

# 2024

## The Year In Review

ISHA DATAR  
EXECUTIVE DIRECTOR

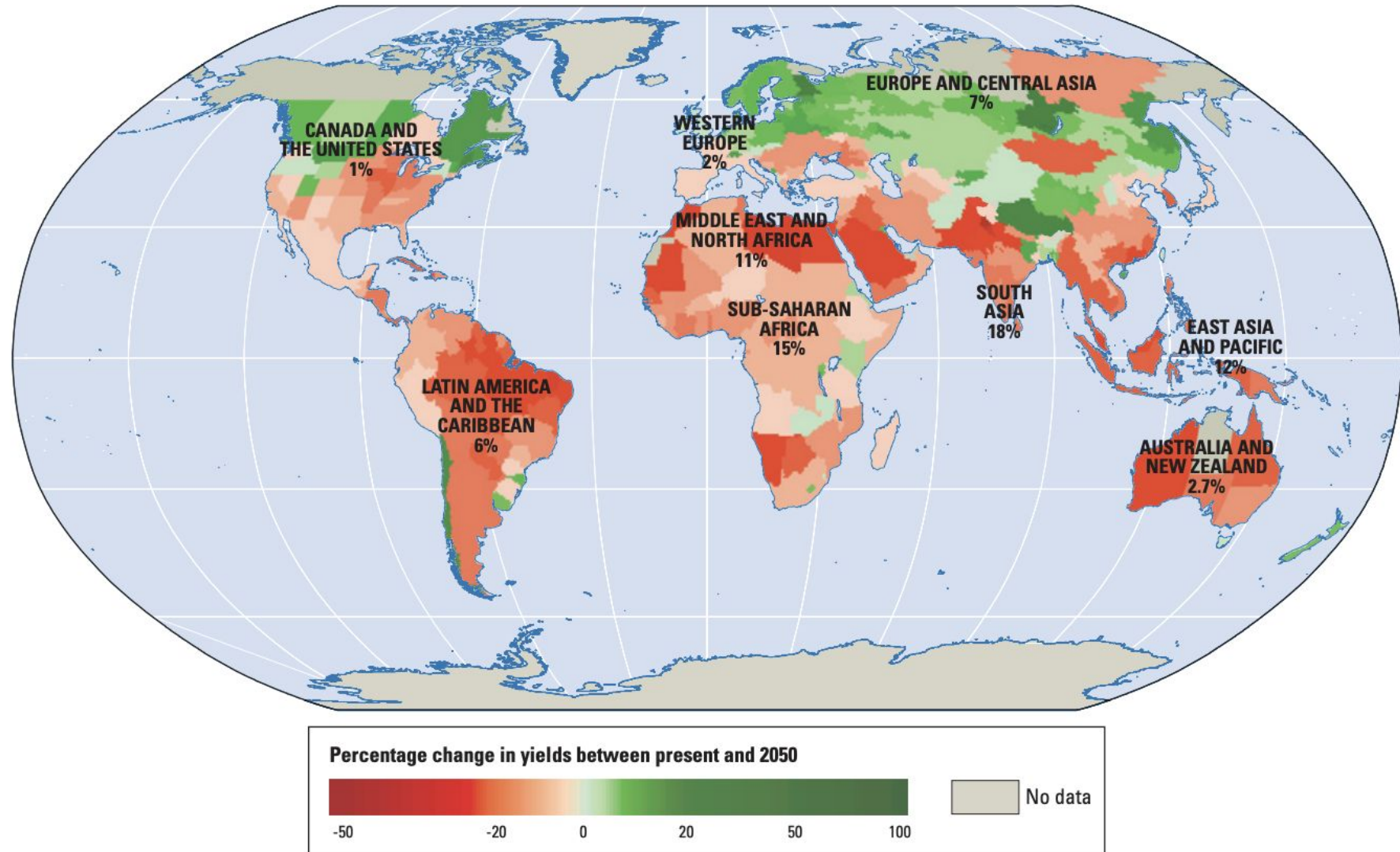




We're here today because we believe  
that cellular agriculture  
can unlock a better future.



**Map 1** Climate change will depress agricultural yields in most countries in 2050, given current agricultural practices and crop varieties



World Bank (2010). World Development Report. This map combines three emission scenarios across five global climate models to projecting change in yields of 11 major crops under current practices/varieties



We're also here today because we know  
that technology isn't everything.



