

BCC Innovation

2023 Annual Report



Table of Contents



Page 04	Introduction
Page 07	BCC Innovation key figures
Page 08	About us
Page 11	Research areas
Page 13	Innovation and Research Projects
Page 14	CITA GO-ON
Page 16	MYCOTOUR
Page 18	JAN-JASAN
Page 19	DELICIOUS PROJECT
Page 21	GASTROVALUE
Page 22	FUEGOS ECUADOR
Page 23	SWITCH
Page 24	SEASONED
Page 26	DEVELOPING NEW FOODS
Page 28	DEVELOPMENT OF AI
Page 29	RESTOCKVISION
Page 30	FOOD FICTIONS
Page 32	MAP OF INTERNATIONAL PROJECTS
Page 34	Living Lab
Page 39	Entrepreneurship
Page 48	Next steps
Page 51	2024 Challenges



1 | Introduction

In 2023, the convergence of artificial intelligence in the food industry, the maturation of FoodTech, and the escalating global climate crisis reshaped our landscape, presenting both challenges and opportunities. As a technology center specialized in gastronomy, we navigated these rapid changes with adaptability, creativity, dynamism, and collaboration. Despite the substantial effort required, our enthusiastic embrace of these shifts yielded a decidedly positive outcome.

In this rather turbulent context, we at BCC Innovation have stayed true to our commitment

to innovate, create, collaborate, connect, transform and develop projects – always from a sustainability and health perspective and without losing sight of the latest trends in the industry. We have been able to adapt to a new reality where change is already a constant; and with an eye on what is to come in the more immediate future: the new GOe–Gastronomy Open Ecosystem building. An international hub designed to foster collaboration, research, experimentation, and entrepreneurship, thereby furthering the evolution of the gastronomy sector.

approval of the draft bill to prevent food waste, we are determined to continue to push all sustainability-related initiatives. To help address the major challenge of promoting the transition to more sustainable, healthier diets in Europe, we are part of a European project to raise awareness and increase knowledge among the population in this regard, through innovative tools and solutions that help them move forward in this process of change towards a sustainable diet in line with the SDGs.

At BCC Innovation, we view gastronomy as a potent tool for economically, socially, and culturally transforming a territory. Bearing this in mind, in spring, we journeyed to Ghana for a first-hand experience with Robusta coffee, the most commonly grown variety in the country. We're presently developing a project there aimed at boosting Robusta consumption among the population while also raising awareness of the diverse commercial and culinary possibilities of the product in Ghana, of which much of the population is unaware. This year, we'll continue our work on the project, which will positively impact the region by spurring the creation of new companies to bolster Ghana's food industry. Additionally, we're strengthening Ghana's connections with other countries through the International Chefs Network, established explicitly for this project.

Over the past year, we have promoted a wide variety of projects, and we have participated in an increasing number of European projects that allow us to work closely with numerous partners, both public and private, from different countries. This has contributed enormously to enhancing project development, the quality and dissemination of the results obtained, and the impact on society. Moreover, the experience we gained in each of these projects, the knowledge shared, and the reflection and dialogue represent a real achievement for us.

At a time when issues like food waste and water shortages and their dire consequences are at the forefront of practically all European governments' agendas, and with the recent

The imperative harmony that should exist between gastronomy and health is a key rationale for us, which is why, since our creation as a technology centre, the dedication of our

research team in the area of healthy gastronomy has a primordial place in our day-to-day. Omic sciences, therapeutic cuisine and functional nutrition are some of the lines we are currently working on. To date, more than 200 people have passed through our centre as part of a project we are participating in, which is aimed at preventing cognitive decline by adopting healthy habits and lifestyles and looking after cardiovascular health.

It should be noted that many of our projects are carried out in the Basque Country, where we have the support of the Basque Government and the various city councils, especially those of Gipuzkoa and Donostia-San Sebastián. By collaborating with numerous companies in our region, we contribute to positioning the Basque Country as a benchmark in entrepreneurship and innovation.

We have started the year with numerous challenges ahead. To meet these challenges we have an excellent team working passionately and enthusiastically to enable BCC Innovation to continue transforming and enhancing the agri-food sector through research and innovation.

BCC Innovation key figures



10 *Scientific papers published*

70 **Projects with technology companies and the food industry**

10 **Talks at national and international scientific conferences**

150 **Organisations we have collaborated with**

27 **Research projects**

2 | About us

BCC Innovation, a technology centre specialised in gastronomy, works to generate new knowledge so that gastronomy continues to be a key driver for development in society. Founded in 2018, our center is part of the Basque Science, Technology and Innovation Network and the National Network of Technology Centres, and it is a partner of EIT Food, Europe's leading food innovation initiative. Additionally, we are active members of various leading clusters and associations within the sector.

