



**FOOD4
FUTURE**
BILBAO FOODTECH
WORLD SUMMIT

13-15 MAY 2025
BILBAO - BEC
#F4F2025

SMART FOOD SOLUTIONS

CONCLUSIONS OF THE
FOOD 4 FUTURE SUMMIT 2025

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WHAT WILL YOU FIND IN THIS DOCUMENT?

- / A comprehensive **overview** of the most relevant developments at Food 4 Future 2025.
- / **Highlights** from the conference segment of the event.
- / **Innovations** presented that address, or are expected to address, new demands and needs within the food value chain.

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ROGELIO POZO. DIRECTOR OF FOOD 4 FUTURE WORLD SUMMIT AND JAVIER DUEÑAS, PRESIDENT OF F4F – EXPOFOODTECH


ROGELIO POZO

Director of Food 4 Future World
Summit and CEO of AZTI


JAVIER DUEÑAS

President of F4F – ExpoFood-
Tech and CEO of Campofrío

Never before have we faced such an intense combination of challenges: inflationary pressures, talent shortages, shifting consumer habits, fragile supply chains, and mounting demands for sustainability, traceability, and transparency. Added to all this is a more informed, more demanding, and less predictable consumer—one who wants to eat better, faster, with lower impact and at an affordable price. A formidable challenge, but also a unique opportunity.

In this context, **Food 4 Future – Expo Foodtech** 2025 has firmly established itself as the key meeting point where the entire breadth and diversity of the food sector comes together to reflect, share, and shape the future. Over three days, leaders from food companies, retailers, startups, technologists, and experts have tackled, head-on, the major issues shaping the present and future of food.

The conclusion has been clear and unanimous: the sector cannot afford to wait. We can no longer operate with yesterday's models in a market that reinvents itself every week. The answer lies in combining sustainability, agility, and a human touch. To do so, we need more resilient business models, genuine innovation in products and processes, smart data management, purpose-driven brands, and value chains built on trust and collaboration.

Now more than ever, competition alone is not enough. We must cooperate with vision, adopt technology in a democratic way, and restore pride in being part of an essential industry. Attracting young talent, practising empathetic leadership,

and committing to positive impact are now just as crucial as operational efficiency or product quality.

Food 4 Future – Expo Foodtech was created with this very mission: to be the space where the food industry reimagines its future, confronts its challenges, and equips itself to overcome them. A place where big brands learn from small ones, where innovation is made accessible to all, and where purpose becomes a competitive edge.

The food of the future won't build itself. It demands bold decisions, investment—and above all—collaboration. At F4F 2025, we've seen once again that the sector is ready. Because those who dare to lead the change will own the future.



F4F2025 HIGHLIGHTS

FOOD 4 FUTURE - EXPOFOODTECH 2025, IN FIGURES

Food 4 Future - Expo FoodTech 2025 took place from 13 to 15 May 2025, establishing itself once again as a leading international forum for the food and beverage industry. Now in its fifth edition, it brought together the most influential players across the value chain to explore the technologies, trends, and sustainable business models that will shape the future of food.

The presence of international investors, tech hubs, and research and innovation centres completed the key agri-food ecosystem that gathers annually at **F4F-ExpoFoodTech** to drive forward the foodtech sector. It is the meeting point where knowledge, innovation, and essential technologies converge to push the transformation of the agri-food value chain.

Germany was the guest country at this year's edition, represented by a prominent institutional and business delegation led by the Honorary Consul in Bilbao.

At F4F-ExpoFoodTech 2025, **over 420 FoodTech solutions** were showcased, covering industrial automation and robotics, artificial intelligence in food production, new sustainable packaging systems, supply chain traceability and digitalisation, technologies applied to areas such as food safety or personalised nutrition, and solutions focused on efficiency and sustainability.

Food 4 Future 2025 in numbers:

- Attendees: **over 8,000 agri-food professionals**
- Estimated economic impact: **€19 million**
- **Exhibiting companies: 250**
- Speakers: **379 national and international experts** took part in 125 congress sessions
- More than **200 international startups presented their disruptive solutions**

FOODTECH AND INNOVATION ECOSYSTEM

The FoodTech Startup Forum once again served as a hub for fostering collaboration and growth within the foodtech innovation ecosystem, bringing together startups, leading corporations, innovation stakeholders, and investors.

The forum hosted over 200 international startups, 60 of which were selected to present their most innovative solutions. It was an inspiring space aimed at showcasing who is innovating, investing, and collaborating within the FoodTech ecosystem.

The 2025 edition emphasised the need for collaborative effort to transform the sector. The dynamic role of startups as drivers of innovation was recognised, with a spotlight on the importance of attracting investment to scale their solutions. Financing models for FoodTech projects and capital attraction to the sector were also discussed.

The crucial role of technology centres, universities, and innovation platforms in transferring technology and knowledge to industry was highlighted. Cutting-edge R&D projects demonstrated how



national initiatives are tackling urgent global challenges and redefining the future of food.

Presentations and panel discussions covered key topics such as:

- Automation and robotics
- Biotechnology and synthetic biology
- Artificial Intelligence
- Sustainability and circular economy
- Agritech
- New ingredients and alternative proteins
- Smart packaging and traceability

A central theme, reflected across keynotes and panel discussions, was collaboration between large corporations and startups in the food sector. Speakers agreed that cooperation is essential for driving innovation and tackling industry challenges effectively.

They stressed the need to clearly define challenges for successful open innovation, involve all business units, and remain flexible to

adapt solutions to real needs.

Alba Bernardino, Venture Manager at **Pascual Innoventures**, highlighted the importance of preparing open innovation leaders and creating dedicated departments with allocated budgets. **Bé-lén Moscoso**, Corporate Venturing Manager at **EIT Food**, noted that AI adoption in the food sector lags behind other industries, though significant progress is underway.

Albert Anglarril, Innovation and Project Development Manager at **AECOC**, spoke of common challenges faced by manufacturers and retailers—such as customer experience, sustainability, and technology—and how collaboration can help solve them. **Chrish Aurand**, Open Innovation Lead at **Foodtech SPACE-F/Thai Union**, addressed the need to decarbonise the fish supply chain and the value of collaborating with startups and other companies facing similar issues.

Synthetic biology drew special attention, with discussions on its technological challenges and opportunities. Representatives from Navarra's innovation ecosystem presented the potential of this disruptive technology for the food sector. The roundtable included **Nasertic** (public enterprise and instrumental body of the Govern-

ment of Navarra), **Sodena** (financial support agency), and the **Na-grifood Cluster**, who outlined how infrastructure and investment are supporting Navarra's synthetic biology strategy.

Two startups also took part, sharing their R&D progress and transition to industry:

- **Genbioma**, focused on personalised nutrition, is developing pioneering products that positively impact human health.
- **Moa FoodTech**, which transforms industrial by-products into high-value ingredients through fermentation.

Challenges highlighted included the industrial scaling and commercialisation of competitive solutions, establishing a regulatory framework that ensures safety, improving public perception of this technology, and addressing the shortage of skilled professionals. Despite these hurdles, there is growing recognition of the opportunities and benefits that synthetic biology can bring to the food sector.

In a roundtable with venture capital **Pampa Start VC**, **The Yield Lab** and **Sparkfood Sonae**, participants explored investment opportunities, high-potential sectors, innovations attracting funding, and key decision-making factors.



Meanwhile, **JOYANCE Partners**, **AgFunder VC Fund**, **AgriFood Futures** and **The Kitchen FoodTech Hub**, discussed the value investment funds bring to the food industry, driving innovation and growth.

F4F-ExpoFoodTech highlighted the increasing importance of innovation hubs, collaborative innovation ecosystems, open innovation, and new governance models such as corporate venture frameworks that promote collaboration between startups and established companies.

Some of the keynote speakers at the FoodTech Startup Forum 2025 were:

Corporate open innovation processes a new relationship with startups to grow together



Alba Bernabino Cuesta
Venture Manager
Pascual Innovaciones

Albert Anglarril
Gerente de Innovación y Desarrollo de Proyectos
Foodtech SPACE-F / Thaï Union

Chris Aurand
Open Innovation Leader
Foodtech SPACE-F / Thaï Union

Belén Moscoso
Corporate Venturing Manager
EIT FOOD

Retos tecnológicos y oportunidades de la biología sintética para startups, corporates y hubs de innovación foodtech



Gonzalo Rodríguez Ordóñez
Director de Medicina Personalizada y Laboratorios
Nagrifood

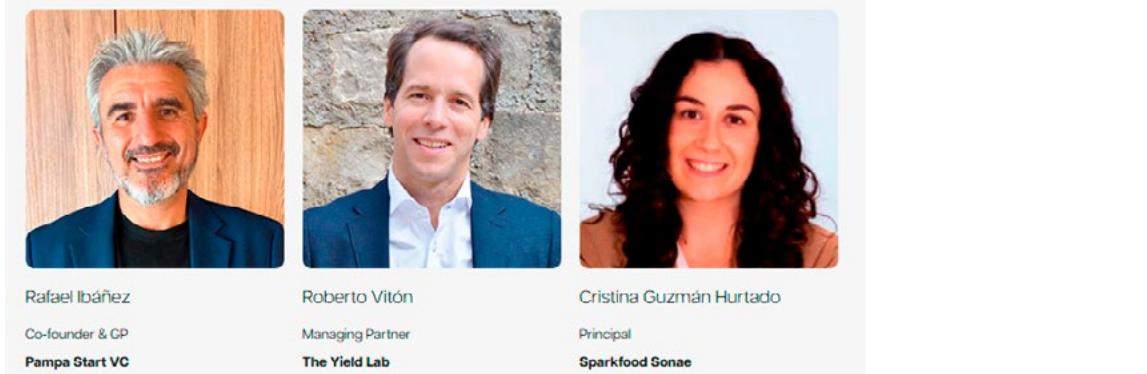
Sandra Aguirre
Investment Manager
Sodena

M. Eugenia Lezáunberri
Co-Founder & CEO
Genbioma

Josine Ayo
CEO
Moa Foodtech

Bosco Emperanza
CEO
Foodtech SPACE-F / Thaï Union

Explorando las oportunidades de inversión en la industria alimentaria



Rafael Iñáñez
Co-founder & CEO
Pampa Start VC

Roberto Vitor
Managing Partner
The Yield Lab

Cristina Guzmán Hurtado
Principal
Sparkfood Sonae

The value proposition of investment funds



Alice Ko
Investment Partner
JOYANCE Partners

Lara Erman
Associate
AgFunder VC Fund

Joshua Soo
Co-Founder
AgriFood Futures

Amir Zaidman
Chief Business Officer
The Kitchen FoodTech Hub

AWARDS

FOODTECH INNOVATION AWARDS 2025

The FoodTech Innovation Awards 2025 once again recognised the most innovative and disruptive startups and projects across key categories that are transforming the food sector with high-impact solutions.

