



SOCIEDAD HUB

2022 Annual Report

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Welcome

SOFOFA Hub 2022:

Trust and collaboration to grow together

2022 marked the beginning of a second stage for SOFOFA Hub, with a focus on capitalizing on our ability to articulate, to engage all the innovative talent in Chile and the world in the main challenges facing the industry and the country at large.

Thus, together with our partners CMPC, CCU, Enel, Molymet, Pucobre, and Agrosuper, we launched the Venture Client SOFOFA Hub program, which accelerates innovation cycles at companies, through collaboration and by scaling up tech-based startups in Chile. This program has not only facilitated work between big business and entrepreneurs, through a model that achieves strategic alignment, with CEO commitment, and the active participation of commercial units within these companies; it also constitutes a unique startup scaling platform. Part of this potential is generated because, as these companies belong to the manufacturing sector, many of the solutions selected through this collaborative process turn out to be of interest for other firms, even

if their businesses are different. Through this program, we seek to increase the competitiveness of our primary sectors and contribute to sustainable economic development, by scaling up technological ventures that provide solutions for circular economy, as well as innovation in materials, in the supply chain, and in the energy of the future, which are the main thematic focal points in the program.

Likewise, in partnership with CORFO and the Ministry of the Environment, we launched the Territorio Circular (Circular Territory) program, facilitating the implementation of Chile's Circular Economy Roadmap, from within its different territories. By articulating companies, local authorities, entrepreneurs, universities, and other actors in civil society, the program was born as a natural succession to the Scale 360° program – led by SOFOFA Hub in 2020 and 2021, together with the World Economic Forum, to identify and develop opportunities for industrial symbiosis and thus, to accelerate the transition to a circular economy in Chile. With Territorio

Circular, we reaffirm our commitment to work in regions and to promote a circular economy for our country, pushing the development of circular models together with different actors.

With its mission of bringing biotechnology closer to industry, the Translational Biotechnology Center (CBT) managed to consolidate its support model to scale-up biotech ventures, generating bridges with industry, with investors, and with diverse capabilities available in Chile and the world. It also made strides in the creation of CBT Conecta, a networking space that promotes collaboration around biotechnology.

We highlight our partners' active participation toward the development of a more integrated and sustainable country, based on innovation and collaborative work. It is this shared purpose, along with an extraordinary team, that moves us daily to achieve the accomplishments we wish to share in the following pages.



“We highlight our partners’ active participation toward the development of a more integrated and sustainable country, based on innovation and collaborative work.”

Alan García Clydesdale
SOFOFA Hub
Executive Director

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“Entrepreneurs are very important as they inject competition into society, and this transforms people’s lives. Big companies have a lot to learn from startups. During an internal reflection process at SOFOFA, we discovered that at larger firms, there is a perception of distance with senior management, when compared to SMEs. The absence of that connection can have profound effects. We need to recenter commercial activity on people and, to achieve this, we need to encourage competition, innovation, and disruption.”

Richard von Appen
SOFOFA President



SOF OFA
Hub 2022
Directory

Its members were
appointed in December
2021, for the 2022-2023
period.

1.
Manuel José Casanueva
Chairman of the Board
SOF OFA Advisor
GTD Vice President
2.
Alan Meyer
Mercado Libre General Director
for Chile, Peru, and Ecuador
3.
Gonzalo Russi*
SOF OFA General Secretary
4.
María José Montero
FIS Ameris Director of Impact
Investment
and Sustainability
5.
Fernanda Soza
ChileMass Executive Director

*Gonzalo Russi joined the board replacing
Aurora Olave, who left in August 2022.

1.



2.



3.



4.



5.



“SOFOFA Hub is a space for collaboration between companies, universities, researchers, and entrepreneurs, to solve high-impact multidisciplinary challenges. I think it highly valuable that such a point of articulation among various players exists, where ideas can be exchanged to solve challenges. SOFOFA Hub constitutes a space for innovation and collaboration that is very different from those that exist within a company, as there is interaction in search for the best practices and capabilities in Chile and in other parts of the world.”

Manuel José Casanueva
Chairman of the Board
SOF OFA Advisor
GTD Vice President

SOFOFA
Hub 2022
Directory

Its members were
appointed in December
2021, for the 2022-2023
period.

6.
Rosario Navarro
SOFOFA ADVISOR
IDEMAX Chile Senior
Business Partner

7.
Francisco Ruiz-Tagle
CMPC CEO

8.
Sebastián Ríos
Pucobre CEO

9.
José Guzmán
Agrosuper
Vice President

“If, in the future, we want to catapult successful companies, and transform their business models, they will need to have an innovative outlook. SOFOFA Hub’s value is it manages to unify multiple industry visions, understanding the challenges from various vectors, which is something unique. It’s enterprise-driven; not the other way around. This is not born out of universities or academia; it is born out of the corporate sector, and from there, it links with the world of universities and academia, but with a business outlook, which is super transformative.”

Rosario Navarro
SOFOFA Advisor
IDEMAX Chile Senior
Business Partner



6.



7.



8.



9.

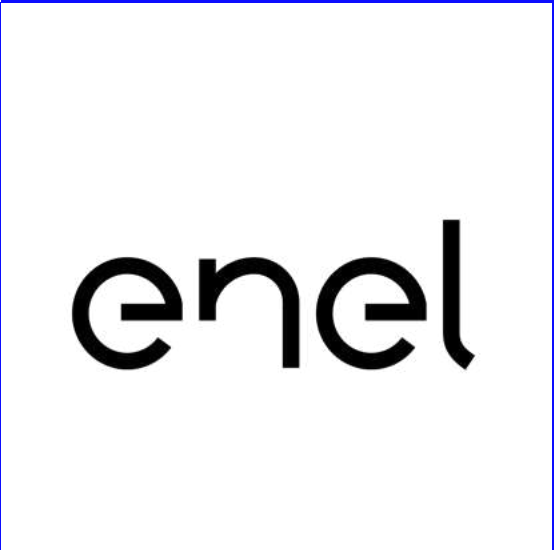
“SOFOFA Hub programs are a tremendous opportunity to connect with new ideas that enable us to accomplish more sustainable and renewable solutions together. As a company, we have sought out and worked toward this shared-value connection as a priority, since the creation of CMPC Ventures, an initiative that has allowed us to collaborate in depth with valuable startups. We are very excited to participate in Venture Client SOFOFA Hub and become strategic partners for great entrepreneurs. We believe that, together, we will build a better world for the future.”

Francisco Ruiz-Tagle
CMPC CEO

SOFOFA Hub Strategic Partners

SOFOFA Hub partners are deeply committed to leading the shift toward a sustainable development model that is the result of collaborative work and innovation.

Accordingly, CMPC, Agrosuper, CCU, Pucobre, Enel Chile, and Molymet make up our Executive Committee and actively participate defining our projects' strategic guidelines.



Governance
Model

Board of Directors

9 SOFOFA-appointed members

Executive
Committee

Gonzalo Russi
Rosario Navarro
Manuel José Casanueva
Felipe Alcalde – CMPC
Cristián Meyer – Agrosuper
Sebastián Ríos – Pucobre
Martín Rodríguez – CCU
Juan Cristóbal Valenzuela – Molytmet
Antonella Pellegrini – ENEL

CBT
Committee*

Gonzalo Russi
Rosario Navarro
Manuel José Casanueva
Isaac Kohlberg (CTO Harvard)
Eduardo Abeliuk (TeselaGen)
Mauricio Cañoles (CBT Implementing
Partner Research Centers Representative)
Rolando Chamy (CBT Implementing
Partner Universities Representative)

*The Translational Biotechnology Center is a project backed by the Chilean National Agency for Research and Development (ANID), and which operates under the auspices of SOFOFA Hub, to bolster the development of biotechnology from the private world, connecting the needs of companies with solutions generated at research centers and universities, to boost Chilean industry.



Our team

The SOFOFA Hub team is tasked with articulating representatives from the R&D world, entrepreneurs, and public and private actors to solve the challenges in the Chilean manufacturing sector. Our members' role includes engaging knowledge, science, and talent in the service of challenges in the industrial sector and the country at large.

Marianela Rosas (who could not be present in this photo) is the Circular Economy Monitoring and Tracking Coordinator. .



Giovanni Cruz
SOFOFA Hub Head of
Administration and Finance

Andrea Guzmán
SOFOFA Hub Communications
Director

Florencia Undurraga
SOFOFA Hub Attorney

Alan García Clydesdale
SOFOFA Hub Executive Director

Javier Obach
Territorio Circular
Program Manager

Guillermo Badillo
CBT Academic Coordinator

Montserrat Roll
CBT Technology Initiatives
Coordinator

Mariana Thielemann
SOFOFA Hub
Entrepreneurship Manager

Tamara Sepúlveda
CBT Project Analyst

María José Monti
Community Relations
Advisor

María Paz Merino
CBT Deputy Director
of Technology

2022
Timeline

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Webinar on a “Regulatory proposal for biobanks for research purposes” by the CBT public-private biobank working group.

6-10

Commercial Mission to Boston “Sustainability and Beyond: Rethinking Clean Technologies and the Food of the Future”, convened by the CBT, with the collaboration of ChileMass.

31

CBT Connecta Los Lagos (Frutillar): “Southern Chile: a hub for bio-innovation”

8

to October 7 Launch of a new Hemisferio Biotech call.

6-7

CBT participates in the ChileMass Innovation Day “The Future of Food”.

14 Plant cell expansion platform kickoff, a project by the Concha y Toro Research and Innovation Center, INIA, and CBT.

9-10

CBT participation at the Biohunt Summit in Miami.

10 Workshop on Circular Opportunities in Maule Region, organized by the Territorio Circular program.

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEP

OCTOBER

NOV

DEC

21 First meeting of the new SOFOFA Hub board of directors.

23 Organic Waste Demo Day, with Territorio Circular and LCBA (Low Carbon Business Action).

3

Launch of the Territorio Circular program (as part of the implementation of the Roadmap for a Circular Chile), with the participation of Environment Minister Maisa Rojas and CORFO Executive Vice President José Miguel Benavente.

13 First meeting of the Territorio Circular Advisory Council, comprising actors from the public, private, and academic sectors, along with representatives of the civil society and international organizations.

7

Launch of the Venture Client SOFOFA Hub program, via the in-person and online panel “Company-Entrepreneur: Connections for growth.”

13 Launch of the first call for Venture Client SOFOFA Hub challenges.

13 Meeting at the Concha y Toro Research and Innovation Center, with participants from the Commercial Mission to Boston.

17

Start of the International Certificate in Bio-business, by CBT in partnership with the U. de los Andes and UCSD.

21 CBT Connecta Santiago “Biotechnology in companies: the big leap in innovation”.

21-29

SOFOFA Hub (through Territorio Circular) participated in a European tour, organized by Fundación Chile, under the auspices of the Circular Plastic in the Americas Program (CPAP).

23 Circular Opportunities in Casablanca Workshop, Territorio Circular.

The region's first associative venture client program seeks to accelerate innovation by scaling up startups in Chile, facilitating links between leading companies in the industrial sector and tech-based entrepreneurs.

The focus of the Venture Client SOFOFA Hub program is to get large companies to build long-term relationships with scientific/technology-based entrepreneurs, and thus contribute to the competitiveness of major industries.

Venture Client SOFOFA Hub

Venture Client SOFOFA Hub

A real opportunity to connect industry with tech entrepreneurs

In order to boost startup growth in Chile, SOFOFA Hub partner companies created an alliance to convene entrepreneurs that have innovative solutions for their business challenges. Through a collaborative process, companies convene, select, and validate the best solutions, thus generating a unique opportunity for startups to grow by getting one or even more important clients, and without sacrificing ownership of their business. The process is designed to ensure companies' commitment, and at the same time minimize the time spent by companies and entrepreneurs validating or dismissing each opportunity..