Continuously emerging challenges prompt us to reassess and redefine the trajectory of the food and gastronomy sector. Our team of professionals specializes in diverse areas such as sensory sciences, health and nutrition, sustainability, digital transformation, and culinary innovation. With a comprehensive and forward-thinking approach, we undertake research, innovation, and entrepreneurial projects at the local, national, and international levels.



Technology park

We have been able to position ourselves as a benchmark in the gastronomy sector and form part of the Basque Science, Technology and Innovation Network and the National Network of Technology Centres.



Living Lab

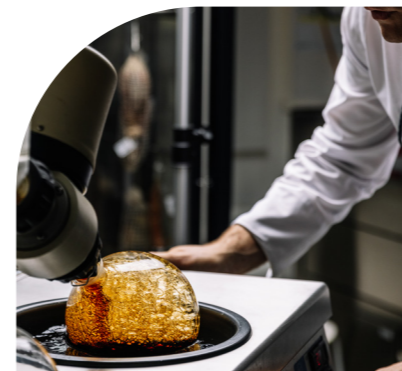
A space where we test and co-create with companies and startups new concepts, products, services and experiences directly with citizens.



New space: GOe-Gastronomy Open Ecosystem

GOe is a unique talent ecosystem, a technology innovation district based in Donostia-San Sebastián, where open innovation and citizen science will be the concepts on which the activity will be carried out.

Research areas



CULINARY INNOVATION In this area, we develop products and concepts with elevated gastronomic value tailored for both the food industry and the HoReCa sector. Our team of research chefs leads the ideation, formulation, development and testing of products for companies looking to launch new innovative offers in the market or to use new channels, formats, sources or alternative ingredients to achieve more sustainable

and healthier food that also surprises the consumer.

The focus of the department also includes exploring advanced culinary techniques and applying food science to improve nutrition and sensory enjoyment, as well as the in-depth study of diverse gastronomic cultures, incorporating a rich diversity of flavours, techniques and traditions. This cultural knowledge is key to developing products that connect with the consumer on an emotional and sensory level. Interdisciplinary collaboration with food technicians, nutritionists and sustainability experts is essential to ensure that each new product is not only innovative and commercially viable but also developed taking into account health and environmental criteria.



SUSTAINABILITY We design and develop innovative projects as part of our aim to promote gastronomy in line with the principles of circular economy. Our objective is clear: to reduce food waste and promote biodiversity. We work with diverse stakeholders through initiatives and projects that promote zero waste, reuse and methodologies for a more sustainable and resilient value chain. We firmly believe in forging this path day after day and know that it is only possible with the implication and commitment of all the stakeholders involved.



HEALTH. We explore the relationship between gastronomy and health to promote healthier eating. Healthier eating plays a key role in preventing various illnesses, at a social level and among different groups of people such as children, older adults, and sports people, among others. We also have a therapeutic approach to various chronic non-communicable diseases such as cancer, inflammatory diseases, type-2 diabetes and neurodegenerative diseases. Our

researchers are dedicated to preventing these pathologies and to improving the quality of life of those who have them, by promoting a healthier diet.



SENSORY ANALYSIS. We study consumer perception by analysing the interaction between the person and the food, in three areas: the organoleptic properties of the product (colour, aroma, flavour, etc.), the specific variables of the person (genetics, culture, etc.) and aspects in the eating context (in a restaurant, at home, in the company of friends, etc.).

The overall objectives of this area are to create knowledge about the perception of food and food choices and to devise strategies for promoting a sustainable and healthy diet, but without renouncing the hedonistic aspect and enjoyment of the food. To do

this, we collaborate with consumer panels, chefs and foodies who help us understand the role of the different characteristics of food and the moment of consumption in choosing the food, and adherence to specific diets.



GASTRONOMY AND CULTURAL IDENTITY. We perceive gastronomy as a strategic sector, catalyzing socio-economic transformation and a unifying force in fostering the development of more innovative, competitive, and resilient territories. Our efforts are geared towards establishing innovation ecosystems across the entire gastronomy value chain, fostering enhanced connectivity and collaboration among its stakeholders. We work to create innovation ecosystems throughout the entire

gastronomy value chain, enhancing connection and collaboration among its stakeholders. We boost the positioning of the territories through diversification strategies, we explore areas of opportunity, promote entrepreneurship and the richness of native products and their cultural identity, and promote the development of territorial policies.





DIGITAL TRANSFORMATION. Through open innovation and a multidisciplinary, people-centered approach to design, we propel the digital transformation of gastronomy. With LABe-Digital Gastronomy Lab, a living lab for innovation that includes a real restaurant, we rethink and co-create the future of gastronomy. Here we conceptualise, co-develop and test different types of digital solutions, machines and technological and food tools with real users.

For instance, we explore enhancements in cooking and preservation processes and techniques; leverage AI, voice recognition, and artificial vision to streamline operations and management; integrate connectivity solutions for efficient energy management; implement strategies for improved food waste management; and tailor food offerings for specific population segments with unique health conditions, among other focal points.

