FOOD → TURE

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A safe, sustainable and healthy food system.

FOODTURE
A safe, sustainable and healthy food system.

Recommendations for sustainable and successful food business transformation.

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What will you find in FOODTURE?

Key information pills on the most relevant aspects to take into account in order to activate food innovation.

A holistic view of the present and the immediate future projection of the food system.

Inspiration through a selection of pioneering innovations reflecting movements that agile enterprises are making to respond to the context of change, and meet new market demands.

Some insights or keys for action, which provide clues for translating opportunities into specific strategies and actions, in order to respond to the changes motivated by COVID, and to the fundamental movements that are the basis of the new food revolution.

Follow the display of content presented in this report and developed in more depth at:

http://www.azti.es/aztinnova/

This document aims to provide you with the knowledge you need, first, to understand the complex and changing environment in which we are immersed; and second, to change your perspective and explore the opportunities offered by this disruptive and transformative context. It is intended as a guide to act timely, or for the more daring, to even anticipate the future.

The changes brought about by Covid-19 have taken place in a very short period of time; they have been an accelerated journey into the future. We will never be the same again, there have been adaptive changes that have transformed us as people and as consumers. It is a before and after of the world as we knew it. Everything will simply be different. When will the “new normal” arrive and how “normal” will it be?

In a world that has become uncertain, where it is difficult to plan, and know what to do and how to act, managing uncertainty is key for enterprises: does it make sense to make post-crisis future scenarios, what will be the impact at all levels, how are people changing, which trends will be transitory and which will last?

With a virus that has disrupted the world and dragged us into unprecedented disruption, in the face of so much dynamism we are forced to look differently, be flexible and act fast: both enterprises and individuals need to be more agile than ever, and pivot our behaviours and the direction of our businesses.

The future depends on a paradigm shift in what is understood as productivity: it will no longer be measured just in terms of economic performance, but in terms of impact on people's health and the environment.

We are irremediably bound to think more in terms of the key ecosystem, to be more risk-taking, to anticipate the changes to come, and to innovate. This interpretation is full of signals that will be the lodestar that can guide food strategy and innovation in both the short and medium term, and there are two attitudes we can adopt:

• An attitude of fast adaptation and resilience towards the current changes in circumstance.

• A transformation, and a proactive and innovative attitude to anticipate the future from an understanding of structural changes.

FoodTure is discovery: we hope you find it inspiring. But, above all, we hope it will spur you into action, that you will contribute to the transformation of the sector at the speed it requires, connecting with the key people of change.

Enjoy reading and be inspired!

Context of change

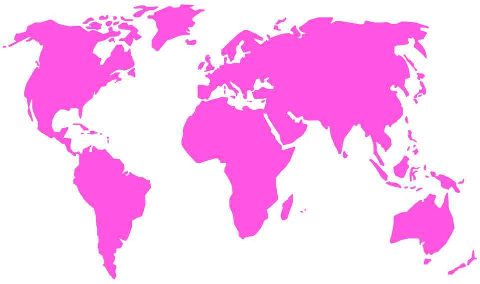
FOODTURE

15 min reading time

I.

Context of change

And great challenge: will the food industry be able to supply the needs of 8 billion people in 2030??



8 billion in 2030

Volatility

Uncertainty

Complexity

Ambiguity

These attributes define the environment in which food companies are currently operating, and which is leading them towards one option: to be flexible and to focus on innovation.

The global pandemic scenario we are currently experiencing has left the underlying movements, whose impact is of a more strategic nature, on the backburner, and in the medium or long term. These are global forces that act slowly and confront us with systemic challenges that cannot be ignored or forgotten: they are essential to understand and achieve that global vision, that canvas of the food system context that will allow us to act strategically, beyond today. With ever greater force and speed, the fluttering of the butterfly on the other side of the world is impacting our business models like a tsunami wave.

There are two main frameworks for the transformation of the food system in Europe: the **UN**[1] **SGD**[2] and the European Union's Food 2030 strategy.

1. https://ec.europa.eu/info/research-and-innovation/research-area/food-systems/food-2030_es

2. https://www.un.org/sustainabledevelopment/es/sustainable-development-goals/

SGD 2030

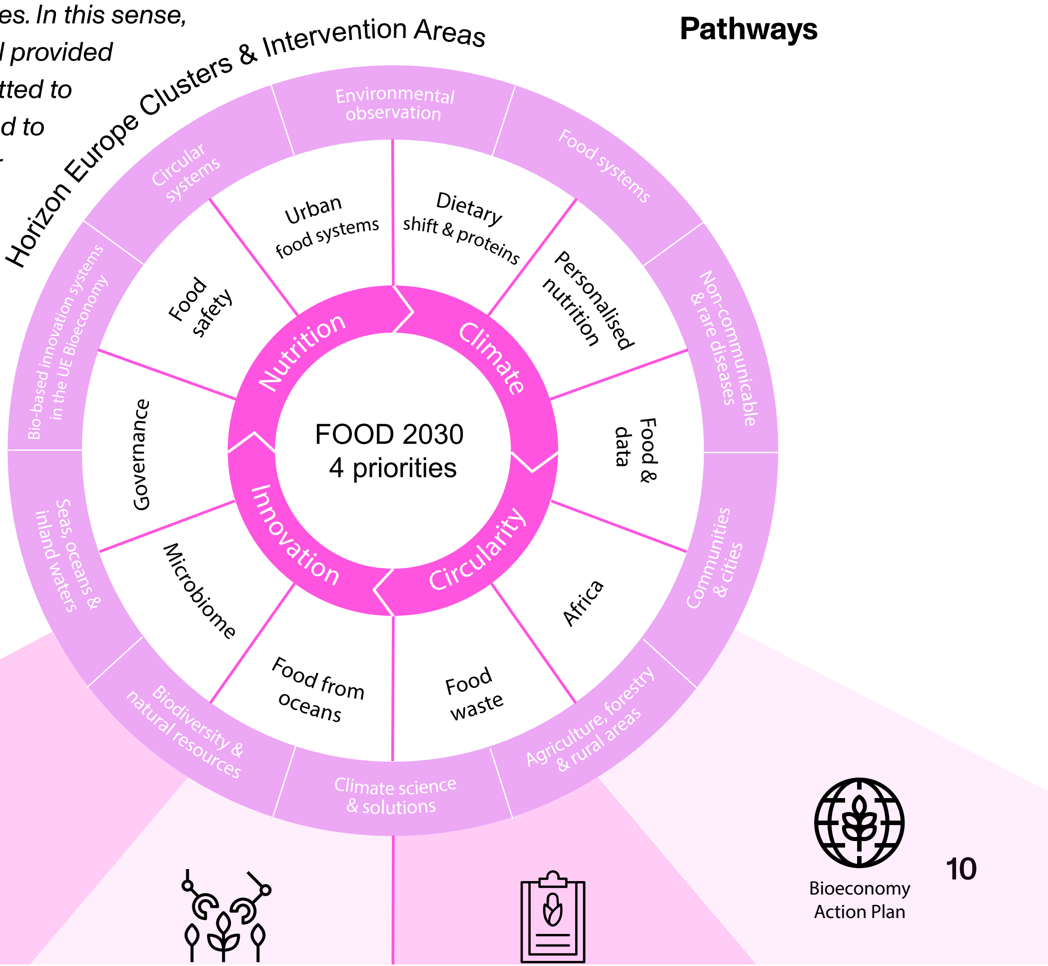
—Luciano Pirovano
Global Sustainable Development Director.
BOLTON FOOD

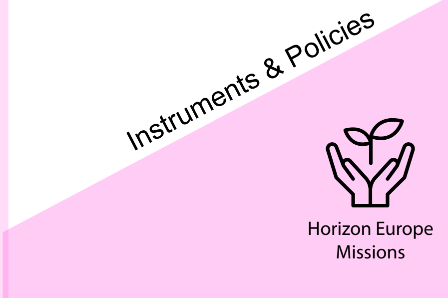
"At Bolton Food, the Bolton Group Food Business Unit, we want to be an active player in the transformation of our industry and become the most sustainable tuna company for the world. We work with a global and scientific approach to create shared value with our stakeholders. Our goal is to ensure the health of the oceans, protect their resources for future generations and to act responsibly towards communities and all the people who work along our supply chain.

In addition, it is our responsibility to provide consumers with responsible buying choices. In this sense, fishing traceability is a key tool provided by companies that are committed to transparency, sustainability and to our consumers. To achieve our ambitious objectives, we work in alliance with prestigious NGOs such as ISSF, WWF and Oxfam, from a scientific and global point of view. This networking, coupled with a cross-cutting sustainability strategy and commitment, will help us to ensure the essential balance to secure the future of our oceans, our people and our business."

Food 2030

Pathways





60/70%

1/3 Of global food production is wasted

2050 Goal save the planet

75% Cities carbon emissions

16% Of food waste is used

30% Food sector's energy consumption

+400 Volumen of plastic packaging expected by 2050

x3 Increase in water use since 1959

25 years is the time required to transform an industrial sector and all value chains. We have 4 years left to take the necessary steps to achieve a climate-neutral Europe by 2050.

The world's cities occupy only 3% of the earth, but account for 60% to 80% of energy consumption, and 75% of carbon emissions.

The food sector accounts for about 30% of the world's total energy consumption, and 22% of total greenhouse gas emissions.

X3 is the increase in water use since 1959. If we continue with business as usual, water demand will exceed supply by 40% in 2030.

60/70% is the expected increase in food demand by 2050.

1/3 of global food production is wasted every year (equivalent to 1.3 billion tonnes).

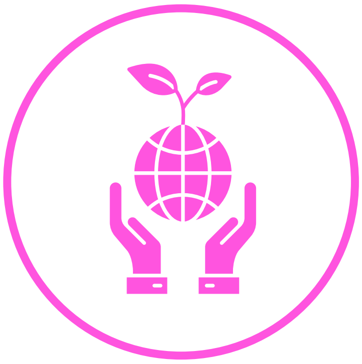
Only 16% of food waste is used in Europe.

+400% is the volume of plastic packaging expected by 2050 and, if nothing changes, plastics in the sea could outnumber fish by 2050.

Sources: (European Green Deal; United Nations; Fundación Ellen Macarthur; UBS- The food revolution)

Can we save the planet by optimising food production and consumption?

Let's look at what is happening in this context of change following the impact of Covid-19, and a vision of where it will evolve in the near future.



—Santiago Salas
GRUPO APEX

Plastic and its use mainly in packaging is a challenge for the entire food sector. We need to work together to find more sustainable packaging options that meet food safety needs, at the same time as they maintain products with all their characteristics and meet people's expectations. Plastic is currently perceived as a protective and hygienic measure, despite its impact in terms of sustainability. It is a big challenge: in the food industry there are still not many better preservation options than plastic in many product categories. While we are making progress in finding alternatives, we must work together without delay to reduce its impact on the environment.