Connections for growth

On Thursday, July 7, the Venture Client SOFOFA Hub program was launched over a panel conversation entitled "Connections for Growth". It involved entrepreneurs and executives from major companies who analyzed the challenges and opportunities present when large firms and startups enter into a business relationship. The panel was composed of Maxiloda Country

Manager Claudia Verdugo; Kepler CEO Hugo Galilea; Rodrigo Arias, Head of Open Innovation at Agrosuper; and Natalia Correa, Head of Sustainable & Circular Ecosystem at ENEL. Journalist Soledad Onetto moderated the instance, which was broadcast on SOFOFA's YouTube channel.

The Program

Venture Client SOFOFA Hub is a program that lets large companies connect with the entrepreneurial ecosystem to find solutions for their challenges, through a methodology that accelerates and facilitates the process of finding, validating, and contracting innovative solutions. The goal is to help all parties establish a trusting relationship that can extend over time, where the entrepreneur becomes a supplier for the large company, successfully scaling-up their business in a sustainable way. The model's collaborative nature allows solutions to generate interest in one or more partner companies, making it a singular showcase and platform for startups to scale up their business.

Accelerating innovation

Based on their CEOs' commitment and the active participation of their business units, partner companies have made their internal processes more flexible to facilitate the work with startups. This

results in minimizing administrative delays, streamlining negotiation processes, balancing contractual conditions, and aligning both parties' expectations.

SOFOFA Hub's role has been to support companies in identifying and establishing business challenges, in searching and selecting solutions at the global level, and in articulating the collaborative process at each program cycle. In turn, we ensure that both sides remain active in building their relationship by, for example, ensuring that set deadlines are met, and that progress is properly monitored.



“Our program overcomes the barriers that exist between entrepreneurs and big companies, because it starts from a ‘ailment’ the company wants to solve, and for this purpose it is willing to allocate budget and time. Thus, we can increase the likelihood that the selected entrepreneur will become a supplier in the future. It is a great opportunity for the entrepreneur to achieve important growth in Chile and even across the region.”

Mariana Thielemann
Entrepreneurship Manager and Venture Client
SOFOFA Hub Program Coordinator



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“Being part of Venture Client SOFOFA Hub has allowed us to accelerate the innovation cycle at our company and to link up with startups in a much more direct and clear way, regarding our challenges. In addition, collaborative work among partner companies has generated an instance to share and learn from the experiences of others.”

Sebastián Ríos
Pucobre CEO

Partner Companies

Enel
CCU
Molymet

Pucobre
Agrosuper
CMPC

Thematic Areas in the Program:

1 Supply chain

- Quality control
- Transparency and traceability
- Logistics innovation

2 Innovation in materials

- Ecodesign
- Sustainable sourcing
- Improvements in the production process

3 Energy of the future

- Energy transparency
- Energy efficiency
- Electromobility

4 Circular economy

- Emission reductions
- Waste valuation
- Operational sustainability
- Water efficiency

First Cycle Results:
Enel y Agrosuper

Four challenges were published during this first cycle in 2022: two from Agrosuper and two from Enel. Over 80 startups, from more than 20 countries, applied with solutions to these challenges.

At the end of the selection phase, companies selected two suppliers each, to carry out proofs of concept (POC), as shown in the following table:

Company				
Challenge	Water shortage and efficiency in animal husbandry processes and process plants		Cable monitoring and traceability for urban mining.	Debris separation and valuation.
Selected startups	Aquacycl (USA): Modular bioelectrochemical treatment to treat highly concentrated wastewater.		INNOVAXXION (Chile): Real-time hardware tracking and monitoring solution.	Revaloriza (Chile): Waste management and valuation by a mobile plant.
	Remote Waters (Chile): Last mile water treatment.			

Where the added value is

1

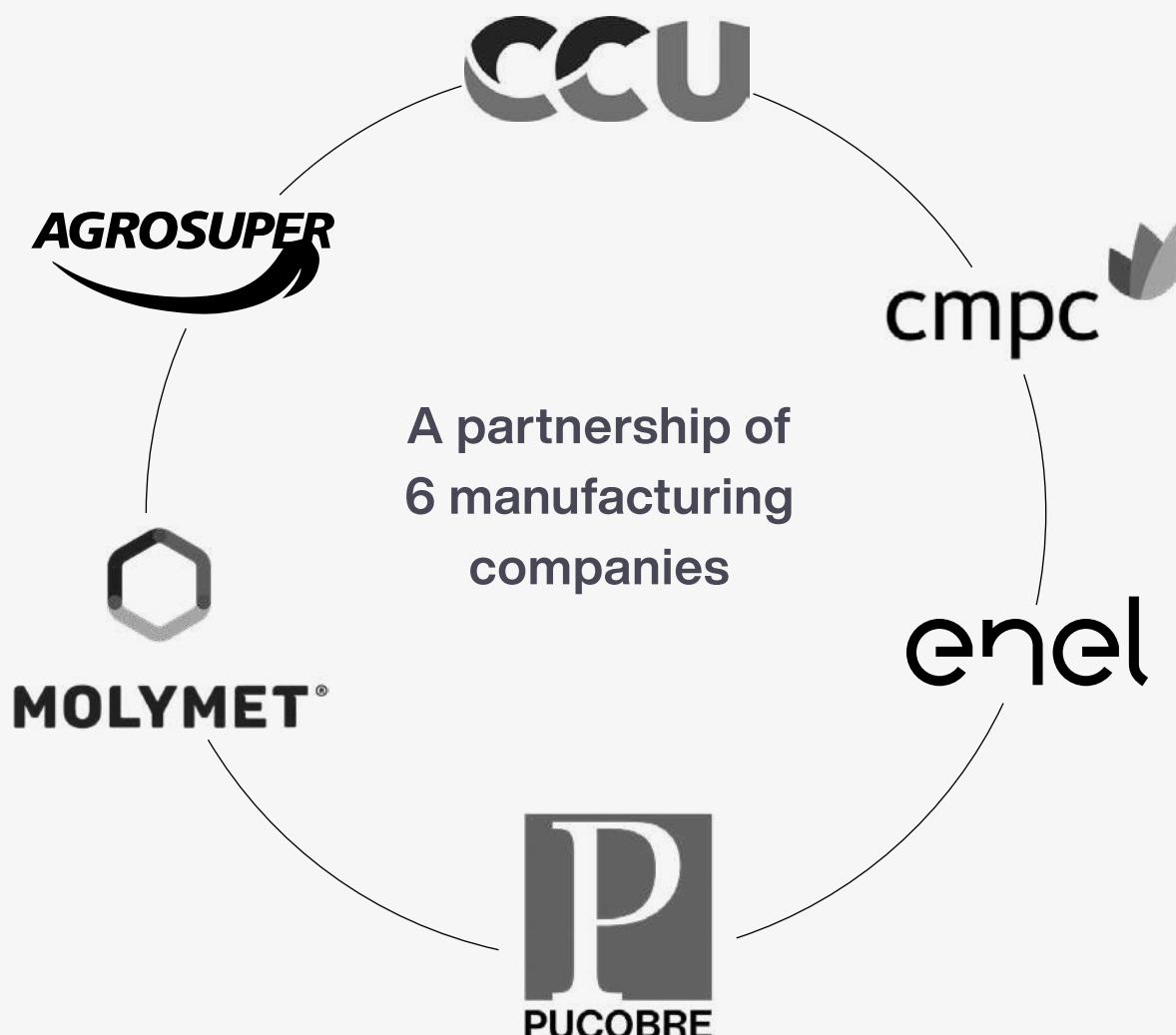
Collaborative model

- Economy of scale
- Similar problems
- Inter-organizational learning

2

Convening Capacity

- 6 industry-leading companies
- Global SOFOFA Hub Network



Business Challenges

Global tech-startup network

6 months

Innovation Cycle

Proofs of concept for technology solutions

Adoption of technology

4

Results

- Decreased time-to-market (cycle)
- Contribution to company EBITDA
- Startup Growth (sales)

3

Focus on adoption

- Our methodology minimizes common problems in the company-startup relationship.
- CEOs sign a participation agreement, making procurement policies more flexible.

“What is interesting about the program is that, with the participation of a network of corporations and large companies, it becomes a great value offer for entrepreneurs to showcase their technologies and connect with several potential clients. This makes Venture Client SOFOFA Hub a very attractive soft-landing to encourage startups around the world to present their innovations to the different industries gathered here.”

Rodrigo Arias
Agrosuper Head of Open Innovation

“We came to work with SOFOFA Hub with a very clear challenge, which was to find a solution to revalue debris waste and transform it into a by-product. The Venture Client SOFOFA Hub process has been very important to arrive at a supplier that allows us to find this answer. During every step, they were very diligent, and we had a very powerful professional team at our disposal, who helped us throughout the process and considered us at every stage.”

Bárbara Cornejo
ENEL Distribution Head of Environment

Process Stages:

1

Business challenge
application and selection

- Establishing challenges by company and application
- Executive committee selection based on validated criteria

2

Scouting and
outreach

- Global Scouting and Outreach partner contract and kick off

3

Workshop 1
Selection

- Solutions pre-selection
- Identification of best candidates
- Definition of key technical questions from a business standpoint

4

Workshop 2
Selection

- Proposal selection
- Answers to key questions
- Increased clarity regarding team and solution

5

Value
proposition days

- Presentation and discussion plans for proofs concept:
 - (a) Proposed solution
 - (b) KPIs and targets
 - (c) Requirements
 - (d) Long-term proposal

Support Activities

Support in
establishing
challenges,
application, and
selection

Search through
direct local and
global networks

1:1 interviews
with candidates
and company
feedback

Case briefing and
aligning value
proposition

Biotechnology CBT

The Translational Biotechnology Center's mission is to bring biotechnology closer to the industrial sector and to generate enabling conditions for its development in Chile, creating a real impact on company productivity.



Within the biotech and scientific innovation projects in which the CBT is involved, we have continued to bolster its role as articulator, with increasingly revealing results regarding the importance of its role at the country level.

María Paz Merino
CBT Deputy Director of Technology

A good 2022 for the CBT

The pride of inspiring others to trust biotechnology

In our role as the CBT, we have had to establish close relationships with larger companies and startups in the biotech industry, and become familiar with their concerns and enduring challenges, within the regulation framework at the country level. We have noticed the gap that still exists between biotechnological development and corporate culture. For big companies, it is still difficult to gauge and absorb the costs that technological innovation requires, and to understand that, while biotechnology cannot solve immediate emergencies, it is an investment in the future.

In this scenario, CBT projects have served as illuminating cases. They allow us to show the world the successful experiences of companies that have made strides in this area, which engenders trust.

This 2022, we continued working on our projects. The Caligus anti-parasitic by ICTIO

Biotechnologies and Domolif has proven to be a highly sophisticated scientific initiative, which will represent a great contribution in terms of sustainability. The Plant Cell Expansion Platform, by INIA and the Concha y Toro Research and Innovation Center, is also on the frontier of new biotechnology, offering an option for agricultural industries to better address climate change. The Hemisferio Biotech call, meanwhile, remains a support for entrepreneurship, generating new scaling capabilities.

We are proud of all the initiatives our team works on every day, with perseverance, collaboration, and the conviction that we are contributing to continue building a more innovative and sustainable Chile.



CBT Committee

The CBT Committee mission is to direct and supervise the Center’s guidelines and actions. It brings together representatives of three key areas for biotechnology industry development: universities, research and development centers, and the corporate sector.



Mauricio Cañoles
[CBT partner R&D centers Representative]
Ph.D., MII General Manager UC Davis Chile Life Sciences Innovation Center

“One of the most attractive things about the CBT is establishing needs from an industry outlook (needs that may or may not have a biotech solution). Due to their complexity, biotech matters are often close to the technology push development model: from scientific offer to presumed industrial demand. However, the CBT has looked for needs in industry, and identified solutions from actors close to science and research.”

Mauricio Cañoles
R&D centers Representative



Manuel José Casanueva
SOFIFA Advisor
GTD Vice President



Eduardo Abeliuk
TeselaGen Founder



Rolando Chamy
[CBT partner universities Representative]
Director at Núcleo de Biotecnología Curauma Pontificia Universidad Católica de Valparaíso



Rosario Navarro
SOFIFA Advisor
Senior Business Partner at IDEMAX Chile



Isaac Kohlberg
Chief Technology Development Officer
Harvard University



Gonzalo Russi
SOFIFA General Secretary

“One of CBT’s most attractive characteristics is it addresses the issue of scaling. There are many projects where you develop an innovation, you get to the prototype phase, but then you need an industrial scale-up to test the product. This is what the CBT does, filling a void that no other center does. It is important to connect what is being developed at laboratories and innovation centers in Chile with the productive world, and the CBT makes that connection, generating collaborative research that contributes to the development of new businesses and enhances national industry competitiveness.”