This year's awards focused on seven key areas reflecting major industry challenges: digitalisation, sustainability, health, automation, packaging, most innovative startup, and best Spanish startup with international potential.

The awards ceremony featured **Maite Ambrós**, Deputy Director General for Innovation and Digitalisation at the **Ministry of Agriculture, Fisheries and Food**, and **Amaia Barredo**, Minister for Food, Rural Development, Agriculture and Fisheries of the **Basque Government**.



Winners of the FoodTech Innovation Awards 2025:

- **URAPHEX** – **Best Sustainability Project and Spanish Startup with Greatest International Potential.** Recognised for its patented PHEX technology, which saves water in the industry without using chemicals or altering the sensory properties of food.
- **Coccus** – **Most Innovative Startup.** Offers technological solutions for food production based on alternative proteins and hybrid products containing animal protein.
- **Centric Software** – **Most Innovative Digitalisation Solution for the Food & Beverage Industry.** Its Centric PLM solution helps companies accelerate product launches and quickly respond to market demands.
- **Toy Medical** – **Best Healthy Food Project.** Awarded for a snack developed using salt-balancing technology derived from seaweed.

• **Beckhoff Automation** – **Best Automation and Robotics Solution for the Food Value Chain.** Their Syntegon platform integrates magnetic levitation transport and machine vision for product handling.

• **Grupo Lantero** – **Most Disruptive Packaging Solution.** Recognised for its groundbreaking resealable tray and lid made entirely from 100% mono-material PET, designed to keep food fresh for longer.

Among the 250 entries submitted, the following finalists also stood out in each category:

Finalists – Best Sustainability Project:

- **Parcitank**, for its vertical farming system that allows crops to grow inside a detachable tank under fully controlled conditions.
- **Ainia**, for producing new non-plant biomass raw materials and bio-based products through upcycling and cascade use.

Finalists – Most Innovative Startup:

- **Naria**, with its platform connecting the food industry to social organisations to manage food surpluses.
- **Uomics**, accelerating anti-arrhythmic drug discovery using deep learning-based technology DRUP.

Finalists – Most Innovative Digitalisation Solution for the Food & Beverage Industry:

- **Inspectra**, with its Easy AI technology that solves complex classification tasks using deep learning.
- **Agricolus**, with its smart farming tool offering field mapping, crop monitoring, and predictive models for irrigation and fertilisation.

Finalists – Best Healthy Food Project:

- **Nucaps**, with NuGluCol, a project involving plant-based protein microparticles for blood sugar and cholesterol control.
- **Quarkwerk**, with its creamy cheese bars in a convenient grab-and-go format.

Finalists – Best Automation and Robotics Solution for the Food Value Chain:

- **Eroski**, with its AutoStore robotic system for storage and order management.
- **Logimelt**, with Logivision, an edge-cloud platform to acceler-

ate AI adoption in food and beverage industries.

Finalists – Most Disruptive Packaging Solution:

- **Fibtray**, with its laminated cardboard packaging system enabling hermetic sealing.
- **LAM'ON** Compostable Films, specialising in biobased compostable films for thermal lamination and food-safe packaging.

Finalists – Spanish Startup with Greatest International Potential:

- **Gimme Sabor**, offering flavourful, responsible, and accessible plant-based products.
- **Escudellar**, bringing Mediterranean rice dishes to the world through food delivery.

F4F 2025 SUMMIT

The congress, a central pillar of Food 4 Future 2025, welcomed the participation of over **370 national and international experts** who shared the latest trends, strategies, and innovations transforming the agri-food value chain.

Food4Future 2025 structured its programme around **three strategic pillars: technology and digitalisation, sustainability, and health**. Among the key topics addressed were **Artificial Intelligence, the circular economy, resilient production models** in the face of climate and geopolitical crises, and **strategies to ensure global food security**.



Begoña García
Secretary of State for Agriculture and Food.
"Innovation is fundamental to guaranteeing food security in Europe.

Food autonomy is both an economic and strategic objective. And no one advances alone. The future is built on cooperation networks and political will."



Amaia Barredo
Minister for Food, Rural Development, Agriculture and Fisheries, Basque Government.

"The food of the future will be smarter, fairer and more sustainable – and Euskadi wants to play an active role in this transformation."



Lou Cooperhouse
CEO Bluernalu

"Be epicurious-reimagine the future of food; Be Bold-create solutions with courage and innovation; Be a Lighthouse-Lead the way with excellence and accountability-and Be the true blue-act as a force for good".



Pablo Plaza
McCain

"We need young talent who see agri-food as an innovative, digital industry with social impact."



Elena Martínez
Managing Director of Martínez Somalo

"We remain competitive thanks to specialisation, meticulous cost control and a commitment to sustainability and new technologies."

- **Lou Cooperhouse Founder**, President & CEO, **BlueNalu**
- **Adrien Langeard**, Chief Business Officer, **Gourmey**
- **Silvia Canals**, Sustainability Director, **Danone**
- **Roselyne Chane**, President / Corporate affairs FATE / Alimentos Sanygran
- **Alejandro González**, Innovation Director, **Pascual**
- **Pablo Plaza**, CEO, **McCain**
- **Óscar Vicente**, CEO, **Angulas Aguinaga**
- **Joan Mir**, CEO, **ANECOOP**
- **Isabel Sánchez**, CEO, **Delaviuda** Confectionery Group
- **Andrés García**, Managing Director, **Garlan**
- **Asunción Eguren**, CEO, Bodegas **Eguren Ugarte**
- **Ruth Martínez**, Marketing Manager & Key Account Manager **NATUR ALL by IPARLAT**
- **Alfonso Menoyo**, **Albacora**
- **Clara Hernández**, Environmental and Climate Change Director, **Sigma**
- **Óscar López**, Cybersecurity Manager, **GB Foods**
- **Marta Iguacen**, R&I Iberia Lead, **Danone**
- **Ruy Andrade**, Business Development Director, **Grupo Pereira**
- **Florencio García**, Better Balance European Director, **Sigma**
- **Jose Manuel López Vilariño**, R&D Manager, **Hijos de Rivera**
- **Adrián Piñole**, EMEA Business Development Manager, **GEA**
- **Javier Zaratiegui**, COO, **Cocuus**
- **Juana Manso**, Marketing director, **Campofrío**
- **Izaro Martínez**, Marketing director, **Café Fortaleza**
- **Elena Martínez**, CEO Martínez, **Somalo**
- **Rosa Carabel**, CEO, **Eroski**
- **Jorge Escudero Hurtado de Amézaga**, CEO, Grupo **Nueva Pescaanova**



- **Daniel Palacio**, CEO, **Tutti Food Group**
- **Néstor Nava**, CEO, **Grupo Gallo**
- **Javier Roza**, CEO, **Mantequerías Arias**
- **Henrik Stamm Kristensen**, Founder, **Blendhub**
- **Virginia Vera**, **FRIT Ravich**
- **Niklas Sannebro**, **Deoleo**
- **Miriam Vergara Len**, environmental manager, **Hijos de José Serrats**
- **Ana Carrasco**, **Paturpat**
- **Iñaki Ochoa**, **PepsiCo**
- **Juan Basagoiti**, commercial director, **Echebaster**
- **Ignacio Malcorra**, director, **Insalus**
- **Santiago Miguel Casado**, President of Vitartis. Grupo **HERMI**
- **Manuel Moracho**, General Manager, **Huercasa**
- **Guillermo Mena**, director I+D, **Fruselva**
- **Miguel Ángel Sanz**, Deputy General Manager, **Grupo Uvesa**
- **Montserrat Rosell**, Familia **Torres**

A STRONG REPRESENTATION FROM KNOWLEDGE INSTITUTIONS AND RESEARCH BODIES

Alongside corporate leadership, the 2025 edition of Food 4 Future welcomed a broad representation of **key ecosystem stakeholders**, including associations, technology centres, and universities.

Notable speakers included:

- **Marleen Onwezen**, **Wageningen University & Research**
- **Guido Ritter**, **FH Münster** / Institute of Sustainable Nutrition
- **Dusan Ristic**, **German Institute of Food Technologies** (DIL e.V.)
- **Simone Zanoni**, Professor Università degli Studi di Brescia (**UNIBS**)
- **Anna Pacak**, **International Institute of Refrigeration**

- **Paola Maio**, European Heat Pump Association (**EHPA**)
- **Christina Kachacha**, Institute for European Energy and Climate Policy (**IEECP**)
- **John Murphy**, Alternative Proteins Association UK (**APA**)
- **Femke Aers**, **ILVO Flanders**, Research Institute for Agriculture, Fisheries and Food
- **Lorena Savani**, **EIT Food**
- **Suguru Kitagaki**, CEO, **Cuon Crop**
- **Hirotaka Tanaka**, Founder & CEO, **UnlocX & Co.**
- **Barry O'Neill**, **Value Create**
- **Amir Zaidman**, Chief Business Officer, **The Kitchen FoodTech Hub**

HIGHLIGHTS OF THE FOOD 4 FUTURE 2025 CONFERENCE

Lou Cooperhouse, founder and CEO of **BlueNalu**, opened the Food 4 Future 2025 congress by underlining the importance of open innovation and technology, stressing that these must be accompanied by strategic partnerships and collaborative networks. BlueNalu, a pioneer in cellular aquaculture, is developing products such as cultivated bluefin tuna. Cooperhouse emphasised the need for a solid regulatory framework, market research, and supply chain cooperation. He also called for a level playing field with traditional fishing and greater support to scale up sustainable solutions. BlueNalu is currently advancing in technology transfer and regulatory processes towards commercialisation, aiming to tackle challenges such as overfishing and food insecurity. His central message was clear: "Don't do it alone."

The congress also highlighted the numerous challenges faced by small and medium-sized food enterprises in a context of high volatility and uncertainty, marked by political and economic turbulence, regulatory pressure, and shifting consumer trends. Several experts shared their insights on the sector's challenges and opportunities.

Óscar Vicente, CEO of **Angulas Aguinaga**, emphasised the relevance of seafood products, noting that marine resources such as mussels have a significantly lower environmental impact than

land-based protein sources. He also referred to the growing demand for healthy, high-value foods. Vicente stressed that innovation must go beyond the product itself, extending to processes and the way brands engage with consumers.

Pablo Plaza, CEO of **McCain**, addressed the planet's future challenges, highlighting environmental impact and sustainability. He advocated for a holistic approach to sustainability across the entire value chain—from agricultural production to packaging. He identified regenerative agriculture as a key solution to enhance sustainability and mitigate environmental impact, particularly as agricultural yields, such as potato crops, have fallen by up to 10% due to water scarcity or excess. Plaza set out McCain's goal of en-

suring that 100% of its farming land adopts regenerative practices by 2030.