Now

With the impact of the global pandemic, sustainability has moved from the backburner to the top of the agenda for businesses and individuals alike.

• **Plastic** has regained its lost prominence: the world has re-plasticised itself to protect itself from the virus.

•There has been an increased social awareness of the important role of climate change in the appearance of **emerging risks.**

• Covid-19 has shown that it is not only consumers who are primarily responsible for **food waste**, but that there are many inefficient links in the chain.

• Faced with the exponential increase in e-commerce, reducing environmental impact is now one of the main challenges for **last mile logistics.**

• Research into **new protein sources** is contributing to a more sustainable food system that supports a healthier planet.

How can I secure a supply of quality raw materials at a competitive price?

What's next

Coming years

• Pressure on natural resources will increase: **raw materials for food will eventually become a strategic resource like energy**.
• There will be growing uncertainty about possible environmental disasters (**eco-anxiety**) or new health crises, which will be a stimulus for a more conscious, socially and environmentally friendly lifestyle.
• **Local agriculture** will be optimised to provide fresh vegetables in short supply chains.
• **Regenerative agriculture and livestock farming** will be promoted, and biodiversity will be fostered as a way to improve the quality of production while caring for the environment.
• The **circular economy and the bioeconomy** will be the main lines of action for the contribution of food to sustainable development, seeking zero waste, and using biomass and waste in new valorisation processes.
• The green and digital transition promoted by the European Next Generation Recovery Funds will drive **climate-smart processes**. Efficiency in production, logistics and distribution will be a priority based on the principles of the green transition.

Inspiring cases

The Waste Factory

... is a company that makes soups and sauces from by-products (mainly vegetables and fruit) provided by wholesalers, producers and processors. This company is part of a Circular Economy knowledge and expertise hub, whose network offers companies solutions related to food waste, both to minimise and valorise it.

https://eu-refresh.org/de-verspillingsfabriek-waste-factory

Ooho

... is a flexible packaging for drinks and sauces made from Notpla, a gelatinous material obtained from algae and plants that is biodegradable (it decomposes in 4-6 weeks) and edible. These small transparent sachets are ideal for on-the-go consumption, and are already used in sports competitions, for condiments in take-away meals, or even for tasting cocktails at events.

https://www.notpla.com/

Will we succeed in building the necessary trust in a safe food system?

Now

We live in times where safety, hygiene and health are of utmost concern. The food sector is still perceived as safe, but social expectations and demands have increased in terms of quality and safety standards..

• We are witnessing the new "**contactless**" era, where physical contact and human interactions are minimised.
• The **local** is revalued, as it is perceived as safer and more trustworthy.
• Demand for **plant protein** is increasing, partly due to the zoonotic origin of the virus.
• We are more aware of our vulnerability to **emerging risks** that could compromise food safety.

Inspiring cases

Nima

... is a food safety sensor that acts as an allergen checker. In just 2 minutes it tells you if the dish you are about to eat contains traces of gluten.

https://blog.nimasensor.com/

Is the food industry prepared to deal with potential future threats to food safety?

What's next

Coming years

• The search for safety will lead to a conflict of channels between **physical** and **online experience**.
• There will be an increased demand for **science-based evidence** that provides assurance of food quality and safety.
• **Scientific and technological advances** will enable faster and more targeted methods to facilitate decision-making on food safety issues, both for enterprises and citizens.
• The **demand for safety** will continue to be implicit in food purchasing and supply activities: hygiene protocols, safe packaging, delivery systems, "contactless" technologies, etc.
• Corporate schemes for staff care will be promoted, fostering improved **well-being and work performance**.
• There will be an increasing incorporation of **digital technologies** in production and transformation processes, increasing transparency, trust and preventive action against potential threats.

Inspiring cases

Inoscentia

Swedish technology company, Innoscentia, and Ynvisible Interactive (Canada) have teamed up to create real-time monitoring labels that detect contaminated food even before its expiry date, also combating food waste. These smart labels provide a quick way of knowing whether food is still fit for consumption..

http://www.innoscentia.com/

Will we build a food chain that is resilient to crises?

Now

—Agustín Markaide
EROSKI

Society demands a food transition that focuses on improving three areas:

1. The impact on health (accessibility and safety of products).

2. The environment and the social environment of production. Here, products sourced close to the place of consumption play, in our view, a crucial role.

3. Adaptation of supply to cultural variables (beliefs, tastes, ...). Once again, proximity products have an enormous capacity to respond appropriately to these variables.

Convenience, and clear and transparent information are, finally, aspects that food products must integrate in order to meet people's needs.

The economic crisis that has been dragging on since March 2020 will be of an unknown dimension in the face of continuing constraints and their impact on the economy, which is entrenching structural weaknesses related to the labour market and business demographics.

• It is a **global crisis,** which is hampering internationalisation processes.

• The closure of a large part of the Horeca sector is having a knock-on effect on the entire supply chain, with serious implications for the sector.

• **Trade agreements**, tariffs imposed by the United States, Russia and factors such as Brexit are having a major impact on the sector.

• With pressure on food commodities, access to and control of food production and supply is leading to increasing purchases of fertile land and fishing rights.

• Absenteeism and prevention costs in the workplace will remain as a structural part of companies, with a major impact on margin reduction.

• **Local economies,** short marketing chains and local production capacity are being promoted for self-sufficiency in raw materials.

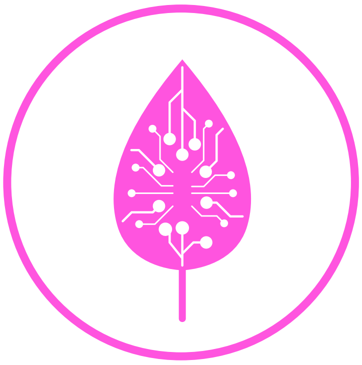
What's next

Coming years

• In the case of **Brexit**, exports of perishable fresh produce seem likely to be the most affected, as border control times will increase, with significant spoilage and losses in quality. Logistics will be reinforced to speed up distribution times for perishable products.
• The **regulatory gap** that we already have in the food sector in Europe will widen, making exports even more complex.
• There will be a **simplification of the ecosystem** of actors in the food supply chain, and strong concentrations of food companies.
• The transition to a **green economy**, smart production processes, and the digital transformation of the food supply chain will require adapting to the requirements of European policies that allow access to funds to help investments to be made.

Technological acceleration

Can the fourth industrial revolution make the food sector a more efficient and connected system?



Inspiring cases

Pinduoduo

... is a social shopping model implemented in China. It is a kind of virtual bazaar that connects producers, distributors and consumers through an interactive shopping experience in which, for example, groups of people can be created to bid for a batch of products and obtain better prices.

https://en.pinduoduo.com

Now

Technology is revolutionising society and business. The transition to Industry 4.0 in the food sector focuses on the efficiency of production processes and business intelligence for decision-making in favour of competitiveness and sustainability.

• The **automation** of processes and the generation of data are two key axes of business digitisation.

• Technology applied to healthcare is a clear example of the move towards purposeful technology. The "**tech health**" market is moving unstoppably towards personalisation and precision nutrition.

• Food e-commerce is experiencing an unprecedented boom, as well as last mile delivery and B2C models in general.

• The **online world** is becoming the main point of contact between brands and people: customers are just a click away. The digital customer experience economy is emerging.

• Everyday activities such as work, shopping and leisure are moving to the home, facilitated by technology.

How can you provide a good customer experience and gain their trust, in an increasingly automated environment, without direct contact?

What's next

Coming years

• Still incipient technologies in the sector such as artificial intelligence (or the emergence of new technologies that may break through) will undergo continuous implementation in the production and distribution, design and manufacture of products and/or services. Smart Manufacturing will be consolidated to promote predictive, safe, efficient and automated production.

• **Biotechnology,** omics tools and big data will enable new segmentations of the population, and determine the nutritional requirements of different groups, facilitating new personalised value propositions.

• The **maker** and DIY **culture** may end up having a certain impact on the economic-industrial model, as technology and production capacity become increasingly accessible to the population.

• Continued **implementation of new technologies** in the transformation processes, which have less impact on the nutritional properties and molecules of interest to health that are naturally present in food, as well as on its sensory properties.

• The Horeca channel and food retail will be **reinvented**, combining physical and virtual versions, and experiences. New multi-channel and multi-delivery experience formulas will emerge that are increasingly convenient, seamless, personalised and immediate.

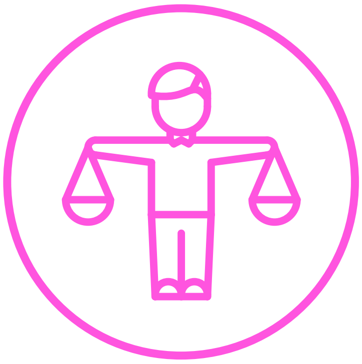
Inspiring cases

Culinary AI Labs

... is a project that explores potential collaborations between people and artificial intelligence in the kitchen, with the aim of democratising nutrition and personalised diets. Through an AI-based platform, an algorithm calculates the most suitable combinations of ingredients for each person.

http://www.culinairylabs.com/

Will the new European strategies give a definite boost to the food transformation?



Now

The European Union is accelerating the implementation of the policies it had designed, linking Next Generation recovery funds for a green and digital transformation. The Farm to Fork strategy is integrated, together with the Biodiversity strategy, as the pillars of the Green Deal, the backbone for the transformation of today's society.

• Europe is promoting the development of more sustainable agri-food systems, favouring the viability, competitiveness and livelihood of **small** family **farms** and small agri-food producers, which will contribute to maintaining the population in rural areas.
• The new regulation, aimed at increasing the **transparency of risk assessment** in the food chain, will enter into force in March 2021.

What’s next

Coming years

1 Governance and system change
2 Transforming the urban food system
3 Food from oceans and freshwater resources
4 Alternative proteins and dietary change
5 Food waste and resource efficiency
6 The world of the microbiome
7 Healthy, sustainable and personalised nutrition
8 Food safety systems of the future
9 Food systems Africa
10 Food systems and data

• The **Farm to Fork strategy** will shape the future of food in the European Union in the coming years, and will focus on relevant issues such as:

Food safety culture

Consumer information

Improving the cooperation of primary producers to strengthen their position in the food chain.

Social responsibility (redistribution of food to reduce wastage)

Constraints for plastic

• The funding that will be available under **Horizon Europe**, to help find answers to the priorities of the European food system by 2030, will concentrate on 10 areas known as action pathways.