A global non-profit organization

Our Purpose: **Cellular Agriculture for the Public Good**

Est. 2004 - We're 20 Years Old!





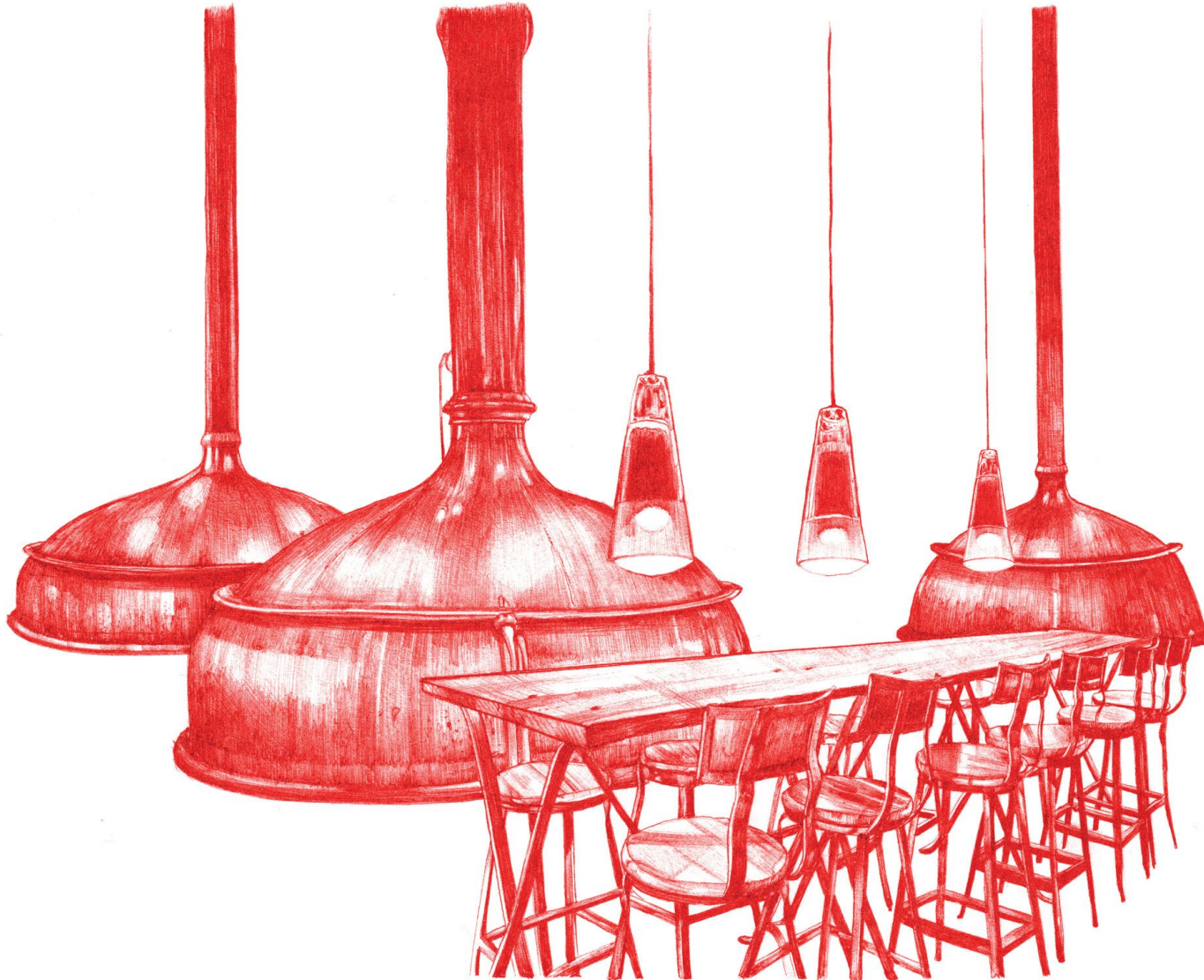
“In fact, it could be said that — insofar as virtually all food has resulted from arduous breeding and patient experimentation — virtually all restaurants embrace food technology. But what sets Farma apart from these is how it leans into this, recognizing that **the only path towards a food-secure future is one in which biotechnological modification becomes the norm;** a future in which our ability to manipulate biology in the pursuit of wellbeing truly goes from pharma to table.