Other priorities discussed included improving seed and plant resilience, cutting emissions, and switching to renewable energy sources. Plaza also called for attracting young talent to the agri-food sector and ensuring that younger generations view it as an innovative, digital and socially impactful industry.

Joan Mir, Managing Director of **Anecoop**, highlighted that innovation and sustainability are essential to boosting crop profitability and offering new consumer experiences. He emphasised the need to attract young talent to revitalise rural areas and secure the fu-



ture of the countryside. For Mir, digital transformation is essential to increase efficiency in agriculture and reduce food waste.

Isabel Sánchez, CEO of **Delaviuda** Confectionery Group, pointed out the importance of adapting to evolving consumer habits, which now demand healthier, more sustainable products with full traceability. She saw this shift as an opportunity for companies ready to embrace change. Sánchez also advocated overcoming the seasonality of products such as turrón by exploring new channels and categories to ensure a more diversified and sustainable business. Strategic partnerships with prominent brands were seen as key to remaining competitive.

Round tables at the event focused not only on shaping the future of the food industry, but also on identifying the core competencies for those aspiring to lead it. The key lies in turning uncertainty into a competitive advantage through strategic integration of shared data, cross-sector collaboration and constant innovation in both processes and products. Market and business line diversification, alongside smart management to maximise operational efficiency and value creation, were also highlighted. In this regard, young talent is a critical resource, demanding clear strategies for attraction, development and retention to build diverse, cohesive teams ready to meet global market challenges.

At the round table on “**Challenges Facing the Food Industry**”, CEOs from **Eroski (Rosa Carabel)**, **Nueva Pescanova (Jorge Escudero)**, **Tutti Food Group (Daniel Palacio)** and **Martínez Somalo (Elena Martínez)** agreed that the sector is undergoing a period of deep uncertainty, shaped by inflation, rising costs, fragile supply chains, increased environmental demands and shifting consumer habits.

Despite its solid reputation, the agri-food sector is facing increasingly complex challenges that require rapid adaptability and a clear strategic vision. Key priorities include ensuring affordable prices without compromising quality, managing volatility through effective risk management, and strengthening collaboration across the food value chain.

Product and market diversification, coupled with ongoing innovation, is essential—especially in improving operational efficiency and value creation, where the smart use of data plays a pivotal

role. The effective management and sharing of data across all links in the food chain emerged as crucial for anticipating demand, reducing hidden costs and improving decision-making. Moderator **Rogelio Pozo**, CEO of **AZTI**, summarised the experts' views succinctly: “Data management is not a side element—it's the circulatory system keeping the food chain alive.”

Another urgent matter is addressing labour shortages and making food industry careers more attractive by encouraging generational renewal, attracting new talent, and promoting diversity and team cohesion.

In summary, speakers agreed that the future of food must be built on four key pillars to turn uncertainty into competitive advantage:

1. Efficiency

2. Data-driven technology

3. Effective collaboration

4. People

The growth of private labels (PL) was central to the session led by **César Valencoso (Kantar Media)**, titled “**Private Labels vs. National Brands**”. Valencoso stressed the unstoppable rise of PL in the fast-moving consumer goods market, driven by major retailers and a narrowing perceived quality gap compared to manufacturer brands.

He argued that national brands should not merely compete on price. Instead, they must adopt a long-term strategy based on brand investment, innovation, and quality. Innovation, he insisted, is key to building genuine, emotionally resonant brands.

In a market that is increasingly fragmented and competitive, brands face the challenge of global expansion while maintaining their local identity. This tension was explored in the panel “Local vs. Global Brands vs. Private Labels”, featuring **Javier Roza (CEO, Mantequerías Arias)**, **Carmen Guelbenzu (Eroski)**, **Iratxe Berriozabal (Angulas Aguinaga)** and **Néstor Nava (CEO, Grupo Gallo)**.

Topics discussed included brand positioning, consumer loyalty, and competitive advantage. Speakers agreed that differentiation must be based on uncompromising quality, local roots and a capacity for innovation—understood as the ability to adapt swiftly to new consumer demands and retail dynamics.

On the subject of private label growth, Néstor Nava argued that the challenge is not just to compete but to collaborate with retailers to better meet the needs of diverse consumer profiles and support an innovative ecosystem.

Javier Roza presented the “differentiation triangle” for brand competitiveness: A unique product (perceived as best-in-class); A recognised Brand; The ability to generate added value (and higher margins). He shared the successful case of Le Rustique Camembert, launched in 2024, which became a category leader within ten months. Despite a higher price, it captured 70% of market share versus private labels and saw double-digit growth. This demonstrated that with a clear, distinctive value proposition, national brands can drive category growth and generate value across the supply chain.

Eroski's loyalty data show a growing consumer preference for store and local brands. While global brands retain loyal customers, their unit sales are declining. Eroski actively supports local branding—with over 25,000 local references and more than 2,500 producers—to generate value, foster local economies and boost competitiveness.

Finally, talent attraction and retention was a key theme at Food 4 Future 2025. The session titled “**Inspirational Leadership: Empowering People and Fostering Teamwork**” featured prominent voices from the tech and food sectors: **Cristina Burzako (Telefónica)**, **Verónica Pascual (Fundación Asti)** and **Sara De Pablos (Greater Transition Community)**.

They emphasised the need to dignify and revalue agri-food professions to make the sector more attractive and offer real career prospects. The discussion touched on diversity, inclusion, workforce ageing, absenteeism, and hiring challenges in agro-related roles. They agreed that the key success factor in a rapidly changing environment is people: professionals who are motivated, empowered and aligned with their company's values and purpose.

To attract and retain value-generating talent and encourage effective teamwork, it's essential to understand the expectations and values of new generations. Speakers highlighted the need for soulful leadership—leadership that inspires and empowers—along with the creation of cohesive teams united by a shared vision, and

the vital role of transparent, consistent communication in aligning companies with their purpose and building strong employer brands.

TRENDS AND CONSUMERS: ESSENTIAL KNOWLEDGE FOR THE SECTOR

Guillermo Mena, R&D Director at **Fruselva**, and **Pablo de la Rica** from **AECOC**, discussed strategies for capturing consumer attention. Their conversation focused on the power of functional foods and the growing trend toward healthy eating. Both agreed on the importance of **understanding and responding to the consumer**, drawing on knowledge of consumption trends and leveraging technology to gather deeper insights into consumer behaviour.

Henrik Stamm Kristensen, founder of **Blendhub**, and **Akiko Okada**, Insight Specialist at **UnlocX & Co**, shared their perspectives on the **transformational potential of hyper-personalisation**, outlining strategies aimed at delivering personalised experiences to significantly boost customer satisfaction, loyalty, and business growth.

Eva Ugarte Arregui of **Eroski**, **Virginia Vera** from **Grefusa**, and **Nicklas Sannebro** of **Deoleo** also addressed hyper-personalisation. Eroski highlighted how it sits at the core of their strategy to build lasting relationships with customers, aiming to provide tailored benefits through an **omnichannel approach** and the use of **advanced algorithms**. However, they also emphasised that **human interaction in-store remains essential** to achieving true personalisation.

Grefusa shared its approach to **personalising customer experiences**, particularly in the B2B model, where they manage large volumes of data. They stressed the importance of monitoring trends and how **AI accelerates product ideation and development** for more nutritious offerings, adapted to various consumption moments and customer profiles. The company also focuses on **omni-channel consistency**, using AI to recommend products and optimise assortments by store type and location.

At **Deoleo**, the discussion centred on **consumer mistrust** and the growing desire to know a product's origin. In a sector like olive oil, where fraud potential is high, they showcased the implementa-

tion of **blockchain technology** to create a **traceability system** that guarantees quality and origin. This system ensures immutability of data from suppliers and independent laboratories and is accessed via **individual QR codes on each bottle**, providing detailed information on origin, production date, third-party certifications, and the oil's sensory profile. Launched in 2022, this solution **is now present in 30% of their extra virgin olive oils globally** and aims to become a new industry standard—not limited to premium products—to foster consumer trust.

Another major theme at Food 4 Future 2025 was **how to leverage information and communication technologies to reach consumers**. **Suguru Kitagaki**, founder and CEO of **Cuon Crop**, addressed topics such as data analytics, artificial intelligence, and personalised communication strategies. He presented real-world examples showing how businesses can use these technologies to **increase consumer engagement and loyalty**. The session also discussed the challenges and opportunities of **adapting communication strategies** to promote responsible and sustainable consumption. The presentation concluded with a forward-looking vision of how **digital marketing** can reshape the relationship between producers and consumers, encouraging more sustainable practices.

Ainhoa Oyarbide from **Eroski** spoke on how communication influences consumer decisions, highlighting the importance of **consistency, social commitment, and transparency**. She presented examples of holistic and digital marketing campaigns designed to inspire action, build trust, and encourage behavioural change, including social responsibility initiatives. The overarching goal is to enhance brand image and reputation, fostering deeper consumer connection and increased store visits.

In response to growing awareness among European consumers about the need to eat more fish—and a persistent gap in some regions between recommended and actual consumption—**Grupo Pereira**, **Angulas Aguinaga**, and **Echebaster** addressed **product innovation in seafood** aimed at boosting consumption. A key insight: the main barriers appear to be **uncertainty around how to buy or cook fish**, rather than a dislike of fish itself.

Ruy Andrade, Business Development Director at **Grupo Pereira**, explained how species like **hake, squid, and octopus** have evolved

from whole formats to ready-to-cook or ready-to-eat products. The company focuses not just on the product but also on format and packaging innovations (e.g. **easy-peel solutions**) to facilitate fish consumption. He also showcased innovations in **canned fish**, featuring new species and sauces designed to appeal to younger consumers.

Iratxe Berriozabal from **Angulas Aguinaga** shared their strategy of **reviving traditional recipes in convenient packaging** with a classic appearance, reconnecting with the origins of surimi through their new “Japan” range, and offering a range of **seven “Aguinamar Aperitivo” products** designed for flexible consumption occasions.

Juan Basagoiti, Commercial Director at **Echebaster**, highlighted several key challenges: demographic shifts (particularly population growth in Africa and Asia), sustainability, and health. Their response includes developing **tuna-based solutions** such as pre-cut portions, packaged tuna, and ready-to-cook formats (crispy tuna, burgers, Basque marmitako bites).

The conversation touched on the need to balance **convenience, indulgence, and health**, and acknowledged price as a major consumption driver—and a factor contributing to declining seafood intake. The panel stressed the importance of **finding the right balance between innovation and affordability**.

