

# CircularEconomy4Colombia

## Innovation Challenge

### Innovations' Booklet



**The CircularEconomy4Colombia  
Innovation Challenge is powered by:**



**Co-organized with:**



The **CircularEconomy4Colombia Innovation Challenge** is an initiative designed to support Colombia's transition toward a circular economy in the agri-food sector. Through this challenge, we have identified and supported early-stage, high-impact solutions, backed by science and adapted to the local context, that promote efficient resource use, waste reduction, and sustainable development in Colombia.

The call for applications attracted more than 400 submissions across Colombia and beyond. Following a rigorous selection process, 21 promising teams participated in an intensive in-person bootcamp, where they refined their business models, strengthened their solutions, and built lasting connections within Colombia's circular economy ecosystem. From this group, 10 outstanding teams were selected for a three-month intensive acceleration program designed to help them scale their solutions, track key metrics, experiment, and refine their business models. Throughout the program, they received specialized mentorship, masterclasses from CGIAR scientists, expert guidance from partners, and tailored support to maximize their growth.

The CircularEconomy4Colombia Demo Day, held on March 11, 2025, marked the culmination of this challenge, where the acceleration program teams, along with five additional growth-stage startups identified during the program, presented their innovative solutions to investors, industry leaders, and key players in Colombia's sustainability and innovation ecosystem.

**This booklet showcases the CircularEconomy4Colombia teams who participated in the innovation challenge featuring ten teams that advanced to the acceleration program cohort, as well as the eleven additional teams who participated in the Bootcamp, demonstrating the depth and potential of Colombia's circular economy ecosystem.**

### Accelerator Cohort



#### Entrepreneurs:

Yesi Sevillano  
Co-founder & CEO

Jaqueline Sevillano  
Co-founder & CRO

Margarita Sevillano  
Co-founder & Director of  
Marketing



Tumaco, Colombia

#### Growth stage:

Pre-seed

#### Website:

<https://fundacionpacificoemprende.org/asomefama/>

## Asomefama

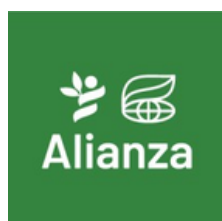
Asomefama is a women-led association which produces CAMHARINA, a **natural flour made from shrimp heads and exoskeletons**. This innovative product not only contributes to food sovereignty, providing an accessible and nutritious protein source, but also plays a key role in reducing environmental impact. By utilizing byproducts that are traditionally discarded, CAMHARINA promotes a circular economy model, minimizing waste and encouraging a more efficient use of marine resources.

#### Goals accomplished during the program:

- **Sustainable Impact:** Successfully transformed over 50 kg of shrimp waste into CAMHARINA.
- **Market Expansion:** Achieved sales in key Colombian cities—Tumaco, Cali, Medellín, and Bogotá—demonstrating growing national demand and contributing to a 30% increase in overall sales.
- **Customer Satisfaction:** Built strong customer loyalty and satisfaction, validating the product's market fit and value proposition.



### Accelerator Cohort



## Circulab

CircuLab is a **circular innovation lab** hosted by the Alliance of Bioversity International and CIAT. It operates as a collaborative platform for testing and co-developing nature-positive solutions to valorize organic waste in the agri-food sector. CircuLab connects research, entrepreneurship, and technology to enable the piloting of sustainable solutions such as black soldier fly (BSF) bioconversion and rice straw biochar production.

### Entrepreneurs:

Guillermo Peña  
Strategist, Circular  
Economy Platform

Diego Felipe Conejo  
RID Coordinator



Palmira, Colombia

### Growth stage:

Pilot / Validation  
(Living Lab)

### Goals accomplished during the program:

- **Strategic Partnerships:** Signed MoUs with Residua Biocircular and Biotermica Innovación to co-develop BSF bioconversion trials and a climate-smart agriculture project using biochar.
- **Pilot Launch:** Started BSF trials with Residua to test waste-based diets and assess larval and frass quality.
- **Project Design:** Developed a joint project with Biotermica and a rice producer to valorize rice straw. Partners are committed, and CircuLab is fundraising to launch the trial and life cycle assessment.
- **Innovation Support:** Reinforced CircuLab's role as a field lab for early-stage circular innovations.





