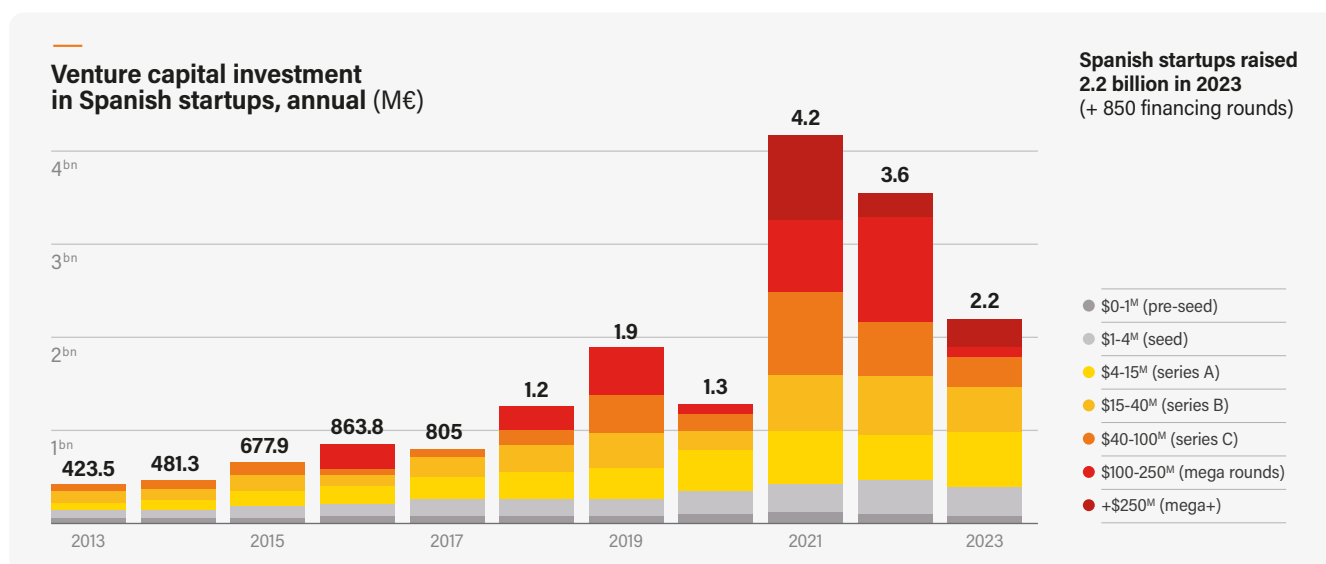
Spain is consolidating its position as a medium-sized player in the European startup ecosystem, but where agritech is beginning to increase in size and assume leadership, as we will see later.

Thus, the Spanish ecosystem is the second fastest growing in terms of valuation in Europe, second only to Norway, and ranks seventh in terms of number of unicorns (technology-based companies with a valuation of more than 1,000 million euros before going public), with a total of 18, none of them from the agritech ecosystem.

The volume of venture capital investment in Spain, which combines private equity and venture capital, stood at more than 3.5 billion euros at the end of September 2024, a drop of 14% compared to the first nine months of 2023 (when more than 4.1 billion were achieved; source: EY/SpainCap).

The number of registered transactions stood at 504, a decrease of 13% compared to the 584 investments made in the first three quarters of 2023.

Likewise, and this is a revealing fact, in terms of fundraising (raising capital by funds) and in a complicated year in general terms the first nine months of the year were the best on record, with 2.7 billion euros being raised.



However, it can be noted that the "investment appetite" of especially international funds (2/3 of the accumulated investment at the end of September 2024), both private equity and venture capital, is maintained, as they have "abundant liquidity and maintain their interest in Spain". By the end of September 2024 the volume of venture capital investment in Spain (private equity + venture capital) stood at more than 3,500 million euros, showing a clearly positive trend, taking into account the multiple financial and geostrategic uncertainties in 2025.

In terms of new fundraising, 2024 has represented the best first half of the year in terms of volume on record (from 2013 to 2023), thanks to the positive returns and the support of the Fund of Funds Programmes of public funds - Fond-ICO Global, Next Tech, Innvierte Program (CDTI) or Cofides, among others.

In this overall context, the agritech ecosystem is experiencing exponential growth driven by technological innovations and the growing demand for sustainable solutions. To capitalize on these opportunities, it is important to have investment vehicles to support this growth potential. We have the experience and expertise to identify and leverage startups with the capacity for scalability.

The agritech ecosystem has proven its ability to help startups, thanks to its knowledge of agri-food market dynamics and emerging trends. This translates into a more rigorous selection of projects and more effective support during the investment process.

The agritech sector is in any case one of the sectors closing less financial rounds in the Spanish startup ecosystem. It must be taken into account that scalability in these types of startups is not as accelerated as in other sectors: it takes time, knowledge and conviction about its potential.

3.2 | Public agents and financing

Value generators are not only entrepreneurs or business leaders. Public institutions, universities and civil society are also essential for value creation. The proper functioning of markets, their expansion or decline, depends on the interactions between all economic agents. Public-private cooperation is essential.

The concentration of public stimuli, incentives, and talent must be oriented towards solving major social or economic problems. The market alone need not be aligned with the resolution of the great challenges faced, from aging to climate change, from unemployment to lack of labor force and massive inequality. The great technological breakthroughs capable of solving these problems are the result of major public-private efforts.

Public Financing

CDTI. The Center for Technological Development and Innovation (CDTI Innovation), the state-owned public business entity for financing, depending on the Ministry of Science, Innovation and Universities, is involved in a process 2024 to boost the ecosystem of entrepreneurs and technology startups. In the field of venture capital, the Board of Directors of Innvierte, the closed-end collective investment company whose promoter and sole shareholder is CDTI Innovation, has already approved a range of actions focused on expanding the company's operating spectrum, facilitating the implementation of new capabilities to expand its venture capital investment capacity in both direct and indirect operations, of at least 125 million euros in 2024.

Through Innvierte CDTI Innovation has to date committed more than €384m in 20 investment vehicles that have invested in more than 250 companies, and through its co-investment finance it has directly committed an amount of more than €342m in at least 135 companies.

ENISA. This is an organization whose objective is to provide financial support to small and medium-sized enterprises and/or startups that want to promote innovative entrepreneurship projects. Its mission is to support viable business projects through a financing alternative that makes it possible to diversifying the sources of financing. They are therefore configured as a complementary option to other possible sources of investment, both public and private. ENISA reports to the Directorate General for Industry and Small and Medium-sized Enterprises, under the Ministry of Industry, Trade and Tourism.

As regards its connection with the Recovery, Transformation and Resilience Plan, ENISA acts as executing entity in the present Digital Entrepreneurs Financing, in the [AgroInnpulso Financing Line](#) and in the "Brand for Spain as an Entrepreneurial Nation" programme.

The ENISA financing for Digital Entrepreneurs offers the possibility of applying for equity loans ranging from a minimum amount of €25,000 to a maximum of €1.5 million. To determine the amount, equity and financial structure of the startup will be assessed, among other factors.

ICO. Fond-ICO Next Tech is a joint initiative of the Secretary of State for Digitalization and Artificial Intelligence and ICO through the AXIS venture capital company. This was created in 2021 as part of the [Recovery, Transformation and Resilience Plan](#) with the aim of promoting the development of high-impact digital projects and investment in innovative startups and scaleups by strengthening public financing instruments, attracting international funds and boosting the venture capital sector.