EIT Food presented a study showing that **over 50% of Europeans prioritise healthy eating**, though many need industry support to make this a reality. **Marleen Onwezen**, special professor at **Wageningen University & Research** and part of the EIT Food Consumer Observatory, stated that **understanding consumer behaviour is essential for transforming the food system** towards greater health and sustainability.

Based on **surveys of more than 19,000 people across 18 European countries**, the study also revealed that emotional labelling influences purchasing decisions more effectively than technical information. It identified five consumer profiles based on stages of habit change and noted emerging trends such as **plant-based products from indoor tech farms**, personalised nutrition, and **the link between diet and emotional wellbeing**.

Onwezen concluded that food **choices are not only rational but**



also emotional and social, and the industry must provide attractive, accessible, and well-communicated products to support sustainable everyday choices.

Another session at Food 4 Future 2025 addressed **how to meet the future social needs of consumers**, with a focus on fruit and vegetable consumption in relation to sustainability, nutrition, and accessibility. Speakers included **Juan Valverde** (General Manager, **Hortifrut Genetics**), **Adolfo García** (Director, **Camposeven**), **Eneko Ruiz** (Director, **Fribasa**), and **Natalia Berenguer** (Director, **Spanish Association of Plant-Based Food and Beverage Producers**).

The panel discussed how to manage changing consumer preferences and **anticipate future varietal demands**. Today's global consumer is increasingly concerned with health and wellbeing, but environmental impact remains a major concern. There is a clear appetite for **innovation and novel experiences**, as evidenced by the rising popularity of products with unique flavours.

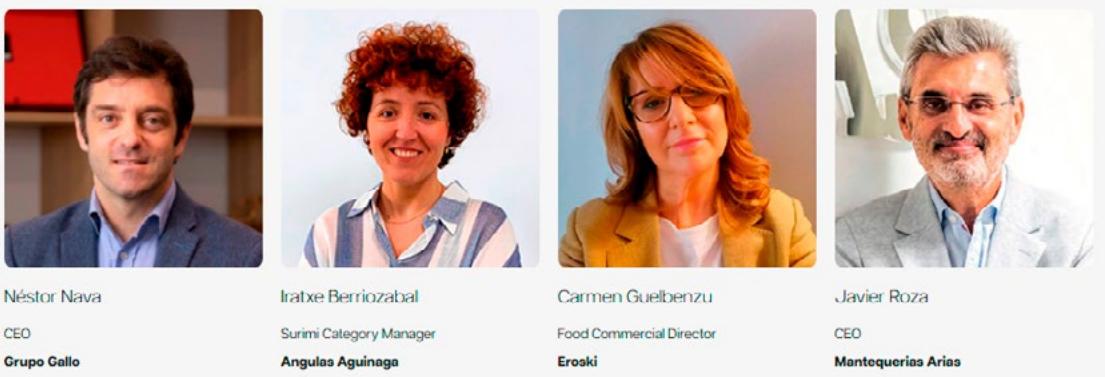
The panel also addressed **time constraints** faced by modern consumers and the growing role of **technology and AI** in streamlining daily tasks. One provocative idea raised was the possibility of **kit-chennelless homes** in the future and growing reliance on apps and AI for food-related decisions.

Speakers stressed the importance of **regulating emerging food categories** to ensure technological success without overregulation. They concluded that barriers span from primary production to consumer perception. Looking to the future, they envisioned a more informed, health-conscious consumer, concerned with local products, aware of the entire food chain, and empowered to **make better decisions and support more conscious consumption**.

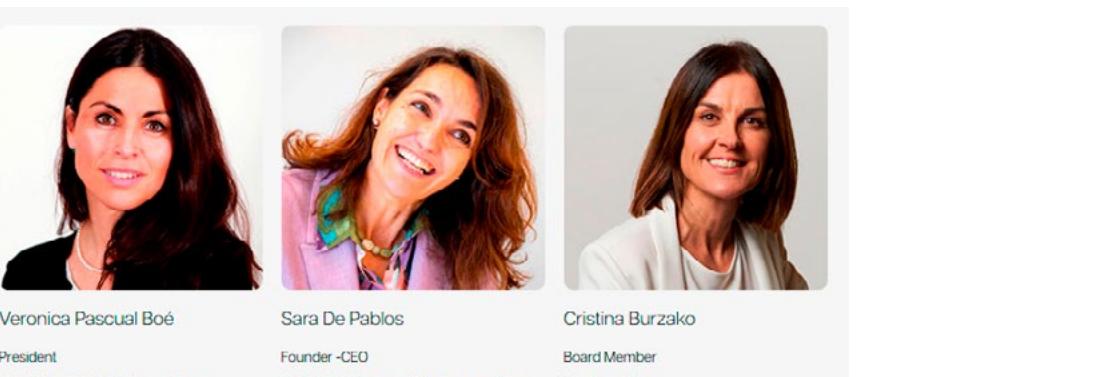
Retos y desafíos de la industria alimentaria



Marcas locales vs marcas globales vs marcas de distribuidor



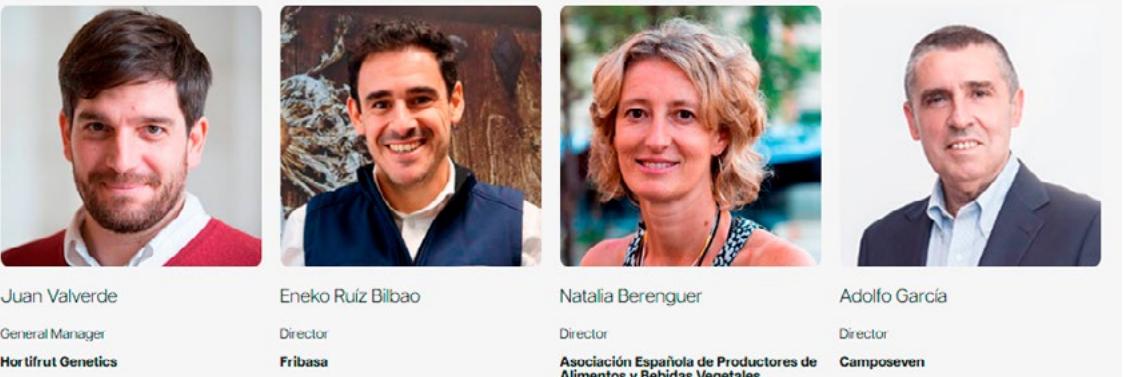
Liderazgo inspiracional: Claves para empoderar personas y el trabajo en equipo



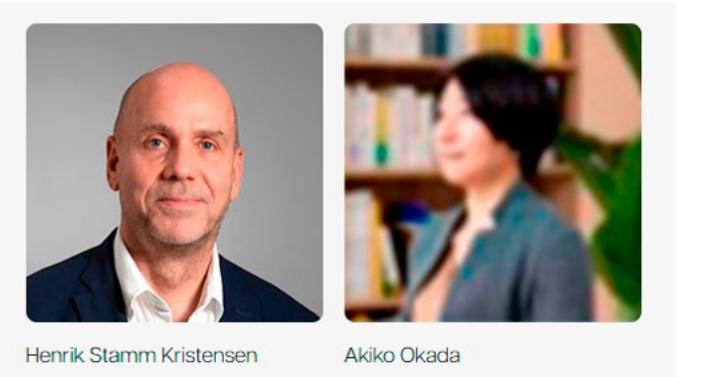
Hiperpersonalización: ¿La gran tendencia que definirá el futuro del consumo



Cómo responder a las necesidades sociales de los futuros consumidores



Is hyper-personalization the future of consumer offerings



DIGITALISATION

Technology and digitalisation once again served as the guiding threads of the Food4Future 2025 congress, where solutions were extensively presented and discussed around:

- **Artificial Intelligence (AI) and Big Data**, and their applications in optimising production processes, improving product quality and traceability, enabling predictive maintenance, developing new products, and tailoring offerings to consumer demand.
- **Robotics and automation**, and the transformation they are driving in processing plants, packaging lines, logistics and precision agriculture. Highlights included collaborative robots and autonomous systems designed to boost efficiency and reduce costs.
- **Internet of Things (IoT) and sensors**, increasingly implemented for real-time monitoring of crops, storage conditions, and product quality throughout the supply chain—ensuring greater transparency and safety.
- **Blockchain technology, enabling full traceability** “from farm to fork,” fighting food fraud, and certifying the origin and quality of food products.

PRIMARY SECTOR: PRECISION SYSTEMS FOR AGRICULTURE AND FISHERIES

The **primary sector** and its evolution toward precision production systems featured prominently at Food 4 Future 2025. In the field of smart and precision agriculture, technological solutions were showcased to optimise resource use (water, fertilisers, pesticides), improve crop yields, and minimise environmental impact—including the deployment of drones and advanced farming machinery.

Smart fishing, and how digitalisation and data science are transforming the fisheries sector, was one of the most prominent topics on the final day of the congress. The transition toward **Industry 4.0** is well underway in the fishing industry, with initiatives aimed at reducing carbon emissions and improving energy efficiency. Se-

veral speakers presented examples of collaboration between the scientific community and the industry.

According to **Joseba Castresana** from **AZTI**, decarbonising fishing fleets does not rely on a single solution; identifying the best path forward requires **digitalisation, monitoring, and scientific knowledge**. He noted that the fisheries sector still lags behind others in terms of digitalisation. Castresana referenced various projects where technology integrated into different types of vessels has led to significant **improvements in energy and fuel efficiency, innovative fishing gear, and real-time species sorting**.

Femke Aers, from the Marine Department of **ILVO**, stressed the importance of onboard sensors—monitoring fuel consumption, GPS and tractive force—which gather real-time data to improve vessel management. This data can support both onboard decision-making and research efforts, such as analysing the relationship between fishing gear and fuel consumption.

Alfonso Menoyo of **Albacora** pointed to regulatory changes that are imposing new operational restrictions and increased costs. In light of these challenges, he underscored the need for **professionals, data-based decision models** rather than intuitive ones. He discussed the role of AI and the importance of standardising and sharing information in a timely, structured, and exploitable format, and called for **advanced analytics systems** to support efficiency management.

CYBERSECURITY AND INDUSTRIAL CONNECTIVITY

Cybersecurity played a significant role in this edition of Food 4 Future. **Óscar López**, Cybersecurity Manager at **GB Foods** (with 18 factories and over 20 offices), shared his experience, highlighting the value cybersecurity brings beyond mere protection. It enables strategic alignment in an increasingly connected industrial environment. From access control, data flow inspection, real-time production monitoring, automated inventory, machinery efficien-



cy, incident reduction, plant personnel optimisation, to fully remote maintenance—cybersecurity emerges as a key value-added enabler.

He also focused on the need for secure information traceability channels and emphasised the importance of delivering structured, secure, and exploitable data to extract maximum value. For a successful cybersecurity strategy, he advocated for **technology investment, process alignment, and full integration across the value chain**.