## Accelerator Cohort



EVOLUTIO

### Entrepreneurs:

Camilo Garzón  
Co-founder & CEO

Camila Plata  
Co-founder & COO



Bogotá, Colombia

### Growth stage:

Pre-seed

### LinkedIn:

<https://www.linkedin.com/company/evolutio-col/>

## Evolutio

EVOLUTIO is a biotechnology company that transforms organic waste from agri-food chains into **high quality insect protein**, using the bioconversion capacity of the **Black Soldier Fly** (*Hermetia illucens*). They specialize in the production of premium, nutritious and sustainable dog snacks, and plan to replace 25% to 50% of commercial fish, chicken and pig feeds with insect protein. As a by-product, they generate **high quality organic fertilizer**, ideal for organic agriculture due to its contribution of nutrients and chitin.

### Goals accomplished during the program:

- **Product Testing:** Engaged over 100 customers in active product testing, demonstrating strong initial traction and demand.
- **Market Expansion:** Secured six distribution channels, significantly broadening market reach and accessibility. As a result, EVOLUTIO achieved a 35% increase in sales during the program.
- **Strategic Pivot:** Successfully transitioned from a black soldier fly production model to the commercialization of pet snacks.



## Accelerator Cohort

# FAIoT

Future **AIoT** Solutions

## FAIoT

### Entrepreneurs:

Nicolás Vargas  
Co-founder & CEO

Santiago Angarita  
Co-founder & CTO



Bogotá, Colombia

### Growth stage:

Pre-seed

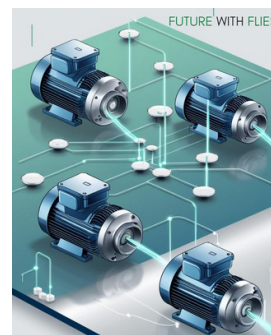
### LinkedIn:

<https://www.linkedin.com/company/faiots-colombia/about/>

FAIoT is a technology-driven company that develops **IoT applications** in both hardware and software, focusing on enhancing energy efficiency, **optimizing water consumption, and reducing greenhouse gas emissions**. By integrating advanced sensors, data analytics, and automation, the company enables businesses and communities to monitor, manage, and optimize resource usage in real time. Their business model is **subscription-based**, with contracts with a minimum duration of one year, and a fixed monthly cost.

### Goals accomplished during the program:

- **Strategic Pilot:** Developed proprietary technology that reduces machinery operating costs by 20% and successfully pivoted to a new industry, unlocking a much larger market opportunity.
- **Product Testing:** Initiated the deployment of their IoT solution in a first plant, marking a major step toward industry adoption.
- **Market Expansion:** 150% increase in sales qualified leads, signaling strong market interest.



### Accelerator Cohort



## KACOTA

Naturaleza en tus manos, bioplástico  
de cacao que transforma el mundo.

## Kacota

### Entrepreneurs:

Diana Meza  
Co-founder & CEO

Catherine Hernández  
Co-founder & Co-  
investigadora

Marcela Gutiérrez E.  
Co-founder

Katalina Ángel  
Co-founder

Jessica Agudelo B.  
Co-founder & Co-  
investigadora

Pereira, Colombia

### Growth stage:

Successful testing in  
real-world  
conditions

KACOTA began in 2020 as an innovative PhD thesis project and evolved by 2024 into a company with a multidisciplinary team committed to sustainability. The company developed a **biodegradable nursery bag** made from **cacao pod husks**, a highly underutilized byproduct that accounts for 80% of the cacao sector's waste. What was once discarded is now part of an eco-friendly, functional solution that reduces single-use plastic pollution in agriculture.

KACOTA's business model focuses on manufacturing and commercializing these biodegradable bags for nurseries, farmers, agro-industries, and cacao producers seeking sustainable alternatives. In doing so, KACOTA addresses two major challenges: reducing single-use plastic pollution in agriculture and revalorizing organic waste.