“The chefs at Farma know that **by embracing food technologies such as recombinant DNA, precision fermentation, and cell culture, food can become more nutritious and better for the planet.**”

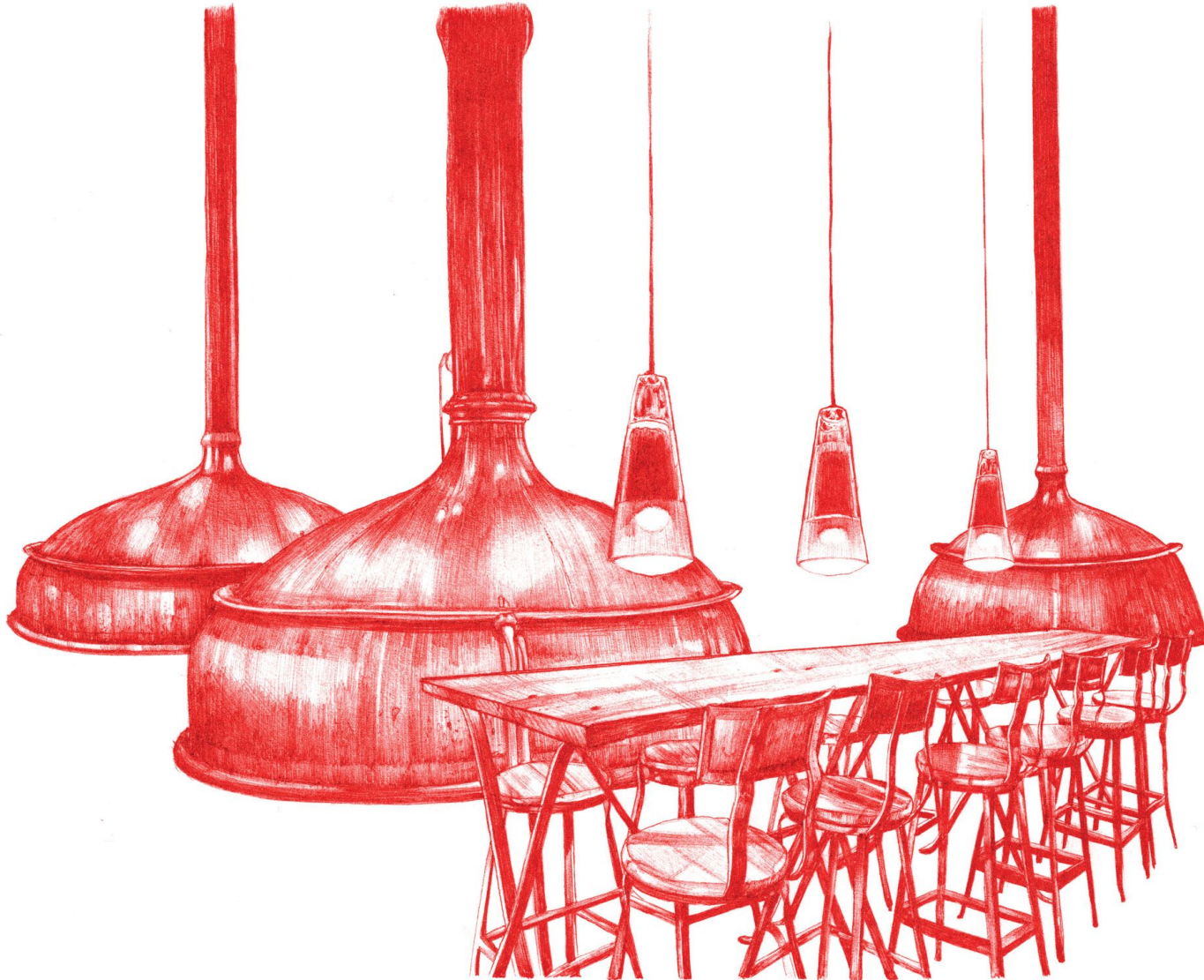
Cell culture and advancements in plant-based food technology may soon make it possible to replace meat and other animal-derived products, thereby saving [billions of animals](#) from slaughter each year. And while the **success of these foods depends on a variety of factors — such as legislation, marketing, data-driven research, taste, and cost — sure failure will come from misinformation.”**