[Fond-ICO Next Tech](#) always acts in collaboration with private investors, either through indirect investments in funds (venture capital funds and corporate funds) or through direct investments in Spanish startups and scaleups. Its activity contributes, on the one hand, to attracting foreign capital to Spanish projects and, on the other hand, it strengthens the growth of Spanish companies with high potential to become unicorns, retaining talent and thus consolidating the entrepreneurial ecosystem in Spain.

Fond-ICO Next Tech has already approved investments of more than 620 million euros in ten venture capital funds and in five projects of Spanish companies with high technological and digital capacity.

With its activity, Fond-ICO Next Tech promotes the development of startups such as Trucksters, a Spanish technology-based company that uses artificial intelligence to provide a relay system to the road freight industry making transport more efficient and sustainable.

COFIDES. This is a public-private company specialized in the management of state funds (Secretary of State for Trade). The company, which is part of the [Ministry of Economy, Trade and Business](#), offers medium and long-term financing to private investments related to different public policy purposes.

For more than three decades, it has been managing resources aimed at supporting the internationalization of Spanish companies. Within the framework of the PRTR addendum, COFIDES has been assigned the direct management of two new financial instruments: the Co-investment Fund (FOCO), to attract foreign investment to Spain in activities mainly linked to the green and digital transitions, and the Social Impact Fund, aimed at strengthening the national impact investment ecosystem.

Coinvestment Fund (FOCO) is a public financial instrument managed by COFIDES that aims to mobilize resources from foreign investors, both public and private, to promote productive investments by private companies in Spain in strategic sectors.

FOCO's investments are always made jointly with a foreign co-investor, with biotechnology and sustainable agriculture standing out.

3.3 | Private financing agents and financing

Private equity fundraising in the second half of 2024 and during the next year 2025 will be a turning point that will alter the situation that the sector has been going through in the last two years, provided that the economic situation allows this. The recovery in investment fund operations will be felt more clearly in key sectors. Thus, throughout 2024 there has been a positive recovery, both in the level of fundraising and in the volume of investment and divestment operations, marked in recent months by certain monetary policy adjustments.

Private equity fundraising, both domestic and foreign, slowed down in Spain in fiscal 2023 compared to previous years as a result of macroeconomic uncertainty, with high interest rates and inflation.

3.3.1 | Venture Capital Funds and Venture Capital Companies (VCC)

A significant percentage of corporations choose to invest through participation in specialized investment funds. These funds, managed by private equity firms, channel the financial resources of multiple investing companies into a diversified portfolio of emerging companies, and where agritech companies are becoming increasingly important.

With respect to venture capital companies, it is important to emphasize that they are, in the first place, closed-end collective investment institutions, i.e., those in which there are no exit or entry windows throughout the life of the company. Therefore, divestments are made simultaneously by all the partners and the amount received by each investor is based on the rights corresponding to each one of them, in accordance with the terms established in their bylaws or regulations and with prior authorization from the CNMV (National Securities Market Commission).

In Spain, the list of funds and VCCs specialized and active in agritech can be seen in the attached table showing the main and most prominent players without prejudice to some additional incorporation. There are 27 active funds in the Spanish agritech ecosystem.

Fund

Alter Capital	www.altercapital.es
Arcano Partners	www.arcanopartners.com
Aurorial	www.aurorial.com
Ayming	www.ayming.es
Bbooster Ventures	www.bbooster.org
BEWATER FUNDS	www.bewaterfunds.com
Bpifrance	www.bpifrance.fr
CEMEX VENTURES	www.cemexventures.com
Conector Startup Accelerator	www.conector.com
Delicias Capital	www.deliciascapital.com
DIVITEL	www.divitel.com
MCH	www.mch.es
Mecides	www.mecides.es

Moira Capital	www.moiracapitalpartners.com
MURCIABAN	www.murcia-ban.es
PERMIRA ASESORES	www.permira.com
PINAMA Inversiones	www.pinama.es
Pascual Innoventures	www.pascualinnoventures.com
ATITLAN GRUPO	www.atitlan.es
SWANLAAB FUND	www.swanlaab.com
FONDO AGRO SMART	www.bancosantander.es
MIRABAUND FUND	www.mirabaund-am.com
PANDA AGRICULTURE WATER FUND	www.pandaagriculturefund.com
MAR OCEANA	www.mar-oceana.es
NOSO CAPITAL	www.nosocapital.com
BE HAPPY INVESTMENT	www.behappyinvestments.com

3.3.2 | Venture Capital

Corporate Venture Capital (CVC) may represent the investment arm of a company, which focuses its investment activity in startups. However, the key to this activity is not reduced to the transaction of funding for equity participation, but lies in the synergies that can arise from the collaboration between the two parties, starting with the incubation and/or acceleration itself. Its relevance and progression is striking in recent years in Spain.

In short, corporate venturing strategies and their advantages are a way of exploring new technologies and business models through investment in startups with potential, and a mechanism for attracting talent and innovation capacity for a sector, the agri-food sector, in need of it.

The table below shows the list of VCs active in agritech in Spain, containing the main and most prominent VCs, without prejudice, as indicated above, to any other additions, given the dynamism of the Spanish agritech ecosystem.

In this respect, we can see that within the Spanish agritech ecosystem there are 39 VCs active to a greater or lesser degree, but it is true that the Corporate Venture Capital field is growing both nationally and internationally at remarkable rate.

Venture Capital

4Founders Capital	www.4founderscapital.com
7r Ventures	www.7r.ventures
Adara Ventures	www.adara.vc
Asabys Partners	www.asabys.com
AUSTRAL VENTURE Gestion Sgeic Sau	www.australventures.eu
Axis – Grupo ICO	www.ico.es
Axon Partners Group	www.axonpartnersgroup.com
Bcombinator	www.bcombinator.com
Cabiedes & Partners SCR	www.cabiedesandpartners.com
Clave Capital	www.clave.capital
Conexo Ventures	www.conexo.vc
Criteria Venture Tech	www.criteriaventuretech.com
Draper B1	www.draperb1.vc
Encomenda	www.encomenda.com
Enzo Ventures	www.enzovenures.eu
Eoniq Fund	www.eoniq.fund
Faraday Venture Partners	www.es.faradayvp.com
GoHub Ventures	www.gohub.vc
Inveready	www.inveready.com

JME Ventures	www.jme.vc
Kfund	www.kfund.vc
Kibo Ventures	www.kiboventures.com
Klima Energy	www.alantra.com
Mar Océana	www.mar-oceana.es
Mouro Capital	www.mourocapital.com
Nauta Capital	www.nautacapital.com
NEC X	www.nec.com
Origen Ventures Fund	www.origenventuresfund.com
Pioneer investor	www.pioneerinvestors.org
PRINCIPAL ADARA VENTURES	www.adara.vc
Roca Group Ventures	www.rocagroupventures.com
SABADELL VENTURE CAPITAL	www.sabadellventurecapital.com
Samaipata	www.samaipata.vc
SC Net Zero Ventures	www.es.nzventures.vc
Seaya Ventures	www.seaya.vc
Tartecfund	www.tartecfund.com
The Venture City	www.theventure.city
Wayra - Telefónica	www.wayra.es

3.4 | Startups invested

The primary sector, often erroneously defined as precarious and old-fashioned, is being able to adapt by creating a sustainable bridge between the paths of technology and the agri-food sector.