### Goals accomplished during the program:

**Farmer-centered Design:** Demonstrated the ability to reduce cultivation costs by 5%-10%, making it a valuable solution for farmers seeking more efficient and sustainable practices





### Accelerator Cohort

# Madera de COCO



#### Entrepreneurs:

Angela Sofía Parra Paz  
Manager

Jonathan Cundar  
Investor



Pasto, Colombia

#### Growth stage:

Laboratory

## Madera de Coco

Madera de Coco is an innovative company that produces **moisture-resistant particle boards** made from **coconut husks**, offering a sustainable alternative to conventional wood-based particle boards. By repurposing agricultural waste, the company promotes a circular economy, reducing deforestation and minimizing environmental impact. These high-durability boards are ideal for construction, furniture, and interior design, providing a renewable and eco-friendly material that maintains strength and resilience even in humid conditions.

#### Goals accomplished during the program:

- **Product Testing:** Secured six No Disclosure Agreements (NDAs) with corporate partners, actively testing the product, demonstrating strong market interest and validation.
- **Market expansion:** 60% increase in sales qualified leads.
- **Unique Value Proposition:** Developed the only sustainable particle boards with bio-adhesives, making them highly suitable for export to regulated markets.



## Accelerator Cohort



### Entrepreneurs:

Diego Castaño  
Co-founder & CEO

Alejandro Rendón  
Co-founder & CRO

Medellín, Colombia

### Growth stage:

Seed capital

### LinkedIn:

<https://www.linkedin.com/in/nanomof-col-0230a2339/>

## NanoMOF

NanoMOF transforms low-value **agro-industrial byproducts**, such as coffee and cocoa waste, into **high-value resources**, driving sustainable rural development. The company's innovative approach involves sourcing biomass waste from farms, converting it into biochar through pyrolysis, and returning a portion of the biochar to those farms for soil remediation and other benefits. This **closed-loop model**, coupled with future participation in the international carbon market, positions NanoMof as a leader in sustainable waste management and biochar production in Colombia.

NanoMOF strengthened their business proposition by aligning their solution with **corporate sustainability needs**, positioning themselves as key players in the circular economy.

### Goals accomplished during the program:

**Industrial Partnerships:** Established initial connections with the Colombian food processing company Nutresa and Postobón to explore the potential reuse of their raw materials, opening doors for industrial partnerships and market adoption.



## Accelerator Cohort



### NATECO

#### Entrepreneurs:

Luz Marina Florez  
Co-founder & CEO

Luz Aurora  
Co-founder & COO



Cali, Colombia

**Growth stage:**  
Laboratory

Nateco transforms biomass waste from the agri-food industry and the hotel, restaurant and cafeteria sector into sustainable products. At this moment NATECO has two product lines, based on the **use of fruit and vegetable waste and used cooking oil**. The first production line has allowed them to develop a moldable paste with which they have been able to obtain **biolayers, for the production of packaging and thermoformed products** to create substitutes for single-use plastics of fossil origin. With used cooking oil, **scented candles have been developed**.

With over 10 years of experience in developing biomaterials from waste, the team has designed and manufactured **exclusive machinery for biomaterials production**, optimizing processes and ensuring product quality and scalability.

#### Goals accomplished during the program:

**Distribution Channels:** Secured agreements with Cali-based companies for product acquisition, validating their value proposition in the market and establishing local distribution channels.



## Accelerator Cohort



### Origin Bites

#### Entrepreneurs:

Mauricio Varela  
Co-founder & CEO

Camilo Prieto  
Co-founder & CMO



Bogotá, Colombia

#### Growth stage:

Pre-seed

#### Website:

<https://originbites.com/>

Origin Bites is an innovative company that upcycles discarded coffee pulp into **nutritious and sustainable snacks**, turning agricultural waste into a valuable food resource.

By leveraging this underutilized byproduct, the company not only contributes to waste reduction and a circular economy, but also enhances food security by introducing high-fiber, antioxidant-rich snacks to the market. This initiative creates new income opportunities for small coffee farmers, helping them diversify their revenue streams and improve economic resilience.