Our team is composed of experts spanning various disciplines including scientists, and creatives in fields such as industrial design engineering, gastronomy, culinary arts, software development, and data science. Together, we collaborate to conceive and execute projects, conceptualize ideas, conduct concept tests, develop innovative prototypes, and test food products and services in the market.

The Basque Culinary Center's living lab forms part of the 'Etorkizuna Eraikiz' initiative of the Provincial Council of Gipuzkoa, in collaboration with the Basque Government and Donostia-San Sebastián City Council.



3

Innovation and research projects

CITA GO-ON

The CITA GO-ON study researches how to prevent cognitive decline by adopting good daily habits and lifestyles.

The study included more than 1,000 adults aged between 60 and 85 and susceptible to developing the disease in the coming years. Each participant was involved in the study for two years, during which time their risk factors were closely monitored regularly, they received socio-emotional education and cognitive stimulation and training and took part in healthy eating programmes and physical activities.

BCC Innovation handled the nutrition and culinary activities, running group workshops to promote the adoption of healthy eating habits and integrating aspects related to nutrition education and cooking skills.



The importance of cooking for health

During this session, all attendees gained insights into the significance of both the raw materials utilized in cooking and the cooking techniques employed, recognizing that ‘what’ we eat is equally crucial as ‘how’ we consume it.



Planning for healthy eating

This session emphasized the importance of proactive planning for healthy eating habits, advocating for the creation of a shopping list in advance and the prioritization of fresh produce. Participants received guidance on interpreting nutrition labels on food products, empowering them to make informed choices while shopping. The day concluded with a showcooking demonstration, showcasing the preparation of five different sauces and offering ideas on how to incorporate them into daily meals.



Learning to Shop Healthily

In smaller group sessions, participants delved deeper into the intricacies of healthy shopping practices. The sessions emphasized the critical role of selecting appropriate foods due to their direct impact on our health. Attendees also received guidance on deciphering nutrition labeling for various food groups.

The project is led by the CITA Alzheimer Foundation, in collaboration with different institutions: BCC Innovation, Biodonostia Health Research Institute, University of the Basque Country, Achucarro Basque Center for Neuroscience and the Public University of Navarre. It also has the support of internationally renowned institutions such as the Karolinska Institute of Sweden and the Alzheimer’s Association (United States) (Alzheimer’s Association). The initiative is financed by the Basque Government, Fundación HNA and the State Research Agency of the Ministry of Science, Innovation and Universities of the Spanish Government.



Mycotour

“This is the first time that we have hosted a project like this, in which we shared our concerns and opinions, bringing together renowned chefs and scientists to respond to the challenges presented. We covered topics as diverse as the use of health apps, the study of the organoleptic properties of different mycological species, and fungi as an alternative for people with special dietary needs, among others.”

The Myco-Culinary-Hub, held on June 26th and 27th, 2023, was an integral component of the MYCOTOUR project, uniting 35 prominent chefs, esteemed researchers, and subject matter experts to explore the culinary, mycotourism, and agri-food potentials presented by edible fungi. To address the challenges at hand, at the beginning of the conference, the Living Labs methodology was employed to build an experimentation ecosystem in which scientists, sector professionals and all

persons interested in the structuring and dissemination of mycotourism experiences took part in the co-creation process. For this, different ‘co-innovation operational teams’ were formed for each challenge and led by the BCC Innovation team. Each of the operational teams developed and worked on ideas that were later shared with the rest of the participants.

The myco-gastronomy innovation challenges discussed at the Myco-Culinary-Hub included: healthy combinations of local mushrooms, legumes and vegetables; the potential of mushrooms as an alternative for people with special dietary needs; the responsible use of truffles and truffled products without imitation aromas; intercultural cooking with mushrooms from other continents; wine, wild mushroom and truffle pairings, and how to adapt myco-gastronomy to the consequences of global change. Finally, participants reflected on the creation of a network of restaurants with a distinctive seal certifying good practices regarding the use of wild mushrooms and truffles.



El proyecto se desarrolla en Castilla y León, Aragón, Cataluña y Euskadi, territorios de alto potencial micológico y/o alta tradición micológica. El consorcio incluye a asociaciones relacionadas con la micología, fundaciones de innovación, ayuntamientos y diputaciones con interés en promocionar y explotar el potencial que ofrece la micología: Fundación de Innovación y Transferencia Agroalimentaria de Aragón (FITA), Diputación provincial de Teruel (DPT), Asociación MicoAragón, BCC Innovation, Ángel Moretón SLU (E-SPAIN), Organisme Autònom De Fires I Mercats de Vic (OFIM), Diputación provincial de Ávila (DPA), Ayuntamiento de Soria (AS). La iniciativa cuenta con la coordinación de la Fundación de Innovación y Transferencia Agroalimentaria FITA, con la asesoría científica del CITA y del European Mycological Institut y con la financiación del Ministerio de Industria, Comercio y Turismo, el Plan de recuperación Transformación y Resiliencia y fondos Next Generation EU.