Below are some of the most outstanding Spanish startups receiving investment in recent years in the agritech ecosystem, not only considering the volume of investment raised but also their potential, and without any disrespect obviously to any others.



Core: Soil health.

Technology: Data, artificial intelligence and bioinformatics.

Objective: Regenerative agriculture reversing the degradation of arable soils.

Last Round: 12 million euros led by Prosus Ventures. The transaction has also involved the participation of Seaya Ventures, Viking Global Investors, JME Ventures and Pymwymic.



Core: Vertical Farming in urban areas.

Technology: hydroponics in a controlled environment. Its production includes lettuce, red fruits, tomatoes and high value plants for non-food industries.

Objective: Optimization and global food production in urban areas.

Last Round: 3.5 million euros led by Fondo Tech Transfer Agrifood managed by Clave Capital.



Core: Sustainable agriculture and intelligent pest management.

Technology: Efficient water management and optimization of natural resources. 4eGrowth AI based agricultural monitoring APP technology that enables real-time field monitoring with satellite technology and advanced data analysis.

Objective: International benchmark in crop monitoring.

Last Round: 2 million euros led by the company Bongerma VF.



Core: Digitization of the agri-food sector, as well as soil characterization and crop monitoring.

Technology: Artificial Intelligence.

Objective: Digitalization of the global agri-food industry.

Last Round: 36 million euros led by Partech through its Impact Growth Fund. The round also involved the participation of Mouro Capital.



Core: Consentio is a B2B technology platform that connects operators in the fruit and vegetable and agri-food sectors.

Technology: ERP/CRM.

Objective: collective efficiency to enable agribusinesses to grow while providing more sustainable answers.

Last Round: 4.5 million euros led by Mundi Ventures. Label Investments and Hambro Perks fund also participated.



Core: Microalgae fertilizers.

Technology: Trietech© is a patented technology that brings together more than 20 years of research and studies on the use of microalgae extracts in the development of agricultural solutions.

Objective: International leader in the provision of integral solutions for agricultural needs in the biostimulants and bioprotectors sector.

Last Round: 10 million euros led by Moira Capital.



Core: Biotechnological solutions for biological wastewater treatment, both for urban and industrial environments.

Technology: FILMATH, proprietary simulation technology, validated for biofilm technologies, which allows to simulate the real operation of a Wastewater Treatment Plant.

Objective: Aims to become a leader in the digital transformation of WWTPs.

Last Round: 7 million euros led by Moira Capital and Inbergune.



Core: Digitalization of the agri-food sector.

Technology: APP. Sensorica and generated data help to make the best decisions to optimize and manage the agronomic management of crops. Plug-and-Play technology.

Objective: International leader in sensor technology and digital optimization of agri-food farms.

Last Round: 0.5 million euros led by Seidor Venture Capital.



Core: Higher profitability, better quality of life for the farmer and better traceability of livestock.

Technology: Big data and artificial intelligence. IoT in rural environments (NB-IOT and LoRaWAN networks).

Objective: To bring life back to the villages by promoting livestock farming and its social inclusion.

Last Round: 1 million euros supported by the current shareholders, composed of Barrabés.biz; HEMAV; Finaves Fund, among others.

4

Diagnosis of technology supply and demand



4 | DIAGNOSIS OF TECHNOLOGY SUPPLY AND DEMAND

There are multiple ecosystems at the global level. Innovation has perhaps been mistakenly understood as a purely technological phenomenon, forgetting the market, the organization, the value chain and even the geographic scope.

What is the reality?

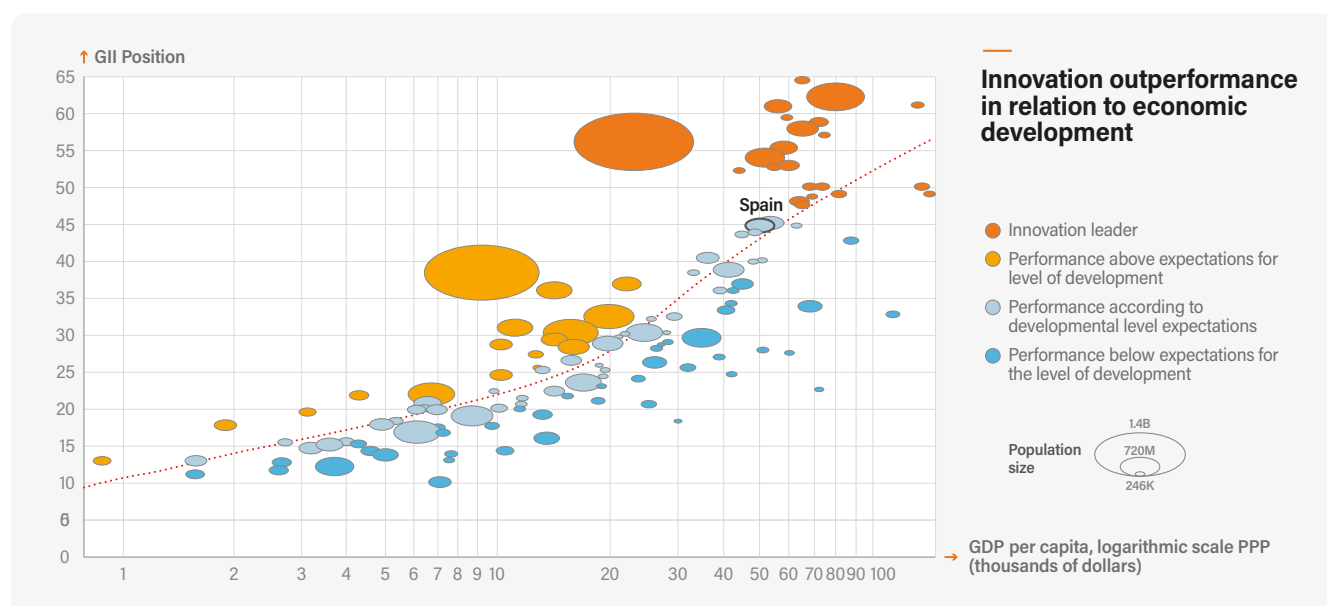
Based on what we have seen in decades in the agri-food sector and in its most primary part, we assume and share the fact that open innovation requires the need to create local innovation ecosystems and disruptive innovation requires public-private cooperation schemes, as previously highlighted.

To this end, it is necessary to design institutional frameworks that encourage such cooperation, which we can analyze or at least describe. Some countries are developing powerful R&D clusters at industry and even local level, although their projection is international/global: South Korea, Israel and Finland, among others. In general, Asia, the USA and Europe diverge in their models.

As a result, solid innovative ecosystems have emerged, according to the Global Innovation Index of the World Intellectual Property Organization (WIPO).

The Global Innovation Index (GII) ranks the world's economies according to their innovation capabilities. The Index consists of approximately 80 indicators, grouped into innovation inputs and outputs, and aims to capture the multidimensional facets of innovation. Spain ranks 28th among the 133 economies included in the GI 2024.

- Spain is well positioned in the ranking, occupying 28th place in the list, and its different indicators are well structured.
- A good position in Infrastructures (position 16) and the quality of Spanish talent (position 26) stand out.
- Spain could move closer to countries such as Germany (position 8) or France (position 12) by investing heavily in three areas:
 - Universities, with training programs more focused on the most demanded profiles now and in the future.
 - RDI.
 - Creation of ecosystems and clusters that connect universities, companies, sectors and startups.