ARTIFICIAL INTELLIGENCE AS A DRIVING FORCE

AI once again stole the spotlight at **Food 4 Future 2025**. **Álex Ra-yón**, Co-Founder and CEO of **Brainandcode**, delivered a keynote on the foundations and applications of the most powerful generative AI tools today, noting that after more than 20 years of development, several of these technologies have reached a mature stage. He referred to **OpenAI as the “most intelligent brain”** in the field and demonstrated practical applications of different AI tools, underscoring that their power lies not in understanding, but in processing capability.

DIGITALISATION

Speakers from **Eurecat**, **Gradhoc Smart**, and **UMYNO Solutions** discussed how AI enhances efficiency across the industrial food sector.

- **Pol Torres** (Eurecat) shared real-world cases where continuous data from IoT sensors optimised the wine pressing process, cutting pressing time by 30% with only a 2% loss in efficiency. He also highlighted digital twins for predictive maintenance and resource optimisation, reducing raw material use and boosting sustainability.
- **Julen Plazaola** (Gradhoc Smart) addressed high energy consumption in refrigeration systems, calling predictive maintenance essential to avoid food spoilage. He outlined technologies like IoT, digital twins and machine learning, citing benefits such as 40% energy savings, 25% maintenance cost reductions, and 35% lower CO2 emissions.
- **Christian Klein** (UMYNO Solutions) discussed the use of AI in food product development. He explained how digitising sales, marketing, and R&D processes can optimise recipes and forecast consumer acceptance. He emphasised the need for appropriate AI models, accurate data, and user-friendly interfaces.

DATA GOVERNANCE AND STANDARDISATION

Regarding data governance in the food chain:

- **Javier López Nogués (ProLeiT Iberia, Schneider Electric)** underscored the need for reliable and contextualised data, integrated software architectures, deep process knowledge, and end-user involvement to overcome resistance to change. While cost can be a barrier, ROI becomes evident through reduced waste and improved efficiency.
- **Juan Marcelo Gaitán**, General Director of **La Vega Innova** (an agri-tech innovation hub supported by the Ministry of Agricul-

ture), stressed the importance of data standardisation for sector growth and specialisation. He criticised the lack of interoperability and proposed the open-source European standard Fiber to facilitate data exchange. La Vega Innova supports companies in their digital transformation by offering mentoring and test labs, among others. He advocated for the public sector's role as mediator and validator in setting data standards—arguing that standardisation ensures buyer freedom and broader market opportunities for sellers. He also noted how contextualised traceability data allows swift and precise responses to food safety alerts, building consumer trust and reducing waste.

ANIMAL WELFARE AND MEAT QUALITY

Technology's impact on animal welfare and meat quality was also addressed.

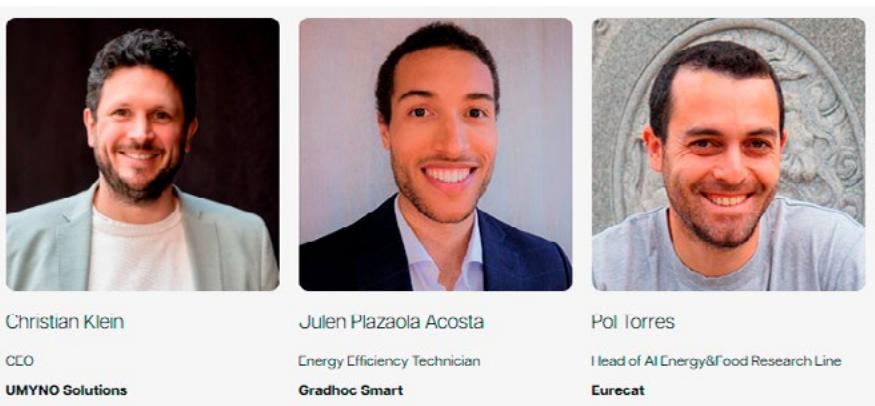
- **Pedro Tarrafeta (SigmaKREAS)** showcased how digital twins can support decision-making in animal husbandry by offering detailed insights into living conditions, monitoring animal health, and predicting potential issues. Leveraging real-time data, AI and IoT, these tools enhance animal care practices and reduce the need for invasive interventions.
- **Josep Reixach (Batallé Group)** reinforced the need to adopt new technologies—such as sensors, algorithms and AI—to optimise production systems and leverage the growing volume of available data.

Some of the speakers who spoke about digitalisation were:

Smartfishing: How is digital and data science transforming fishing



How AI enhances efficiency in food industry



Gestión y gobernanza de datos en la cadena alimentaria



SUSTAINABILITY

The agri-food industry is currently facing the challenge of increasing food production while using fewer resources – such as water, materials and energy – and adopting more sustainable practices. In this context, sustainability has emerged as a key strategic trend, approached from a comprehensive perspective that encompasses everything from natural resource management to the optimisation of the supply chain.

One of the main thematic pillars of the 2025 edition of Food 4 Future was the shift towards decarbonisation and circular economy models. The need to reduce greenhouse gas emissions, improve energy efficiency and promote the use of circular ingredients has become imperative amid growing environmental pressure and resource scarcity. At the same time, the sector faces additional challenges that demand immediate attention and coordinated action, such as the transition towards sustainable packaging.

At Food 4 Future 2025, **sustainability was a cross-cutting theme**, addressed with a holistic vision by numerous companies that shared their initiatives and strategies to foster a sector that is more environmentally and socially responsible, more efficient, while also resilient and profitable.

- **Upcycling and valorisation** was one of the key areas of focus this year. Discussions centred on the technological limitations, the complexity of biological raw materials, and the organisational and strategic challenges of integrating these practices – a path towards minimising food loss and waste across all stages of the value chain, aligned with new regulations and growing social awareness.

- As part of **Pick&Pack for Food Industry**, the latest innovations in sustainable packaging were showcased: recycled and recyclable materials, bioplastics, and designs that facilitate reuse.

- **Energy and water efficiency** was another highlight, with best practices and technologies shared to optimise consumption in production processes.

- **Climate change adaptation and resilience** were widely discussed, with contributions from across the value chain – from the primary sector, heavily impacted, to research centres exploring emerging diseases and risks linked to climate change.

Climate risks and their impact on the agri-food chain were discussed by **Manuel Moracho**, CEO of **Huercasa**, who offered an agricultural perspective, and **Santiago Miguel** from **Grupo HERMI and Chairman of Vitaris**, alongside **Miguel Ángel Sanz**, Deputy CEO of **Grupo UVESA**, who provided a view from the meat sector.

Moracho spoke about the impacts of extreme weather events on agriculture, with significant declines in average yields per hectare and crop quality. He pointed to these as one of the root causes of an unsustainable supply chain – in terms of volume, quality and competitive pricing. He also explained how the effect on crops can lead to sharp increases in raw material prices for animal feed.

From the meat industry's perspective, discussion centred on how the sector is evolving due to legislative changes and growing consumer and client demands for low-impact economic activity. Strategies highlighted included developing more resilient crops, reducing agricultural campaigns, and focusing more intensively on low-risk periods as ways to mitigate future risks and safeguard the reliability of supply in terms of volumes and pricing.

Other challenges facing the primary sector were also raised, such as generational renewal, effective alternatives to phytosanitary products, and the small size of many businesses.

At the **Food 4 Future 2025 Congress**, there was a compelling debate on local value, highlighting **the importance of recognising and promoting local products and services in a globalised context**. **Ruth Martínez**, Marketing Manager & KAM at **Natur All by Iparlat**, stressed the need to give the primary sector the strategic value it deserves. She presented their model of partnering with local suppliers (as in their use of oats from Álava for oat drinks) and the goal of replicating this model in other areas. She emphasised

the importance of connecting land and consumers. In the case of plant-based drinks, she argued that **flavour, health and sustainability must go hand in hand** to meet global demand.

Asunción Eguren, CEO of **Bodegas Eguren Ugarte**, spoke about what vineyards represent – they "sell" a region, a landscape, culture and tradition – and highlighted the success of wine tourism and events. She also discussed the challenge of connecting with younger generations, strengthening social and environmental commitment (with a focus on regenerative viticulture), and building a sense of community. Eguren noted that although the impacts of climate change are not yet strongly visible, their vineyards act as carbon sinks, absorbing more CO₂ than they emit.

Andrés García, General Manager of agricultural cooperative **Garlan**, focused on structural challenges in the primary sector, underlining that economic sustainability in farming is the foundation for true environmental sustainability. He highlighted regenerative agriculture – with its focus on soil – as the model for the future. He also spoke about sustainability as a business opportunity, not just a challenge or burden, with product innovation now closely tied to sustainable practice. He warned of a widespread lack of public understanding of agricultural work and the absence of a compelling narrative to support its value. One of the sector's urgent challenges, he argued, is generational renewal and the need to dignify the profession, give it prestige and recognition, and inspire young people to see agriculture as a viable and meaningful future.

All three debated the challenge of **influencing and changing consumer shopping habits**, pointing to a lack of storytelling and communication, and a need for better criteria to help people make more responsible purchasing decisions. They also discussed differentiation and positioning in a competitive market, noting that "local" alone should not justify higher prices. They concluded by exploring how to promote local value – through ties to the land, community building, and linking "local" with sustainable development.

Another roundtable on **sustainability in the food industry** explored a range of strategies and challenges facing the sector. **Dusan Ristic** of the **German Institute of Food Technologies** (DIL e.V.), **Silvia Canals**, Sustainability Director at **Danone**, and **Saioa Ra-**

mos, researcher at **AZTI**, discussed key topics such as integrated sustainability assessment, nutrient circularity and the environmental impact of products and services.

Dusan highlighted the importance of integrated sustainability assessments that consider the environmental impact of products, services and companies. He questioned common perceptions – for instance, that transport is more critical than it often is, that local does not always mean more sustainable, and that sustainable products necessarily cost more, since efficient processes can reduce costs. He also discussed the difficulty of achieving full circularity, the importance of **eco-design**, and **how carbon footprint alone is not enough** to evaluate total environmental impact – we must also account for **water footprint and biodiversity**. He outlined technological and policy-related barriers to sustainability, yet emphasised Europe's continued progress in the right direction.

On the topic of the transition to net-zero industries, **Iñaki Ochoa**, Director of **PepsiCo**'s beverage plant in the Basque Country, presented the remarkable sustainability progress achieved there. The plant has significantly reduced its water and energy use and is actively minimising waste. This year, it will become **PepsiCo's first net-zero beverage** plant globally. Ochoa highlighted the pioneering nature of these initiatives and their ongoing commitment to progress – while noting that sustainability has a real cost: "it's not free," he stated. The next big challenge will be optimising water management, particularly reuse.