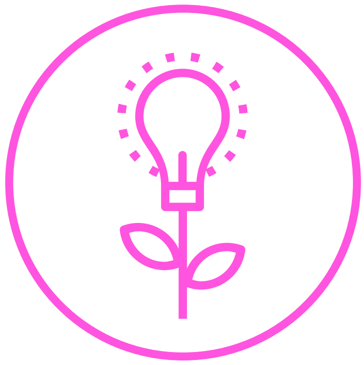
What’s next

Coming years

• The European Commission is working on a series of measures that will affect the Consumer Information Regulation 1169/2011. The **future regulation** will address issues such as front-of-pack nutrition labelling, nutrient profiles, food origin and date indications.
• The EU has committed to a 55% reduction in CO2 emissions by 2030. The **circular economy** and the **bioeconomy** will evolve as pathways to generate wealth, and contribute to sustainable development.

Legislative measures that may arise as a result of food alerts, Brexit, or new food products that are authorised after approval by the European Food Safety Authority (e.g., new food products derived from insects or algae-based foods) will also need to be considered.

Will business R&D be strengthened as a key element to innovate in times of uncertainty?

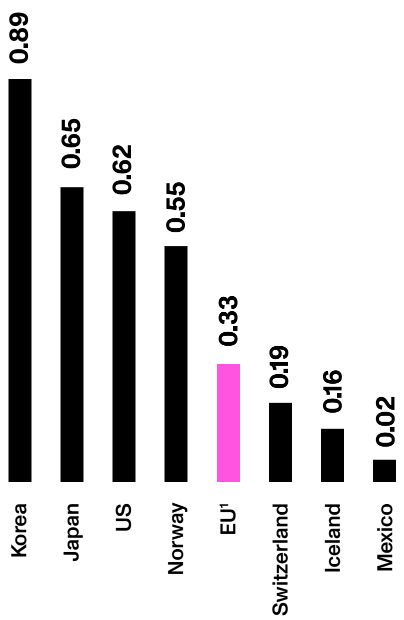


Now

Outside our comfort zone, this crisis is forcing us to be agile in our search for funding in order to fit into this new puzzle, where the sustainability of food systems, adaptation to the digital era, and the need to improve the state of health and well-being of citizens are going to be the key axes of innovation.

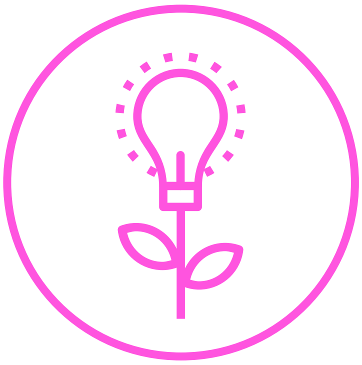
• The new €95.5 billion **Horizon Europe** programme is the framework for meeting the challenges and achieving the proposed objectives. Access to public resources is becoming increasingly competitive, geared towards the construction of large consortia and ambitious projects, although the livelihoods of small operators in the food value chain will also have to be safeguarded.

• Despite world-class research and strong industries, Europe fails to achieve leadership in innovation and entrepreneurship, lagging behind Japan, China and the US. The EU food industry also has a lower R&D intensity than in other countries.



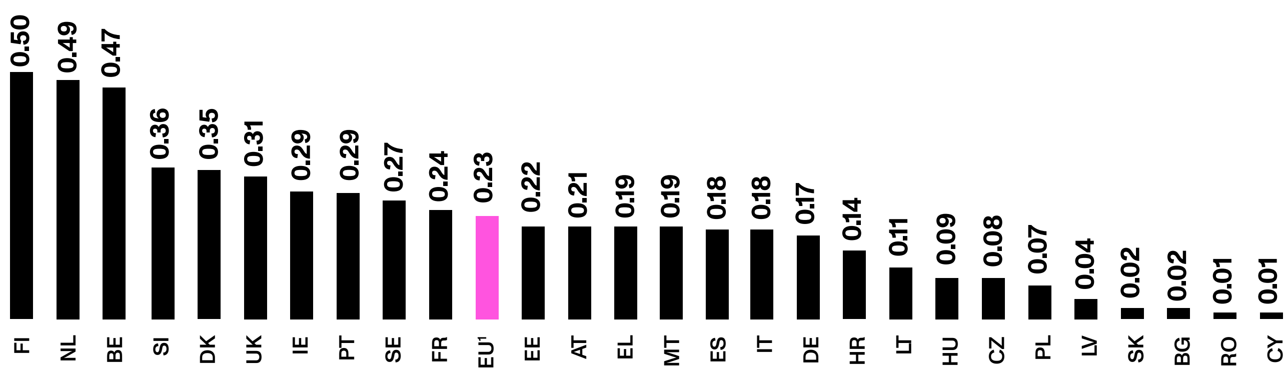
Source: Eurostat (IBERD, National Accounts)
OECD (STAN)

Research, development and innovation



Now

• The **R&D investment** intensity of the food and drink industries in EU member countries varies from 0.01% (Cyprus) to 0.50% (Finland), with Spain in 15th place with 0.18%. The weight of business R&D expenditure continues to be one of the main structural weaknesses of our industrial fabric.



Source: Eurostat (IBERD, National Accounts)

Will marine biology labs be the world’s new fishing grounds?

—Elena Martinez MARTINEZ SOMALO

“Innovation is still a strategy for positioning and differentiation. It will be even more so in a future in which change will be continuous, in which people will quickly modify their behaviour and brand loyalty will be lost, unless you provide values that are consistent with people’s requirements. What are our children going to eat? What approach do we want to leave them? These are the concerns that should guide food companies.

What’s next

Coming years

• Europe has proposed that public funding in R&D&I should reach 1.25% of GDP by 2030, and 0.75% by 2024 (In 2018, it accounted for 0.52% of GDP in Spain).
• **Health care** will continue to be prioritised, especially in the prevention of chronic non-communicable diseases, through precision nutrition and a healthier, more sustainable and personalised diet.
• The “**plant-based**” trend will continue to take hold, and animal protein will coexist with novel sources of protein (plant-based, algae, fungi, insects, etc.), and cultured or laboratory-grown meat.
• Food production techniques (seafood, meat and dairy) based on microbial and cellular systems will continue to advance.

In Spain, 91% of FMCG manufacturers are looking for new areas of innovation during COVID-19, focusing in particular on new products and the search for new sales channels.

—Innovación en contexto de Covid, IRI and Lantern, 2020

What will be the key aspects to establish a culture of agile innovation in my business: partnerships, technology development, collaborations with start-ups, ...?

Inspiring cases

Artelac Bio

... is a milk developed through a technological process that removes saturated animal fat and replaces it with vegetable fat (high oleic sunflower). The result is a family of state-of-the-art dairy products that help maintain optimal cholesterol levels.

https://artelacbio.com

Solar Foods

... is a Finnish food-tech start-up that is pilot testing a technology that uses electricity to produce microbial mass from carbon dioxide, to be used as edible protein. They produce a protein powder called Solein that can be used as a protein ingredient.

https://solarfoods.fi/

What's next

Coming years

- There will be an increasing focus on **regenerative agriculture** (with a positive impact on the environment) and biotechnology (CRISPR gene editing), for nutritional improvement of crops.
- Research into **meat and dairy substitutes** will continue, with the aim of improving sensoriality while subjecting them to less processing.
- Packaging will continue to be reinvented, with the emergence of **new barrier materials** for more sustainable packaging.

27% of European consumers would eat lab-grown food (meat), but 50% would not.

—Mintel

Impact of COVID

FOODTURE

5 min reading time

II.

Impact of COVID

What changes are here to stay?

The unprecedented situation generated by Covid-19 has shaken the whole world, and has put new challenges for the agri-food sector on the table: short-term challenges where food companies can emerge stronger if they seize the opportunity and aim not only to be resilient and weather the storm, but to take advantage of the convulsion, and transform themselves to become more sustainable, efficient and competitive.

The **health crisis** is causing an unprecedented shock wave in the national economy, with a large number of companies in a vulnerable situation, especially SMEs and those most closely linked to the Horeca sector. It is estimated that the mean turnover of small food and drink retailers will fall by an average of 40%, and that the probability of insolvency of Spanish companies will triple in 2021. The hotel and catering sector has been particularly hard hit by the pandemic, and is showing a less promising and more delayed recovery scenario than the home food or retail sector. A crisis that is proving to be a great catalyst for tackling challenges that were already on the agendas of many companies, such as digital transformation or sustainability.

Of particular concern is the loss of purchasing power of many families, and the low consumer confidence index, which is so necessary to recover in order to accelerate consumption and achieve economic recovery. We are witnessing a time of collective anxiety and high spending restraint in which consumers are more cautious than ever. On the optimistic side, e-commerce has grown exponentially to levels not expected for another four years, and the home delivery sector is experiencing a golden age.

We are facing a **panorama of opportunities** linked to the new paradigm we are witnessing. It is precisely in periods of deep crisis that the greatest opportunities for transformation arise.

Some data

España

—Yoseba Jainaga
AUSOLAN

The mass catering sector needs to harmonise protocols. If someone cannot take their child to school, they should be able to have the option of giving them the meal they would normally have at school. We need to find ways to work together to get those menus to all the people who miss out on one of the most important meals, in many cases, the only full meal of their day.

77% of Spaniards say they are very concerned about health and safety issues.

(Deloitte State of Consumer Tracker)

+18% is the net propensity to spend on food vs. **-22%** propensity to spend in restaurants / takeout.