4.1 | Technological demand

4.1.1 | Agriculture

Innovations applied to **crop water management** are the main technological demand from Spanish farmers. In Spain, there are 3,713,936 hectares of irrigated crops (23 % of the cultivated area), and the interest in increasing irrigation efficiency is growing, according to official statistics; this means irrigation technologies have positioned themselves as the main technology demanded by producers. The scarcity of water resources and climate variability make water management a crucial factor in ensuring agricultural sustainability.

Technology demanded by Spanish farmers



Irrigation

- Intelligent irrigation systems
- Humidity sensor
- Irrigation calculation tools



Fertilization

- Sensors applied to nutrient detection
- Machine vision linked to nutrition
- Satellite images



Pest and disease management

- Pest and disease alert and probability calculation tools for pest and disease disinfection
- Capture sensors (smart traps)
- Machine vision linked to pests and diseases
- Satellite images



Data management, traceability and cybersecurity

- Digital Operations Notebook
- Information storage systems
- Tools for decision making, productivity prediction and quality monitoring
- Cybersecurity
- Agricultural traceability management



Machinery and agricultural robotics

- Selective and intelligent applicators of fertilizers and phytosanitary products.
- Harvesting robots



Renewable energies

- Photovoltaic energy
- Cogeneration
- Biogas
- Energy storage systems

Source: prepared by the company based on information obtained from the Observatorio de la Digitalización del Sector Agroalimentario Español.

In this regard, farmers consider essential for their crops technologies such as moisture sensors and water allocation calculation tools to essential for their crops, often incorporate artificial intelligence systems to improve accuracy, as well as smart irrigation systems. These solutions make it possible to apply the exact amount of water needed, which not only optimizes the use of resources, but also reduces costs and improves crop productivity. Smart irrigation systems, for example, work through a technological framework composed of IoT sensors, irrigation programmers and advanced artificial intelligence systems, which facilitates decision-making based on real-time data.

The second technology cluster that stands out in the demand from the agricultural sector is **innovations applied to crop nutrition**, with the aim of reducing the use of fertilizers and increasing the environmental sustainability of farms. These solutions seek not only to improve efficiency in the use of inputs, but also to minimize the environmental impact of nitrate pollution and other chemical products.

A feature of this area is sensor technology used for the detection of nutrients in the soil and the nutritional status of crops, such as IoT sensor technology or dendrometers. In addition, the use of drones and satellite images facilitates a detailed and accurate analysis of crop needs, providing an aerial view that helps to identify areas with specific nutrient deficiencies. On the other hand, the implementation of intelligent tools that optimally calculate the amount of fertilizer to be applied based on the data obtained by these devices is increasingly in demand. These tools, many of them based on artificial intelligence algorithms, allow precise dosage adjustments.

Products and services related to the **detection of pests and diseases affecting crops** constitute the third most demanded technology group by the Spanish agricultural sector. This group includes tools for warning and calculating the probability of the incidence of pests and diseases in crops, based on specific meteorological data for each plot.

These technologies make it possible to anticipate possible outbreaks and take preventive measures, which is key to avoiding significant production losses. Also noteworthy are smart traps, which, through a complex system of devices and sensors, are capable of capturing and detecting pests in real time. These traps, connected to digital platforms, can send immediate alerts to farmers, facilitating a quick and efficient response to a threat.

In addition, the use of drones and satellite imagery makes it possible to detect the incidence of these pathologies by analyzing changes in the vegetation index of plants. These artificial vision tools help identify problems in all types of crop models, providing complete crop coverage and facilitating intervention in specific areas before infestation spreads. This technology, combined with predictive models, strengthens the farmer's ability to make data-driven decisions, contributing to more accurate and effective integrated pest management. Moreover, combining these needs with variable application equipment for crop protection products is another added value.

The **management of data collected from plots, the traceability of agri-food products and the cybersecurity of farms** constitute the fourth most relevant technology cluster for agriculture. Mass data capture on farms is currently expanding significantly, which means that farmers need solutions that include information storage platforms, either local, in the cloud, or via edge computing. These platforms not only allow data to be stored, but also to be analyzed in real time, facilitating strategic decisions that improve farm efficiency and sustainability.

Tools for analyzing the evolution of crop condition, as well as applications that allow crop forecasting and even yield gauging, are required by farmers and especially by marketing companies to ensure that the demand of processing and distribution companies is met.

Also noteworthy in this technology cluster is the growing demand for Digital Farm Notebooks, electronic documents that allow detailed tracking of inputs and cultural work used on farms, thus facilitating traceability and regulatory compliance. This result was possibly influenced by the regulations imposed by the government to implement the Farm Notebook as mandatory at the time of collecting the survey data, and since this regulation was going to be mandatory a few months after the survey was carried out; however, this requirement ended up disappearing in the short term.

Automation and robotics constitute the fifth priority in the technological demand of Spanish farmers. Two main groups of technologies stand out. First, selective fertilizer and phytosanitary applicators, which employ a wide range of sensors and artificial intelligence systems. These technologies allow the precise application of inputs at plant or plot scale, reducing the use of agrochemicals by up to 90%, reducing both costs and environmental impact.

Second, there is a growing demand for tractors with assisted driving. These tractors enable farmers to perform more efficient operations, reducing operator fatigue and improving accuracy in field work, such as planting, fertilizing and harvesting. In parallel, prototypes of autonomous tractors, which are controlled remotely or operate in a fully automated way, are emerging, representing a significant advance in the robotization of the sector.

In addition to autonomous tractors, specialized robots are being developed for tasks such as harvesting, weeding and pruning. These technologies not only address labour shortages in the sector, but also improve productivity and efficiency in operations that have traditionally been highly dependent on human labour. This interest in robotization is part of a broader shift towards agriculture 4.0, where digitization, the use of real-time data and automation are key to a more sustainable and profitable future.

Finally, the **implementation of renewable energy sources** is the sixth technological priority for Spanish farmers. The most important ones in this area are the adoption of renewable energy sources, such as photovoltaic systems, the valorization of agricultural biomass, cogeneration and biogas.

In addition, the integration of renewable energies on farms contributes to reducing the sector's carbon footprint, in line with environmental requirements and sustainability commitments at a European level. Biogas production, for example, not only makes it possible to use agricultural waste, but also to generate clean energy and reduce greenhouse gas emissions. This process is part of the transition to a circular economy, where waste is transformed into useful resources, closing the production cycle and promoting long-term sustainability.

As indicated above, the robotization of agricultural activity is one of the farmers' priorities. In this regard, 82.2% of farmers want to robotize some of the tasks on their farms, mainly those that are more costly. The labour shortage experienced by the agricultural sector and an improvement in the quality of life are two priority issues for Spanish agricultural producers.

Specialization in the demand for robotics is diverse. However, producers agree that harvest robotization is their main priority. On the other hand, people in the agricultural sector demand robots specialized in the application of phytosanitary products, fertilizers and water, as well as in sowing, crop transplanting and weeding.

4.1.2 | Livestock

The main technological demand of Spanish livestock farmers is focused on **innovations applied to monitoring animal welfare on farms and animal health**. A feature of this area are products and services based on IoT sensor technology, allowing the detection of animal stress and the early detection of diseases or the identification of calving. These tools allow farmers to make quick and accurate decisions, improving not only improving productivity but also the quality of life of the animals, something increasingly valued by both consumers and animal welfare regulations.