Cristina Rodríguez, Head of Sustainability at **Eroski**, outlined the major challenges the retail sector faces in moving towards a net-zero model. She stressed the importance of maintaining competitiveness, adapting to increasingly demanding regulations, and connecting with an ever more informed and engaged consumer. Eroski integrates sustainability throughout its strategy – from **local, environmentally respectful production to consumer education** – and takes part in initiatives like Enviroscore, Eco-score and Planet-score to communicate the environmental impact of products.

Food 4 Future 2025 also addressed the **key challenges of sustainable food packaging** across the value chain, focusing on how to adapt to new regulations without compromising competitive-

SUSTAINABILITY

ness, while ensuring all players are considered. The fast-changing regulatory landscape is compounded by other issues: shortages of affordable recycled materials, maintaining packaging functionality for sensitive products, and the crucial need for a **cultural shift** among consumers to support more sustainable habits like reuse, returnable containers and bulk buying.

María Alcántara, Head of Legumes and Quality at **Garlan**, spoke of the difficulties in reducing plastic use, from higher costs to consumer perceptions that often undervalue products with alternative packaging. She called for more effective communication to support this transition.

Izaro Martínez, Marketing Director of **Café Fortaleza**, focused on the technical challenge of preserving product quality using more sustainable materials – such as mono-materials and compostables – and the importance of forming alliances to drive innovation and reduce impact.

Ignacio Malcorra, Director of **Insalus**, explained the eco-design measures being implemented, such as reducing packaging weight and increasing recycled PET content, and stressed the need to engage consumers in closing the loop through return and reuse systems.

Arantza Madariaga, Director of **ELIKA** Fundazioa, presented Ontzi | Basque Food Packaging Innovation Hub as an example of public-private collaboration. This initiative, now with nearly 300 member organisations, connects supply and demand for sustainable, safe and competitive packaging solutions while improving the consumer experience. Madariaga highlighted good practices including the switch from plastic to paper tea sachets, the use of 80% recycled aluminium in capsules by Fortaleza, and the move to recyclable paper by Insalus and Natra.

Food waste reduction and its business opportunities also featured prominently at Food 4 Future 2025. **Helena de Miguel** of the **Ministry of Agriculture, Fisheries and Food** introduced the new

Law 1/2025 to prevent loss and waste across the food chain. The law sets out a hierarchy of priorities for surplus food and applies to all actors along the chain. European projects were also shared – such as Lluís Puig's experience at Freshis Company, which cut waste to 1% by selling "imperfect" foods and improving efficiency. Alejandro Gonzalez from Grupo La Caña presented their work processing fruit and vegetables, having developed nine living labs to identify and valorise products such as tomatoes, avocados, courgettes and cucumbers. He stressed the importance of avoiding mislabelling and optimising the use of imperfect produce.

Miriam Vergara Len, Environmental Manager at **Hijos de José Serrats**, presented "Resatún", a project that uses nanofiltration to transform saline industrial wastewater from canneries into reusable brine and a high-value protein concentrate – turning waste into a resource. This project not only shows the profitability of sustainability, but also supports green job creation and positions Bermeo as a benchmark circular ecosystem.

Itxaso Ibarra from **Gashor** discussed a predictive algorithm that controls production, forecasts quality, and optimises parameters – reducing waste and costs. Implemented across several industries, the technology improves output by up to 80%, cuts product rejections and enhances sustainability.

ELIKA also addressed the challenges and opportunities of transitioning to a circular economy in the food sector, emphasising that this shift requires the cooperation of all links in the chain to reduce global food waste. Barriers such as excessive bureaucracy in the primary sector and resistance to change were noted, but so too was the potential of technologies like artificial intelligence to optimise production and minimise losses and costs. They also stressed the importance of communication to highlight best practices in sustainability and to educate consumers on the value of these efforts.

The **upcycling roundtable** in the agri-food industry explored the opportunities and challenges of this emerging practice. **Roselyne**



Chane (President/Corporate Affairs at **FATE/Sanygra Foods**), **Ana Carrasco** (**Paturpat**), **Iria Varela** (CEO, **ODS Protein**) and **Miguel Ángel Cubero** (CEO, **Ingredalia**) discussed technological feasibility, market conditions, and the barriers that hinder growth. Roselyne highlighted the growing market for upcycled products, driven by both necessity and consumer willingness to pay more. Paturpat presented **Project Brilian**, which recovers starch from potato pasteurisation water to produce biodegradable plastics, with other uses including animal feed. ODS Protein explained how it uses fermentation to **upcycle agro-food waste** into mycoproteins. Ingredalia's CEO focused on innovation alliances between research and business, describing sustainable business models that bring value to by-products. He also cited the lack of transformation technology as a key barrier.

On the challenges, the panellists agreed that despite the abundance of raw material, **upcycling remains more expensive** than using conventional inputs. They emphasised the importance of educating consumers about the added value of upcycled products. Scalability was also a hurdle – solutions that work in labs are often unviable or costly at industrial scale. The **variability and heterogeneity of by-products** further complicate the process. Regulations were cited as another constraint – both in terms of cost and time.

Looking to the **future of upcycling**, the speakers stressed the importance of collaboration with tech centres, testing prototypes with consumers, and taking a multi-pronged approach to valori-

SUSTAINABILITY

sation. Distributors must also play a role in bringing innovation closer to consumers.

The latest edition of Food 4 Future also explored **the transformative potential of circular bioeconomy and regenerative agriculture** in the agri-food sector, with real-life innovations that turn waste into valuable resources to boost sustainability and efficiency.

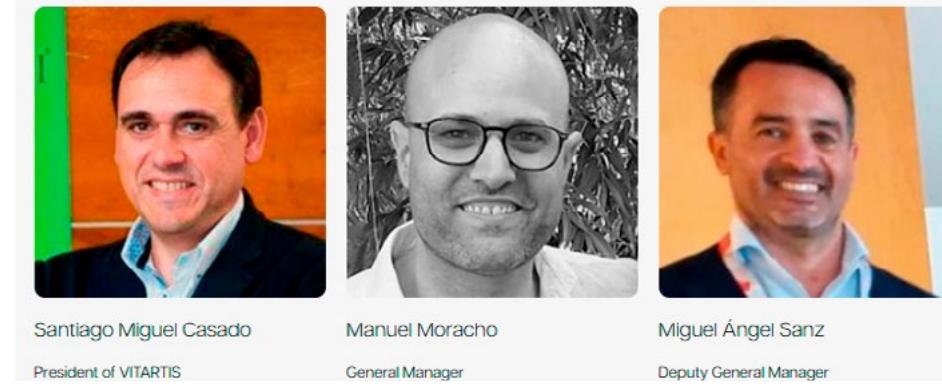
Ana Ceniceros from **Lev2050** focused on the development of **bio-fertilisers and biostimulants**, explaining how specific types of microorganisms are selected and combined, and how their impact on different plants is measured. Her approach seeks to harness microbial diversity, including strains that can't be isolated, for agri-food applications.

Iñaki Isasi presented **Biozambrana**, a **biorefinery project** that doesn't operate as a conventional company but as an initiative for by-product valorisation. Their work includes the production of **ethanol, tartaric acid and polyphenols**, proving that high-value outputs can be derived from biomass.

Eusebio Gainza from **Biosasun** spoke about their production of **organic olive oil** in Navarre and the Basque Country, including their work with polyphenols and truffles. He emphasised the **active application of circular economy principles** in agricultural production and resource valorisation.

Some of the speakers who spoke about sustainability were:

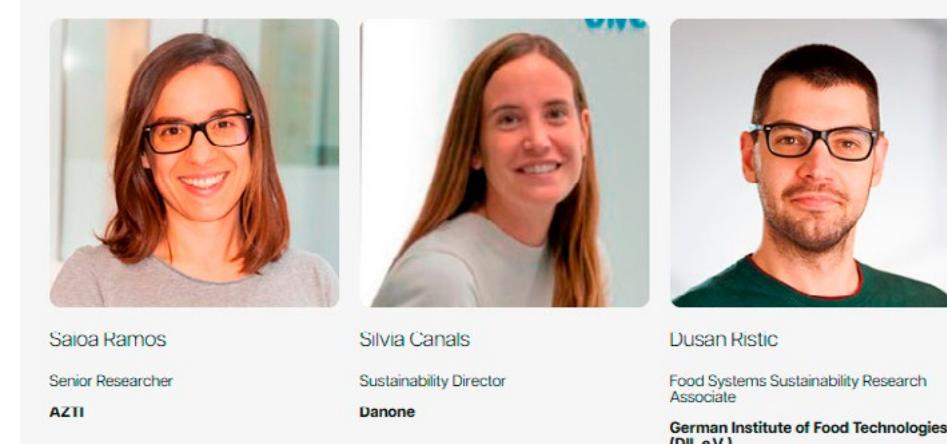
Los riesgos climáticos: una clave para la gestión de la empresa agroalimentaria



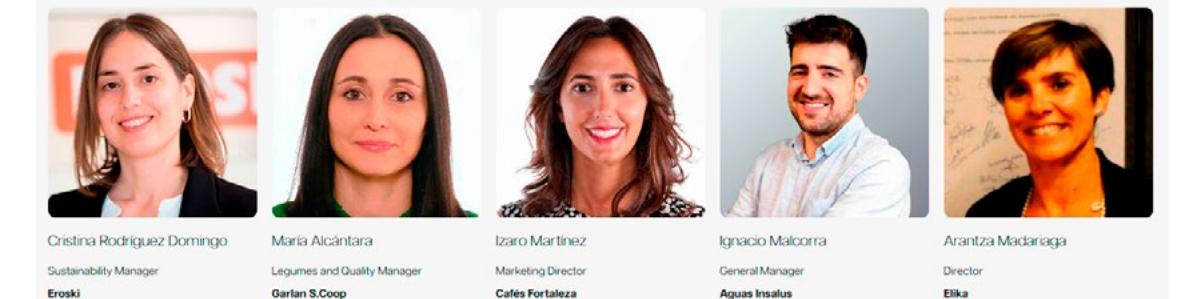
El valor de lo local ante los desafíos globales



Sustainability in the food industry: Strategies and challenges



La sostenibilidad en el packaging alimentario



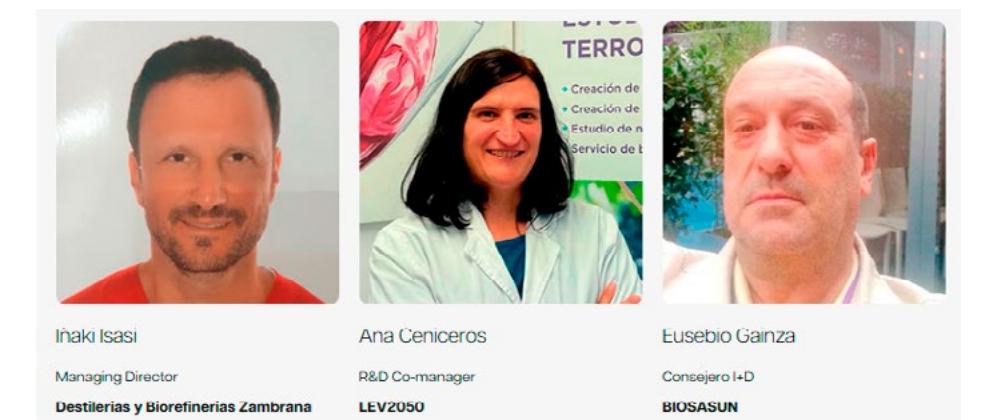
ZERO WASTE: Obligations and opportunities in the food chain



Upcycling in agri-food; game-changer or unrealistic dream



Agrifood circular bioeconomy & regenerative agriculture



HEALTH AND WELLBEING

In the field of health, Food 4 Future 2025 placed particular emphasis on the development and application of alternative proteins and novel ingredients, with technology playing a key role in enabling the convergence of nutrition and health. The focus was on serving the needs of an increasingly conscious and demanding consumer, as well as supporting the industry's transformation.