(Deloitte, January 2021)

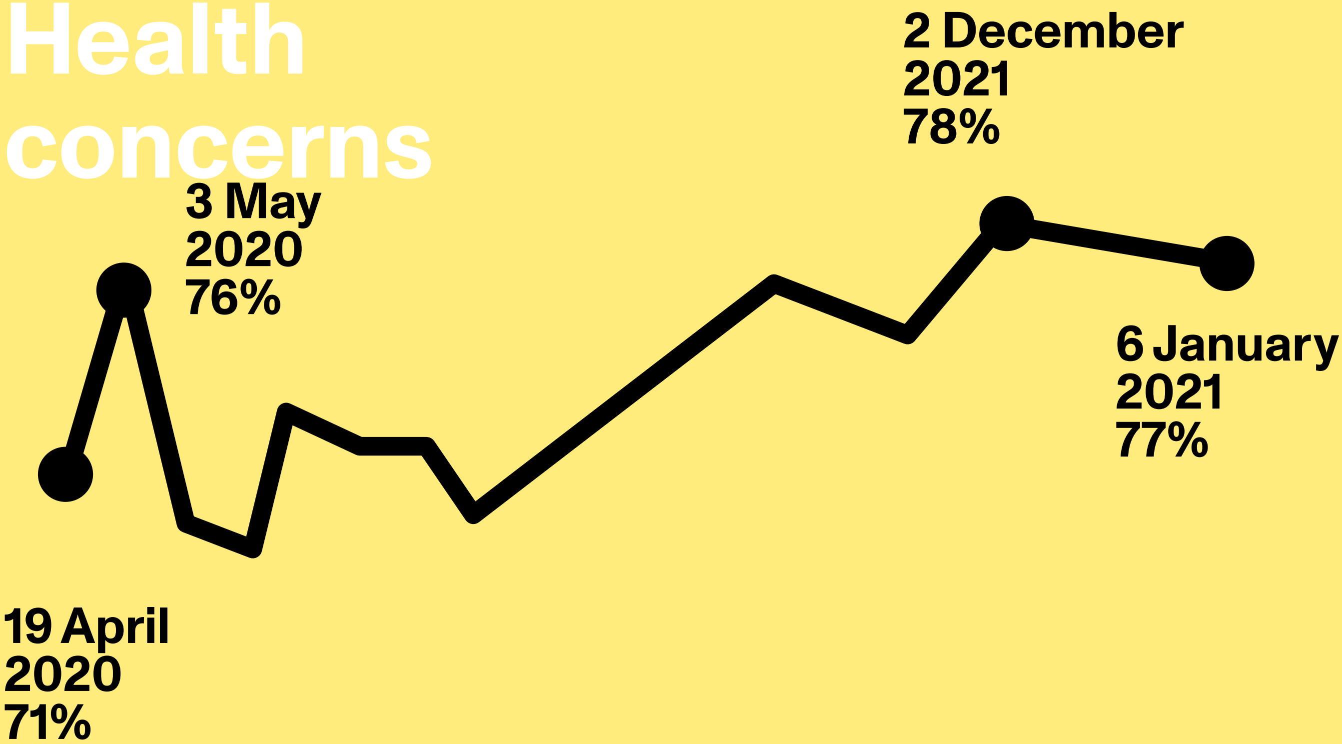
8,3% propensity to spend in restaurants / takeout.

(EAE Business school)

21% has started using or has increased the frequency of use of home food delivery services.

(McKinsey & Company)

Health concerns



Source: Deloitte State of consumer Tracker, Spain

Impact of COVID

One of the key questions to which answers are constantly being sought is: **which of the changes brought about by the Covid-19 crisis are here to stay and which will be temporary?** All the indications are that some changes will be temporary (arising as a more immediate reaction to the health crisis situation), such as the obsession with hygiene and social distancing. On the other hand, other changes will be more far-reaching, and will remain over time and become structural, such as, for example, omni-channelling, and the transfer of part of leisure and work to the home.

Circumstancial ★

Obsession with hygiene	Saving: spending restraint	Social distancing	More thoughtful, intentional consumption
Preference for private (not shared)	Convenience of proximity	Splitting of price sensitivity	Plastic as first choice for safety reasons
Slow lifestyle	Investment in material concepts (house...)	Affinity for traditional, "safe", well-known and trusted brands	

Structural ★

Healthy and balanced nutrition on a holistic level	Revitalisation of the home, home culture (cooking, rituals...)	Teleworking	Short marketing chain
Multi-delivery (click & collect, drive thru)	Communities around common interests	Low contact: touch-free, contactless	Environmental awareness
Multi-channel e-commerce	Evidence with data (science-based): transparency, trust	Bifurcation of leisure: online experiences from home coexist with offline experiences	Accessibility, immediacy and personalisation: "on-demand"
B2C or D2C	Digital adoption		

What will be the impact and implications for my business?

That the pandemic is bringing about changes in the business environment is clear, but the key question is: **how do these changes affect me?**

—Luis T. De Arriba
THE AGGREGATE VALUE

The pandemic has changed expectations in terms of speed and shopping experience: the new challenge is 2-hour delivery, ultra-fast delivery. The main barriers to online business are getting traffic, the data war ("whoever has the most, wins"), and having critical mass to optimise logistics. But there are great opportunities now for brands to use the online channel to reach their customers directly, and have first-hand knowledge of their needs and interests. Some keys to the success of this digital revolution in the retail and delivery model: create an ecosystem (Amazon has long since become more than a company), create membership models (such as Amazon Prime), be not only multi-channel but multi-delivery, and integrate the entire experience from the purchase decision to delivery..

Let's review some of the main axes of impact of the pandemic situation on the sector, and more specifically on the food industry, in the short and medium term.

Food Business

Short-term ★

Price as a key competitiveness factor	Completion of ERTEs (temporary suspension of employment)	Slowdown in movement of goods: procurement, exports	Fluctuation in raw material prices
Need to consolidate new trade agreements with the UK (Brexit) and the US.	New Brexit tax rates	Lack of liquidity and public financing hindering urgent investments.	Reduction in profit margins
Short marketing chain	Adaptation of European strategies		

Mid-term ★

Investment funds continue to focus on the food sector as it is increasingly seen as essential and strategic.	Disappearance of a large part of the Horeca sector	Mergers: simplification of the chain.	Boom in business and investment in the health and wellness sector
Withdrawal from hyperglobalisation	Austerity policies and spending cuts		

Sustainability

Short-term ★

Increase in food waste in the face of fluctuations and instability of demand	Sustainability impact assessment in delivery logistics: innovation in sustainable last-mile logistics	Raw material availability and sourcing: quality and price	Plant-based diet and alternative proteins

Mid-term ★

Taxation of more polluting products	Need for more sustainable alternatives to plastic and in more product categories	Appearance of new brands and logos to communicate environmental impact (supported by scientific evidence of impact measure)	Incorporation of eco-design into the design and development phase of products and services
Implementation of circular economy strategies and models in the food sector	Short marketing and sourcing chains for local produce in urban areas in a "15-minute cities" model	New ingredient suppliers (lab-grown)	Investment in "greener" containers and packaging: biodegradable plastics, etc.

Safety, health and hygiene

Short-term ★

Labelling regulations and consumer information	Increase in “naturally functional” ingredients and food	Demand for products and services for a balanced mental health and immune system	Process automation: no human contact
Increased costs in Occupational Health and Safety: worker absenteeism, investment in protective measures...	Animal welfare guarantees	Digital traceability	Increased demand for local products

Mid-term ★

Personalised diet according to the needs of population groups (with preventive and reactive effect)	Emerging risk factors	Safer and smarter packaging	Rapid methods: food safety information to consumers
Rapid methods: risk detection and prevention in production	Increasing supply of plant protein-based products	Worker health improvement plans	

Technology

Short-term ★

Process automation	Data intelligence: generation and use (exploitation) of in-process and customer data	B2C models	Increased importance of online food shopping (including fresh produce): more functional e-commerce space
Development of ad-hoc D2C products for the online and retail channel	New products and services based on the “new convenience”	New processing and preservation technologies: more efficient processes and higher product quality	

Mid-term ★

Advanced robotics reducing human intervention and manpower	Multi-channel and multi-delivery online experiences (in the food sector this is still in its infancy)	Full shopping and home delivery service from own channels (no aggregators)	AI for process efficiency: supply, demand forecasting, warehouse management...
AI to understand consumers and their sensory preferences.	Big data for consumer segmentation and personalised offers	DIY concepts and solutions for food production at home (3D printing, diagnostic kits - customised ingredients...)	

Regulation and legislation

Short-term

Limitations on the use of plastic	Fight against food waste (including clear labelling of best-before/use-by date)	European commitments to reduce emissions and combat climate change	Initiatives to stimulate the reformulation of processed foods (maximum levels of saturated fats, sugars, etc.)
Flexibility and simplification of regulatory requirements for small businesses and promotion of cooperation (competitiveness support)	Greater transparency, facilitating more informed purchasing for citizens (in health and sustainability aspects)		

Mid-term

Measures against premature obsolescence	Towards zero carbon and alignment with the SDGs

Call to Action

What is your plan: operational and survival in the short term, or more strategic in anticipation of structural changes?

For more information on the impact of Covid-19 on the food value chain, see the "Diagnosis and conclusions of the Health and Economic Crisis in the Food Sector".

https://www.azti.es/aztinnova/informe/un-mar-de-Opportunities/

If you are interested in delving deeper into the current challenges in the short term, and in activating new areas of innovation or solutions directly related to Covid-19, we invite you to AZTINNOVA

https://www.azti.es/aztinnova/

Science

FOODTURE

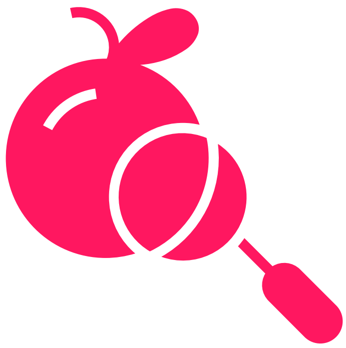
III.

3 min reading time

III.

Science

Can science avert the next food crisis?



The Covid-19 crisis has highlighted the important role of science in addressing global challenges and moving forward. Having a solid scientific basis in the agri-food field offers not only credibility for society, but also provides sound criteria for risk assessment, decision-making and innovation. Scientific and technological advances are the main drivers of the transformation towards a safer, more efficient, sustainable and healthier food system.

The framework imposed by the EU is clear, and opens up new opportunities for companies while bringing value to society, with the European Green Deal and the Farm to Fork Strategy to increase the sustainability of food systems.

Europe is driving **research and innovation in alternative proteins, precision nutrition and health, digitisation and the bioeconomy.** These are the prime areas of interest for funding in the coming years, with the support of near-market projects.

• Precision nutrition

The food of the future will be personalised; new molecular tools such as omic sciences (nutrigenetics, metabolomics, microbiota) allow us to characterise different population groups, and define their individual nutritional requirements, known as precision nutrition. We will be able to develop personalised diets, through specific foods designed to meet the needs of groups, either from the perspective of prevention or treatment of a specific disease. In this way we can improve people's well-being and quality of life.

• Data-based innovation

Advances in the massive use of data (Intelligence and Big Data) will bring enormous benefits to farmers, food companies and society. It is reshaping the way we produce, consume and research food. The benefits are felt in all aspects of our lives, from a more direct connection with those who provide us with the portfolio of food solutions on the market: more personalised and healthier diets, greater transparency about the food we are offered, and more precise, personalised, local and sustainable agri-food production. Technologies to make production more flexible, robotics and advanced sensors, the use of blockchain for food traceability and artificial intelligence to collect consumer data are examples of R&D&I lines that are being accelerated.

• Mobilising industry for a clean and circular economy

The ambitious goal of achieving climate neutrality by 2050 has a direct impact on the food value chain, which needs to work hard, adapt to the new European regulations, and have “pioneers” who adopt cutting-edge technologies for the transformation of the chain. Precision farming, regenerative agriculture, eco-efficiency in food processing, and the integrated use of by-products from the agri-food industry are strategic areas to be addressed in the short term. Research into alternative proteins, new solutions to plastic, optimisation of the environmental impact of the last mile, or new methodologies for quantifying and communicating the environmental footprint of products and services are also strategic areas to be addressed in the short term.