Jan-Jasan

To ensure that the development of new products has a lower environmental impact and greater acceptance in the market, BCC Innovation has designed an innovative methodology combining consumer-centred design and life cycle analysis. As a case study, a new product has been developed: a spicy sauce based on discarded Espelette pepper production.

From the initial conception of the product, consumer opinions have been integrated through qualitative research methods. Additionally, the product has been optimized considering its physicochemical and sensory characteristics, as well as its environmental impact.

Finally, the acceptance of the product has been determined, along with the applications and uses consumers make of it, as well as the most favourable communication strategies to promote product selection.



DELICIOUS PROJECT

Carrot cake, oat biscuits and sesame tabini cookies were just some of the healthy snacks that the team from the culinary innovation department of BCC Innovation conceived and prepared for the Delicious project.

Using information obtained through market studies, gastronomy research and interactions with colleagues from Lebanon, Egypt, Italy and Portugal, BCC Innovation sought to disseminate good eating habits and healthy options in the diets of children and teenagers (ages 6-12 and 13-17) to achieve greater adherence to the Mediterranean diet.





PORTUGAL

BCC Innovation visited two schools in Lisbon to understand and observe the operation of the kitchens that prepare the students' meals.



EGYPT

The BCC Innovation team visited Egypt from 15 to 22 February to learn first-hand about the gastronomy and dietary habits of Egyptian society and specifically to see what the main diet is in their school canteens.



LEBANON

The culinary innovation team and sensory department of BCC Innovation gave cooking workshops to young students, in which they developed some of the prototypes for the proposed snacks.

The consortium is formed by 10 organisations from 5 countries: EDELVIVES (Project Coordinator) (Spain), AIJU INSTITUTO TECNOLÓGICO DE PRODUCTO INFANTIL Y OCIO (Spain), BCC INNOVATION, GASTRONOMY TECHNOLOGY CENTER OF THE BASQUE CULINARY CENTER (Spain), CONTACTICA S. L (Spain), LCI TECHNOLOGIES (Spain), ASSIUT UNIVERSITY (Egypt), PROVINCIA D'ITALIA DEI FRATELLI MARISTI DELLE SCUOLE (Italy), UNIVERSITÀ DEGLI STUDI DI CATANIA (Italy), CONGRÉGATION DES FRÈRES MARISTES AU LIBAN (Lebanon), and PROVINCIA PORTUGUESA DA CONGREGAÇÃO DOS IRMÃOS MARISTAS (Portugal).

Gastrovalue

At BCC Innovation, we train small and medium-sized companies in countries in Africa, the Caribbean and the Pacific. We aim to promote the production and development of added-value products, taking advantage of local resources such as coconut, cocoa, coffee and kava.

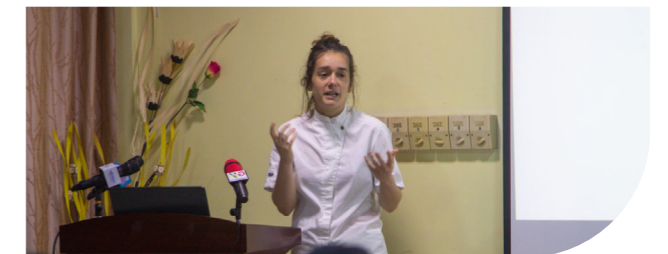
In 2023, BCC Innovation travelled to Ghana as part of the development of the Gastrovalue project (supporting inclusive and friendly national and regional business policies and strengthening the productive capacity and value chains of the International Trade Center (ITC). One of the main objectives of this trip was to raise awareness among the population about coffee consumption and to show them the possibilities in Ghana about the great commercial and culinary potential of coffee.

An analysis was carried out on the country's production methodology and methods and meetings were held with numerous stakeholders during the different stages of the Robusta coffee transformation process. This contributed greatly to helping us better understand their needs and the main obstacles they face when trying to strengthen the value chain.

Taking into account these representative products, two workshops were given at the CSIR Food Research Institute, showing the possible uses of coffee as an ingredient in culinary preparations adapted to the local culture:



Co-creation workshop for developing prototypes.



Culinary innovation workshop and recipe development.

Project funded by the International Trade Centre (ITC)



ALLIANCES FOR ACTION



Funded by the European Union

FUEGOS Ecuador

The collaborative project with the Culinary Innovation Network of Ecuador, formed by Iche of the FUEGOS Foundation in the Pacific Ocean, Canopy Lab of Canopy Bridge in the Amazon jungle and Urku Minuka of Grupo Salinas in the Andes Mountains, started in 2021 and ended in 2023.

BCC Innovation contributed to the development and implementation of this project by designing an open innovation and gastronomic entrepreneurship ecosystem. The primary objective was to establish the first market accelerator for gastronomy and food prototypes, with the overarching aim of fostering positive social and environmental impacts within the country.