#### Goals accomplished during the program:

- **International Networking:** Participation in Gulfood Dubai, showcasing their innovative coffee pulp-based snacks on an international stage.
- **Market expansion:** Over \$2,000 in sales to date, demonstrating early market traction and demand.
- **Distribution:** Established sales channels including Oculito Café, Fitmarket, and e-commerce platforms, expanding their reach.





## Accelerator Cohort



### Entrepreneurs:

Mohamed Darwich  
Co-founder & CEO



Bogotá, Colombia

### Growth stage:

Laboratory

## Vida Azul

Vida Azul is a pioneering company that produces **natural and sustainable pigments and raw materials** derived from cyanobacteria, offering an eco-friendly alternative to synthetic colorants.

By harnessing the power of **microalgae and biotechnology**, the company develops high-quality, biodegradable pigments for applications in industries such as food, cosmetics, textiles, and packaging.

### Goals accomplished during the program:

**Corporate Trial:** The team is actively engaging in trials with mid-sized corporations to explore the commercial potential of their raw materials.





### Bootcamp Cohort



#### Entrepreneurs:

Stiven Morales  
Managing Director

Edgar Unigarro Calpa  
Co-founder



Pasto, Nariño, Colombia

#### LinkedIn:

<https://www.linkedin.com/company/allpa-agricultura-4-0-sas/>

## Allpa Agricultura 4.0 SAS

The Allpa project develops **affordable, sustainable technologies for livestock farmers in Colombia**. Since 2022, the team has been transforming organic waste from markets, restaurants, and local businesses into animal feed and sustainable energy. Partners such as Hotel V1501 and Más Fruta in Pasto supply husks and food scraps, which are processed and blended into organic concentrate pellets.

To support this process, Allpa has designed and built machines for **grinding, mixing, pelletizing, and drying—cutting feed costs by up to 35%**. The project is also developing biodigesters to produce renewable energy, completing a full circular economy model. By diverting waste from landfills, Allpa contributes to environmental sustainability and helps **reshape the livestock industry** for a more efficient and resilient future.



### Bootcamp Cohort



#### Entrepreneurs:

Oswal Gómez  
Director

Maritza Galindo  
Collaborator



Bogotá, Colombia

### Biobriq briquetas

Biobriq is an innovative product in the organic charcoal market, since it is made with **100% ecological and renewable raw materials**, such as fruit and vegetable peels resulting from the daily food process in the home kitchen.



## Bootcamp Cohort

### Biolamina a base de almidón de cáscara de papa

#### Entrepreneurs:

Luz Marina Florez  
Co-founder & CEO

Luz Aurora  
Co-founder & COO



Cali, Colombia

The organization recycles **potato peels to produce starch-based biolaminate films**, providing a biodegradable alternative for packaging. The process consists of collecting and cleaning the potato peel, then the starch is extracted, the material is transformed into nanoparticles using **chemical hydrolysis** and, finally, the biolayers are obtained, which are the basis for the packaging.



CircularEconomy Colombia  
Innovation Challenge

### Bootcamp Cohort



#### Entrepreneurs:

Camilo Osorio  
Co-founder & CEO

Kevin de Cuba  
Co-founder & Relations



Bucaramanga, Colombia

#### Website:

<https://www.bioreficol.com/>

## Bioreficol

Bioreficol converts residual biomass from the coffee industry and other agricultural sectors into **high-value, eco-friendly raw materials** for various industries. By partnering with coffee producers, the company promotes circular business models that reduce environmental impact. One key innovation includes transforming **coffee mucilage into biodegradable, non-toxic clothing** that can safely return to nature after use.



### Bootcamp Cohort



#### Entrepreneurs:

Olga Mercado  
Co-founder & CEO

Iván Barragán  
Co-founder & CTO



Bogotá, Colombia

#### Website:

<https://biotermicainnovacion.com/>

### Biotermica innovación

Biotérmica Innovación was born on April 19, 2021, in the midst of the pandemic, with the purpose of **developing solutions for waste treatment**. Today, it develops **mobile biorefineries** that convert organic waste **into biochar, syngas, and bio-oils through advanced pyrolysis**. They are located in Colombia and have a presence in Japan. They solve the social, environmental and economic problems produced by solid waste (urban, livestock, agricultural and forestry).