Food safety remained a central concern, especially in light of emerging risks stemming from rapid environmental changes. The event underlined the need for **preventive and predictive approaches** to anticipate threats and ensure food safety in an increasingly complex global context.

- **Alternative proteins** continued to be a vibrant area of innovation, with new plant-based proteins showcased alongside those derived from fungi, algae and insects.

- **Functional ingredients and biotechnology** were explored, with attention to health-promoting properties and the role of biotech in developing new foods and improving processes.

- **Precision nutrition** was also in the spotlight, driven by consumer demand for food that supports a healthier lifestyle, with improved nutritional profiles and tailored solutions.

- **Food safety technologies** were presented, including rapid pathogen detection and systems to ensure food safety throughout the supply chain.

One of the main protagonists at Food 4 Future 2025 was undoubtedly protein. From alternatives to traditional sources to newly emerging ones, companies such as **Gourmey**, **Coccus** and **Sigma** shared insights into the challenges and opportunities shaping this fast-growing sector. The demand for protein continues to rise, motivated by factors such as its role in building muscle mass and supporting low-fat diets. The narrative is clearly shifting from consuming protein in high quantities towards **optimising intake** and, above all, focusing on quality – **particularly bioavailability**.

Today's consumer expectations reflect growing concerns around **sustainability and ethics**, the natural origin of nutrients, and a perception of protein as a healthy source of energy with functional benefits. Younger consumers appear most engaged with these health benefits, though efforts are needed to encourage uptake among older populations.

Companies from across the food value chain offered diverse perspectives, with dairy remaining the lead category for protein intake, while eggs are gaining traction in innovation. Even the snack industry, traditionally low in protein, is undergoing a significant transformation in this respect.

One critical question was how to bring alternative proteins to the mainstream. The consensus pointed towards making them more appealing and affordable, to break down barriers and encourage consumers to explore new offerings. Slow technological adoption – both societal and industrial – as well as **regulatory hurdles in Europe**, were also noted.

In one panel, **Adrián Piñole** of **GEA** highlighted the importance of scaling from pilot to commercial production, and the three key pillars for making cellular agriculture a reality: a viable (developed and validated) process, functionality (the ability to produce meaningful volumes), and economic feasibility (at industrial scale).

Guido Ritter of **FH Münster** focused on translating new protein science into real food, developing recipes that chefs can introduce into consumers' daily diets. He also stressed the value of scientific support for start-ups and the need to establish regional alternative protein production systems to build more resilient and sustainable food systems.

Florencio García, European Director at **Better Balance** (Sigma Group), offered a consumption-based perspective, citing that for 53% of global consumers, health is the primary reason for considering plant-based alternatives. He emphasised the importance of product sampling to build credibility and the marketing chal-



ge of communicating these innovations to the public.

Javier Zaratiegui, CEO of **Coccus**, discussed machinery and formulations for food manufacturers, and forecasted the rise of hybrid animal-plant products. He also pointed to emerging research opportunities and the goal of democratising alternative protein access.

Michał Klar of **Better Bite Ventures** noted the rapid growth of the protein market in Asia-Pacific, while plant-based meat in the US has slowed down following an initial boom. Investments in cultivated meat have dropped sharply due to high costs and unsatisfactory taste. He advocated for a new product approach – not meat imitations or substitutes, but healthy, appealing alternatives that stand on their own merit.

Adrien Langeard and **Anna Handshu** of **Gourmey** stressed the superior sensory experience offered by cultivated meat compared to plant-based versions. Their flagship product, cultivated foie gras, tackles a major challenge in a sector affected by avian flu and ethical bans. Gourmey is the first European company to apply for regulatory approval for cultivated foie gras.

Laura Pedrós of **Levprot Bioscience** addressed cost and sensory barriers, advocating for the use of microorganisms to scale up alternative protein production and reduce expenses.

Anna Handshu (Gourmey), **John Murphy (Alternative Proteins Association**, UK) and **Lou Cooperhouse (BlueNalu)** reflected on the need for constructive regulatory engagement to unlock the sector's potential. With regulatory environments more favoura-

HEALTH AND WELLBEING

ble in some non-EU countries, many innovations are being piloted abroad. A collective effort is needed to advocate for regulatory reform and pave the way for commercialisation in Europe.

On **consumer acceptance**, the panel recognised the challenge of overwhelming novelty – new ingredients, technologies, formats – and the need to build trust in products not yet available on the market. There was consensus on the importance of multi-angled, **evidence-based communication** to counter negative narratives. A key issue in Europe is the inability to conduct consumer tastings of products still awaiting regulatory approval, seen as a **major innovation bottleneck**.

In **BlueNalu's** case, their products are valued for being free from parasites and microplastics. Importantly, the consensus was that these innovations are complementary options, expanding consumer choice rather than replacing conventional foods.

The interplay between **diet, health and wellbeing** was also explored by **Juana Manso (Campofrío)**, **Marta Iguacen (Danone Iberia)** and **Lorena Savani (EIT Food)**. Campofrío referred to the era of “infinite choice” as an opportunity for diversification and personalisation. Manso also pointed to the “responsibility paradox” – consumers want wellbeing, but expect brands to deliver it for them.

Danone noted growth in niche products like kefir, and strong interest in protein, plant-based yoghurts and Greek-style products. EIT Food urged a shift from treatment to prevention, calling for stronger alignment between food and health systems. Savani stressed the importance of affordable healthy products, improved nutritional profiles and personalised nutrition.

José Manuel López (Hijos de Rivera) underlined the need for credibility through molecular-level insights and proven functionality, sharing work on functional peptides and the use of AI to evaluate their behaviour.

From a sectoral perspective, a session on innovation drivers in non-alcoholic beverages featured **Montserrat Rosell (Familia To-**

rres), **Laura Aranda (Danone)**, **Francisco Álvarez (Hijos de Rivera, S.A.U.)**, and **Alejandro González Navech (Pascual)**.

Discussions focused on consumer preferences, cutting-edge technologies and health-centric innovation, with new product categories such as kombucha, functional waters and probiotic juices integrating wellbeing and pleasure.

Key developments included:

- **Familia Torres: non-alcoholic alternatives linked to wine culture.**
- **Danone: emphasis on plant-based drinks and water.**
- **Hijos de Rivera: expansion into functional juices, mineral waters and immersive experiences.**
- **Pascual: growth and diversification, though noted that Spanish consumers are still reluctant to pay extra for sustainability.**

Among the challenges, speakers highlighted slow EU regulation compared to faster-moving markets like the UK or the US, particularly around novel ingredients such as adaptogens, nootropics and natural energisers. The need for local ingredients and clear, educational communication was also stressed.

The emergence of a **new generation of ingredients** also played a leading role at Food 4 Future 2025. Developing functional ingredients for next-generation foods requires integrated initiatives. In this vein, **Clara Talens (AZTI)** and **Amaia Ortiz (Neiker)** presented a collaborative project focused on **underutilised local legumes** to create new protein-rich ingredients.

The project combines sustainability and innovation, harnessing advances in agricultural and food transformation technologies. Legumes are more acceptable to consumers than other alternative sources like insects and are nutritionally rich, though their cultivation faces challenges such as pests and harvest variability, especially in the changing climate of the Basque Country.

The aim is to design flexible processes that adapt to such variability and produce functional ingredients tailored to new market needs – including older demographics. Despite being sensorially attractive, digestibility still needs evaluation.

Elsewhere, the role of **next-generation ingredients** in transforming the food industry was discussed by **Thomas Dietrich (Tecnia)**, **Montse Jorba (Leitat)** and **Carolina González (CNTA)**. Innovations presented included:

- **Precision fermentation to enhance nutritional profiles.**
- **Plant-based proteins.**
- **Upcycling of by-products into new ingredients.**
- **Probiotics, microalgae biorefineries, and functional compounds such as beta-glucan from Euglena gracilis.**

On **personalised and functional nutrition**, **Leyre Urtasun (CNTA)** stressed the importance of collaboration among companies, tech centres and universities, highlighting the Plenty Food project and a growing gastronomic ecosystem focused on sensory and precision nutrition.

The **GOe Tech Center** (Basque Culinary Center) was introduced, with a mission to develop high-value, personalised, healthier food solutions.

Alvar Gracia (Leitat) shared innovations in nutritionally enriched foods and probiotic encapsulation, advocating co-creation and open collaboration to accelerate the application of new technologies. His team is also working on 3D Food Evolution, driving innovation in 3D food printing.



HEALTH AND WELLBEING

Finally, **Sara Arranz (AZTI)** presented a strategy for personalised nutrition based on omics technologies, enabling in-depth analysis of biological, genetic and metabolic data. She highlighted the potential to reshape dietary habits for both individual health improvement and public health impact.