Rolando Chamy
CBT partner universities Representative

*Francisco Chiang served on the CBT Committee until December 2022.

CBT Director and Committee Member Isaac Kohlberg visited Santiago in early December 2022. During his stay, he reviewed CBT progress in this initial project stage, and attended meetings with authorities and with other players in the innovation and biotechnology ecosystem.

Isaac Kohlberg's Visit

Chile is one of the leading countries in Latin America in generating scientific innovation that is relevant to a large number of industrial sectors. It is a country that possesses excellent universities and research centers with a great tradition. However, the bridge of interaction between industrial sectors, Chile's emerging startups, and universities and research centers was relatively weak. The need for a platform that could play a role in linking R&D capabilities and the necessities of for-profit sectors was clear, to advance on technology transfer, and innovation translation and adoption, in the development of products and services. This was the genesis and rationale behind the launch of the CBT.

The CBT understands the needs of

companies and matches them with capabilities available at research centers and universities. It is an agent of change that builds on these collaborations, thus creating a new biotech ecosystem in Chile that serves a number of sectors, beyond just the life sciences.

In addition, the fact that the CBT is under the SOFOFA Hub umbrella has incredible convening power, beginning with the members of this organization, who represent Chile's leading industrial companies.

Isaac Kohlberg
Chief Technology Development Officer
Harvard University
CBT Committee Member



The Technology Centers for Innovation (CTI) program intends to enhance knowledge transfer and scientific-technological development in strategic areas for Chile, and to promote collaborative projects between the scientific and industrial sectors. The Translational Biotechnology Center (CBT) was created in this context, with the aim of promoting biotechnology as a core concept for innovation across different economic sectors.

CBT and CTI

Partners to drive biotech innovation

“The CBT and the CTI program faced challenges brought on by the pandemic, but also showed the capacity for, and value of, collaboration among the centers and industry. The CBT proved its ability to adapt to change, generating innovative and collaborative solutions, while strengthening its connections to industry, developing strategic partnerships, to enhance the added value of its projects and its openness to international collaboration.”



Camilo Erazo
ANID Deputy Director of Associative
Research Centers



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Plant Cell Expansion Platform

New varieties that are more resilient to climate change

Conversations to kickoff this project began in 2021, and in 2022, the roles and contributions from each of the parties were defined. It is an initiative that promotes the generation of new technology that will enable our national agricultural industry to adapt and increase productivity in the new context of climate change.

In October 2022, at the Institute of Agricultural Research (INIA) laboratory, located in the municipality of La Pintana, the three entities participating in the Plant Cell Expansion Platform project met. Bringing together the Concha y Toro Research and Innovation Center, the INIA, and the CBT, the initiative seeks to promote cutting-edge technologies to genetically strengthen grape crops. Thus, after two years of talks and protocol design, the project kicked off among the small seedlings

growing in vitro, under monitored temperature and light conditions.

While in 2021, work was done on defining administrative aspects and agreements between participants, 2022 was focused on starting joint work. The CBT participated as project manager, coordinator, and dialogue facilitator between the parties.

Phase one will last 30 months and is intended to validate this cell improvement system for use in other crops, and to serve as a

business model to offer cell regeneration services to other food companies. The initial step will be to adapt agricultural crops, to work with them under controlled laboratory conditions.

An Unprecedented Contribution

Thanks to this public-private effort between INIA, the Concha y Toro Research and Innovation Center, and the CBT, a new path is beginning to open to explore the adaptation of certain foods to new forms of controlled growth. This way, these products could grow more resilient and better prepared to face the threats climate change poses to the agriculture industry, such as water shortages and the proliferation of certain pathogens linked to new environmental conditions.



“Using biotech tools to adapt plant material to climate change is not a challenge only for the wine industry, but for the country’s entire agri-food sector. We are at the outset of a project that will improve the vegetables of the future, adapting them to the environmental conditions we are experiencing.”

Tamara Sepúlveda
CBT Technology Initiative Coordinator

“Currently, we know of no other companies that do this work in Chile in a marketable way. In this regard, the CBT also participated in defining the platform’s business model for the future. We have managed the project and have monitored the activities technically and financially.”

Álvaro González
Viña Concha y Toro Research and Innovation Center Director

**ICTIO Biotechnologies
Progress**

**A new format to fight
against Caligus**

26

Photo credit: Ventisqueros S.A.

“Along with health industry players and Domolif, we went from making a product that cures a disease to one that prevents it. Without a doubt, the platform CBT generates to connect different actors in biotechnology brings together a tremendous team.”

Camila Wilkens
ICTIO Biotechnologies Technology Transfer
Coordinator

After the CBT connected ICTIO Biotechnologies with the Chilean startup Domolif, in 2021, both sides continued talks, during 2022, to optimize development of their flagship product: an anti-parasitic for salmon that attacks the caligidosis pathogen, called Caligus, also known as “sea louse”.

Domolif began industrial-scale production of the anti-parasitic in June 2022, and the goal by mid-2023 is to reach 500 ki-

los, culminating with a field test. The CBT has focused on supporting project development, dissemination, and subsidy.

In addition, in 2022, new industrial opportunities emerged for this sustainable and organic anti-parasitic – as none of its components are chemical or artificial. While originally considered a healing agent to be given as an antidote to infected fish, ICTIO Biotechnologies tests revealed it can also

be used as a food additive to prevent infection. Along these lines, they managed to develop an alternative, more cost-efficient strain, with higher production yield, and better commercial applications than the initial proposal.

Hemisferio Biotech

Successful Scaling Cases
together with the CBT

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A new Hemisferio Biotech

In September 2022, the second Hemisferio Biotech call was launched, to support new biotech development projects in their processes of scaling-up and connecting with the market. The call remained open between September 8 and October 7, 2022. Selected projects will be announced in 2023.

After SOFOFA Hub's CBT launched the Hemisferio Biotech call in 2021, together with the Chilean Venture Capital Association, to scale up projects related to biotechnology, in 2022, work was done with the selected applicants (Rubisco Biotechnology and Citokin+), to develop and implement their respective pilot projects. In this scenario, the role of the CBT has been to support them in their relationship with the market, their access to expert networks, as well as offering co-financing, human resources, legal advice, and management support.

Rubisco Biotechnology

Scaling production and new markets

Rubisco Biotechnology is a Chilean company that produces ingredients for cosmetic products based on larch cells, through low environmental impact processes. After being selected by Hemisferio Bio-tech, in 2021, to produce formulas in bio-reactors, replicate them in greater volume, and then move on with their commercialization, in 2022, they managed to gradually increase production of the compound. The goal is to reach 50 liters by April 2024. In addition, thanks to CBT support, they were able to share their products' benefits at international innovation and investment trade shows, such as the In-cosmetics fair in Paris (France), and the Cosmopack event in Las Vegas (United States). Likewise, the CBT also helped manage their participation at the Ganesha Lab's Miami Biohunt, expanding their commercialization opportunities in the international market.

Rubisco Biotechnology CEO José Pablo García highlights the results obtained thanks to this collaboration with the CBT: "Commercially, we have had a great push and a much faster development than we expected. We are happy with how the relationship with the CBT has evolved. They have been a huge support and have had the flexibility to help us along the way. We met monthly to review progress; they are very much on top of the project and the follow-up that needs to be done."



Collaborating with Kumiko: an international partnership

In addition to its production in Chile, Rubisco Biotechnology has outsourced production of the larch cell-based compound at a laboratory in Sweden that, in 2022, managed to market the formula's first batches. In terms of commercial relations, one of the year's milestones was the partnership with the international cosmetics company Kumiko, with whom they connected at the In-cosmetics fair in Paris, held from April 5 to 7, 2022. Due to this contact, Rubisco's formula will be marketed in an anti-aging product format, in countries such as Mexico, the United States, and Chile.

"The experience with Rubisco Biotechnology has been enriching and positive, in valuing the potential of sustainable plant biomass production through cell culture technology that protects the environment. From the super active ingredient in larch, one of the longest-lived species in the world, which has powerful regenerative and anti-aging properties, Kumiko debuted two formulations that have positioned very well since their launch."

Trinidad Puig

Kumiko Skincare Communications
and Content Manager

Citokin+

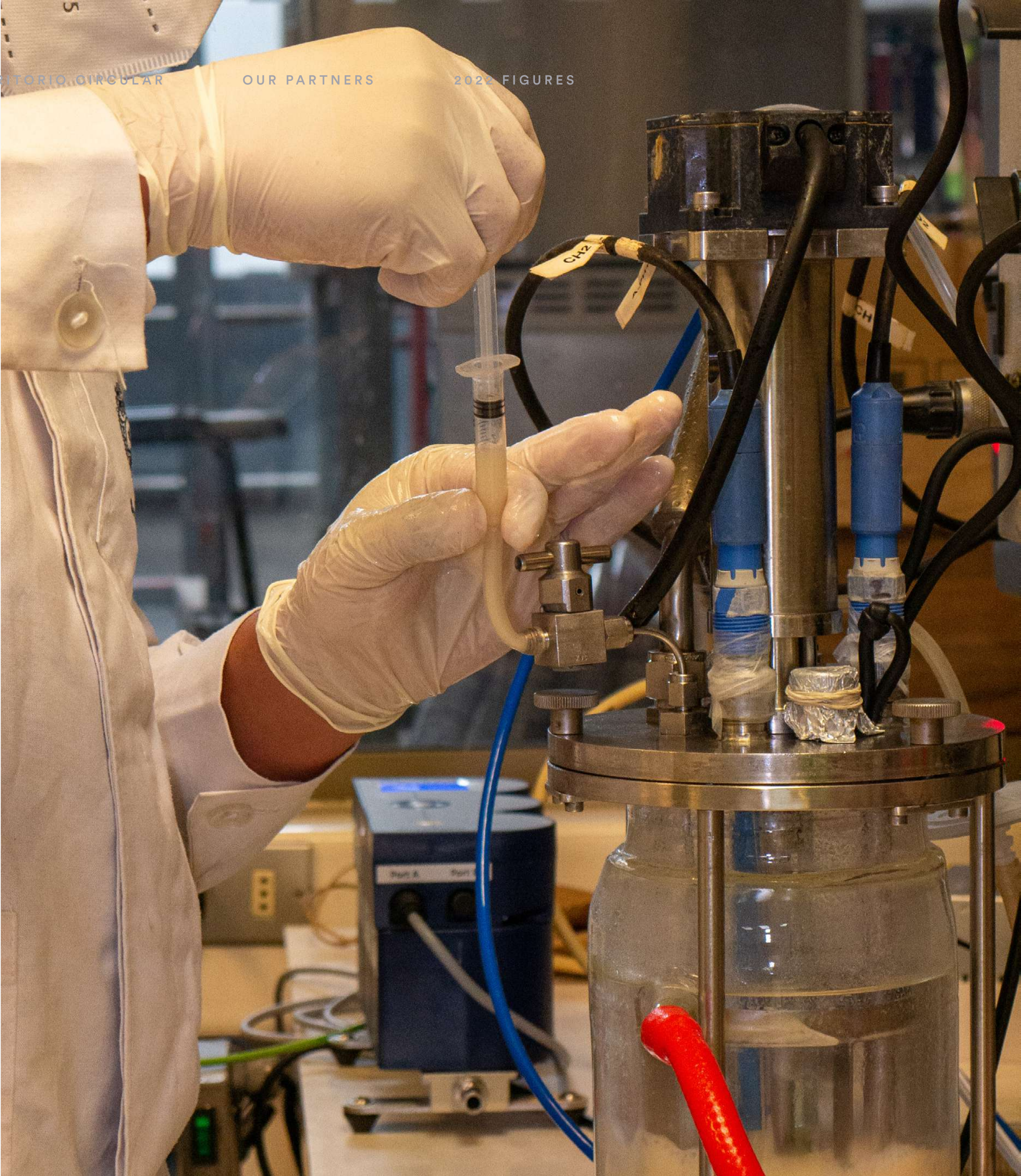
Supplements for more accessible crops

The other venture to be selected to develop its pilot scaling project was Citokin+. Developed by DICTUC, with the support of the ADAMA company, it consists of a yeast that hyper-produces trans-zeatin, capable of synthesizing 20 milligrams of cytokinins per hour; this plant hormone is used as a supplement to enhance crop growth. This process could be a much more cost-efficient alternative to the usual extraction means.