## Bootcamp Cohort



### Entrepreneurs:

Iván Ramírez  
Managing Director

Juan Suárez  
Remote Sensing Engineer



Bucaramanga, Santander,  
Colombia

### Website:

<https://www.conexalab.com/>

## i-CO2

The i-CO2 platform is an advanced solution **designed to optimize the management of agroforestry, forestry and environmental systems**. This multi-platform employs digital twin technology and remote sensing, integrating data obtained from satellites, drones capturing multispectral images, LiDAR and IoT sensors.

By combining this data with artificial intelligence (AI) and blockchain protocols, the i-CO2 platform **improves crop efficiency and yield**. This ensures continuous and accurate monitoring of agroforestry systems, allowing users to make informed decisions, optimize input use and encourage sustainable practices.



### Bootcamp Cohort



#### Entrepreneurs:

Mario Heredia  
Chief Scientific Officer

Jonathan Coba  
Gerente Técnico



Quito, Ecuador

#### Website:

<https://nina.energy/>

## Nina Energy Limited

Nina Energy Limited is an innovative company specializing in the development and deployment of **advanced pyrolysis technologies for the production of biochar and solid biofuels**. Its unique approach combines the production of high quality biochar with **carbon sequestration and renewable energy generation**.

Nina Energy uses agricultural and forestry residues as feedstock, contributing to the circular economy and sustainable rural development. Its **low capital cost technology** allows for rapid expansion in diverse agricultural regions. With projects in Ecuador, Italy and Argentina, Nina Energy is positioned to make a significant contribution to mitigating climate change and improving soil health in Latin America and Europe.



### Bootcamp Cohort



### Residua Biocircular

#### Entrepreneurs:

Andrés Camargo  
Co-founder & CEO

Diego Villamil  
Chief of Staff



Bucaramanga, Colombia

#### Website:

<https://www.residua.bio/>

Residua Biocircular transforms organic waste into innovative circular bioeconomy solutions, optimizing resources and reducing environmental impact from the black soldier fly. The company specializes in developing state-of-the-art processes to transform organic waste into valuable resources, such as **biofuels, organic fertilizers, and bio-based chemicals**. Their solutions contribute to reducing landfill waste and lowering greenhouse gas emissions.

Their company harnesses the **potential of nanotechnology** to enhance the efficiency and effectiveness of their processes. Nanomaterials and nanoscale interventions play a pivotal role in optimizing resource recovery and sustainability. Residua's products and technologies have applications across various sectors, **from agriculture to industrial manufacturing**, addressing the diverse needs of a circular economy.



### Bootcamp Cohort



### AgroData Connect

#### Entrepreneurs:

Milton Duque Cano  
Team Lead

David Marquez Bayona  
Statistical Analysis



Colombia

#### Website:

<https://linktr.ee/agrodataconnect>

AgroData Connect is an AgTech venture that empowers smallholder farmers with **AI-driven tools to reduce crop loss and increase productivity**. Their platform combines satellite imagery, machine learning, and local data to provide real-time insights on crop health, yield predictions, and early warnings for pests and diseases. Designed for accessibility, their solution works even in low-connectivity areas and requires minimal technical training. In Colombia, pilots have shown **a reduction in post-harvest losses from 41% to 8%, and yield prediction accuracy of up to 95%**.

Their mission is to make precision agriculture affordable and practical for underserved farming communities, particularly those vulnerable to climate impacts.



## Bootcamp Cohort

### Terra Bios

#### Entrepreneurs:

Jairo Vanegas

Inventor

Ruth Rodríguez

Financial Management



Bogotá, Colombia

Terra Bios is an **organic soil conditioner obtained by hydrothermal calcination** transforming agricultural residues into useful products. The liquid presentation is highly soluble and rapidly absorbed, and the solid presentation improves soil structure.







# CircularEconomy4Colombia

## Innovation Challenge



<https://agritechchallenge.org>



[innovations@cgiar.org](mailto:innovations@cgiar.org)