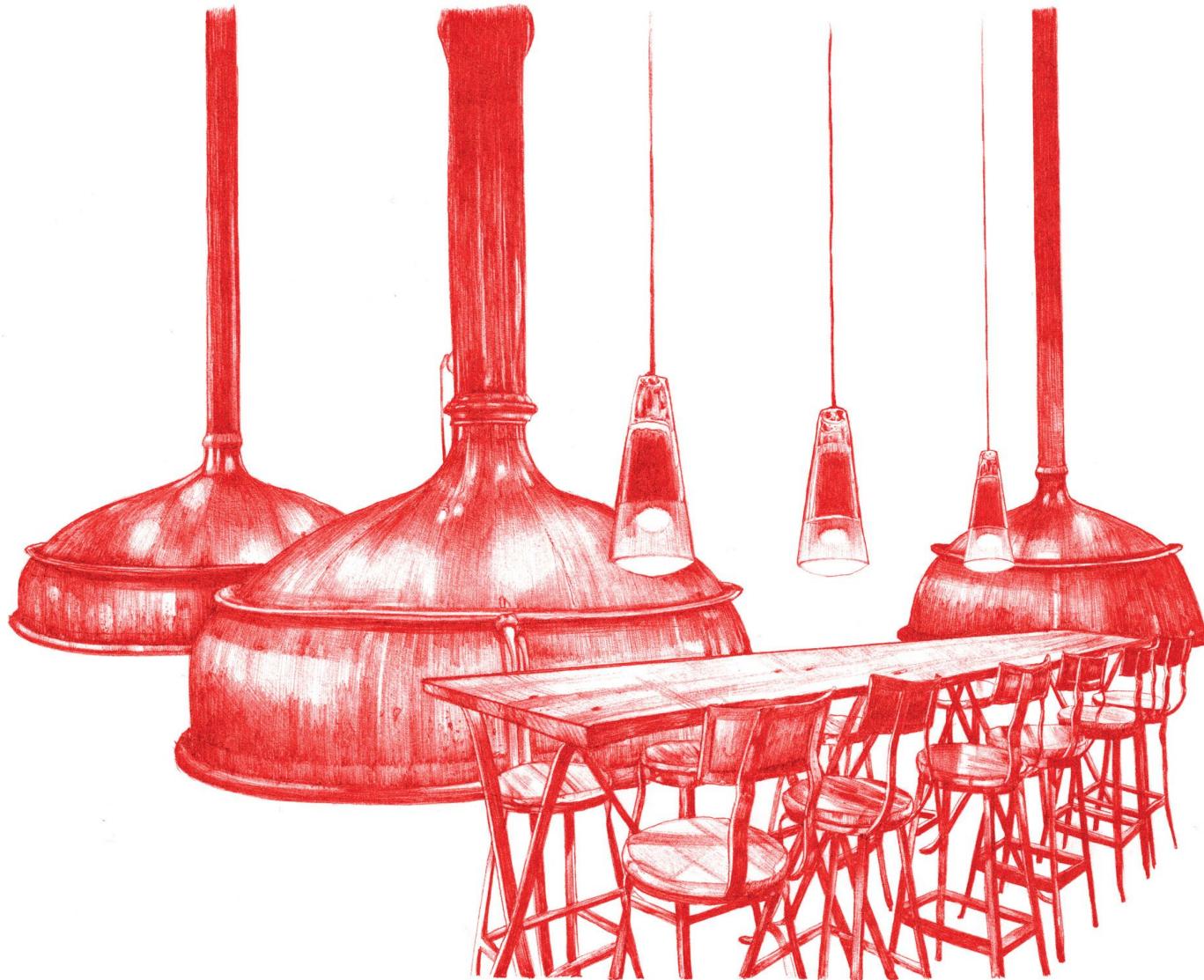


“For this new industry to exist, some conditions have to be met in the early days of discovery and development.

**The science has to remain fairly open, transparent, and publicly accessible.** With a population of scientists scattered about the planet interested in making in vitro meat a reality, **an “open source” approach to in vitro meat will accelerate development of the technology.** Intellectual property protection has a place in the industry at some point, but **heavy, prohibitive patent protection early on could stunt this new industry before it has a chance to flourish.** Culturing in vitro meat involves a level of “art” and technique that only comes with experience and familiarity with processes and materials.