Technology demanded by Spanish farmers



Animal welfare and health motorization

- Sensors applied to behavioral monitoring and stress detection
- Sensors applied to disease detection
- Sensors applied to childbirth
- Drones



Control of environmental conditions

- Sensors applied to temperature monitoring
- Sensors applied to humidity detection
- Sensorics applied to air quality detection



Precision feeding

- Automation of feeding and the development of precision feeding
- Precision feeding
- Applied sensors for the detection of GHG emissions during the feeding process



Data and cybersecurity management and automation

- Data warehousing services
- Livestock ERP
- Access control to the facilities (animal security and detection of contacts)



Automation and robotization of activities

- Feeding
- Cleaning and disinfection of facilities
- Milking
- Childbirth



Renewable energy

- Photovoltaic energy
- Cogeneration
- Biogas
- Energy storage systems

Source: prepared by the company based on information obtained from the Observatorio de la Digitalización del Sector Agroalimentario Español.

These technologies must in addition be integrated into analysis platforms based on artificial intelligence algorithms, which facilitate the detection of abnormal animal behaviour, such as changes in feeding or movement patterns, indicative of health or comfort problems. These technological solutions optimize farm management, improving operational efficiency and reducing costs associated with late treatment or production losses.

The monitoring of internal environmental conditions on farms has become the second priority for Spanish farmers. This includes sensors specialized in measuring temperature, humidity and air quality stand out, especially through the detection of greenhouse gases that may exist in the microclimate of farms, which are toxic for both animals and people. In addition, these digital solutions can be integrated with other technologies, such as augmented reality or digital twins, allowing a detailed and virtual image of the farm to be obtained.

These tools facilitate remote monitoring and control, allowing farmers to detect problems before they become serious, thus optimizing farm management.

These solutions can also be connected to ventilation systems to automate their operation according to the needs of the farm's internal environment, improving animal welfare and reducing exposure to harmful gases. They also enable accurate tracking of equipment lifetime, facilitating preventive maintenance and reducing downtime, which translates into greater operational efficiency.

Precision animal feeding is another important issue for Spanish livestock farmers, representing the third most important technology cluster. Features in this field are the use of sensors to detect the feed or forage consumed by individual animals, as well as the adequacy of the supply of the different feed ingredients to the production, weight or growth rate of each individual, which can lead to adjusting their diet, stands out. This data allows farmers to optimize rations and ensure that animals receive the necessary nutrients, improving their health and well-being. The information collected is also useful for adjusting the incorporation of additives to mitigate greenhouse gas emissions.

Data management, traceability and cybersecurity constitute another group of key products and services for Spanish livestock farmers. As in agriculture, there is a growing interest in data capture, which necessitates the development of large-scale storage systems, both in the cloud and through local solutions, depending on the needs of each farm.

On the other hand, farmers are showing great interest in enterprise resource planning (ERP) systems for the coordination of all their on-farm activities, from feeding to animal health and production management, in order to optimize economic results. The integration of these systems with monitoring technologies facilitates total control of production, helping farmers to comply with traceability and transparency regulations, which are increasingly demanded by both consumers and regulatory bodies. The information gathered through these systems is key to the completion of the farm book, an essential tool for management and regulatory compliance.

In addition, technologies that allow full control of access to farms are essential, facilitating the identification of potential contacts and improving biosecurity. This is essential to prevent the entry of diseases and protect animal health, especially in a context of growing concern about epidemics and biosecurity. These solutions not only improve the protection of the facilities, but also contribute to the automation and digitization of the farm as a whole.

Equipment that enables **automation and robotization of livestock activities** is the fifth technological priority for livestock farmers. This includes feeding automation, which makes it possible to apply feed rations on demand, and the development of specific robots for cleaning facilities or milking cows, stand out.

The automation of tasks such as feeding and milking contributes to the standardization of processes, resulting in greater consistency in the quality of dairy products and improved animal health, as they receive the right feed and care at the right time. For example, automatic milking systems monitor cow health, detecting possible infections such as mastitis before they become serious problems, allowing for quick and effective intervention. Likewise, the integration of this equipment with digital platforms allows farmers to have complete control of farm operations, accessing real-time data on production and animal condition.

Finally, **investment in renewable energy** is another priority for livestock farmers, similar to what is happening in crops. The adoption of technologies such as solar panels or biomass valorization helps to reduce energy costs and the carbon footprint of livestock farms, aligning with sustainability regulations and contributing to a more sustainable future for the sector.

In livestock farming, there is a slightly higher interest in robotizing farms. 92.2% of people in this sector want to implement robots in some activities, with animal welfare management, feeding, cleaning of facilities, product collection (e.g. eggs or milk) and farm monitoring standing out. The automation of these tasks not only improves operational efficiency, but also reduces the workload, allowing farmers to focus on strategic aspects of management or improve their quality of life.

4.2 | Technology offer

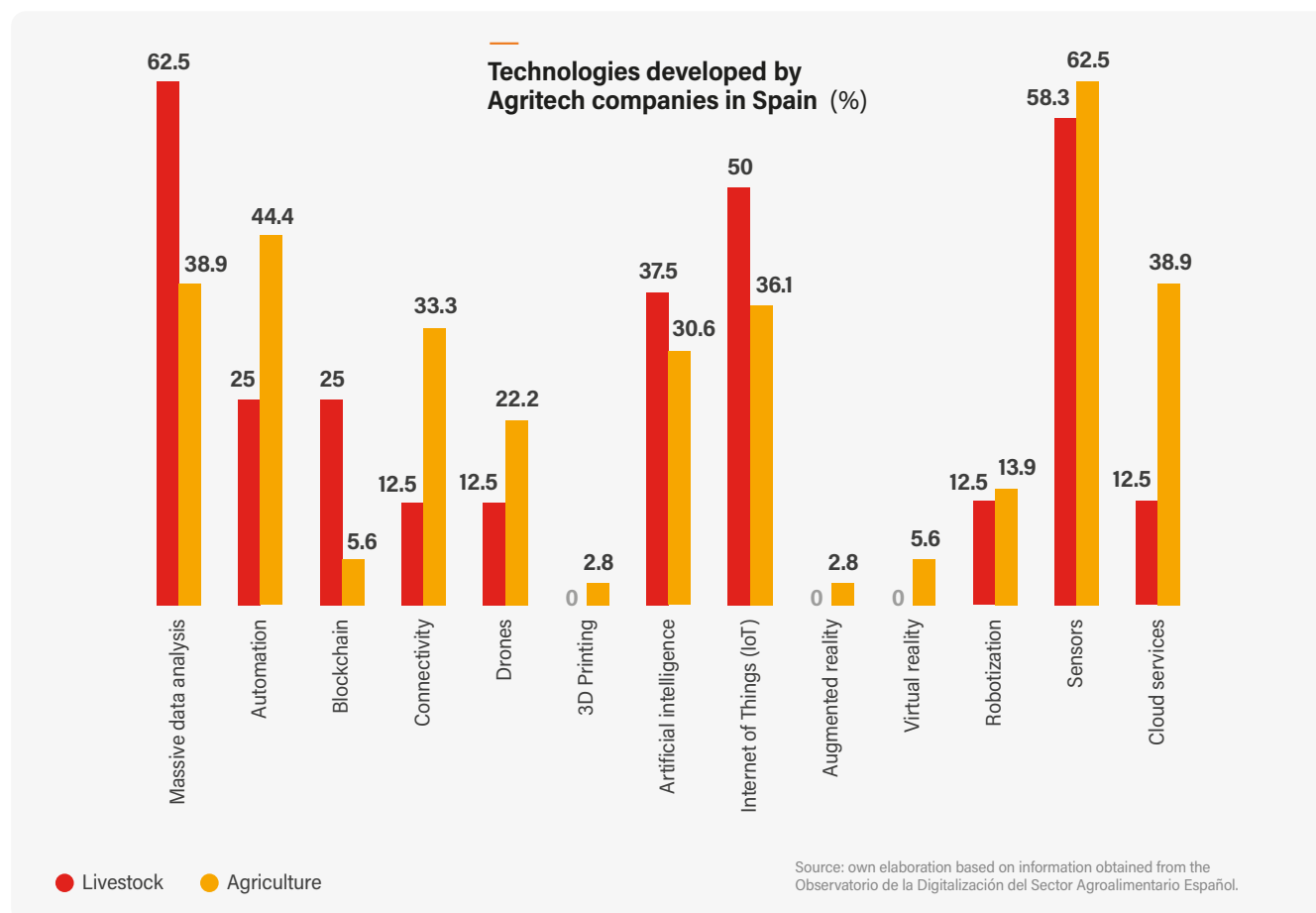
Agritech companies in Spain have oriented their technological offerings to the needs of the Spanish agricultural and livestock sector, seeking to boost efficiency and sustainability in these activities. In this sense, this auxiliary industry has focused the development of its products and services on enabling technologies **for massive data analysis and advanced sensors**. These innovations enable agricultural and livestock farms to optimize their resources, reduce waste and improve their productivity.