This 2022, cytokinin lab production tripled, reaching 1.5 grams of the compound per liter. In addition, they managed to move from a one-liter reactor to a 50-liter reactor, achieving similar concentrations to those in the smaller reactors. Part of this progress was accomplished with a multidisciplinary team that included Biochemistry and Engineering students from Pontificia Universidad Católica.

“Follow-up by CBT directives during this process has been important. These monthly meetings allowed us to be up to date, organizing the results progressively. That has been very positive.”

Eduardo Agosín
Citokin+ Project Director



International Certificate in Bio-business

A crossover of scientific knowledge, industry, and the business world

The first CBT International Certificate in Bio-business kicked off in October 2022, extending until May 2023. The initiative aims at building bridges between the worlds of science and business, promoting the development of biotech-based projects.

Strategic Partnerships



Universidad de
los Andes

Universidad de Los Andes: Co-certifying Partner. Developing, implementing, and managing the program curriculum. Additionally, providing assistance to students in developing their final projects.



UC San Diego

UCSD: Co-certifying Partner. Developing and implementing the program curriculum.

Universidad de Los Andes and the University of California San Diego, together with the CBT, were in charge of implementing the program. The certificate is divided into four courses dealing with business creation, entrepreneurship, innovation, and biotechnology. Over the second portion of the program, the 18 students enrolled in this first edition must develop a business model linked to content seen in class. Experts in entrepreneurship and innovation from Universidad de los Andes will assist in this task.

Hugo Villar, Director of Outreach at UCSD, highlights: “The program gives participants access to professionals who are involved in the biotech industry in one of its most active regions. Likewise, it is contextualized to the Latin American environment, where the experiences of developed nations are not always perfectly applicable,

in a medium that is culturally and economically different. We have experienced professionals to carry out a transfer of knowledge that is productive and goes beyond theoretical aspects.”

For his part, Anil Sadarangani, Director of Innovation at the Universidad de los Andes, highlights the contribution the certificate makes to biotech industry development at the local level: “Our dream is that Chile becomes a hub for international biotechnological development, and we believe this program is one of the first stones we are laying down to build this house. In my opinion, biotech is one of the technologies that are transforming the 21st century, and we believe it will surely generate the best solutions to the problems we face today: climate crisis, biodiversity, sustainable foods.”



“There are people from companies enrolled in this certificate program who know business, who learn a lot about biotechnology, and how to do business with it. On the other hand, we have biotech people who want to learn business. The idea behind the certificate is for you to do whatever you want, whether it’s boosting your company or starting a business. This is important to highlight; the certificate seeks to enhance the biotech business development.”

Guillermo Badillo
CBT Academic Coordinator

The Students' Voices

“My venture is in biotechnology, so I think it is essential to understand about this business area, how it works, what are the differences with conventional businesses, what are the investors who bet on this type of projects looking for, what are the existing growth strategies, among other matters.”

Paola Aceituno

Begood SpA Founder of Research and Development

“Relationships with classmates and teachers are very important, because they generate a strong support network to help and support each other. When we develop these ties between people focusing on bio-business and the translation of new technologies, we strengthen the entire network that drives Chilean R&D&I and move quicker through the launch of a technology and its adoption.”

Camila Wilkens

ICTIO Biotechnologies Technology Transfer Coordinator

The Teachers' Assessment

“This program gives executives translatable skills, for the multiple types of biotech business models and corporate structures, and about the importance of intellectual property, to deliver sustainable competitive advantages. In addition, it provides students with a solid foundation on what makes the biotech industry unique among every other industry.”

Williams Ettouati

Associate Professor in the International Bio-business Certificate program, Professor at UC San Diego School of Pharmaceutical Sciences

“This program goes beyond the typical mechanics of entrepreneurship and presents students with important methodological tools and frameworks that can help them organize, examine, test, and accelerate their learning and, most importantly, their entrepreneurship ‘practice.’”

Gregory Horowitz

Associate Professor in the International Bio-business Certificate program, Director of Innovation at UC San Diego

Working Groups

Better Regulations for Better Technology

Public-private working groups are an initiative established, in 2021, by the CBT and other actors and collaborating institutions, to foster the emergence of enabling conditions to create and implement biotech solutions, through the development of new regulatory frameworks for these industries and their products. During 2022, the work of these groups continued to move forward.

Their members held meetings and continued to work on addressing their respective challenges together with the CBT, which plays an articulating role in monitoring their respective agendas. The three working groups are: Biobanks, Microorganisms (MOI) and Algae Collections, and Cultured Meat.

Cultured Meat Working Group

Participants:

CBT, Agrosuper, Luyef Biotechnologies, Universidad de Chile Biotechnology and Bioengineering Center, Universidad de Los Andes, and Universidad Católica.



2022 Achievements:

- The working group members, along with the CBT and the Chilean Agency for Food Quality and Safety (ACHIPIA), participated in consultation for the Chilean Codex Alimentarius. The need to include cultured meat production and other related regulatory aspects were also addressed.
- On May 26, the seminar “Cultured meat: a path to sustainable food” took place, with experts analyzing the potential and gaps for cultured meat development. Participants included María Paz Merino, CBT Deputy Director of Technology; Nutropy CEO Nathalie Rolland; Kris Blanchard, CEO at Luyef Biotechnologies; and Felipe Aldunate, Open Innovation Leader at Agrosuper’s Innovation Department.

“There is a very wide market in which we can move forward, but first we need to have a collection of cultures, which requires engaging the national network, and understanding which the best way is to preserve microorganisms. To have a market in microorganisms, we also have to make strides in an international network, get connected, and learn other countries’ rules, laws, and regulations.”

Cledir Santos
Founder and Director of the Chilean Type Culture Collection (CCCT) Universidad de la Frontera

Microorganisms and Algae Working Group

Participants:

CBT, Universidad de la Frontera Microbiological Resources Bank, Universidad de Chile Chilean Fungal Collection (ChFC), Universidad Austral Chilean Collection of Filamentous Fungi and Yeasts, Universidad de Atacama Collection of Atacama Desert Microalgae, Universidad de Santiago de Chile Chilean Collection of Fermented Beverage Microorganisms, Chilean Collection of Clinical Microorganism Strains of the Chilean Clinical Mycology Network, Universidad de Valparaiso Chilean Collection of Emerging Pathogenic Fungi, Chilean Antarctic Institute, and the Convention on Biological Weapons of the Department of Control of Military Material and Precursors of the Chilean Army

2022 Achievements:

I think that for achievements verbs should be in the past.

- We had initial contact with directives from the Microbial Resource Research Infrastructure (MIRRI), an infrastructure of European Union crop collections. An institution representative was in Chile, and there is great interest in the country joining its network.
- The World Microorganisms Data Center made initial contact with the network. The organization made a financial donation, through Universidad de la Frontera, to organize the event “Open Science of Microbiology”, which was held in Pucón.
- We worked together with INIA Quilamapu and Universidad Católica on quality control issues. Both institutions have been appointed as International Depository Authorities of Microorganisms for Patent Purposes [regulated by the World Intellectual Property Organization], which strengthens national and international culture collection networks.
- The working group split into different committees, according to their members’ specializations, to restructure the network, develop lines of work, and identify potential new members.



Biobanks Working Group

Participants:

CBT, Universidad del Desarrollo Bioethics and Law Observatory, Universidad de Chile Biobanks, Universidad Católica, Arturo López Pérez Foundation, Luis Calvo Mackenna Hospital, Universidad de la Frontera, Universidad de Valparaíso, Universidad Austral, Advanced Center for Chronic Diseases [ACCDiS], the MAUCO Cohort study, Chilean Alliance of Patient Groups, FENPOF, FECHER, MINSAL, ANID, and ISP.

2022 Achievements:

- We completed the creation and development process of the “Regulatory proposal for biobanks for research purposes”. The final draft of the report was finished, containing the proposed legal and technical standards, background and context on the world of biobanking for biomedical research, a comparative law study, and an account of the working group’s progress. The result was made public on April 28, at a webinar with experts that worked on the project and representatives of the National Cancer Commission, and the Executive Secretariat of the Cincel Corporation (the Consortium for the Access to Electronic Scientific Information) – the latter position appointed directly by ANID.
- The post-project phase kicked off, which consists in transmitting, communicating, and disseminating the proposal to authorities and experts that have an incidence in the creation of regulations and regulatory frameworks in this field. An example was our attendance to the Annual Meeting of the Chilean Society of Genetics, held in November in Punta Arenas.

“The report seeks to promote a legal and technical standard that enables driving and developing platforms that collect biological samples for research purposes. If there is a regulation, everyone will align themselves with quality institutions that work with the same standard. Therefore, this will allow us to have a stronger development in biomedicine and biotechnology in Chile. The search for new treatments will help improve the population’s health and better face critical emergency situations in the country.”

Juan Alberto Lecaros

Bioethics and Law Observatory Director
Clínica Alemana Faculty of Medicine at Universidad del Desarrollo





CBT Without Borders

“In 2022, members of our team had the chance to travel to other countries, not only to publicize what we are doing, but also to strengthen ties with authorities, universities, and biotech companies in those places. This network will allow us to connect the challenges in Chilean industry with the world of entrepreneurship and innovation around the world.”

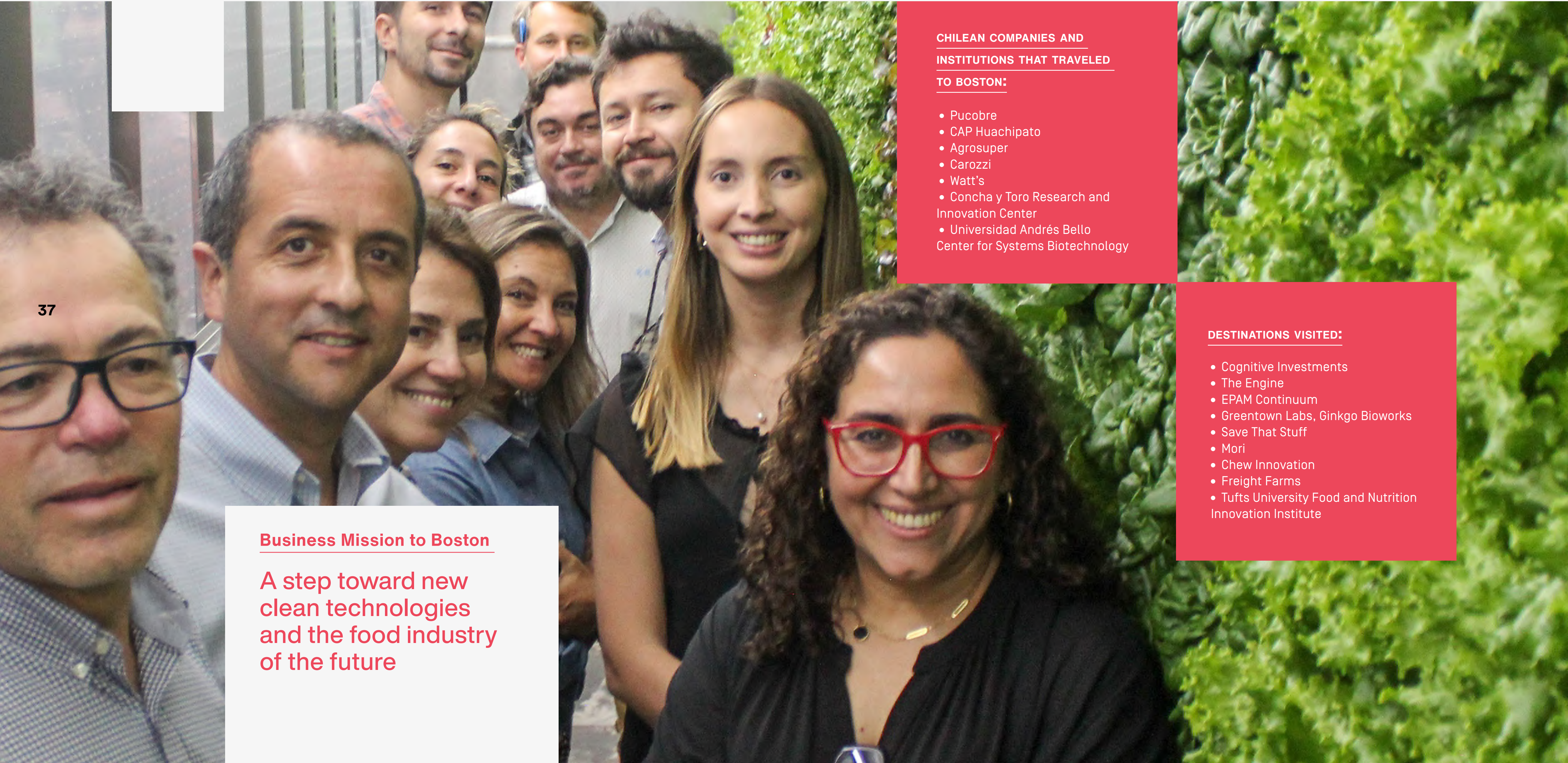
Alan García
SOFIFA Hub Executive Director