• The new European R&I framework programme (Horizon Europe)

with a budget of €95.5 billion for 2021-2027, it will promote projects with a clear social impact, with the objective of reaching up to:

1. Three million lives saved from cancer.

2. One hundred climate-neutral, smart cities.

3. Healthy oceans, seas and inland waters.

4. Healthy, climate-resilient soils and food.

These goals are aligned with several of the **Sustainable Development Goals** set out by the United Nations in the 2030 Agenda, such as Health and well-being, Climate action, Life below water, Responsible production and consumption, and Sustainable cities and communities.

The Spanish government has already incorporated a first batch of Next Generation EU funds to alleviate the economic effects of the COVID-19 pandemic in 2021, amounting to 26.634 billion euros. Digitalisation and R&D&I will account for around 18% of the total resources of these funds - more than 4.6 billion euros.

1
3,000,000
lives saved from cancer

2
100
climate-neutral smart cities

3
Healthy oceans, seas and inland waters

4
Healthy, climate resilient soils and food

3.2 billion Euros have been allocated by the Ministry of Science and Innovation for direct investment, with one of the priorities being the financing of strategic projects with a driving capacity and economic impact, such as personalised medicine or energy transformation to combat climate change.

With 5 missions for the present and future, which represent a social and economic challenge for Spain:

1

Health and ageing

2

Sustainable and healthy agri-food

3

Drastic reduction of polluting gases and promotion of clean energies

4

Intelligent mobility

5

New industry: with disruptive and sustainable developments for greater efficiency and competitiveness

Inspiring projects

Phages to combat food-borne pathogens

The problem
The risk of microbiological contamination of food is increasing due to the globalisation of the food market, the emergence of new bacterial species resistant to antibiotics, the minimisation of the use of chemical preservatives due to consumer rejection, etc. Pathogenic bacteria are the main cause of illnesses triggered by the consumption of contaminated food, which has an impact both on human health and on an economic level for companies.

The solution
AZTI is working on methods based on the application of bacteriophages (phages) and/or their enzymes to fight against some of the most relevant food pathogens such as Listeria and Campylobacter. A safe and natural "biocontrol" process that represents a promising alternative, and which is more natural and less aggressive with the original food properties. The next step will be to design marketable devices to prevent food safety problems.

New products for cancer patients

The problem
People undergoing cancer treatment have altered taste and smell, which impairs food intake and nutritional status.

The solution
At AZTI, we have characterised the molecular profile (through membrane lipidomics) of the cancer population, showing imbalances in their omega-3 and omega-6 fatty acid profile. We have also studied their sensory needs, due to alterations in taste and smell during treatments. With a better understanding of the specific needs of cancer patients, we have been able to design a range of products to improve their nutritional status and quality of life..

Inspiring projects

ENVIRO-SCORE®, an objective measure of the environmental impact of food and drink products

The problem

The food system is both a cause and a victim of the current environmental crisis on our planet. A change in food production models and consumption patterns is urgently needed. The European Commission has long advocated that citizens and governments should be provided with adequate resources to choose the most sustainable products and services through environmental information..

The solution

AZTI is a member of the European panel of experts for the transition to the business environment of the product environmental footprint. We participated in the design of a 5-scale communication system (A| B | C | D | E) based on the European Product Environmental Footprint methodology, which seeks to communicate the environmental impact of food and drink products to the end consumer in a simple way.

Call to Action!

If you are interested in taking advantage of the different finan-cing funds that will be available this year and/or you want to get involved in R&D&I projects at European, national or regional level, please contact AZTI.

Consumer trends

FOODTURE

IV.

15 min reading time

IV.

Consumer trends

How are people's habits and needs changing?

Monitoring consumer trends and the changes brought about by Covid-19 allows us to follow the evolution in consumer needs and expectations, which helps us to identify new opportunities that make a difference and impact the consumer, even in these turbulent and unpredictable times. Some trends have accelerated, and others are taking new directions as a result of the emerging habits of today's new reality.

We need to be aware and understand how Covid-19 is changing people's behaviour: **we will never be the same again**. New values and decision criteria are emerging, we are reordering priorities in our consumer society, and we are more attentive to the most essential needs. These are the basic needs that have been reinforced in the COVID context.

Health and Well-being

Convenience

Security and Trust

Entertainment

Values

New priorities

Health Well-being

- Mental – emotional health
- Search for functionality
- Slow existence
- Revalorisation of contact with nature
- Health-tech apps for monitoring and prescription
- Hyperconnectivity (digital interaction) vs. physical solitude

Values

- Conscious and responsible consumption
- Eco-shame or Eco-anxiety
- Social and corporate activism: acting with purpose
- New ways of socialising
- Supportive and caring society
- Justice, inclusion

Convenience

- New conciliation
- Multi-channel and multi-delivery
- B2C models (Business to Consumers)
- One-stop shopping

Security and Trust

- Renewed focus on hygiene
- Home as the epicentre of our lives
- Epidemic of infoxication and misinformation
- New scientific “influencers”
- Transparency (extreme traceability)
- Preference for the local

Entertainment

- Digital and home entertainment
- Gaming as a social activity
- Horeca food experiences in the home

Consumer profiles

How is your company adapting to changing consumer behaviours? Is your strategy and the products/ services you offer in line with new social priorities?

There are as many consumers as there are people: we must stop treating the "consumer" as a whole and look at the wide range of attitudinal targets, which define groups of people according to their concerns, motivations, lifestyles and needs. Given this new context we are living in, it is interesting to focus on the "new consumer profiles" that are gaining prominence. These are the targets that we have identified as being of greatest interest to the food sector and which will imply a redefinition of the segmentation criteria.

—Iván Romero
CONSERVAS DANTZA

Consumers have returned to habits of the past. They are devoting more time to cooking, and have recovered product categories that have been less frequently consumed in recent years. In our case, vegetable preserves have seen a significant upturn and we believe that "pantry shopping" is here to stay. Consumers want to look after their health and now more than ever they attach more importance to what they eat.

Consumer profiles

The solitary person
Mainly the elderly, who have been more isolated than ever, and whose habits and lifestyles have been more affected, on also having to deal with the technological gap.

Savers
The economic consequences of the pandemic, and the precautionary principle, have led to a resurgence of the rational consumer who seeks consumption based on need, basics and price.

Superconciliators
Lockdowns, teleworking... undoubtedly the main challenge for parents has been to reconcile their work and personal lives even more.

Gamers
Digital and home-based entertainment has experienced an unprecedented boom. This profile of the person who spends hours in front of screens is emerging strongly.

Makers
The need for collaborative production in the face of the urgency of the early stages of the pandemic made it clear that maker communities are a relevant and interesting tribe to consider.

Digital nomads
Usually self-employed and young people who work and live remotely, in and from any location.

"Burnt out" consumers
Concerns about unemployment, care, social isolation and pandemic fatigue have triggered these consumers.

Empowered activists
that promote a more social and fairer consumption shift for people and the planet.

EATRENDS and the impact of Covid-19

Are you clear about your target audience? Are you familiar with their motivations, needs and expectations?

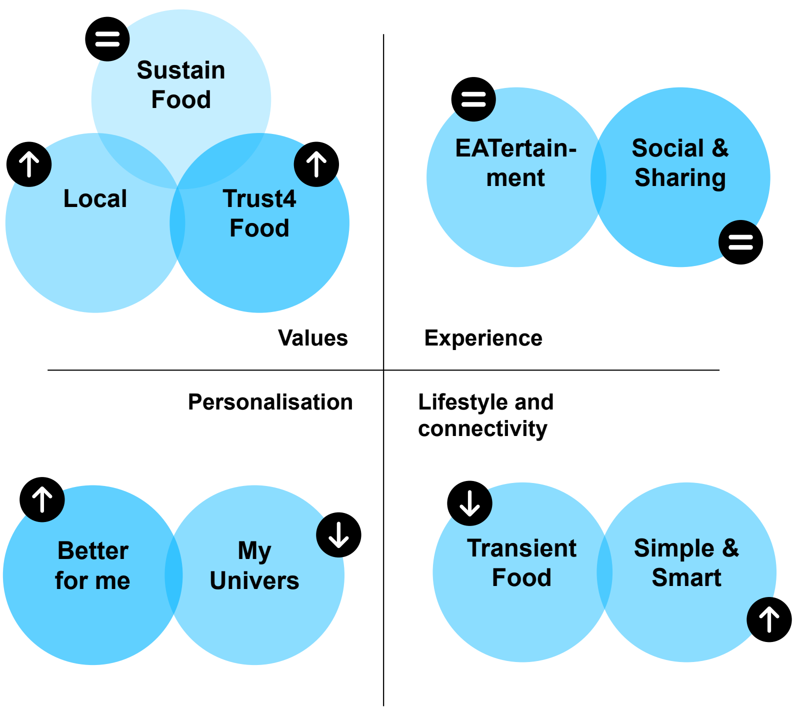
The 9 megatrends with an impact on the food sector, which we have called the EATRENDS, are the result of AZTI's research and analysis of global consumer trends with a focus on food. These are trends that are maintained over the years but which manifest themselves in different ways and nuances. And this year more than ever due to the impact of Covid-19. This map helps us to put food innovations into context, and to discover how trends emerge and evolve over time.

Covid-19 Impact

Trends gaining momentum:
Better for me, Local, Trust4Food, Simple & Smart

Stagnating trends:
SustainFood, Social & Sharing, EATertainment

Trends losing momentum:
MyUniverse, Transient food



Transient food

“A new concept of convenience for a new way of life”
#lowmobility #cocooning # teleworking #newConvenience

Sustain food

“New approaches towards a circular food system”
#data #circulareconomy #lowimpactlogistics #plantbased

Better for me

“Affordable and accessible healthy food for everyone”
#foodforprevention #immunesystem #emotionalwellbeing
#accesibleandaffordablehealth

My Universe

“A new concept of convenience for a new lifestyle”
#lowmobility #cocooning # teleworking #newConvenience

Simple & Smart

“Digitisation drives us towards smart consumption”
#onestopshopping #ecommercexperience #accesibledata #dataintelligence

Local

“Towards a resilient and more glocal food system”
#shortcircuitsmarketing #securityandquiality #trust #lesswaste

EATertainment

“Reinventing experiences”
#entertainmentathome #immersivetechnologies #virtualconnection #mixedexperiences

Social & Sharing

“Revitalising the enterprise-people connection in the digital environment”
#connectingfood #socialfood #virtualpartnership #contactlessconnection

Trust4Food

“A call for social and corporate activism”
#noncontactcloseness #brandswithpurpose #corporatecommitment #takeaction

#1 Food4care

A food system that cares for people

We have identified the new consumer trends emerging in 2021 within the framework of EATrends, which will shape food innovation in the short term.