More than 50% of Agritech companies develop products and services based on these technologies (Figure 5). Undoubtedly, the data generated by farms and livestock farms have undoubtedly become a fundamental pillar for their digitization, allowing farmers to make informed and accurate decisions in real time, which translates into greater profitability and sustainability in the long term.

Other highlights are products and services that integrate **IoT solutions**, which enable sensor networks to connect, automatically exchange data and optimize key processes, such as smart irrigation or livestock management. These products also include cloud services to store and process large volumes of data, facilitating remote access and collaboration between different players in the sector.

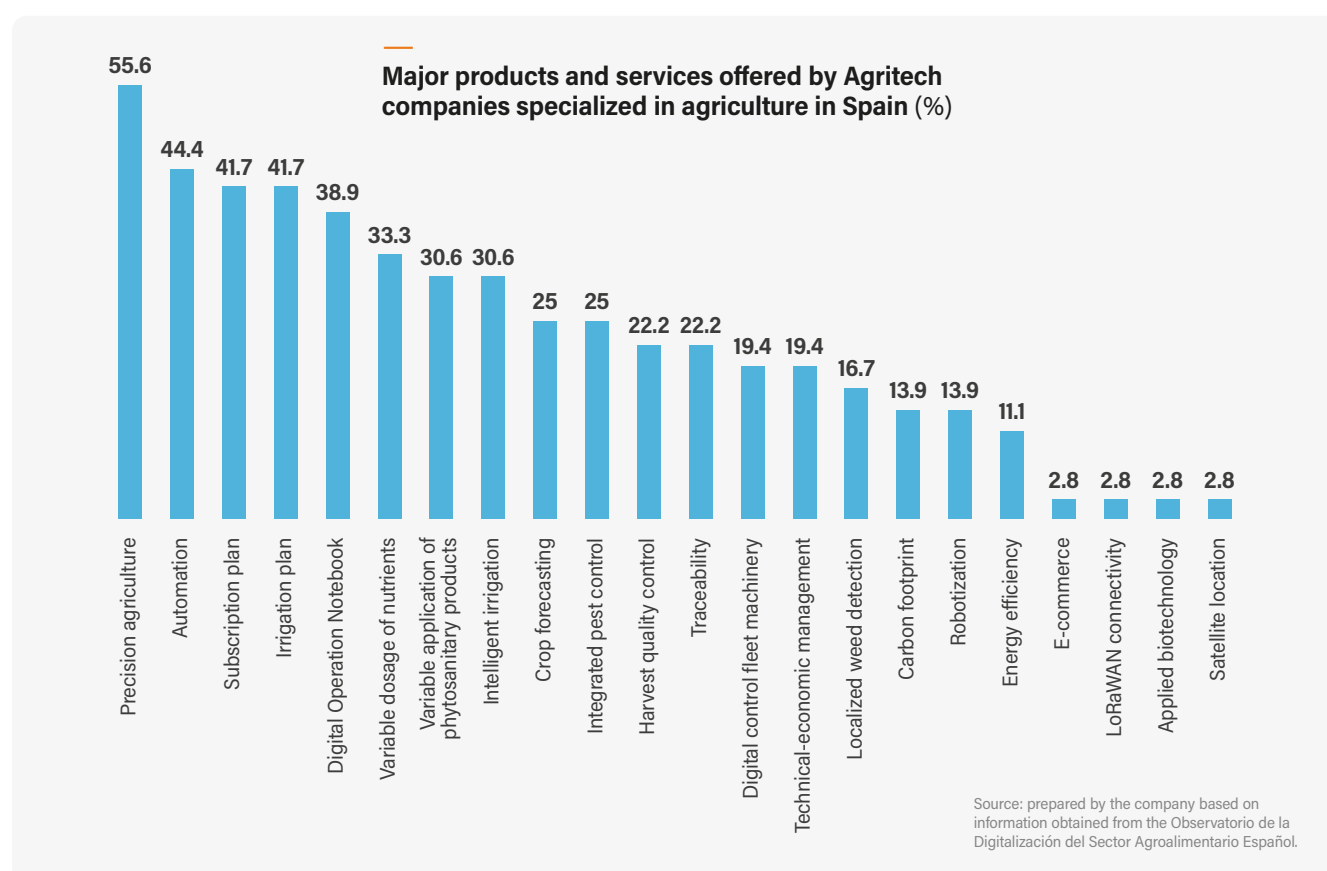
Artificial intelligence systems also figure prominently in the technology offered by these companies, with more than 30% of organizations integrating intelligent models into their products and services. These systems enable more advanced automation and predictive analytics that contribute to continuous farm improvement.

In addition, it is expected that in the use of artificial intelligence in the agricultural and livestock sector will continue to grow, in the coming years offering even more personalized and efficient solutions, adapted to the particularities of each farm.



Agriculture

The integration of enabling technologies in Agrotech companies specialized in agriculture has significantly boosted the supply of **precision farming and automation products and services**, with rates exceeding 40%. These innovations enable farmers to optimize the use of inputs, such as water and fertilizers, improving sustainability and reducing operating costs. In addition, the automation of agricultural tasks contributes to increased efficiency and productivity, helping the sector to meet the challenges of growing food demand, the need to adapt practices to a more sustainable environment, and the labour shortage the sector is experiencing.



Other features are the offer of services related to the **calculation of the water supply**, the fertilization plan and the Digital Farm Notebook. These types of digital tools, offered by between 38.9% and 41.7% of organizations, are increasingly associated with artificial intelligence systems and massive data analysis. These technologies make it possible to improve efficiency in the application of inputs and to carry out adequate traceability in their application, whether on crops or in related cultural work.

The ability to adjust fertilization and irrigation rates in real time according to weather conditions or crop phenological state offers farmers the possibility to reduce resource use and maximize production.