The CBT objective is to be an articulator for the different actors in the entrepreneurship and innovation ecosystem, to promote the application of biotechnology in different economic sectors, to aid in overcoming regulatory barriers, and drive knowledge creation regarding this type of technology in the country. To this end, generating networks that enable the emergence of collaborative spaces is essential. Hence, the CBT has placed one of its focal points on encouraging such initiatives, where partic-

ipants can not only discuss their industries and specific needs, but also become permeated with the new ideas and inspiring solutions being developed in other countries. From these meetings, different virtuous circles of collaboration crop up, opening the door for us to join efforts, enhance our work, and move forward towards a common goal together.

Featured below are three overseas events the CBT and SOFOFA Hub attended, reinforcing the call together with other

organizations: the Business Mission to Boston, ChileMass Innovation Day, and the 2022 Biohunt Summit. All these instances gave rise to spaces for collaboration, where participating companies and startups shared experiences, publicized their own projects, and inspired each other.



Business Mission to Boston

A step toward new clean technologies and the food industry of the future

CHILEAN COMPANIES AND INSTITUTIONS THAT TRAVELED TO BOSTON:

- Pucobre
- CAP Huachipato
- Agrosuper
- Carozzi
- Watt's
- Concha y Toro Research and Innovation Center
- Universidad Andrés Bello Center for Systems Biotechnology

DESTINATIONS VISITED:

- Cognitive Investments
- The Engine
- EPAM Continuum
- Greentown Labs, Ginkgo Bioworks
- Save That Stuff
- Mori
- Chew Innovation
- Freight Farms
- Tufts University Food and Nutrition Innovation Institute

We embarked on a Business Mission to Boston, United States, from June 6 to 10, 2022, under the slogan “Sustainability and Beyond: Rethinking Clean Technologies and the Food of the Future”. The tour was convened and planned by the CBT, with the collaboration of ChileMass, a non-profit organization based in Massachusetts whose aim is to encourage collaboration between Chile, the US, and other countries, for energy, technology, education, and venture capital development. The initiative was also backed by CORFO and ANID.

The mission objective was to become familiar with the American city’s innovation ecosystem and to seek out possible

biotech solutions for our local mining and food industries. Participating executives and professionals attended meetings and panels on the challenges of their respective fields. They also went on visits to different startups, laboratories, innovation centers, and important institutions, such as MIT and Tufts University, to have an interdisciplinary approach to the search for common goals. The various meetings specifically addressed the application of biotechnology in industrial processes, sustainability, circular economy, and renewable energies, along with the promotion of synergies between different sectors to address each other’s challenges.

“It was an excellent chance not just to learn about biotech innovations in Massachusetts, but also to interact with the other members of the delegation, and better understand their challenges.”

Pilar Parada
UNAB

“Being immersed in an innovation ecosystem for a week opens your mind, allows you to connect, and lets you link internal needs with different solutions.”

Cecilia Silva
Watt’s

“Seeing what people are doing in innovation and biotechnology research in a country that is at the forefront of these issues is a great learning experience.”

Wilfredo Tabilo
Pucobre



“We can build partnerships with this world-class knowledge cluster, leveraging Chilean talent and human capital. This way, we can test and implement state-of-the-art technologies in the natural laboratory that is the food and beverage industry in Chile.”

Fernanda Soza
SOFOFA Hub Director

“Our goal was for companies to learn about biotechnology in a hub as important as Boston, and to see powerful industrial applications. The agenda focused on food and biotech, but we also observed technologies associated with metallurgy and steelmaking. We realized the crossover of disciplines generates very useful synergies across industries.”

María Paz Merino
CBT Deputy Director of Technology

Travel Stories

CAP Huachipato was one of the SOFOFA partners that came on this mission, with the intention of learning about the local low-carbon steel production ecosystem. The itinerary included interacting with teams from major institutions, such as The Engine, an MIT platform that finances and promotes the use of renewable energy. In that regard, it was a revealing experience in terms of the possibilities biotech offers the steel industry, such as the treatment of organic residues from the agri-food industry as a means to produce clean energy.

“We found many opportunities in the field of fuels; in the search for solutions to find alternative fuels, as well as mineral exploitation systems. We learned how this contributes to the topic of circular economy, and how different companies can find complementary solutions to mutually benefit from waste disposal, transforming it into products that can have a positive impact on other industries.”

Marco Carrasco
CAP Huachipato Innovation and Development Manager



On the mission: **Carlos Morales** [Pucobre] and **Marco Carrasco** [CAP Huachipato]

Carozzi was another company that traveled to Boston, in order to get acquainted with the innovation ecosystem in the food industry. One of the highlights was the relationship between private industry, science, and academia, who collaborate to provide solutions to challenges. This became evident during a visit to the Tufts University



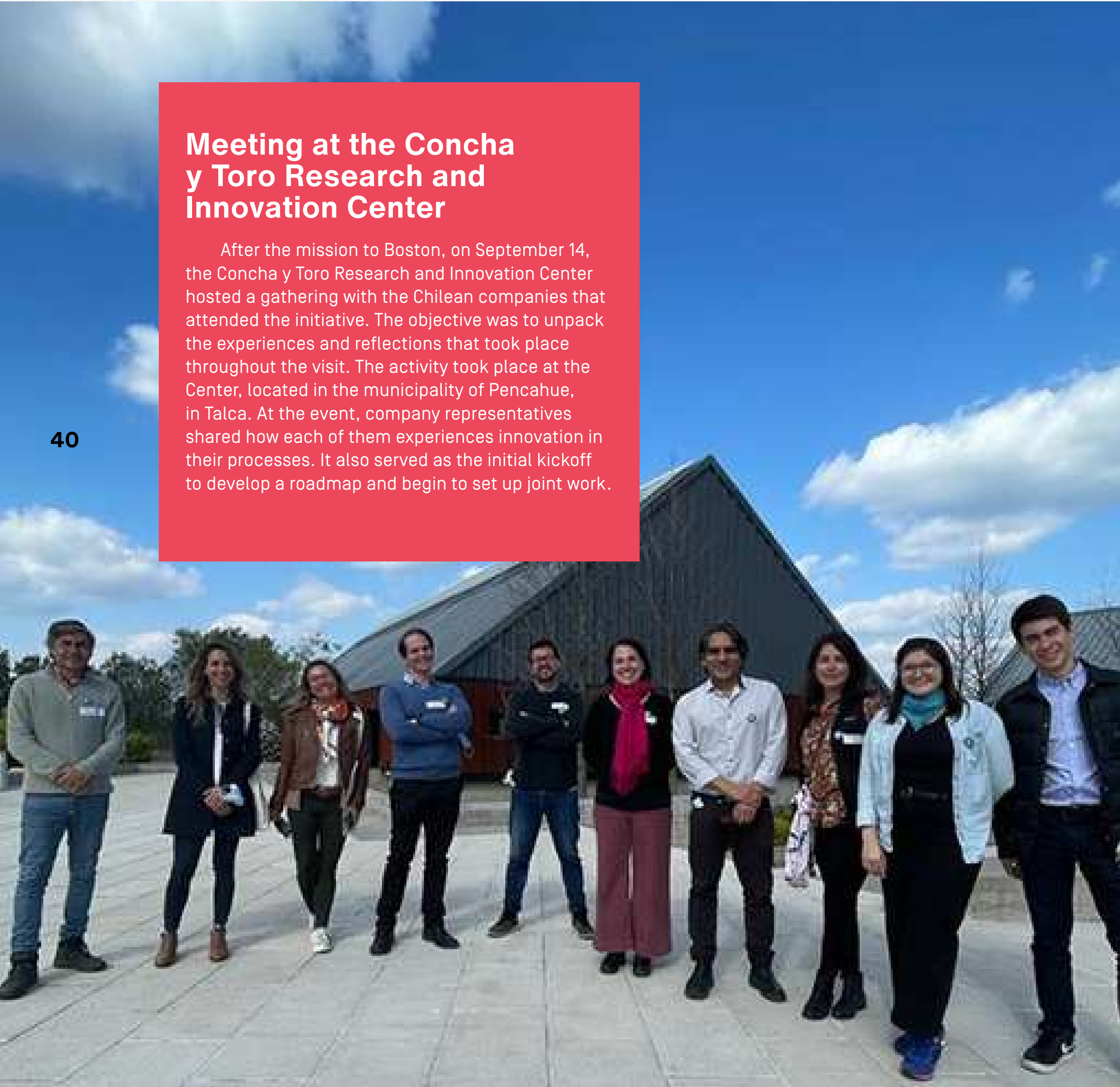
Food and Nutrition Innovation Institute, whose Council brings some of the most important companies in the food industry together with players from the academic world.

“It was great to understand that, despite the highly diverse nature of the industries that attended, there were still points of convergence to be found. It also meant observing an ecosystem that works together with academia. Its role is very clear, working hand in hand with the private sector, and driving initiatives from the ground up. In Chile, we need more collaborative work, and the research process to stem from real company problems.”

Luz María Rojas
Carozzi Corporate Sustainability and Marketing Manager

Meeting at the Concha y Toro Research and Innovation Center

After the mission to Boston, on September 14, the Concha y Toro Research and Innovation Center hosted a gathering with the Chilean companies that attended the initiative. The objective was to unpack the experiences and reflections that took place throughout the visit. The activity took place at the Center, located in the municipality of Péncahue, in Talca. At the event, company representatives shared how each of them experiences innovation in their processes. It also served as the initial kickoff to develop a roadmap and begin to set up joint work.



Tufts Nutrition Council

One of the important visits in the missions was to the Tufts University Nutrition Council, which brings together the world's leading food companies, to promote science and sustainability in the challenges facing the industry. This meeting was especially beneficial for Agrosuper and Carozzi, who received invitations to participate in the initiative, which is a gateway to the new trends in food, science, health, sustainability, and global industry connectivity.



ChileMass Innovation Day

Opportunities in the Chilean food industry

Each year, ChileMass – a non-profit organization that encourages collaboration in economic and innovation matters, between the Chilean government, the United States, and other countries in the region – hosts the ChileMass Innovation Day, an event that functions a meeting ground for different players in their nation’s innovation ecosystem. SOFOFA Hub, one of the organization’s strategic partners, was invited to attend the 2022 edition, held on October 6 and 7, at Harvard University (Boston) and MIT (Cambridge).