#1 Food4care - A food system that cares for people

The pandemic has threatened our health and revealed how susceptible we are to disease, and the important role of our immune system. And it has further highlighted the vital role of food in the prevention and promotion of both physical and emotional health. This has sparked a renewed interest in healthy eating and healthy lifestyles.

People assume their responsibility for a healthy diet, but they also ask for help from the industry: having access to the right ingredients and products on the market is their responsibility. Expectations that the food industry will take care of people are growing, and there is also a demand for justice: healthy food with products that are **affordable and accessible** to everyone.

—Álvaro Guillén Benjumea
ACESUR

Consumers are becoming more and more knowledgeable and informed. They are looking for naturalness in products, more health, simple recipes or formulations, knowledge about the origin, and how food is and will be produced in the future. Production systems must have clear traceability, be efficient and have less impact on the ecological footprint. Companies have to seek cost efficiency while deepening the digital and ecological transformation in a Circular Economy of all processes in order to respond to the demands of an increasingly aware society.

#1 Food4care

A food system that cares for people

Related EATrends

Better for me; Trust4food

Manito

Under the Manito brand, from China comes an innovative example of how holistic solutions focused on improving and mitigating stress are in top form. Drinks and formulations with a high sensory and functional component, which accompany activities such as meditation, are blended in this product: a relaxing aromatic drink with accessories and a tutorial on meditation.

https://www.cmovip.com/detail/3382.html

Compass Group

In March 2020, Compass Group acquired the start-up, Feedr, which offers personalised meals to offices, connecting those who supply healthy products with workforces, by focusing on personalised recommendations and a logistics plan that uses cloud technology. A digital corporate catering service that is part of the 'back to work' strategy in the wake of the Covid-19 crisis, helping companies to look after their workforces through food. Compass is looking to utilise Feedr's software with its portfolio of corporate, education and healthcare clientele. By operating at this new scale, Feedr can accelerate product innovation, and support its Horeca channel partners with new business opportunities.

https://feedr.co/

They also demand evidence of how companies realise their social commitment through the products they offer, and how these benefit them.
Concerns about the origin of products, and purchasing and delivery services are raising safety standards. Added to this is a growing focus on food safety due to the zoonotic origin of the virus, which will continue to drive the demand for plant-based products or meat alternatives.

People's attention is focused on two main purposes: the health of the **immune system, and mental and emotional health**, with the aim of achieving a resilient body and mind. This will lead to new approaches to healthy eating that are a greater psychological burden: "mindful eating" will undoubtebly be a philosophy that will be consolidated.

Lockdowns, the minimisation of mobility... have affected people's lifestyles, creating new health risks as a result of sedentary lifestyles or the increase in the number of hours spent in front of screens.

First understand your target, then help them: what do stressed-out parents need, or young people worried about their futures?

#2 Powerfood

People and companies collaborating for change

For value-driven consumers, companies must be able to reach a balance between doing good and making a profit: they will demand responsible practices, support and connection to society. Consumers in turn will increasingly engage in becoming active, self-organised actors, who push and pull the food system forward.
The pandemic has prompted people to enhance their skills by embarking on diverse and creative activities. The increased availability of time in many cases, and using it effectively and purposefully, has awakened that **creative consumer**. And the maker culture and the empowerment of consumers as producers of their own food has grown.

Globally, 58% of consumers are trying new cooking methods and 47% are trying new hobbies or returning to old ones
—Accenture, August 2020

Consumers will continue to look for ways to create authentic connections, and seek support from others, organising themselves into communities around their common values, passions, goals and interests. **Communities** with a strong sense of belonging act as motivators for mobilisation, which will expand social circles and open up the way to new collective approaches to making a difference.

#2 Powerfood

People and companies collaborating for change

Digital spaces are now the ideal place to shed our previously mainly offline lives, and to experience "self-expression", making them even more relevant environments to learn more about consumers.
Citizens will demand **transparency.** With the current focus on value for money, companies will be driven to be more transparent about the elements that make up the price of their products, providing details about ingredients, processes and people that are reflected in the final price.
Online hubs will promote a more **social e-commerce** (shared shopping experience and the possibility of discounts or other group promotions), and networks that will allow brand fans to share with others and become true influencers.

How can your brand act as an enabler and driver of change together with your customer base?

Related EATrends

Social & Sharing; Trust4food

Instant Pot

... is a cooking device, but it has become much more than that. Due to the social nature of cooking, the business strategy was not just about the product, but about its more passionate customers. A true online community, not only for e-commerce but as a network of super users who share recipes and tips independently from the company, becoming the best brand ambassadors and influencers.

Algae Grower

... is a home culture device for spirulina algae that can produce five grams of biomass per day, enough to meet the needs of an average adult. This prototype fits on a kitchen counter, and uses photobioreactor processes to provide the culture with light, heat and air. This blue-green alga can be used in the diet, in home cosmetics or to heal wounds, thanks to its interesting health properties.

https://wikifactory.com/+wikifactory/stories/qa-with-maurizio-vrenna-creator-of-the-algae-grower

#3 Convenient eatexperience

New convenience for new experiences

The pandemic has brought a new audience to the online world. Newly developed habits will keep consumers hooked on the virtual with a dual purpose: convenience and entertainment. New demands for convenience and experience present themselves in this new consumer landscape.

In a “phygital” reality, where citizens can live, work, shop, and be entertained physically and online, people want help in order to relive their pre-pandemic lifestyles and experiences, such as travelling or eating out. This urges a definition of how brands will meet their consumers in their own homes.
This huge leap from Covid-19 to the online world has highlighted the gap that still exists between the digital and the physical: the digital experience is not yet immersive and satisfying enough. People expect more humanisation of the online space, and inventive ways that delight, entertain and inspire them,...and that are efficient and seamless. Customers are looking for a smooth omni-channel retail experience across all physical and digital touchpoints with brands.

25% of online shoppers agree that the experience is less satisfying than visiting a physical store
—Kantar, May 2020

As restrictions on leisure freedom increase, the need for pleasure or indulgence grows. Gastronomic experiences have inevitably been transferred into the home on many occasions, where whims and moments of enjoyment have moved.

#3 Convenient eatexperience

New convenience for new experiences

Related EATrends

Eatertainment
Simple & Smart
Social & Sharin
MyUniverse
Transient food

Ecolumber

New consumption patterns and consumer motivations are moving towards healthy solutions that are both convenient and pleasurable. Ecolumber, together with AZTI, has tackled the design of a new product that has created a new category of nuts and dried fruit that offers the aspects of health (associated with nuts and dried fruit), and hedonism or pleasure (associated with snacks), in a single product. A unique product on the national market available in the large-scale distribution channel, unique in terms of organoleptic quality attributes, with all the nutritional richness of dried fruit, and with an outstanding nutritional profile in the nut category.

https://www.ecolumberfood.com/

Algae Grower

...is the world's first beer brewed by artificial intelligence, which follows the tastes of its customers. Through a complex algorithm that determines what people like in their beer, they brew new versions that are more precisely tailored to individual tastes. In this way, customers are brought into the feedback loop to continuously pivot the concept of product.

https://digital.hbs.edu/platform-digit/submission/intelligentx-changing-the-world-one-beer-at-a-time/

And the experience of cooking at home has also been boosted, with various strategies that have arrived on our doorsteps, leaving us just a click away from becoming real chefs.
Customers still expect experience and personalisation: personalisation need not necessarily entail interaction, and experiential e-commerce should focus on enabling product customisation, or tailor-made products from scratch.
And consumers must now schedule most of the activities they used to do spontaneously. Consumers crave convenience by relying on the digital channel to have the same level of flexibility, because these changes in habits have fuelled people's impatience. This is compounded by the complexity of the activities being scheduled in an unconventional order to suit individual time demands.
New demands for convenience arise in this new consumer landscape, where new food consumption moments arise from activities such as gaming, the taste for cooking, the food-service experience for special occasions, or the need to socialise online. Consumers expect time-saving, safe and hygienic convenience solutions.

How is your brand connecting with customers now? Could a virtual world bring the whole experience of your brand and your products/services into your customers' homes, in new ways?

#4 SustainData

Data that generate trust

The food industry is one of the least trusted actors in the chain. Consumers are sceptical of the messages coming from companies: they need **commitment in action**. Messages urgently need to be replaced by tangible actions, which enhance the credibility and change-promoting character of the industry.
During the pandemic, attention moved from the slower-moving environmental threats to the more urgent social priorities, and companies' concerns about the planet took a back seat. But they did not entirely eclipse environmental awareness. While not the priority now, the pandemic has brought the link between climate change, biodiversity reduction, etc., and pandemics of this kind back into the limelight. And that is resonating in people's minds.

Consumers are opting for companies that assume their responsibilities. The focus is now on **sustainability allegations.** Consumers expect companies to move from marketing to numbers, from sustainability promises to facts: they want evidence and transparency about the "true cost" of food production, and how industrial activity impacts on the environment and society. Companies' openness and honesty about sustainability credentials may help drive changes in purchasing behaviour in the right direction.

#4 SustainData

Data that generate trust

Related EATrends

Sustainfood
Trust4food

Leaders on purpose

...is a community of purpose-driven entities that promotes an inclusive and sustainable economy. An ecosystem that connects CEOs to global agendas, and helps companies transition to purpose-driven businesses, with purpose at the heart of the business strategy, which benefits not only the organisation but also its workforce, the planet and society as a whole.

The Climate Shop

...is a pop-up shop in Sweden that challenges you to buy everything you need for a week while staying within your C02e budget (CO_2 equivalents exchanged for Swedish kronor). The product price is defined on the basis of their environmental impact: the less environmental impact a food product has, the cheaper it is. The aim of the initiative is to highlight the importance of consumer choices in the fight against climate change.

https://varuhuset.etc.se/

Eco-conscious consumers are attentive to their own impact, and the ways in which they can change it to reduce it, seeking to alleviate some of the guilt they feel when consuming. They will therefore be willing to consume brands that enable them to make better decisions, show them the impact of their choices, and provide them with data to help them control and adapt their consumption.
With the boom in distribution and home delivery, another focus of consumer concern is on the last part of the chain. Promoting **circular delivery models** to reduce the environmental impact of these activities will be key.

How does your company alleviate people's environmental concerns? And how are you telling the story?

Call to Action!

Trends are a key insight for companies that want to put their customers at the centre of their strategy and innovation. They bring with them opportunities that brands must seize to align with or anticipate the changing expectations and needs of their customers. But they are only valid if we apply them to the company's reality. If you want to apply them to your business and innovate around them, join AZTINNOVA.