The project came to life in Colab Culinaria, an open network of innovation labs within the gastronomy sector. It was conceived to amplify the sector's capabilities, undertake innovative projects on both national and international scales, and provide a collaborative space for research and exploration among students and professionals alike.

The gastronomy sector holds undeniable strategic importance for many nations, facilitating decentralized wealth generation and enriching the cultural heritage of regions. Through this initiative, BCC Innovation actively contributed to positioning Ecuadorian gastronomy as a powerhouse of food biodiversity. This, in turn, facilitated the transition towards a healthier, more sustainable, and inclusive food system while enhancing the quality of life for citizens.



SWITCH

The SWITCH project focuses on the food system and is aimed at increasing knowledge and opportunities for European citizens to promote the transition to healthier and more sustainable diets.

The project, which started in 2023 and will run for four years, seeks to create a real impact on the environment by involving a large number of stakeholders. The creation of six food hubs in six European regions is aimed at ensuring that the diets are adapted to the cultural and socioeconomic reality of each region while emphasising the importance of sustainability and health.

The Basque Food Hub, promoted by BC3 Basque Center for Climate Change, BCC Innovation and Kutxa Fundazioa, had its first meeting in November 2023 at LABe – Digital Gastronomy Lab in Donostia-San Sebastián, to promote dialogue, reflection and collaboration for the transformation of the sector. The Hub is intended to be a meeting platform and a springboard for collaborative actions among all stakeholders in the Basque food sector and among citizens.



The consortium is formed of 10 collaborators: CMCC; BBC Innovation; DAS BAUMHAUS; Future Food Institute; IIASA; École Polytechnique Fédérale de Lausanne (EPFL); Kutxa Fundazioa and Kutxa Ekogunea; AGRO CAMERA (ARM); pOsti; LAORE; Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement (INRAE); Research Institutes of Sweden (RISE); UPM; UNINA; UNICAMP; Wageningen University & Research; ZALF; Chalmers Sweden; BC3; Antistatique.



SEASONED

One of the objectives of BCC Innovation is to transfer knowledge to other stakeholders taking their first steps in the sensory sciences.

To this end, the SEASONED project sought to enhance the knowledge and skills of staff at the Wrocław University of Environmental and Life Sciences (UPWr), Poland, in the field of sensory science and consumer behaviour through different activities, including the development and valuation of innovative plant-based foods, with a focus on the importance of local resources and sustainability.

Since the beginning of the project in October 2022, various actions have been carried out to train young researchers in the area of sensory analysis.



University of Southern Denmark (SDU)

BCC Innovation researchers visited the campus of the University of Southern Denmark (SDU) in Odense, Denmark, to participate in the project's General Assembly and to provide training in project management skills.



Miguel Hernández University in Elche

At the Miguel Hernández University in Elche, the team took part in a five-day Summer School during which participants attended various conferences and workshops to broaden their knowledge of sensory analysis and to share their professional experiences.



Sensory Science Hackathon

Sensory Science Hackathon, organised at LABe – Digital Gastronomy Lab by BCC Innovation's sensory department. This event brought together young researchers from different technological areas to develop innovative solutions using sensory analysis methodologies to meet the challenges of the gastronomy and food sectors.



Desarrollo de nuevos alimentos

The culinary innovation department works to find solutions to one of the biggest challenges of the sector: food waste. This project aimed to give value to products that are discarded or disposed of during the value chain. To this end, creativity and different culinary techniques were employed to ideate and develop prototypes for new products.

The collaboration with a leading olive oil company presented an ideal opportunity to implement strategies aimed at valorizing the primary by-products generated during the industrial process. In this context, the project focused on creating gastronomically valuable products utilizing olive pomace, a wet paste comprising olive pulp, crushed pits, skin, and residual water remaining after olive oil extraction.

Following the ideation phase, the team of chefs at BCC Innovation discerned the gastronomic potential of this by-product, aligning its utilization with prevailing market trends. Collaborating closely with the center's research team, various fermentation processes were explored, scrutinized, and refined to develop two new healthy, nutritious, and safe products derived from olive pomace.



The prototypes resulting from this initiative epitomize the outcome of ideation, research, development, and innovation endeavours. They signify a transformation of a previously undervalued product into offerings with substantial market potential, potentially poised for industrialization by the company.

Development of an AI tool and voice commands to optimise inventories, orders and purchases

An AI assistant has been developed for the hospitality sector for voice commands and tactile interactions with mobile devices, which will facilitate all tasks related to managing orders, creating shopping lists and inventories and streamlining and unifying purchases and orders in a restaurant. It also facilitates stock and inventory counting, eliminating the use of paper, computers and the need to have more than one person to perform the tasks.