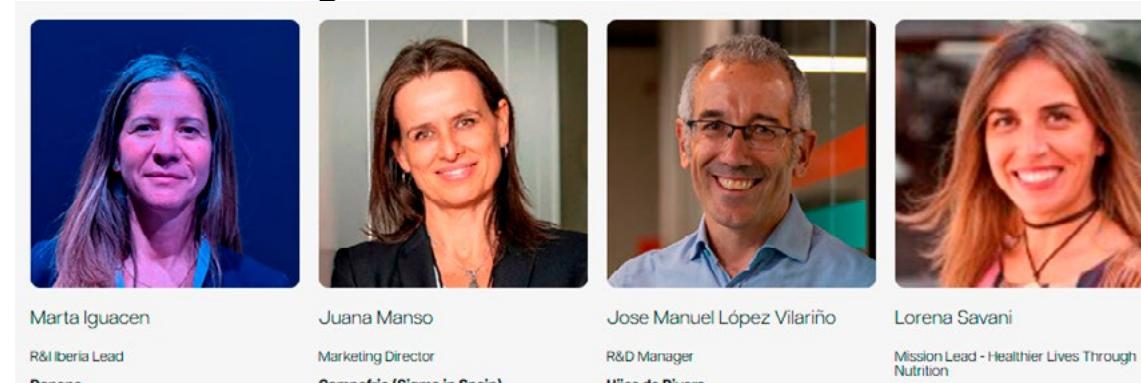
Challenges and opportunities in the alternative protein value chain



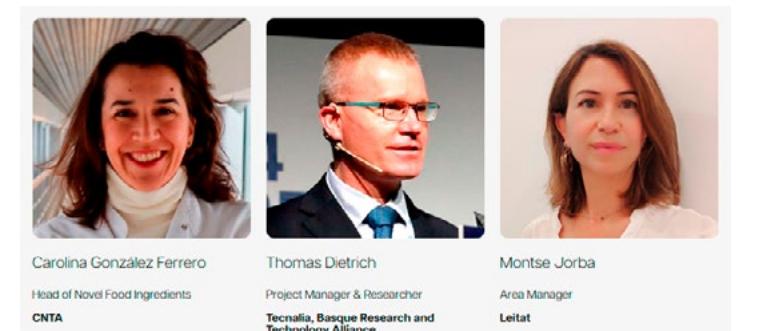
New sources to fill the emerging protein gap



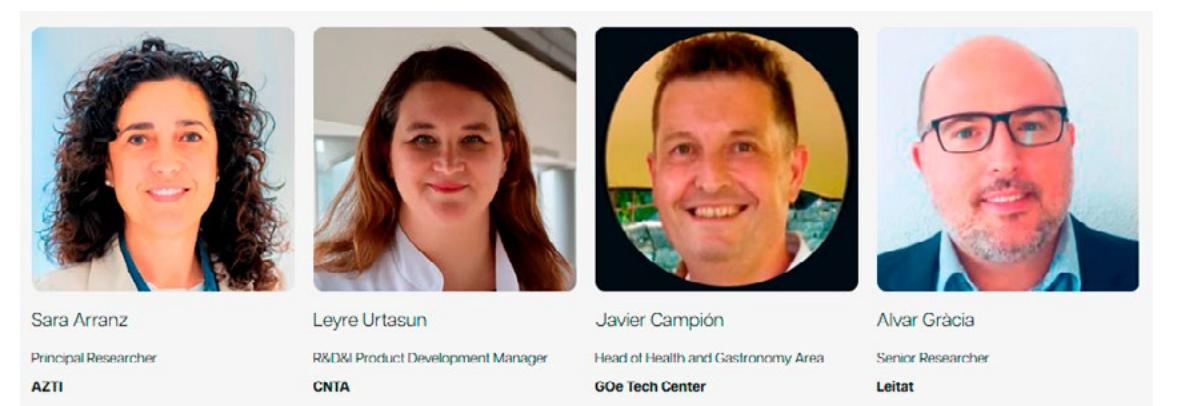
Food & well-being



New generation ingredients (and supplements)



Innovations in personalized and functional nutrition



SIDE EVENTS

European Foodtech Nations Summit

The European FoodTech Nations Summit once again put the spotlight on the innovation ecosystems driving the food sector across Europe, offering visibility to FoodTech initiatives not only within the continent but also in regions as far afield as Japan. This gathering brings together institutions, companies, and representatives from pioneering European regions in food technology to share strategies, initiatives, projects, and experiences aimed at addressing the challenges and transformation of food systems.

Germany was the guest country for the 2025 edition, recognised for its leadership in innovation, automation, and sustainability within the FoodTech sector. The German delegation was led by Michael John Voss, Honorary Consul in Bilbao, who headed a strong institutional and business representation of the country. Germany showcased its position as one of Europe's most robust FoodTech ecosystems, with over 900 active startups in areas such as:

- **Vertical and urban farming**
- **Food biotechnology**
- **Food safety and digital traceability**
- **Sustainable packaging and food waste reduction**

Prominent companies such as **Infarm**, **Mushlabs**, **Biome Makers**, **GEA**, and **Beckhoff** were highlighted, alongside investment funds like Atlantic Food Labs and Blue Horizon, which are driving food innovation from Germany.

Amaia Barredo, Regional Minister for Food, Rural Development, Agriculture and Fisheries of the **Basque Government**, together with **Begoña García**, Secretary of State for Agriculture and Food at **Spain's Ministry of Agriculture, Fisheries and Food**, presented a recognition award to **Michael John Voss, Honorary Consul of Germany in Bilbao** and representative of the 2025 guest coun-

try at Food 4 Future – Expo FoodTech.

Among the standout participants at the 2025 edition of the European FoodTech Nations Summit were:

- **Hirotaka Tanaka**, Founder & CEO, **UnlocX & Co.**
- **Barry O'Neill**, Partner, **Value Create**
- **Amir Zaidman**, Chief Business Officer, **The Kitchen FoodTech Hub**
- **Clara Hernández**, Environmental and Climate Change Director, **Sigma**
- **Karen Verstraete**, Communication Manager, Food Pilot, **ILVO**
- **PERTE Agroalimentario**, Desarrollo industrial y económico del territorio



EXPOFOODTECH

The exhibition area at F4F – Expo FoodTech has once again served as a showcase for cutting-edge technological solutions set to revolutionise the food system at every stage of the value chain – from raw materials to logistics and market delivery.

This latest 2025 edition of Food 4 Future hosted over **240 exhibiting companies**, each presenting innovative solutions to address current challenges in the food sector and to tackle future demands, particularly those involving digitalisation and automation.

Among the standout companies, **Beckhoff** unveiled an innovative magnetic levitation transport system, which was awarded at the FoodTech Innovation Awards 2025 for its contribution to automating the food value chain.

Ibernova showcased its digitalisation solution for wineries, already successfully implemented at Campo Viejo (Pernod Ricard). The system enables real-time management and monitoring of winemaking facilities.

FOSS presented its latest technology, capable of identifying key components in agri-food samples within just a few seconds.

Gashor introduced a solution based on an AI algorithm combined with machine vision and data science to control production and reduce defective output. This innovation not only improves operational efficiency but also enhances sustainability by reducing food waste.

Other companies presenting their latest advances at Food 4 Future 2025 included:

- **Inndeo** (Inspectra), with solutions to automate inspection and sorting tasks in the food industry
- **Pack2Earth**, offering low-carbon biomaterials designed to replace plastics for packaging long-shelf-life dry and liquid products

- **bioMérieux**, with groundbreaking innovations for effective microbiological control in food processing
- **Cocuus**, with a pioneering multilayer system aimed at improving the production of plant-based and hybrid products

Among the most prominent companies presenting their innovations at Food 4 Future 2025 were:

- Beckhoff
- Christeyns
- Cocuus
- Ibernova Ingeniería y Consultoría S.L.
- IFR Group (Innovació i Recerca Industrial i Sostenible)
- BF Food Business Factory
- Biomérieux
- LEV2050 (Low Emission Valley 2050)
- Proveg International





Food 4 Future 2025 has left several clear takeaways about the direction the food industry is heading:

- **Smart Digitalisation is Becoming Mainstream:** The sector is moving decisively towards broader implementation of intelligent technologies. AI, IoT, and robotics are no longer futuristic concepts—they are becoming fully integrated tools to optimise every stage of the value chain.
- **Sustainability is a Non-Negotiable Imperative:** Regulatory pressure and growing consumer expectations are pushing companies to embrace sustainability in a holistic way—from sourcing raw materials to packaging and waste management. Circular economy models and upcycling are emerging as key strategies.
- **Open and Collaborative Innovation is Essential:** No single actor can tackle the industry's complex challenges alone. Collaboration among companies, startups, research centres, and public institutions is crucial to accelerating innovation and building resilient solutions.
- **The Consumer at the Core:** Shifts in consumer preferences towards healthier, more personalised, ethical, and transparent food will continue to be a driving force behind innovation in both products and services.
- **Persistent Challenges Remain:** Despite progress, key hurdles persist—scaling up new technologies, creating adaptive regulatory frameworks, attracting specialised talent, and ensuring that digital transformation is inclusive and accessible to small producers.

Food 4 Future – Expo FoodTech 2025 has served as a catalyst for the food and beverage industry, providing a platform for knowledge exchange, strategic partnerships, and a shared vision of a food future that is inevitably more technological, efficient, sustainable, and centred on the well-being of both consumers and the planet.

The path to fully transforming the food system is complex and demands continuous commitment, but events like Food 4 Future are vital to lighting the way forward and strengthening the collaboration required to reach these ambitious goals.

Food 4 Future 2026 is set to once again become the epicentre of food knowledge and innovation, bringing together global leaders, disruptive startups, and science and technology experts to reshape the future of the sector from a holistic perspective—where scientific and technological advances will continue to redefine the way we eat.

An inspiring event to share success stories, explore emerging challenges, track trends, and develop strategies to tackle them—**together.**

A vibrant forum to discover the most innovative ideas revolutionising the agri-food sector.

A must-attend event for anyone looking to lead the transformation of the food industry. **Will you miss it?**



NETWORK

KNOWLEDGE

BUSINESS OPPORTUNITIES

SEE YOU AT
FOOD 4 FUTURE - EXPOFOODTECH 2026
27-28 MAY 2026 | BILBAO-BEC

Food 4 Future, organised by NEBEXT and AZTI, is supported by the Bilbao City Council, the Provincial Council of Bizkaia, the Basque Government, the European Union (NextGenerationEU), the Spanish Government's Recovery, Transformation and Resilience Plan, and ICEX.

The event is also backed by strategic partners such as:

EIT Food, ILSI Europe, Food for Life Spain, Eatable Adventures, Hazi, AME (Multisectoral Association of Food and Beverage Companies), ANFABRA (Soft Drinks Association), ANICE (National Association of Meat Industries of Spain), Basque Trade & Investment (Spri Group), BRTA, Cerveceros de España, FATE (Food & Agri Tech Europe), FEDEPESCA, Fenil (National Federation of Dairy Industries), FEV (Spanish Wine Federation), FIAB, the Spanish Ministry of Agriculture, Fisheries and Food, and FWS - Spain FoodTech Nation.

FOOD 4 FUTURE IS AN EVENT OF:

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NEXT> BUSINESS EXHIBITIONS

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FOR FOOD INDUSTRY

**FOOD 4
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BILBAO FOODTECH
WORLD SUMMIT

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