SOFOFA Hub Executive Director Alan Garcia spoke at the “Food of the Future” panel, where he presented challenges and opportunities in the Chilean food industry. He also addressed SOFOFA Hub’s role as an articulator for relationships and opportunities between Boston’s tech development system and the food industry in our country.

ChileMass Innovation Day was hosted at some of the most important US learning institutions, including the MIT Sloan Latin American Office and the David Rockefeller Center for Latin American Studies at Harvard. During the instance, specialists spoke on issues relating to entrepreneurship, science, food, technology, and climate change.

280 people from Chile, the United States, and other Latin American countries attended the event.



In an interview with DF Lab, SOFOFA Hub Executive Director Alan Garcia discussed the specific attributes of the Chilean food industry. In the article, he remarked how SOFOFA Hub is implementing initiatives to drive innovation in this sector, such as commercial missions, workshops, and actions to link stakeholders. He also explained that CBT projects aim to connect this industry with innovation and R&D players in Chile and the rest of the world, to develop solutions together. “We want to see how to foster a permanent flow between companies in the sector and research centers, so they can really become project incubators,” he said.

2022 Biohunt Summit

Building networks in Latin America and Miami

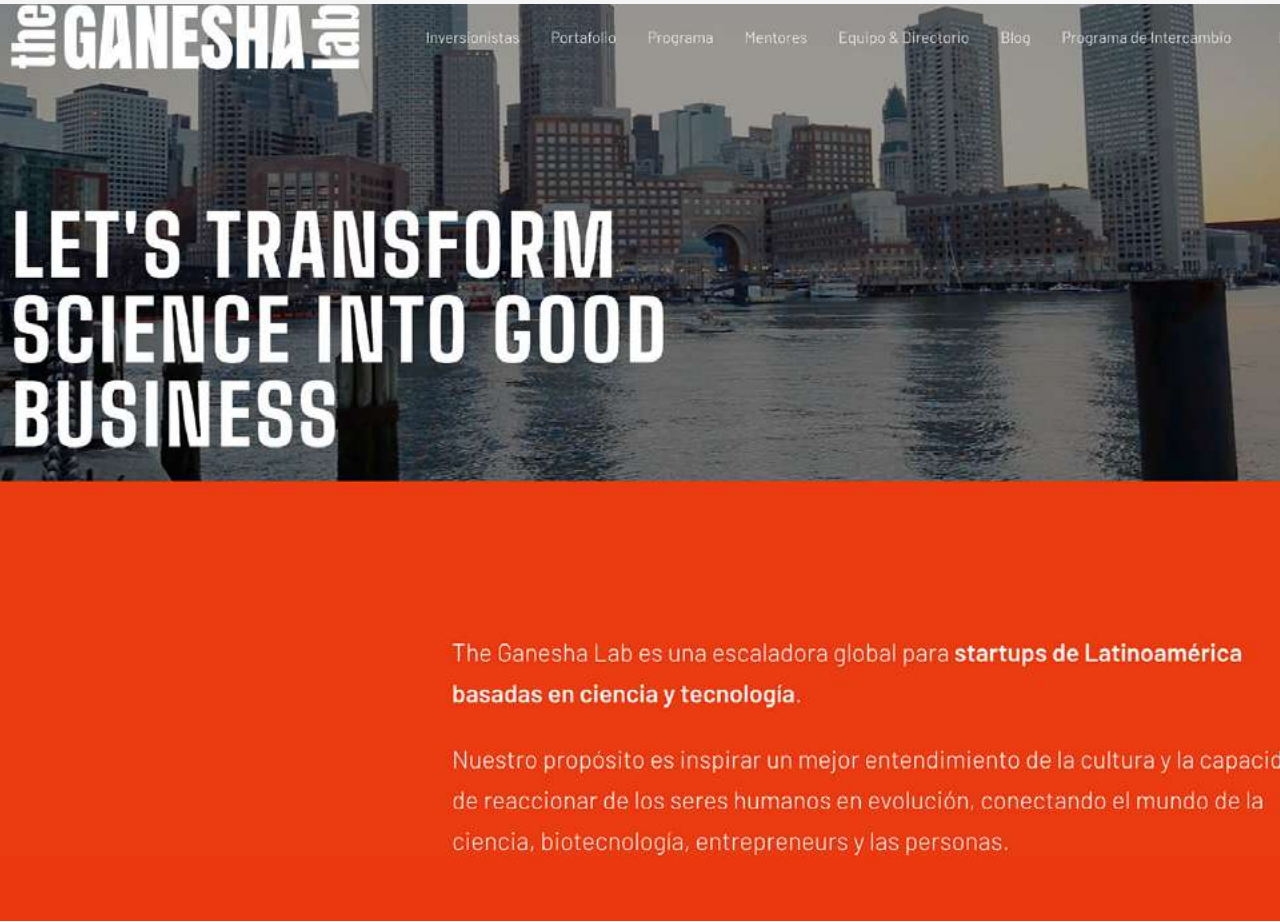
The Ganesha Lab, a Chilean-based scale-up for science and technology start-ups in Latin America, invited the CBT to help organize and participate in the 2022 Biohunt Summit, which took place on November 9 and 10. The event, which hosted seven countries and 350 participants, was held in Miami (United States), given the prominence the city has garnered, as a hub for tech development and investment.

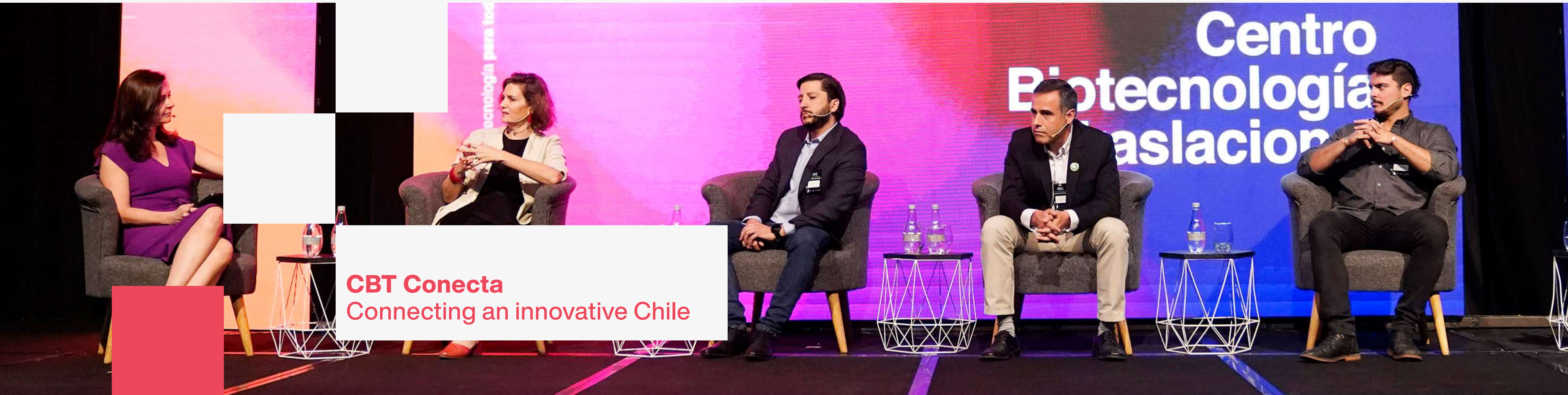
CBT Committee member Eduardo Abeliuk represented the center at the event and spoke about the SOFOFA Hub mission and about specific CBT activities held to strengthen biotechnology in Chile. It was a good opportunity to become familiar with what other projects in the region are doing, including Ganesha Lab itself. Among the Chilean startups in attendance was Rubisco Biotechnology, selected in the CBT’s 2021 Hemisferio Biotech call, who continue to work in 2022, scaling up their pilot project.

During these two days of meetings, there were many opportunities to become familiar with the ecosystem of entrepreneurship, innovation, and biotechnology in the region, through the participation of different Latin American actors, along with US investors. The instance featured biotech-related venture presentations in the food, health, and environment sectors; moments to socialize, at lunches and other, more casual gatherings; and also startup pitch sessions to a jury that included the CBT, to receive feedback on how to scale their projects.

“Groups like The Ganesha Lab and the CBT have the mission of connecting different factors in the innovation ecosystem and promoting biotech applications in the Chilean economy. This is why it made so much sense to support The Ganesha Lab in the event. Participating allowed me to come away with the experiences of companies and entrepreneurs that are rethinking how to solve problems through biotechnology, especially in the areas of food, health, and environment.”

Eduardo Abeliuk
CBT Committee Member





CBT Conecta Connecting an innovative Chile

“CBT Conecta is a series of meetings that gathers the entire ecosystem, but away from academic contexts. What we wanted was for those involved in biotech today, companies that have already taken that step, to have the chance to share their good experiences, to inspire others and to demonstrate its feasibility, thus breaking down initial entry barriers. We still struggle to work collaboratively, but when companies come together, even if they are from different fields, it generates a much more virtuous product.” .

María José Monti
CBT Community Relations Advisor

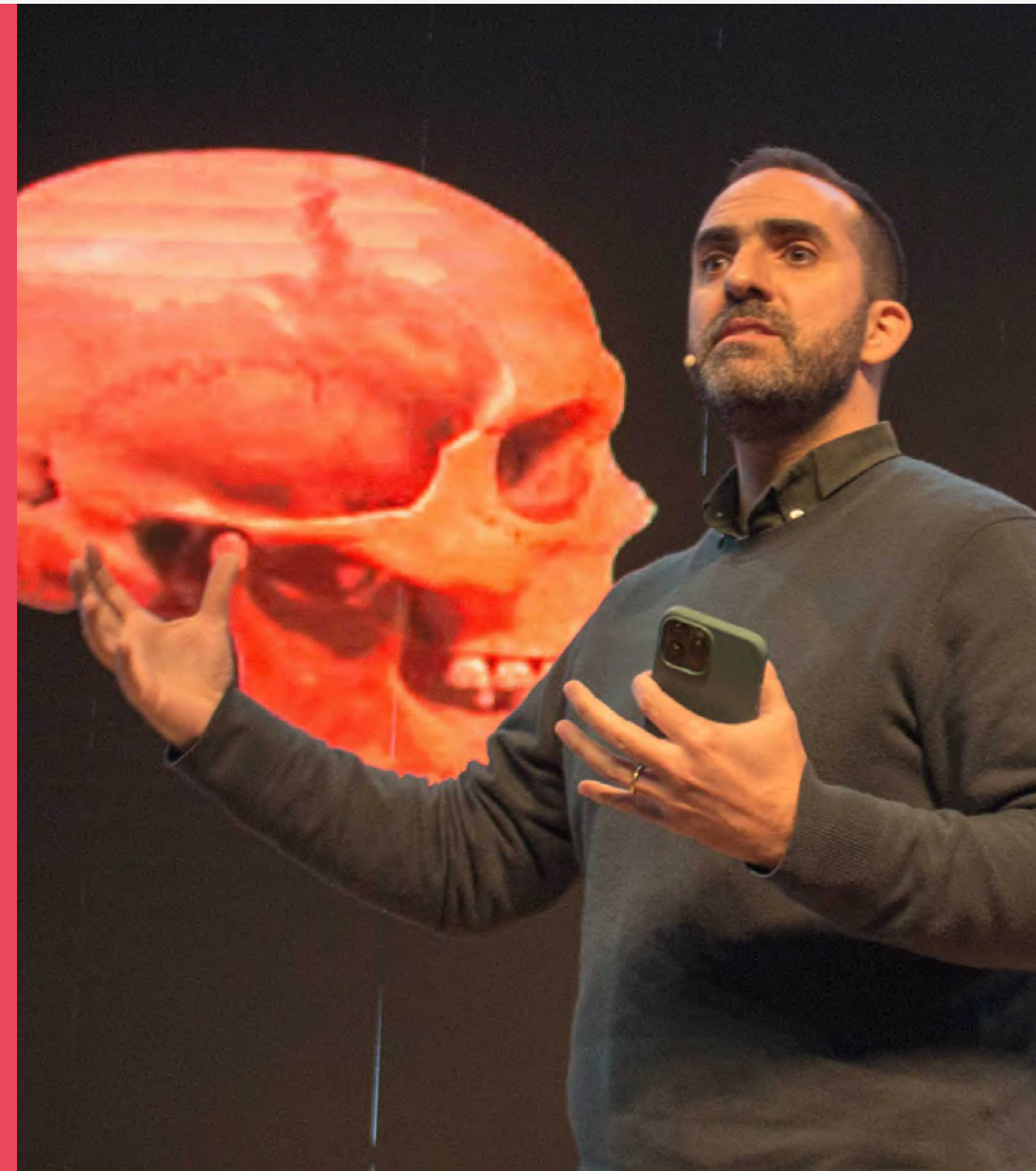
In collaboration with CORFO and ANID, the CBT Conecta initiative was launched in 2022, striving to generate meeting points to strengthen ties between learning/research institutions, startups, and big companies, and to enhance biotech development in Chile, to create solutions to the problems in diverse industries.