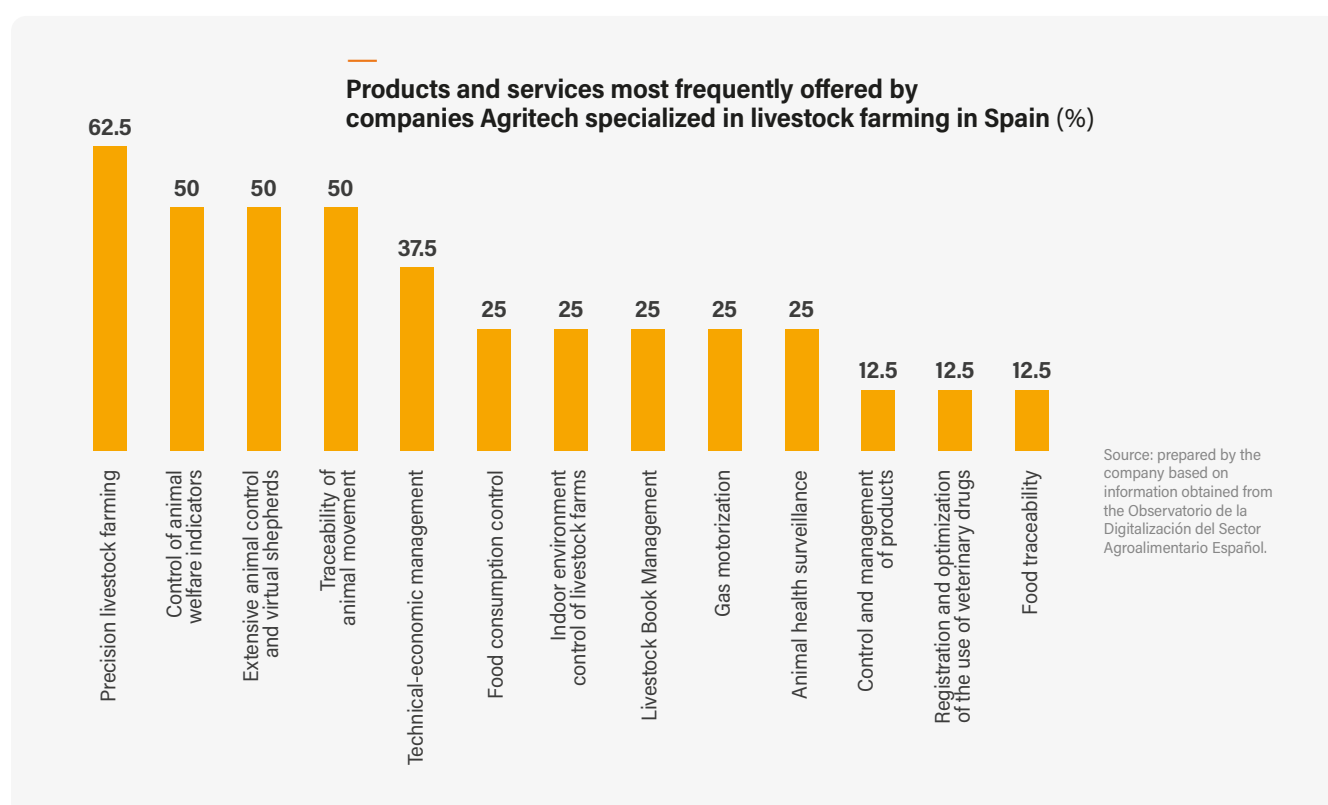
On the other hand, Spanish Agrotech companies have made a strong commitment to the development of **instruments for variable application of fertilizers, phytosanitary products and water** (30.6%-33.3%), which allow differentiated dosage of these inputs according to the specific needs of the soil and crops. Advanced technologies have also been implemented for **integrated pest control**, using sensors and automated monitoring, which reduces the indiscriminate use of chemical products. In addition, production quality is managed through tools that analyze critical parameters in real time, such as moisture content, crop health and fruit maturity, ensuring the consistency and quality of the final product.

Finally, there is an emerging group of products and services based on **cutting-edge technologies**, such as localized detection of weeds using artificial vision, carbon footprint measurement to ensure environmental sustainability, and the robotization of agricultural processes, which allows repetitive and manual tasks to be carried out with greater precision and efficiency than human labor. **Energy efficiency** has also gained prominence, with solutions that optimize energy use on farms, such as solar systems for pumping water or generating electricity. In addition, e-commerce is revolutionizing the way farmers sell their products, connecting directly with local and global markets through digital platforms.

Other areas of innovation include **LoRaWAN connectivity**, which enables data transmission over long distances with low energy consumption, crucial for connecting sensors in rural areas; applied biotechnology, which offers solutions such as seeds resistant to adverse weather conditions or diseases; and satellite positioning, which helps to map and monitor crop plots with unprecedented precision, enabling more accurate and efficient agriculture.

Livestock

In the field of Agritech companies specialized in livestock farming, the main products supplied are related to the category of **precision livestock farming**. 62.5 % of the companies offer this type of products and services. These technologies enable more efficient management of livestock resources, including feeding, animal health monitoring and reproduction optimization. Using sensors and automated systems, farmers can monitor the behaviour and condition of their animals in real time.



Secondly, there is also a group of products and services aimed at **monitoring animal welfare conditions**, thus responding to regulatory and customer demands in this area. Solutions include systems for continuous monitoring of animals and their environment, controlling the evolution of parameters such as temperature, humidity and stress levels. In this context, innovations related to environmental control in farms stand out, such as gas monitoring (mainly ammonia) and animal health surveillance through advanced sensors and artificial intelligence systems that warn about possible health problems, facilitating the adoption of prevention and control measures. Tools have also been designed to monitor farm efficiency and productivity.

Furthermore, a group of technologies is emerging to make possible the traceability of the origin, movement of animals, including RFID devices, GPS sensors and virtual herders. The latter seek to eliminate traditional fences by means of a vast array of sensors and GPS systems that distribute the animals with respect to what they should be consuming at any given time. Technologies related to the control of feed consumption or gas emissions are offered by 25% of livestock Agritech companies. These innovations allow farmers to adjust animals diets according to their nutritional needs and data from feed consumption.

Finally, there is the supply of products and services related to the control and management of farm products, the registration and optimization of antimicrobial use, and feed traceability. This type of technology not only enables compliance with regulatory requirements in terms of food safety, but also helps to improve the sustainability of livestock production by reducing the use of drugs and improving the efficiency of meat and milk production.

4.3 | Final considerations and some examples of reference startups

This study has described the state, componentes and characteristics of an innovation ecosystem in full growth where agritech companies are developing real solutions to meet the demands in the different production stages.

Finally, as an example of the Spanish agritech ecosystem, we have selected some companies such as Biorizon, a benchmark in biotechnology, for being a company that has already become a multinational reality; Ikos Tech, a company specialized in precision agriculture, which is experiencing great growth; Biome Markers Inc, a leading company in regenerative agriculture, founded in Silicon Valley and whose Spanish founders have created a subsidiary in Spain called Biome Makers Spain, revolutionizing the production process. And finally, we have also considered it appropriate to include Auravant as an example of an international company settled in Spain as a gateway to the European market.

As indicated at the beginning of this study, undertaking the challenge of describing the Spanish Agritech ecosystem has not been an easy task, highlighting here only a few striking references being highlighted here, and without obviously including all those that could be included on their own merits.



Origin: Valladolid (Spain) with headquarters in Davis, California (USA) Biome Markers Inc.

Area of interest: Regenerative Agriculture.

Specialization line: Tool that analyzes soil biology to give recommendations to optimize and recover soils.