“Development needs to coincide with **public conversation about meat, meat production, carniculture, and food science.** Consumers need and want to know about the origins of their food. The new science of carniculture must be **developed responsibly, driven by discourse from the beginning.** This is much more likely to happen if **research is funded and conducted publicly,** openly engaging researchers, DIYbio enthusiasts and students to address scientific hurdles. **Creating a food politic that tackles resource use, the environment, public health and animal welfare should be a cooperative movement.”**



“We have to ask not only how in vitro meat products nourish our bodies, but **how the process of making them nourishes human culture and fits in with our sense of a modern humanity.**”

**“In contrast to industrial farming, meat production methods go from secretive to celebrated. Meat production facilities go from vast to vertical. The meat production industry moves from the hands of few to the hands of many. And people grow more authentically connected to the origins and creation stories of what they eat.”**



# Our 20 Year History

A story of ongoing impact



# 20 Years of Field-Building

- 2003 - 2013:
  - **What we did:** With zero staff, some early support of grants in Europe
  - **Benefit:** Some funding entered the field
  - **But:** Very little momentum, not enough zeitgeist/movement/community
  - **Idea:** Figure out how to **activate people, by any means necessary (with zero dollars)**
- 2013 - 2015:
  - **What we did:** Kickstart private sector by co-founding/supporting cell ag companies
  - **Benefit:** Companies found momentum with accelerators and investors
  - **But:** Very little technical talent to hire, very little research basis
  - **Idea:** **Activate the academic basis of cellular agriculture** (people + publications)



# 20 Years of Field-Building

- 2015 Onwards:
  - **What we did:** Fund open, scientific research
  - **Benefit:** By supporting great people, together we fundamentally **creating the foundations for cellular agriculture as a legitimate field of science.**
  - **But:** The field was upside down - private funding far outweighed public funding. High risk of corporate capture with regulators and policymakers. How to get siloed information out of private companies and try to create a level, data-informed playing field?
  - **Idea:** Serve as honest broker to get competing companies to collaborate (around non-competitive issues like safety)
  - **TODAY: Keep supporting research:** Keep focusing on the neglected data/evidence/scientific communities that stands in the way of our vision....



# 20 Years of Field-Building

- 2020 Onwards:
  - **What we did:** Leverage neutrality to facilitate public-private collaboration
  - **Benefit:** Ability to create data to inform evidence-based policymaking, ability to foster conversations that only a neutral convener can foster - on standards, ecosystem-wide challenges, international collaboration, self-criticism
  - **But:** Internally, this required a shift in messaging, where to find funds, and change of approach in how we fund research.
  - **Idea:** Act less like a “regranting” organization, seek more funding partnerships and government support, shift messaging/audiences
  - **TODAY: Keep supporting facilitation:** Keep focusing on the neglected conversations and partnerships that stands in the way of our vision....



# 20 Years of Field-Building

- Over the past 20 years we have:
  - **Supported 66 researchers** - who have gone on to have long-term impact as co-founders, technicians, technical hires, academic leaders
  - **Supported 69 peer-reviewed publications** - which have informed policymakers, grantmakers, companies, and spurred further academic discourse
  - Which has facilitated the founding of **at least 15 cell ag companies**, the founding of **at least 5 institutes of cellular agriculture**, the pull of **>\$3B in private investment**, and **\$100m in public investment**, and **at least 1500 jobs** created in the process...
- We uniquely apply the principles of non-profit “field-building” activity to the cellular agriculture innovation ecosystem.\*
- Our interventions are designed to drive ongoing impact long after they are completed.