CBT Conecta emerged as part of a 2021 study of the dynamics in the innovation ecosystem, which established that the two factors generating more distancing within the environment are lack of information and trust.

CBT Connecta Los Lagos: A Regional Emphasis

Among its objectives, the initiative intends to put the focus on other regions in the country, different from the Metropolitan Region, thus helping to bring light to what is being done in the territories and to recognize their progress in innovation. Thus, Los Lagos Region was chosen for the first CBT Conecta gathering. The event was produced with the support of Endeavor Patagonia, an organization that convenes entrepreneurs from around the world, to promote the work of startups, and their contribution to the ecosystem.

Under the title “Southern Chile: A Hub for Bio-innovation”, the conference was held on August 31, at Teatro del Lago, in Frutillar. It brought together entrepreneurs, academics, business executives, and representatives of the public sector, to talk about how to face the main challenges in innovation and biotechnology in the area. The instance highlighted the interest of actors from different industries – including the aquaculture, livestock, and agricultural sectors – in technology generation and sustainable development, taking another step towards decentralization, and a more connected and collaborative country.



PANELISTS:

- Eduardo Wallach, Kura Biotech CEO
- Rebeca Galvez, Patagonia Biotechnology CEO
- Markus Schreyer, The Ganesha Lab CEO
- Maite Castro, Regional Ministry Secretary for Science, Technology, Knowledge, and Innovation in the Southern macro-zone
- Ximena Henzi, Nutraterra General Manager
- David Cantero, Head of Environmental Management at Cecinas Llanquihue
- Oscar Berrios, BioMar Product Manager
- Leo Prieto, Lemu CEO
- Geraldine Mlynarz, Ictio Biotech General Manager
- Fernando Casari, Agrícola Cran Chile CEO
- Arturo Clement, SalmónChile AG COB & CEO

CBT Conecta Santiago: Key Biotech Industry Players come together in the capital

The second CBT Conecta was held on October 21, 2022, at the W Hotel in Santiago. Representatives from startups and larger companies from the central area of the country were invited to generate common ground and future projects.

In addition to guest speaker keynotes, there were moments for sharing and dialogue, and instances for networking. Everything was carefully planned to encourage new links between both public and private representatives of the biotech innovation industry.

Important ecosystem players attended the event, including Matías Muchnick, CEO and founder of NotCo, who presented his keynote speech via streaming, from New York. Also in attendance was Silvia Díaz, Minister of Science, Technology, Knowledge, and Innovation, who was in charge of opening the conference. During her remarks, the dignitary highlighted the importance of startups in the current climate.

“Innovators and entrepreneurs are a fundamental pillar for what we, as a ministry, want to promote. We are strongly committed to trying to take this engine that you (at CBT) have developed so well, to further connect applied sciences at industries. Let’s work together. We need you, as a ministry, and we are committed to prove it,” Diaz said.

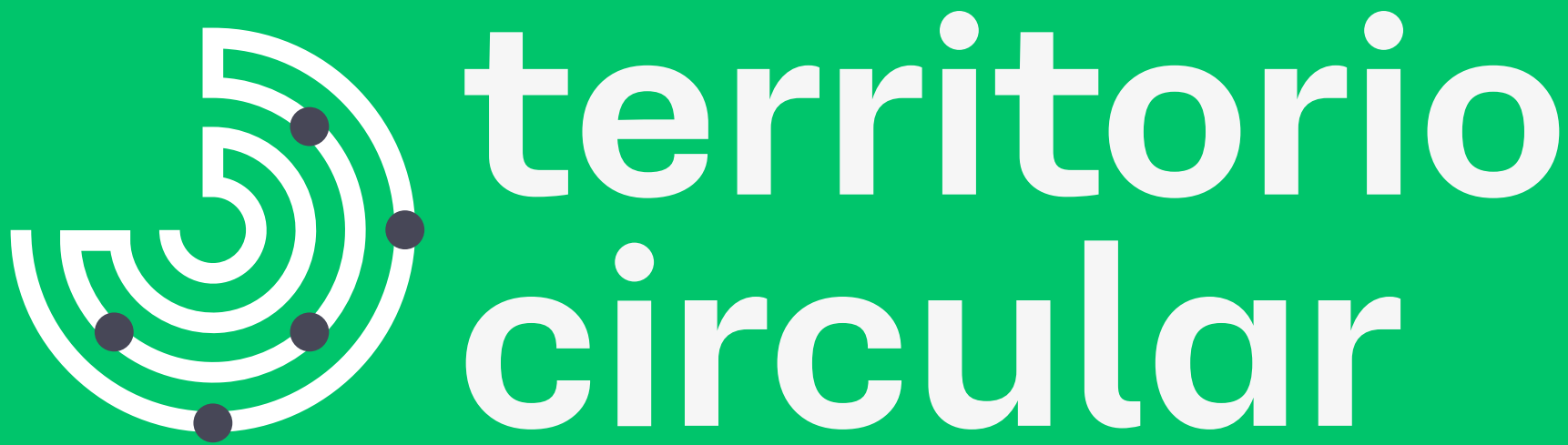
PANELISTS:

- Carolina Torrealba, UNAB Vice-Chancellor of Research and Doctoral Programs
- Rodrigo Arancibia, Executive Director at Cellus
- Álvaro González, Concha y Toro Research and Innovation Center Director
- Kike Rebolledo, Spora CEO
- Pablo Fernandez, Venturance VC Manager and General Partner at Zentynel VC
- Christian Meyer, Innovation Manager at Agrosuper
- Hans Pieringuer, CEO at Phage Lab
- Eduardo Zabala, Done Properly CEO
- Jennifer Alfaro, R&D Manager at Pharma Botanical Solutions and Chief Scientific Officer at Merkén Biotech
- Bernardita Araya, CMPC Ventures Manager
- Fernanda Soza, ChileMass Executive Director
- Jennyfer Salvo, Softpower Connections CEO
- Matías Muchnick, NotCo CEO



SOFOFA Hub is committed to driving circular economy in the country, promoting an industry that prioritizes responsible use of natural resources and innovates in the search for new sustainable solutions for its companies. .

Along these lines, our Territorio Circular program is responsible for monitoring progress along the Road Map for a Circular Chile by 2040.



Territorio Circular

United for a greener and more sustainable future

May 3, 2022, marked the official launch of the Territorio Circular program, a project led by SOFOFA Hub, and promoted by CORFO and the Ministry of the Environment, to monitor the implementation of the “Roadmap for a Circular Chile by 2040”. During its first year, the initiative made significant progress and focused on working especially with territories outside the Metropolitan region, to identify industrial symbiosis opportunities for a circular economy.

A little context: The Roadmap for a Circular Economy Mandate

In June 2021, the Ministry of the Environment, together with the Ministry of Economy, Development, and Tourism, the Sustainability and Climate Change Agency (ASSC), and CORFO, through the Chile Transforma program, published the “Roadmap for a Circular Chile by 2040”, with ambitious goals compiled into various actions. After an open call, in November of that year, SOFOFA Hub was chosen to

monitor the initiative, through the Territorio Circular program.

The Roadmap’s objective is for the public and private sectors to collaborate in promoting a regenerative circular economy that will lead Chile toward a sustainable, fair, and participatory development, where responsible management and consumption of natural resources is a priority. Along these lines, the role of Territorio Circular

is to accelerate the transition to a circular economy, through opportunities for connection between industry and the innovation and entrepreneurship ecosystem that promote sustainable development with a territorial integration outlook.

A Launch Full of Good Ideas

The official launch of Territorio Circular took place on May 3, 2022. The event was held at Cascara Foods, a startup that transforms fruit waste from juice companies into antioxidants and vitamins.

This process of waste valuation via industrial symbiosis illustrates the spirit of the Roadmap, whose objective is to promote productive development, innovation, and the articulation of productive value chains.

Present at the launch were Environment Minister Maisa Rojas, CORFO Executive Vice President José Miguel Benavente, SOFOFA Hub Executive Director Alan García, and Territorio Circular Program Manager Javier Obach.

3 specific Territorio Circular objectives

- Drive circular business models
- Promote knowledge
- Share results

4 lines of action

Enable

Create enabling conditions to foster fair, sustainable, and positive-impact business models.

Execute

Facilitate the implementation of circular projects by articulating companies and innovation and entrepreneurship ecosystems.

Communicate

Disseminate inspiring cases and the efforts of different actors involved in implementing the Roadmap, as well as knowledge generated on circular economy.

Monitor

Follow up on actions set out in the Roadmap and monitor program guidelines.



2022 Achievements:



Participatory Governance

49

We articulated participatory governance with representatives from the public and private worlds, trade unions, civil society, and academia. An Executive Committee and an Advisory Board were established for the program.

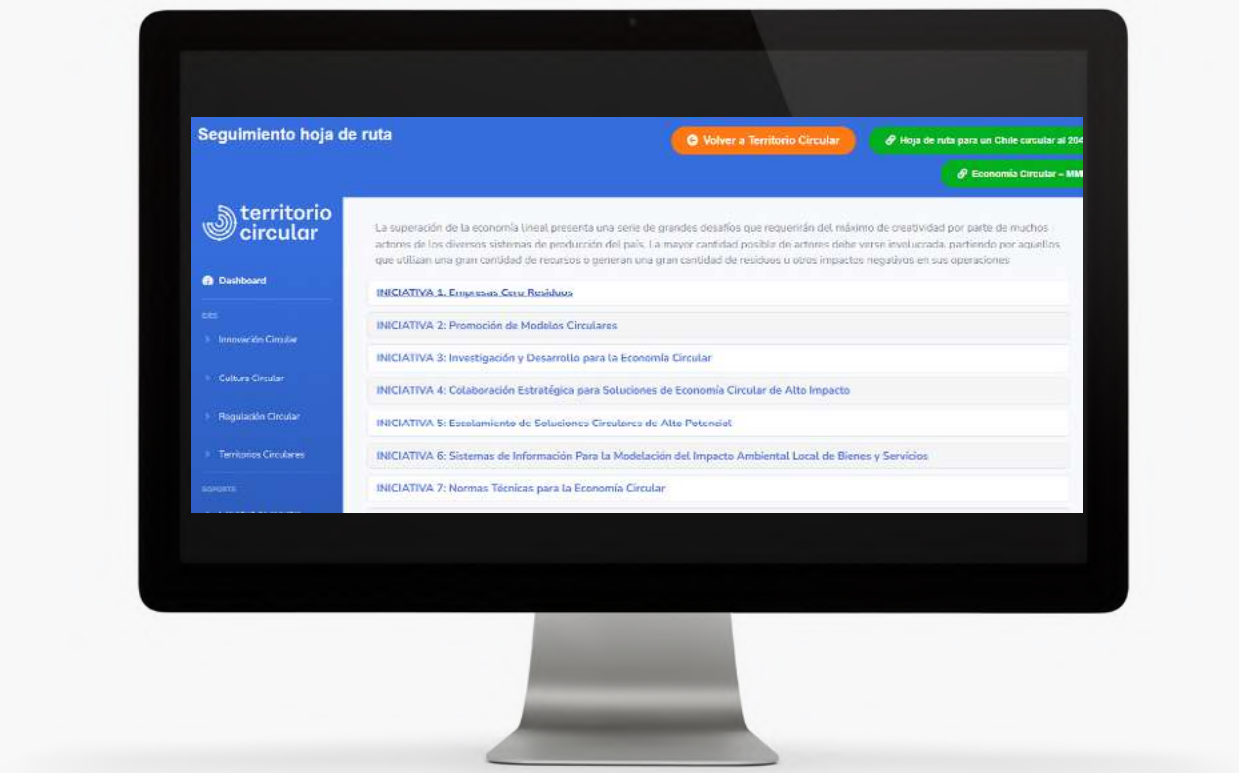
“In our role as ANIR, we have been able to share our opinion, presenting the reality of the recycling industry. For us, it is tremendously valuable to participate in these different activities; to express, show, and shed light on this sector’s reality, and also to make connections with actors in management and recovery of materials such as tires, plastics, etc.”