By approaching the project from a people-centred design perspective cooks were included in the development team and real users were involved throughout the process. After observing the context of implementation at LABe Restaurant –living lab restaurant– the findings were as follows:



- It avoids learning and adoption curves for users, adapting instead to their habits
- Offline functioning, for environments with limited or unstable connectivity such as some kitchens, warehouses, storage rooms or basements.
- It can be integrated with the resource, raw materials and purchase management system of the establishment (ERP).
- Agility and immediacy for users. Low latency, efficiency and voice processing speed (based on native Android and iOS STT solutions).
- Technologies appropriate to the real context of users (flexible rules for speech-to-text and text-to-data, proprietary development and specific language libraries).



Restockvision

Restockvision was conceived to take advantage of technologies already available in the market and used in other industries, but not yet exploited in the HoReCa sector.

An artificial vision project was carried out which focused on managing stocks in gastronomic establishments, with the following functionalities:

- Stocktaking
- Design of the coordination service with the establishment's ERP system for continuous updating and to facilitate placing orders.



Food Fictions

Art, science, and gastronomy: these are disciplines engaged in an ongoing dialogue, although their interactions may not always be readily apparent to the public. For BCC Innovation, conceptualizing a project that embodies this synergy is a novel endeavour. Food Fictions epitomizes the essence of BCC Innovation, encompassing multidisciplinary, innovation, creativity, and scientific inquiry. Within the gastronomy sector, collaboration with the art world occurs on a foundation of scientific knowledge and expertise.

The first collaboration between BCC Innovation and Tabakalera resulted in the creation of Sugar Detox Clinic, a project conceived by artist Elsa Yranzo in partnership with the culinary innovation and sensory science team.

Food Fictions is based on studies and sensory case studies that explore the influence of the five senses on the perception of taste. Artists, researchers, and chefs have collaborated closely to bring Sugar Detox Clinic to fruition. This immersive experience delves into the realms of gastronomy, engaging our senses and invoking memories associated with aromas, textures, and colours, all underpinned by scientific principles.

■ *The project that forms part of the exhibition “Máquinas de ingenio. Jakintzen bidegurutzean” (Ingenious machines) has the support of CIRCE (Creative Impact Research Centre Europe) and was created by the Ministry of Culture and Media Cultura (BKM) of the Federal Republic of Germany to strengthen the economic role of the cultural and creative sector. It also highlights the active contribution of the citizen creation communities associated with the science and technology of Medialab Tabakalera in creative development.*



The Sugar Detox Clinic installation is presented as a detox clinic for treating sugar addiction. Displayed as a giant sugar cube, the work uses treatments adapted to different consumer-addict profiles, based on sensory studies that explore the influence of the five senses on the perception of taste. The piece explores the cultural and psychological relationship with sugar, addressing topics such as diet as control, sweets as a reward and fear associated with body image and health. At the clinic, addiction is treated with jellies designed in collaboration with BCC Innovation and the Medialab Food Hack Lab collective, offering visitors an innovative focus on food and a unique artistic experience.

Map of INTERNATIONAL Projects

- Saudi Arabia
- Belgium
- Croatia
- Cyprus

- Czech Republic
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- France
- Ghana
- Greece
- Hungary
- Israel
- Italy
- Jamaica
- Japan
- Lebanon
- Malta
- Mexico
- Netherlands
- Norway
- Peru
- Poland
- Portugal
- Slovakia
- Slovenia
- Spain
- Turkey
- United States
- Vanuatu





4

Living Lab

LABe-Digital Gastronomy Lab represents an open innovation space where we reimagine and collaboratively shape the future of gastronomy through a digital perspective. This living lab at Basque Culinary Center is part of the 'Etorkizuna Eraikiz' initiative led by the Provincial Council of Gipuzkoa, in collaboration with the Basque Government and the City Council of Donostia-San Sebastián.

NEOVIDE

One of the aims of BCC Innovation is to create and transfer knowledge to the business sector and citizens. From a 360° vision of gastronomy, and bringing together the collaboration and convergence of diverse areas, BCC Innovation has been able to test one of the machines that it is hoped will be revolutionary in the food sector.

The team of chefs in the centre's culinary innovation department used different culinary techniques to test the vacuum packing machine to identify the best possible uses and good practices to be able to later transfer them to the collaborating company.

SOUJI Testing

The implementation of innovative technologies at LABe offers value to development companies, drives technological progress and shares new developments with the sector. As part of the project, the use of the prototype of a machine that transforms used oil into soap for the HoReCa sector was tested in a real context.

The project provided significant learnings and recommendations for optimising both the machine and the soap. By combining digital transformation and sustainable development we boost the circular economy.

Meat-ageing refrigerators

From a multidisciplinary perspective of gastronomy, and with the collaboration of chefs and the research team, BCC Innovation tests new developments in industrial machinery related to the HoReCa channel and studies their functioning using food quality indicators.

In this specific case, a leading company in the catering sector sought to evaluate their new line of meat-ageing refrigerators by comparing different models within their range. To achieve this, the research team at the laboratory and research chefs evaluated the functioning of the technology using indicators such as shrinkage or pH level of the meat.