**Abi Glencross** Kings College  
**Natalie Rubio** Tufts University  
**Marie Gibbons** North Carolina State University  
**Jess Krieger** Kent State University  
**Andrew Stout** Tufts University  
**Scott Allan** University of Bath  
**Ricardo Gouveia** Newcastle University  
**John Yuen** Tufts University  
**Cameron Semper** University of Calgary  
**Ted O'Neill** UC Davis  
**Zachary Cosenza** UC Davis  
**Jordan Jones** Worcester Polytechnic Institute  
**Kai Steinmetz** University of Auckland  
**Sam Peabody** Texas Tech University  
**Jannis Wollschlaeger** Reutlingen University  
**Stephanie Kawecki** UCLA  
**Vanessa Haley-Benjamin** Newcastle University  
**Sophie Letcher** Tufts University  
**Rick Thyden** Worcester Polytechnic Institute  
**Alexis Garrett** University of Nebraska-Lincoln  
**Dawne Skinner** Dalhousie University  
**Allison Esperanza** University of Bath  
**Lily Westerhoff** University of Bath  
**Freya Mehta** Technical University of Munich  
**Irfan Tahir** University of Vermont  
**Mia Keyser** University of Colorado, Boulder  
**Santiago Campuzano** University of Ottawa  
**Jernej Vajda** University of Maribor  
**Han Zhang** University of British Columbia  
**Kyle Manke** University of British Columbia  
**Yi-Fan Chen** University of British Columbia  
**Matt Anderson-Baron** University of Alberta  
**Kaili Chen** Tufts University

**Daniel Peterson**  
**Clarisse Beurrier**  
**Julian Cohen**  
**Jake Marko**  
**Vicky Andriessen**  
**Lisa Musgrove**  
**Ashton Davis**  
**Shravya Mukka**  
**Nina Strasky**  
**Brodie Pearce**  
**Michael McLellan**  
**Bianca Datta**  
**Varsha Rao**  
**Mark Post**  
**Hanna Tuomisto**  
**Luka Banovic**  
**Bostjan Vihar**  
**Nidhi Gupta**  
**Patrick Buchanan**  
**Julieta Cardenas**  
**Oana Kubinyecz**  
**Saloni Shah**  
**Sofia Sanchez**  
**Brigid Barrick**  
**Hannah Chang**  
**Waverly Eichhorst**  
**Lindsey Huff**  
**Rikard Saqe**  
**Kevin Shen**  
**Nathaniel Petre**  
**Omowunmi Odeyomi**  
**André Valkenburg**  
**Ali Parsaee**

Northeastern University  
University of Cambridge  
Tufts University  
Worcester Polytechnic University  
University of Auckland  
University of the Sunshine Coast  
UCLA  
Penn State University  
McGill University  
University of Melbourne  
Tufts University  
MIT  
University of Colorado Boulder  
Maastricht University  
Oxford University  
IRNAS  
IRNAS/University of Maribor  
Texas A&M University  
University of Bristol  
New York University  
University of Cambridge  
Breakthrough Institute  
Tecnológico de Monterrey  
Tufts University  
Tufts University  
University of Colorado Boulder  
Carnegie Mellon University  
University of Waterloo  
University of Waterloo  
Imperial College London  
North Carolina A&T  
Stellenbosch University  
Amii

These 66  
researchers are  
creating the  
foundations of  
cellular  
agriculture.



**“The Fellowship opened incredible new possibilities both as a researcher at Newcastle University and as an entrepreneur.**

**It inspired me to make new discoveries that can potentially benefit billions for decades to come.**

**It provided me with the drive to secure multiple collaborative government funding awards, the first drops in what I hope will be a very big ocean of public investment in this space.**

**And it enabled me to found a company offering real value to the global cellular agriculture community today.**

**—Ricardo Gouveia, New Harvest Research Fellow 2018-2022;  
CSO and co-founder of 3D Bio-Tissues**

Just one story  
of ongoing  
impact...



# Where are we today?

2024

# An International Team



Dr. Paige Wilcoxson  
COO



Simon Ongom  
Controller



Isha Datar  
Executive Director



Pam Devins  
Admin Asst & Bookkeeper



Britt Chambers  
Director of Development



Dr. Dwayne Holmes  
Director of RRI - EU



Dr. Bre Duffy  
Director of RRI - US



Dr. Yadira Tejeda-Saldana  
Director of RRI - Canada

 **New Harvest Nederlands Stichting**

Participating/building a European ecosystem with government support

 **New Harvest Inc.**

Philanthropy-driven grant programs  
Coordination of regional consortia to facilitate alignment

 **New Harvest Canada Inc.**

Building a national ecosystem with government support



# A New Strategic Plan 2025-2030

**Our Purpose:** Cellular Agriculture for the Public Good

**Our Focus:** Advancing responsible research and innovation in cellular agriculture through **facilitative leadership**.