Want to know more? Don't miss out on our latest EATrends report.
https://www.azti.es/aztinnova/informe/EATrends/

Opportunities

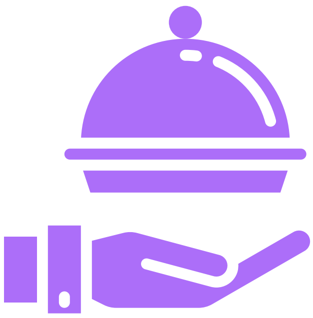
FOODTURE

7 min reading time

V.

Opportunities

Opportunity scenarios for innovation and food business



A context of change is a sea of opportunities. A context in which the strategic role of the sector in the economy and employment stands out, a sector in which to attract investment and talent, and to take advantage of the profound changes that are taking place in citizens' behaviour in order to evolve and transform.

What's moving and where are new food businesses headed?

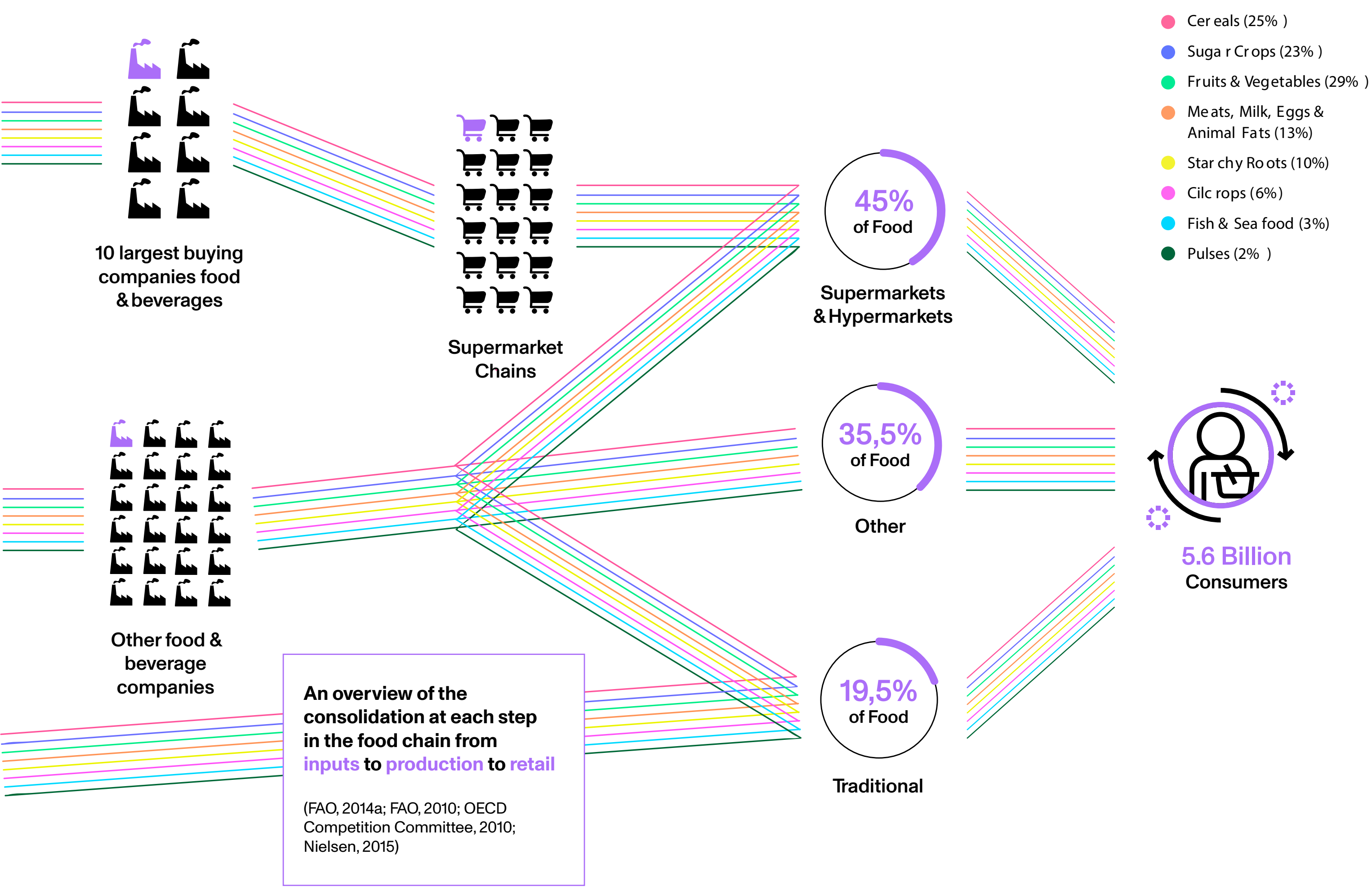
In recent years, 4% of seed and grain companies have been controlling 90% of the trade. This could have a negative impact on security and sustainability, as smaller and smaller amounts of seed varieties are being grown, and biodiversity is affected (DW, 2017).

GLOBAL FOODTECH STARTUP AND SCALEUP COMPANIES FUNDING BREAK-DOWN BY CATEGORY

	AGTECH	CONSUMER APPS & SERVICES	FOOD DELIVERY	FOOD PROCESSING	FOOD SAFETY & TRACEABILITY	KITCHEN & RESTAURANT TECH	NEXT-GEN FOOD & DRINKS	SURPLUS & WASTE MANAGEMENT
Number of Companies	1521	584	889	165	233	396	1210	350
Total Funding	€14B	€3.5B	€31.5B	€1.7B	€1.6B	€4.8B	€6.2B	€1.8B
% of Total Funding	**21%**	**5%**	**48%**	**3%**	**2,5%**	**7,5%**	**10%**	**2,5%**

Opportunities

On the other hand, 10% of Food and Drinks companies control 40% of the market share, and continue to seek to increase their influence in the sector (Clapp 2019). The decisions they make strongly impact the direction the agri-food industry takes, and they are able to influence government policies. The innovation collaborations they establish with start-ups benefit both parties, allowing them to develop a more ambitious value proposition, and to continue to grow and evolve together.



An overview of the consolidation at each step in the food chain from inputs to production to retail

(FAO, 2014a; FAO, 2010; OECD Competition Committee, 2010; Nielsen, 2015)

Opportunities

—Ignacio Muñoz
ANGULAS AGUINAGA

Putting our consumers at the centre of everything we do will be key to innovating, and doing so in a relevant way. Moreover, it is also essential for our companies to grow in size in order to be competitive, and to have the muscle to be able to invest not only in what is happening today, but also in building the future in the mid-to-long term, and thus respond to the important changes that are taking place in our society.

Health is big business: a business worth more than 2 trillion dollars. The expected growth in the coming years is centred on the health and wellness sector, which in 2020 attracted 45 public operations and more than €100 billion in investment. A sector which, according to data from El Referente, already has more than 400 start-ups. And where large companies continue to successfully invest: Unilever already has annual sales of more than 1 billion from plant-based products.

Food delivery companies continue to grow and expand. Some of the top industries are acquiring other companies to expand their reach, and acquire new infrastructures to serve new markets. The other movement observed in this type of companies is that they are entering the pure retail market, and starting to pilot new physical sales channels (grocery stores), an example of the great adaptability they show in understanding how to reach their clientele, as the transaction value is not so much the product, but the service. The food delivery company market is a highly fragmented market that has grown enormously, and is in the midst of a period of consolidation and an increasing concentration of players.

E-commerce businesses are supporting organisations whose supply chains have been financially impacted by Covid 19. This support comes in the form of more advanced payment services, offering discounts and reducing warehousing costs. Many of these e-commerce businesses are experiencing pressure to capitalise on growing demand, while ensuring financial stability for the companies serving these e-commerce platforms. This relationship is mutually beneficial as otherwise they would not be able to continue to be sales players at the most critical times which the COVID 19 restrictions on movement have represented for shoppers.

These are the main areas of opportunity for food companies, which open the debate on what will be the main issues they will have to consider. And the main axes on which they will have to act.

#1 Opportunity: Circular and efficient systems
Zero or low environmental impact companies and solutions

A resource efficient food industry that seeks to retain the greatest value while minimising the environmental impact of the food supply chain as much as possible. Sustainable businesses that generate economic benefits and benefits for the planet.

Main lines of opportunity

1.1. Raw materials: new sources, new ingredients, new foodstuffs... at competitive prices.
1.2. Revalorisation of bio-waste: conversion into bioplastics, ingredients, etc.
1.3. Packaging materials: circular management (reuse, recycling, composting), alternative materials to plastic, edible packaging.
1.4. Waste reduction: raw material management, process automation, data generation and management.
1.5. Short raw material supply chains, marketing and last-mile logistics.

Insight: keys for action

• New ways to respond to the demand to know the "true cost" of food production: evidence of environmental credentials.
• Education and information: illustrating abstract concepts such as "carbon footprint" to help people understand the impact of their actions and influence their behaviour.

Innovative concept

Mitte
Danone Venture

... has developed a smart device for households that purifies and improves tap water, offering a selection of cartridges with different levels of natural minerals, allowing people to personalise their water in a sustainable way. Through an app, quality can be monitored, insights into consumption can be obtained, and cartridges can be purchased. A priori a potential competitor, it has teamed up with Danone, thus contributing to the growth of the water market.

#2 Opportunity: Precision Food "Foodomics" New holistic approach to food and nutrition

A sector capable of offering suitable products and services, which are increasingly tailored to the health and well-being needs of individuals, through the generation and sharing of data. Aiming to promote change and optimisation of a dietary behaviour that benefits people's health and quality of life, and to act preventively in the face of disease. Food as a holistic service for physical and mental health.

Main lines of opportunity

2.1. Services for monitoring and capturing data on the state of health of individuals.
2.2. Precision nutrition for population groups with specific requirements.
2.3. Functional formulations to address new lifestyle risks.
2.4. Support, training and incentivisation of healthy lifestyles.
2.5. Democratisation of products with functionality and premium.

Insight: keys for action

• Companies that incorporate exceptional health and safety features into their products and services, and communicate their benefits, will build a confident and trustworthy brand image. A key intangible asset for success in today's marketplace.
• Identify attributes that consumers are willing to pay for, which can justify and add value to premium products.
• Artificial Intelligence and data analytics for personalised nutrition that adapts to individual lifestyles.

Innovative concept

Nestle
Mindful Chef

Nestles acquired meal kit producer Mindful Chef in November 2020 to enhance its D2C propositions, offering a range of meals through a subscription service. Nestles' expertise and support has thus given them the opportunity to build on an existing success, to make healthy eating easy and accessible to more people. Ultimately promoting the availability and convenience of healthy food products.

#3 Opportunity: Resilient and intelligent industry
Data-driven business intelligence

The crisis has served to measure the digitisation of companies, and their capacity to deal with production stoppages, delays, fluctuating supplies... Digitisation is a commitment to a more efficient, intelligent and secure industry.