By monitoring the meat-ageing process and gathering quantitative data obtained from laboratory analyses, the company obtained objective insights into their technological advancements. This enabled them to formulate a strategic positioning plan for their products.

In addition, as a result of the research carried out on the meat-ageing process, they created a theory and practical guide to serve as a training resource for the salespeople and chefs of the collaborating company.



Neuromarketing in gastronomy

One of the objectives of LABe – Digital Gastronomy Lab is to evaluate technologies and innovations on the horizon of gastronomy. These are tested to apply in the restaurants that prove satisfactory, using the results obtained and disseminating them among professionals in the sector and restaurant users.

“Can neuroscience impact the gastronomy sector?”, is the question posed and explored in collaboration with a neuromarketing company and an experience design and conceptualisation agency. With this objective, in a real context and through a gastronomic proposal, it was tested to see whether technologies used in

neuromarketing could be applied to the world of gastronomy to explore the technologies’ capacity to identify the reactions and emotions of the user.





Culinary Action!

Since 2014, Culinary Action! has been promoting entrepreneurship and new businesses in food and gastronomy. The gastronomic entrepreneurship programme of the Basque Culinary Center and Hazi Fundazioa, within the framework of the The Food Global Ecosystem, catalyses disruptive innovation through the promotion of startups and sustainable projects that are challenging the food system, such as FoodTech, ResTech and AgTech.

In 2023, we continued with various initiatives and projects:



5

Entrepreneurship

Gastronomic Restaurant Incubator in the Basque Country

The second edition of the Gastronomic Restaurant Incubator in the Basque Country was held this year, which sought to empower entrepreneurial talent by developing new proposals that strengthen the innovative character of the territory.

Two winning projects were chosen in this competition:

Labar - the idea that made the most progress in the Incubator.

Under the slogan “atzokoa, gaurkoa” (yesterday, today), Ander Ausin and Ainara Etxeberria, both alumni of the Master’s in Innovation and Restaurant Management of the Basque Culinary Center, sought to offer classic and recognisable dishes to share and enjoy in a new culinary space in the renovated historical building of Casino de Deba.

Lua Bistro - the most innovative idea in the incubation programme

The proposal of Argentinian Lucía Rave and Venezuelan Aarón Castillo is about taking advantage of the food discarded in a catering establishment and later using it to create an omnivore and vegetarian menu.

■ *The incubator programme has the institutional support of the Department of Economic Development, Sustainability and Environment of the Basque Government and the Gipuzkoa Hotel and Catering Association, and the collaboration of La Salve and Araven.*



On The Road

This is the third edition of this competition in roadshow format aimed at FoodTech startups and 360° gastronomy, with stages in Tokyo, Copenhagen, New York, London and Buenos Aires. Five startups participated at each stage and presented their projects to a network of experts in the AgriTech and FoodTech sectors.

In early 2023, we met the winning startup of the second edition, which was created in 2022: ReBorn Farms, run by Henry Obispo, which seeks to build hyper-local food systems in areas with economic disadvantages due to racial or climate inequality.

In July 2023 we launched the third call with the help of local partners in each city. These are the winning startups of the three stages held in 2023, who will compete in the grand finale in 2024:





Tokyo - Oissy (19 October 2023)

A Japanese company has developed a taste sensor based on artificial intelligence (AI), which they have called “Leo”. It analyses products and calculates how strong they are in the five main tastes: sweet, salty, sour, bitter and umami.



Copenhagen - Økoskabet (10 December 2023)

To connect producers of sustainable foods with consumers, Økoskabet offers a sustainable product delivery system, whereby customers can order the products and then collect them from a kind of refrigerated, automated mini post office that’s open 24 hours. These collection points are distributed around Copenhagen.



New York - Alcheme Bio (6 December 2023)

Alcheme Bio is aimed at making lab-grown foods “delicious by design” by introducing flavours at the cellular level during the manufacturing process.



London - WNW Food Labs (1 February 2024)

A FoodTech startup that makes cocoa-free chocolate from plant-based ingredients.



Buenos Aires - Biotango (22 February 2024)

Through a combination of biotechnology, genomics, data analytics and artificial intelligence, Biotango decodes the DNA of crops to predict how they will adapt and flourish in the face of climate change.

Demo Day

The winning startup of each stage will participate in Demo Day, which will be held in April 2024 in Donostia-San Sebastián.

**Digital
Gastronomy
& Hospitality
Startup
Competition
HIP 2023**



Cloudtown is a startup that increases the turnover of restaurants by implementing virtual brands specialised in food delivery and was the winner of this edition.

The 5th edition of the competition was held within the framework of Hospitality Innovation Planet (HIP). Culinary Action! and LABe – Digital Gastronomy LAB, promoters of the event, reaffirmed through this initiative their mission to showcase entrepreneurial talent to the hospitality business sector to transform the industry and take innovation to all levels.