**Our Strategies:**

1. Facilitating **collaborative, open research** - assembling and executing public-private research initiatives to build the body of open, credible, unbiased public information.
2. Facilitating **mission-driven field alignment** - collaboratively developing standards, guidelines, pledges, certifications and other tools and systems of accountability to prevent mission creep in cellular agriculture.



# 1) Facilitating collaborative, open research

## Cultured Meat Safety Initiative (CMSI)

- Address critical technical, methodological, and informational challenges related to evaluating the safety of cultured meat products
- In partnership with Vireo Advisors
- Since 2020, the initiative has engaged **90+ industry leaders, 50+ governmental scientists and regulators, and 10+ academic scientists** and led to **two foundational peer reviewed publications**
- **Seeking participants! Texas Dec 2024, California March 2025, Chicago April 2025**



# 1) Facilitating collaborative, open research

## Omics-guided Technologies for Production of Cell Cultivated Meat



- Genomic, proteomic, and metabolomic approaches to address technical, economic and social barriers to scaling and commercialization
- **5 academic and 9 industrial partners**



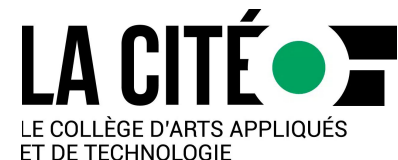
Genome  
Canada



UNIVERSITY OF  
TORONTO



UNIVERSITY OF  
ALBERTA



LA CITÉ  
LE COLLÈGE D'ARTS APPLIQUÉS  
ET DE TECHNOLOGIE



# 1) Facilitating collaborative, open research

## New Harvest - Culley Carlson Award

- Co-designed with Culley Carlson Foundation to leverage NH's experience supporting students toward impact: for students in doctoral programs or other similar level professional degrees (e.g. J.D.) who need support to apply their skills to cellular agriculture.
- **André Valkenburg (Stellenbosch University, South Africa):**  
Developing microbial-based scaffold for improved differentiation
- **Omowunmi Odeyomi (North Carolina A&T State University, USA):**  
Utilizing her background in agricultural economics to study the environmental and economic impacts of cultured meat







# 1) Facilitating collaborative, open research



**FEASTS**

Fostering European Cellular Agriculture  
for Sustainable Transition Solutions



European  
Union

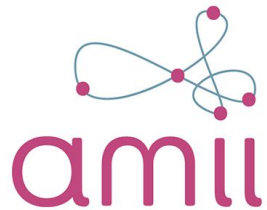
- Developing a comprehensive, unbiased knowledge base about cultured meat and seafood, and their place in the food system. The focus is firmly on sustainability by design, an interdisciplinary approach and knowledge sharing.
- **35 partners from academia and industry across 16 countries**
- Work packages include: a mission-driven roadmap, data-driven sustainability by design, multistakeholder engagement for socio-economic and ethical considerations, food safety, nutrition and regulatory assessment, multi-dimensional impact assessment, maximizing impact through communications and open science



# 1) Facilitating collaborative, open research

## AI in Cell Ag Initiative

- Establish the knowledge foundation to apply AI and ML to cell ag
- First peer-reviewed publication on opportunities to apply AI and ML to cell ag
- Now supporting **a full-time researcher for 1 year**, focused on **Machine Learning-Driven Optimization of Cell Culture Media for Cellular Agriculture!**
- Congrats Ali Parsaee!



UNIVERSITY OF  
**WATERLOO**





# 1) Facilitating collaborative, open research

## Canadian Cultured Foods: Environment, Scale-up, Safety, Nutrition and Food Processing

- The first project on cell ag led by governmental scientists at Agriculture and Agri-Food Canada.
- Leverage provincial and national expertise, academia, SMEs and non-profit organizations to foster transdisciplinarity and develop open research to diversify our food sources.
- **Two PhD students and one MSc will join the New Harvest Fellowship** in 2025, who will be **collaborating with 13 governmental scientists** across 6 AAFC research facilities across the country!