Main lines of opportunity

3.1. Food safety and health. Prevention and efficient management of potential and emerging risks. Occupational health and safety of the workforce.
3.2. Automation: “low human contact” processes and supply chain.
3.3. Advanced manufacturing: efficiency of operations and processes in the food industry.
3.4. Integral traceability systems as a critical element in the management of the supply chain.
3.5. Generation and management of data along the entire supply chain, facilitating decision-making and connecting all relevant actors, from the producer to the final customer.

Insight: keys for action

• Use the power of data to promote business intelligence that will result in economic value for the company and added value for the customer (product customisation, improved customer experience, etc.).
• Creative and transparent communication to build trust in a safe and integral food chain.

Innovative concept

FoodLogiQ
Ripe.io
IBM Food Trust

...have developed a system focused on connecting product monitoring data along the food supply chain through different technology providers. In particular, compliance with a series of regulatory standards for the seafood supply chain has been tested to enable faster and more efficient product recalls. A data-driven traceability solution with interoperability of technologies to create a more robust, transparent and resilient supply chain.

#4 Opportunity: Multi-channel customer experience
A seamless, value-driven on-offline experience

The experience economy has entered a new dimension where it will be key to design a comprehensive and convenient service for shopping and leisure in the food sector. Where customers can move comfortably, have the immediacy they demand, and obtain added value and a loyalty-building experience that goes beyond the mere purchase of products and services.

Main lines of opportunity

4.1. New experiential consumer moments in the home.
4.2. Customer intelligence: off-line spaces to compile data that will help to improve the experience and customisation of products/services.
4.3. New Business2Consumers business models.
4.4. Experiences that promote interaction between brand and consumer in virtual worlds (loyalty, positioning...).

Insight: keys for action

• A new convenience based on solutions and services rather than products, taking into account what your different customer profiles consider to be convenience.
• 24-hour culture, a new level of flexibility to adapt current products and services, and offer new solutions for the different schedules your customers handle.

Innovative concept

Wonderflow
Lavazza

Wonderflow specialises in customer feedback analysis, using Artificial Intelligence to turn consumer insights into actionable insights. Together with Lavazza, Wonderflow analysed customer feedback to generate insights for 6 Lavazza departments, as well as analysing competitors to understand the company's position in the market. The objective was to offer the best experience to Lavazza's customers, optimising its product development strategy, external communication and customer service, through the speed and simplicity of the platform and the generation of insights.

#5 Opportunity: Companies with purpose Committed and connected to society

The time is ripe: society is clamouring and demanding action, and there are ample opportunities for companies to better connect with their customers, strengthen their commitments to them, and spur them to action by going hand in hand.

Main lines of opportunity

5.1. Brand communities to build loyalty and positioning, and to challenge citizens to action.
5.2. Reinvent marketing: more honest, simple, transparent and credible.
5.3. Show evidence and make your actions tangible.
5.4. Measure the impact not only on the business, but also on society.

Insight: keys for action

• Ensure and make accurate and relevant information accessible to your customers, to build their trust and credibility.
• Invest in creating a true community and bond with your brand's fans: connect with your most passionate followers rather than sell to them, and create the structure and resources to foster conversations among them.

Innovative concept

Flying SpArk
Ikea

Flying Spark discovered a natural protein extracted from the Mediterranean fruit fly, offering a sustainable ingredient rich in protein, calcium, iron and potassium. The cultivation of this fly uses minimal resources of both water and soil, as well as human intervention. Its mission was to create a high quality protein, grown under sustainable principles, as a solution to combat world hunger. Supported by the first "IKEA Bootcamp" start-up accelerator, it aligns with IKEA's strategy to support start-ups that tackle global issues, while this partnership allows the product to be taken to a new level to incorporate this ingredient into products served in Ikea restaurants.

What’s next?

FOODTURE

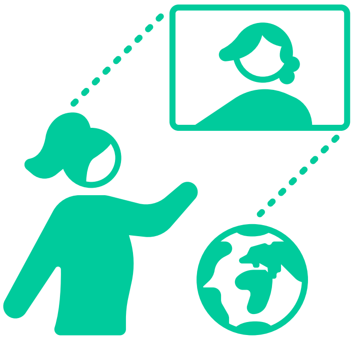
VI.

3 min reading time

VI.

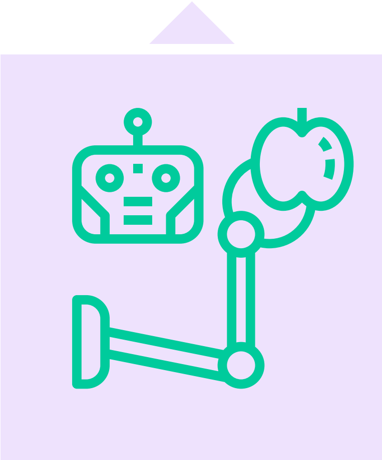
What’s next?

FOODTURE



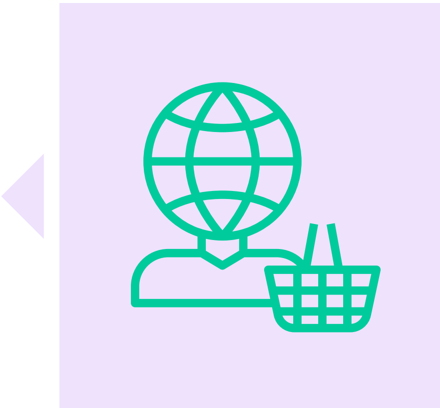
Although it is currently difficult for us to look beyond tomorrow, it is essential not to lose sight of what is to come: **that vision of a future that we must necessarily imagine.**

FOODTURE



More and more food will be produced using **new production systems** based on microbial biotechnologies, cellular agriculture or precision fermentation. Traditional processes will continue to be the majority, but they will be different, more energy efficient, with less environmental impact, reduced ecological footprint, and less use of fertilisers, pesticides and antibiotics.

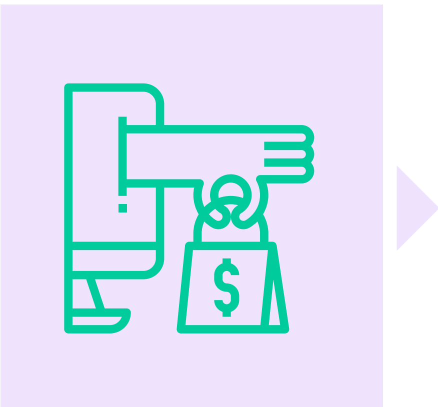
Artificial intelligence will advance to the point of adapting supply according to our personal needs from different points of view: volume, dietary requirements, tastes and times of consumption.



Environmental and health labelling will take on a new dimension, and more and more people will shop according to personal carbon footprint reduction targets and personalised nutritional needs.

We will have offers with **dynamic product availability and pricing** according to best-before dates, climate impact, etc.

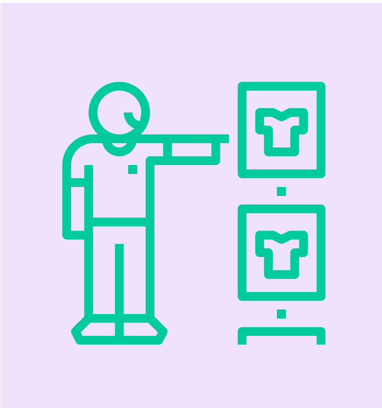
We will rent a local farm plot and **monitor** the growth of the fresh vegetables that will be delivered to our home **in real time.**



FOODTURE

There will be an **evolution of the physical shelf:** interactive shopwindows and the shopping experience will evolve to a mix of physical and virtual, with a new concept of service by retail and procurement aggregators in home delivery.

Wearable devices will be the extension of our body and mind: they will continuously monitor our state of health, guiding us and recommending solutions to feed ourselves according to our needs. They will increasingly influence our purchasing decision, and may even decide for us more and more.



We will live with robots, autonomous vehicles, drones and unmanned shops in increasingly self-sufficient smart cities.

In our kitchens, **we will have small household appliances to make our own ingredients**, snacks or drinks. Fridges will be able to monitor food and record its nutritional information. They will monitor their quality and freshness, and the dietary habits of their owners.

We will be able to **test products and services in the context of their end use**: for example, we will try on a thermal jacket in a cold environment.

The "**Internet of the senses**" will allow us, for example, to visit the countryside virtually, and smell the aromas of fruit trees, check the freshness of a fish in a digital shop before ordering. Or share a digital multisensory dining experience.

Individuals will have **greater control over their personal data**, with opportunities to even monetise them.

ACTION

VII.

VII.

From reflection to action

We hope we have helped you to have a better understanding of the opportunities for innovation. More than ever, we must focus on innovation with value for society, the planet and business. Products, services and new businesses that make a difference, that creatively provide solutions to social needs and expectations. Some have already been launched, and with success.

The challenges are clear: it is time to take action, to drive innovation in the sector and all its agents. To transform in a sustainable and collaborative way. We will only be able to successfully face the challenges by collaborating and investing more in innovation.

At AZTI, we want to drive this transformation, to play a leading role in these changes and to collaborate with those innovative companies willing to take on these challenges. With this aim in mind, we are launching the AZTINNOVA Collaborative Innovation platform: an exclusive space to promote, support, collaborate and build a more advanced, connected, sustainable and healthy food industry. An industry that generates value and creates a real impact.

We invite you to join our AZTINNOVA community so that together we can build FoodTure. To discuss where we want to go and the direction we want to take. A community of people with passion, ability and willingness to influence.

From reflection to action

The success of the transformation that we need in the food value chain, as well as the improvement of the level of health and well-being of Europe's citizens, will depend to a large extent on the degree of cooperation and solidarity of companies. Europe is a major agri-food powerhouse, but there is still a huge disconnect between the key players in innovation and industry. And the only way to move towards a fairer, more sustainable and healthier FoodTure... is together.

Welcome!

—Jose Maria Bonmati
AECOC

During the current CovidD-19 crisis, the sector has once again demonstrated that it is a driving force for employment and that it contributes like no other to the territorial balance of this country. All this undoubtedly makes our sector an example of commitment, efficiency and resilience, characteristics to which we can also add a great capacity to adapt to change, speed and flexibility, which makes us particularly competitive.

Now is the time to take a breath of fresh air, to take a step back and gain perspective, to let go of the ballast in order to face the future.

We are living in times of great uncertainty in industry, and there are sectors that have been greatly impacted, such as the hospitality industry, but we are also experiencing great examples of collaboration between brands driven by the same purpose.

The Food Sector demands capable, resilient and fast leaders, who lead companies that have the capacity to reinvent themselves. We will learn to live with this new normal, but we must anticipate other possible situations whose impacts we are not able to measure. What we do know is that if we do nothing, they could be even more devastating.

It is time to build a more sustainable, healthier sector, and to accelerate digitisation with a soul, without losing people along the way.

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