Description: Biome Makers, a growing company with more than 80 employees. Founded in Silicon Valley (California), integrates soil microbiology into agricultural decision-making to optimize farming practices and reverse degradation of arable soils. They have developed BeCrop® technology, an Artificial Intelligence tool with the world's largest database of microorganisms that, based on soil biology data, predicts risks and diseases, and enables better decisions to improve yields and regenerate soil health.



Origin: Almeria (Spain)

Area of interest: Precision agriculture platform.

Specialization line: Digital platform for crop management support.

Description: It is a precision agriculture platform that has developed its own ecosystem of solutions to optimize production and manage the agronomic management of crops, through the use of IoT, Big Data and AI. As a differentiating element, they have developed an algorithm (Raindrop) that uses sensor data to calculate the water needs of crops, as well as the optimal soil moisture ranges, and which allows them to automate irrigation on demand. They are present throughout the national territory with more than 7,000 devices installed and are beginning their international expansion.



Origin: Almeria (Spain)

Area of interest: Applied biotechnology.

Line of expertise: Development of biostimulants and biopesticides of natural origin for agricultural use.

Description: World pioneers in the development of microalgae-based products for agriculture. They produce microalgae in a controlled and sensorized environment and have developed their own TrieTech© technology, which allows them to select and isolate microalgae according to the desired hormonal profiles and their agricultural potential. Biorizon has the largest microalgae production plant in the world and is about to start up another plant for the production of microalgae with saline water. Currently, in addition to microalgae, they work with bacteria and botanical extracts. It has become a multinational company with more than 100 employees that exports its solutions to more than 50 countries on five continents.

● How does Biorizon Biotech see the Spanish Agritech ecosystem, future and opportunities?



David Iglesias
CEO Biorizon Biotech

The Spanish Agritech ecosystem is undergoing an unprecedented technological revolution, driven by the adoption of disruptive tools that put data management at the centre. Technologies such as AI, Big Data and Cloud services are transforming agriculture, making it more efficient, sustainable and resilient.

In parallel, advances in biotechnology, the use of drones, precision robotics and innovative production systems, such as vertical farming, microencapsulation and indoor cultivation, are redefining agricultural practices. These innovations are creating a more robust and adapted model to ensure stable, high-quality harvests, even in the face of challenges such as climate change.

Spain has a privileged environment to lead this revolution: its climatic diversity, agricultural tradition and capacity for technological innovation offer fertile ground for developing solutions that respond to consumer demands and environmental challenges. In addition, the increasing number of private and public initiatives driving this ecosystem is creating a favorable environment for entrepreneurship and collaboration.

At Biorizon Biotech, we believe that the future of Spanish Agritech is full of opportunities. Technologies such as blockchain, applied to food traceability, together with solutions based on microalgae and other biotechnologies, have the potential to transform agriculture into a more sustainable and regenerative model. In addition, the integration of drones and precision robotics will enable more efficient resource management.

The key to harnessing this potential will be to foster collaboration between startups, established companies, universities and public bodies, as well as to ensure that these technologies are accessible to small and large producers. Agrotech is not only modernizing the agricultural sector, but is also providing sustainable and efficient alternatives to food production and distribution, responding to the expectations of consumers who are increasingly committed to health, sustainability and transparency. In this context, Spain has the opportunity to position itself as a global leader in agricultural innovation, and from Biorizon Biotech, we are ready to be an active part of this transformation.

● How does Biorizon Biotech see its future in the next 5 years?

In the next five years, Biorizon Biotech envisions itself as a global player in agricultural biotechnology, standing out for its commitment to sustainability, continuous innovation and positive impact on agricultural ecosystems. Our goal is clear: to lead the transition to a regenerative agriculture that combines productivity and respect for the environment.

Our TrieTech© technology together with our extensive knowledge in plant physiology will continue to be our central pillars, allowing us to develop biostimulants and biopesticides based on microalgae that offer effective solutions to challenges such as climate change, soil degradation and international regulatory requirements. We are working to expand our presence in strategic markets such as Latin America, Asia and North America, adapting our solutions to local needs and contributing to the strengthening of agricultural value chains in each region.

At a national level, we will work to strengthen our connection with the Spanish Agritech ecosystem, fostering strategic collaborations with universities, such as the University of Almeria (UAL) through the Regenerative Agriculture 4.0 Chair, and with leading research centres. Our goal is to promote projects that facilitate the adoption of innovative technologies at all levels in the agricultural sector.

The incorporation of tools such as Big Data, precision robotics and advanced traceability systems will be fundamental in this strategy, allowing the optimization of processes, improving sustainability and increasing the competitiveness of the sector.

In terms of impact, we not only want to contribute not only to increased agricultural productivity, but also to soil regeneration and the reduction of the water and carbon footprint in food production. Our commitment to sustainability will lead us to diversify our offer, developing solutions that address emerging problems, such as water stress, and favor the resilience of agricultural systems in the face of extreme weather events.

Finally, in five years, we expect Biorizon Biotech to not only be recognized as a world leader in microalgae-based solutions, but also as a driver of change for a fairer, more sustainable agriculture aligned with the expectations of conscious consumers seeking quality food produced in an ethical and responsible manner.

auravant

Origin: Buenos Aires (Argentina) with offices in Madrid (Spain) and São Paulo (Brazil)

Area of interest: Precision agriculture platform.

Line of expertise: Digital platform that integrates and analyzes all agronomic information from the farm.

Description: Auravant has developed a SaaS platform that allows to analyze all the agronomic information of the farm to facilitate better decision-making, achieve better yields and a more sustainable production. Integrating and processing diverse data sources, such as satellite images, georeferenced information layers (yield maps, nutrients, altimetry), rainfall forecasts and records, sensors and weather stations. After their beginnings in Argentina, they arrived in Spain as a gateway to Europe through the Rising up in [Spain program](#) (ICEX Invest in Spain). They are currently present in more than 80 countries.

● How does Auravant see the Spanish Agritech ecosystem, its future and opportunities?



Leandro Sabignoso
CEO & Founder
Auravant

The Spanish Agritech ecosystem is constantly growing, since we started with Auravant in 2017, many startups have been created in different verticals (Digital Agriculture, Robotics, AI, etc.) that generate clear value for companies in the agri-food chain. In the specific case of Digital Agriculture, we are moving from a moment of initial adoption of the technology (early adopters) to another where it is already clear that digitization is unavoidable, and penetration is accelerating (an early majority). This is also being perceived by investment funds, which are once again showing interest in the sector. One of the challenges is the perceived initial cost, especially in sectors where generational turnover is slow. Business models such as freemium or freetrials and the investment of private companies together with partnerships with public entities can be fundamental to democratize access to technology. In addition, distrust of data management continues to be a detrimental to adoption.

It is vital to prioritize security and transparency in the use of data, so that farmers feel supported and confident in the value that these technologies can bring. The production of quality food in a sustainable way is the great challenge of our generation, and Spain has a unique combination of crop diversity,

● How does Auravant see its future in the next 5 years?

Auravant is one of the companies that has been leading the adoption of digital agriculture in the Americas and Europe, particularly precision agriculture. As the spearhead of this paradigm shift, having already overcome the initial resistance to change, what we see in the next five years is an exponential growth in the size of our company. We believe that by 2030 we will be the digital agriculture platform of choice for all industry players to exchange information, goods and services. This not only implies being favoured by farmers and companies, but also of other agtech companies that are starting to choose us as a technology partner to leverage their value propositions.



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