The Digital Gastronomy & Hospitality Startup Forum is aimed at projects that impact the front and back office of any hospitality business, in technologies such as big data, artificial intelligence, data analytics, IoT, robotics and automation, 3D printing with or without food, blockchain, and mixed reality.

In 2024, the scope of the competition will be extended to include new categories to showcase projects and technologies. In this way, areas such as new foods, ingredients, and processes; sustainability and circular economy, and sensory and culinary sciences have also been taken into account. Oreka Circular Economy, a startup aimed at tackling food waste by integrating a technological measurement process that streamlines decision-making for waste reduction and emphasizes surplus revaluation through donations to social organizations, has been crowned the winner of the 2024 Future Gastronomy Startup Competition.

UNWTO Gastronomy Pitch Challenge



Oh les Chefs - winning startup in the 3rd edition.
 The ‘Oh les Chefs’ startup, aimed at empowering women through local culinary tourism by offering them the opportunity to generate income by selling homemade meals to tourists, was chosen as the winner.



Five startups that use technology to improve the gastronomy tourism sector presented their projects during the 8th edition of the World Forum on Gastronomy Tourism, in collaboration with the World Tourism Organisation (WTO) and the Basque Culinary Center, held at the beginning of October 2023. The next edition of the Gastronomy Tourism Startup Competition was also presented at the Forum.



Cardumen Fund

At the end of 2022, a venture capital fund was established in collaboration with Cardumen Capital, with a focus on investing in startups within the agri-foodtech sector. This fund has garnered support from the Department of Economic Development, Sustainability, and Environment of the Basque Government, as part of its comprehensive strategy known as “The Food Global Ecosystem,” as well as from the Provincial Council of Gipuzkoa.

This fund is classified as a sustainable fund under Article 9 of the SFDR and will invest in the most promising technology companies in the agri-food sector. And specifically in technologies aimed at tackling climate change and promoting food security.

The Fund is led by Cardumen Capital, with a team of experts in high technology, and can draw on the expertise of the entire Basque Culinary Center ecosystem which, as a knowledge partner, supports investee companies in their international expansion. The Fund will invest in around 15 companies with cutting-edge technology and commercial traction in areas such as precision agriculture, alternative protein and circular economy, among others.





6

Next Steps

GOe – Gastronomy Open Ecosystem

A unique building for the project of the future. GOe will respond to and escalate the challenges of the future of gastronomy and food. Located in the Gros neighbourhood in the centre of Donostia-San Sebastián, it aspires to become an international epicentre for science and innovation in gastronomy, by hosting research, training and entrepreneurship activities. It will also offer new meeting points and create new spaces for citizens to enjoy.

The ‘Olatuen Bidea - Camino de las Olas’ project (‘the way of the waves’, named because of the unique wavy exterior designed by the Danish architecture studio BIG (Bjarke Ingels Group), won the international architecture competition. The main pillars on which the project is based are, in addition to its architectural singularity and the building’s openness and dialogue with the city, its integration into the city from the perspective of sustainability and adaptation to the environment. Moreover, the building stands out for its versatility and functionality for hosting different activities.

The GOe building is not only a visually impressive symbol but is also positioned as a driver for the cultural and social enrichment of the city of Donostia-San Sebastián. GOe will host a concentration of unique talent in the world: entrepreneurs, researchers, companies, students and citizens will work to create and develop initiatives, technologies and proposals for the gastronomy of the future.

GOe Community

The GOe Community is a digital meeting point where its members can actively connect and interact with each other, creating new spaces for dialogue and relationships. The platform was created to bring people together from all corners of the world, with a single shared idea: to explore the limits and future of gastronomy, based on an open and collaborative spirit.

The platform provides different interactive tools as well as resources for users to deepen their interests in gastronomy. One of the initiatives launched this year was GOe Challenges, a series of challenges in collaboration with experts in various fields such as innovation, food technology and gastronomy. In each challenge, participants have to find a solution to the problem proposed by implementing technologies such as artificial intelligence.



Looking ahead to 2024



Personalised and
precision gastronomy

Sustainable
gastronomy tourism

Food as
medicine

NoLo drinks

*Open
innovation*

*Gastronomy
of the future*

*Voice
technologies*

*Artificial
intelligence*

*Artificial
vision*

*Gastronomy, driver
of development*

Culinary medicine
Functional foods
Technology testing
Connectivity

Citizen science
Alternative protein
Veggie world
Flexitarians

*Gastronomy and
hedonism*
Meeting spaces
Co-creation

Flavours that
characterise each
country

Sustainable
value chain

Resilient
value chain

Zero waste

*Sustainable,
healthy and delicious*

Food innovation Ecosystems

Circular gastronomy

CONTACT



Paseo Juan Avelino Barriola, 101
20009 Donostia-San Sebastián (Gipuzkoa)



proyectosid@bculinary.com



943 574 500



innovation.bculinary.com