Agriculture and  
Agri-Food Canada



# 1) Facilitating collaborative, open research

## Unlocking Canola Meal: The Key to Sustainable Growth and Reduced GHG Emissions in Canadian Agricultural Practices

- Supported by NSERC-SSHRC Sustainable Agriculture Research Initiative in collaboration with Agriculture and Agri-Food Canada
- A collaborative project led by Dr. Kevin DeFrance at Queen's University, and **five other partner organizations**
- The cell ag portion of the project will look at the potential of canola meal as a scaffolding material
- **One PhD student will join the New Harvest Fellowship in 2025**





# 1) Facilitating collaborative, open research

## EU Food Biofutures

- **10 partners across Europe** will build the recommendations and initiatives that will foster entrepreneurship and secure EU leadership in deep food biotech.
- Partners will produce a set of actions and recommendations across 7 pillars: education, knowledge & policy, facilities, consumer testing, entrepreneurship programs, funding, ecosystem coordination.





# 1) Facilitating collaborative, open research

University of Alberta Institute for Cellular Agriculture 

- Newly hired Assistant Professor, Ning Xiang
- **Soon-to-be announced update...**





## 2) Facilitating mission-driven field alignment

### **Doing Science Differently Workshop, Boston, USA**

- 15 individuals from academia and industry
- Exploring how to action sections of the “Race to Mission” paper

### **Cell Ag Field Strategy Round Table, Edmonton, Canada**

- 20 technical experts from around the world
- Developed an ecosystem “to do” list and working groups to begin working on priorities
- We are working with participants to publish workshop proceedings

### **2nd Cell Ag Canada Meeting, Edmonton, Canada**

- 25 individuals from academia and industry around Canada
- Developed a Blueprint for Canada’s cellular agriculture innovation infrastructure and supply chains presented to government officials
- Invited international cell ag leaders to observe and facilitate



# Stay tuned...

- At least **7 new publications** not yet announced
- Seeking **10 researchers** to help us build the DERISC Food Fellowship Defining, Enhancing, and Refining Agricultural Inputs and the Supply Chains of Cellular Agriculture and Biomanufacturing of Food
- We will be hiring **1 new teammate** for 🇳🇱 New Harvest Nederlands Stichting
- We will be hiring **1 new teammate** for 🇨🇦 New Harvest Canada Inc.
- Big consortium grant(s) announcement on its way...





# Our biggest challenges

- We have zero comms team, so keeping community updated on impact is a challenge and fundraising remains very interpersonal.
- A small team across three countries means independence/leadership/intrapreneurship is a must.
- Balancing fundraising from donors vs. governments presents a range of co-existing, sometimes contradictory messages, such as... is cell ag an AND or an OR?
- It still isn't an easy time for cell ag out there... and companies haven't changed their tune
- Lots of excellent academic support is flowing in, getting us to focus on really neglected pieces
- The concept of a Protein Transition, as big as an Energy Transition, is still a very underdeveloped idea in the climate world.

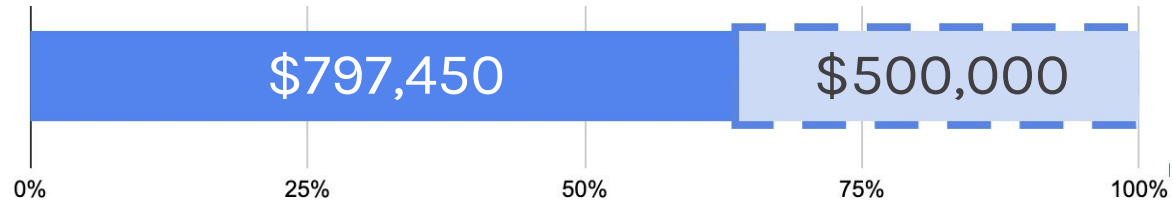


# Some last reflections...

- In total - we'll soon be bringing on:
  - **2 new teammates (!!!!)**
  - **17 new researchers (!!!!)**
  - **And sharing 7 new publications (!!!!)**
- Government support is picking up, as we hoped!
  - Protecting New Harvest's neutrality has been critical
  - Maintaining a consistent vision for 10+ years helps us partner
  - 20+ years as an org lends us enormous credibility
- **Our visionary donors are what drive the impact**
  - Our agility in a changing environment keeps the work fresh, relevant, and impactful
  - We aren't a loud org or a big org, but we're catalytic and we set a narrative



# Donate Today!



**“New Harvest is a visionary org that has been ahead of the curve in many aspects of cell ag. Their track record speaks for itself and I can think of no better organization to support if your goal is advancing the field in an equitable, open access, transparent manner.**

**—Cameron Semper, New Harvest Research Fellow, University of Calgary**

[new-harvest.org/donate](https://new-harvest.org/donate)