Antonia Biggs
ANIR General Manager,
Advisory Board Member



Dashboard

Roadmap Monitor Dashboard: keeping track of progress in circular economy standards and regulations.



“What I spotlight the most is collaborative work: the amount of meetings with a lot of people from different sectors, from different areas, working together to implement actions, first defining what you want to do, and then seeing how to implement it. The main thing for me was that; teamwork to get results.”

Alejandro Chacón
Ecodiseño.cl CEO, Advisory Board Member

<p>Program Coordination Unit</p> <p>SOFOfA Hub serves as the program’s technical advisors.</p>	<p>Project management boards from and with the territories</p> <p>Made up of the Regional Governments, Regional Ministry Secretaries, Regional CORFO offices, municipalities, companies, trade associations, academia and innovation centers, members of the civil society, and others.</p>
<p>Executive Committee</p> <p>Comprised of the Environment Ministry, CORFO, the Sustainability and Climate Change Agency, G100, Avina Foundation, and SOFOfA Hub.</p>	<p>Advisory Board</p> <p>Consisting of the Strategic Committee, active Transforma Programs, experts, and additional institutions and international agencies.</p>

3

Regions

Work with a Regional Focus:
Los Lagos, El Maule, and
Valparaíso (Casablanca)

Many Territorio Circular actions in 2022 were focused on these three regions. The reasons behind this: there are productive areas in these territories that are relevant to the national economy and, therefore, to circular economy; and we identified companies there that had an interest in turning towards circularity and sustainability.

In each region, project management boards were set up, with representatives from public institutions and from the business sector. In addition, we carried out a consultancy entitled “Identification of collective or district projects based on Circular Economy that enable the recovery of non-hazardous industrial waste in three study zones.” Companies were invited to workshops to establish circular economy opportunities in their respective territories. A total of 359 opportunities were identified.



Los Lagos
Region

Tuesday, October 18,
Bellavista Hotel, Puerto
Varas, Los Lagos.

56

Actors

27

Companies

150

Circular
opportunities
identified



Maule
Region

Thursday, November 10,
Main Hall of the Maule
Regional Government
building, Talca.

30

Actors

17

Companies

99

Circular
opportunities
identified



Casablanca,
Valparaíso
Region

Wednesday,
November 23,
Veramonte Vineyards.

20

Actors

10

Companies

110

Circular
opportunities
identified

4

Training

175

People trained in Circular Economy subjects, through collaborations with workshop cycles, postgraduate programs, and others.

5

Demo Days

153

Companies attended the Circular Economy Demo Days, organized with the support of CORFO, SOFOFA Hub, and LCBA. These instances sought to generate ties among industries and the innovation and entrepreneurship ecosystem, encouraging collaboration toward a circular economy, among companies and technology providers, with special attention on the three territorial focal points mentioned previously (Los Lagos, Valparaíso, and El Maule).

6

European Union Circular Economy Tour

Between October 21 and 29, representatives of the Chilean waste management ecosystem toured across different countries in Europe, in a mission organized by the European Union's Circular Plastic in the Americas Program (CPAP). The program aims to strengthen relations with Chile, through initiatives for the development of circular economy. During the tour, we sought to exchange experiences on legislative and technical advances to overcome linear economy. The trip brought together representatives from Fundación Chile, SOFOFA Hub, ASIPLA, ANIR, ReSimple, and Msur.

The tour included visits to destinations such as K (Düsseldorf, Germany), the world's most important trade fair on waste and plastics; the Cure company (Eindhoven, The Netherlands), which is responsible for managing three municipalities in that country; the Fostplus home waste management system (Brussels, Belgium); and the Sycotom plant (Paris, France).



Scale 360°

Concrete Circular Solutions to Industry Challenges

SOFOFA Hub's Scale 360° Program, an initiative developed together with the WEF (World Economic Forum) and driven during 2021 and 2022, promotes the transition of companies to a circular economy through industrial symbiosis. To this end, 15 companies, representing the seven main productive sectors in the country, identified 150 circular economy opportunities. 16 of these challenges were prioritized, and several are currently under development, within the framework of Territorio Circular program initiatives.

Assessment:

How do you rate this first year of Territorio Circular?

“It was a very dynamic year because we had the challenge of building trust and credibility, but I think we managed to put together a good team. Together with SOFOFA Hub, we have been working in a coordinated and seamless effort, meeting with many companies interested in moving forward. One of the highlights of this first year has been the good reception in the territories. There are many expectations regarding this program.”

Felipe Ahumada
Transforma Economía Circular
CORFO Program Coordinator

“Territorio Circular set the challenge for itself of not being a program that is exclusive to Santiago. Therefore, all workshops were carried out in regions, which is super valuable because the easy thing is to always remain in the capital. Plus, there was articulation work, and a monitoring platform was set up, where you can see what each actor is doing.”

Tomás Saieg
Head of the Circular Economy Bureau at the Environment Ministry, Chairman of the Territorio Circular program Executive Committee

Learning instances:

Training, Critical Mass, and Collaborative Work: Reflections on Territorio Circular in 2022

Through various regional workshops that were part of the program’s initiatives in 2022, we saw the importance of connecting companies within a single territory, as many of them have common challenges where common solutions could be applied. However, instances for collaboration between different productive sectors are not always possible, so linking several companies seeking to accelerate their transition to a circular economy is essential.

Hand in hand with this, it is essential to generate critical mass to drive new business models that enable articulating a supply and demand for more circular products and/or services. A company

alone will face greater difficulties in moving towards circular economy models, without the articulation of an ecosystem.

It is necessary to consider “upstream and downstream” from a business to facilitate economies of scale, enabling infrastructures, and/or the necessary regulations, among other conditions that help us make strides in these areas. Also, there is a perceived lack of knowledge in many actors. Circular economy is thought to be synonymous with recycling, which is why training and education on circular economy in Chile must continue to be encouraged.

Javier Obach
Territorio Circular Program Manager



Our
partnerships
in 2022

53

Enterprise Singapore / Australian Embassy in Chile (AusTrade) / UDD Ventures / Incuba UdeC / UC Innovation Center / Endeavor / ScaleX / G100 / Broota / Incubatec UFRO / UDT (U. de Concepción Technological Development Unit) / Climatech Chile / Dadneo / Austral Capital / Sustainability and Climate Change Agency / Avina Foundation / Environment Ministry / Asipla / Resimple / Ecodesign.cl / EuroChile / Sercotec / ChileMass

The Ganesha Lab / ABPDU (Advanced Biofuels and Bioproducts Process Development Unit) at the Lawrence Berkeley National Laboratory / Hubtec Chile / APTA Hub / Know Hub / CENS (National Center for Health Information Systems) / INRIA Chile / Universidad Católica del Maule / Universidad Mayor / Universidad Austral

Canadian Embassy in Chile / MaRS Innovation District / Business Finland / German Entrepreneurship / Berlin Innovation Agency (BIA) / INAM (Innovation Network for Advanced Materials) / German Chamber of Commerce in Chile / Bayern Chamber of Commerce in Chile / CzechTrade / Israel Innovation Authority / Embassy of Israel in Chile

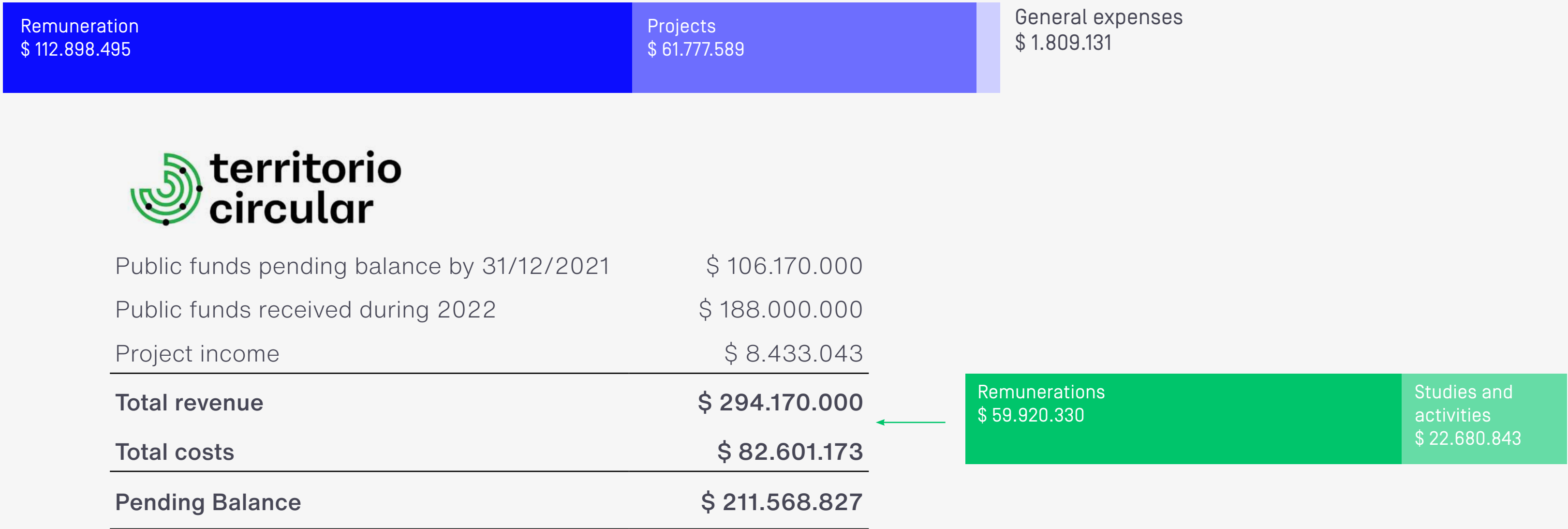
KIT (Karlsruhe Institute of Technology) / IECO (Institute of Eco-Industrial Development) / Low Carbon Business Action Latam / ACVC (Chilean Venture Capital Association) / CORFO (Chilean Production Development Corporation) / ANID (National Agency for Research and Development)

Funds uses and applications

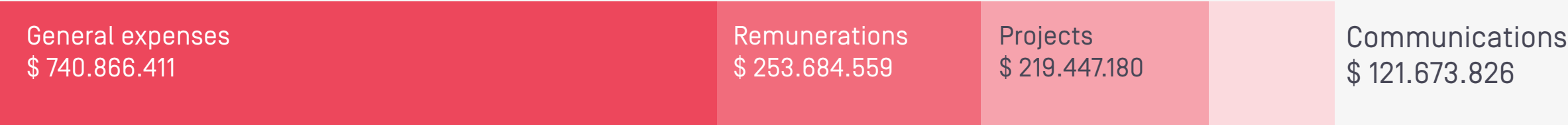
54

S O F O F A H U B

2021 Balance	\$ 90.915.136
Partner Member Fees	\$ 121.855.950
Project revenue	\$ 65.838.920
Total income	\$ 278.610.006
Total costs	\$ 176.485.215
Cash balance	\$ 102.124.791



Public funds pending balance by 31/12/2021	\$ 1.761.125.912
Public funds received during 2022	\$ 1.120.000.000
Project income	\$ 8.433.043
Total revenue	\$ 2.889.558.955
Total costs	\$ 1.335.671.976
Pending Balance	\$ 1.553.886.979



SOFOFA H U B

General Direction
Andrea Guzmán G.

Concept and edition
Memoria Creativa

Art Direction
Camila Berger



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