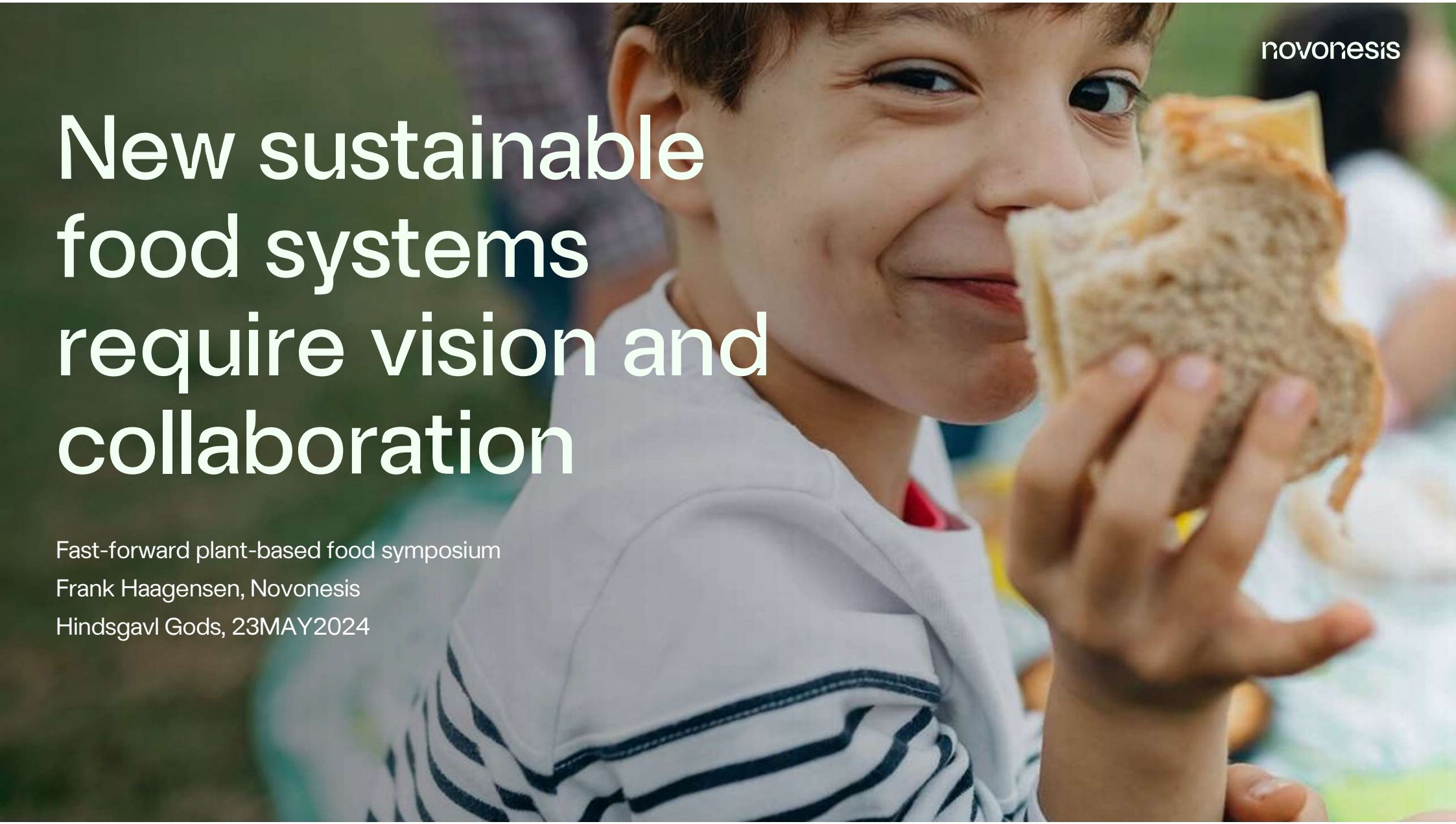
FAST-FORWARD

SYMPOSIUM

PLANT-BASED FOOD



New sustainable food systems require vision and collaboration

Fast-forward plant-based food symposium

Frank Haagensen, Novonesis

Hindsgavl Gods, 23MAY2024

With 100+ years of innovation as our foundation, we will keep delivering transformative solutions

novozymes®

CHR. HANSEN

novonesis


We exist to...
Better our world with biology

Across 30+ industries, our innovations both help businesses achieve their commercial targets and balance the needs of people and our planet

We work with our customers to deliver value with our unique biotech toolbox and ability to produce and deliver at scale.

Here are some of the industries we serve.

Biosolutions for planetary health

- Plastic recycling
- Animal health & nutrition
- Bioag & plant health
- Household care
- Professional cleaning
- Leather & textiles
- Bioenergy
- Carbon capture
- Pulp & paper
- Grain & starch

Biosolutions for food & health

- Baking
- Meat, seafood & culinary
- Beverages
- Functional foods
- Plant-based foods
- Dietary supplements
- Dairy
- Advanced protein solutions
- Infant nutrition

Sustainability is at the core of who we are and what we do

It’s how we do business. It’s at the core of whom we are. It’s what we enable for our customers.

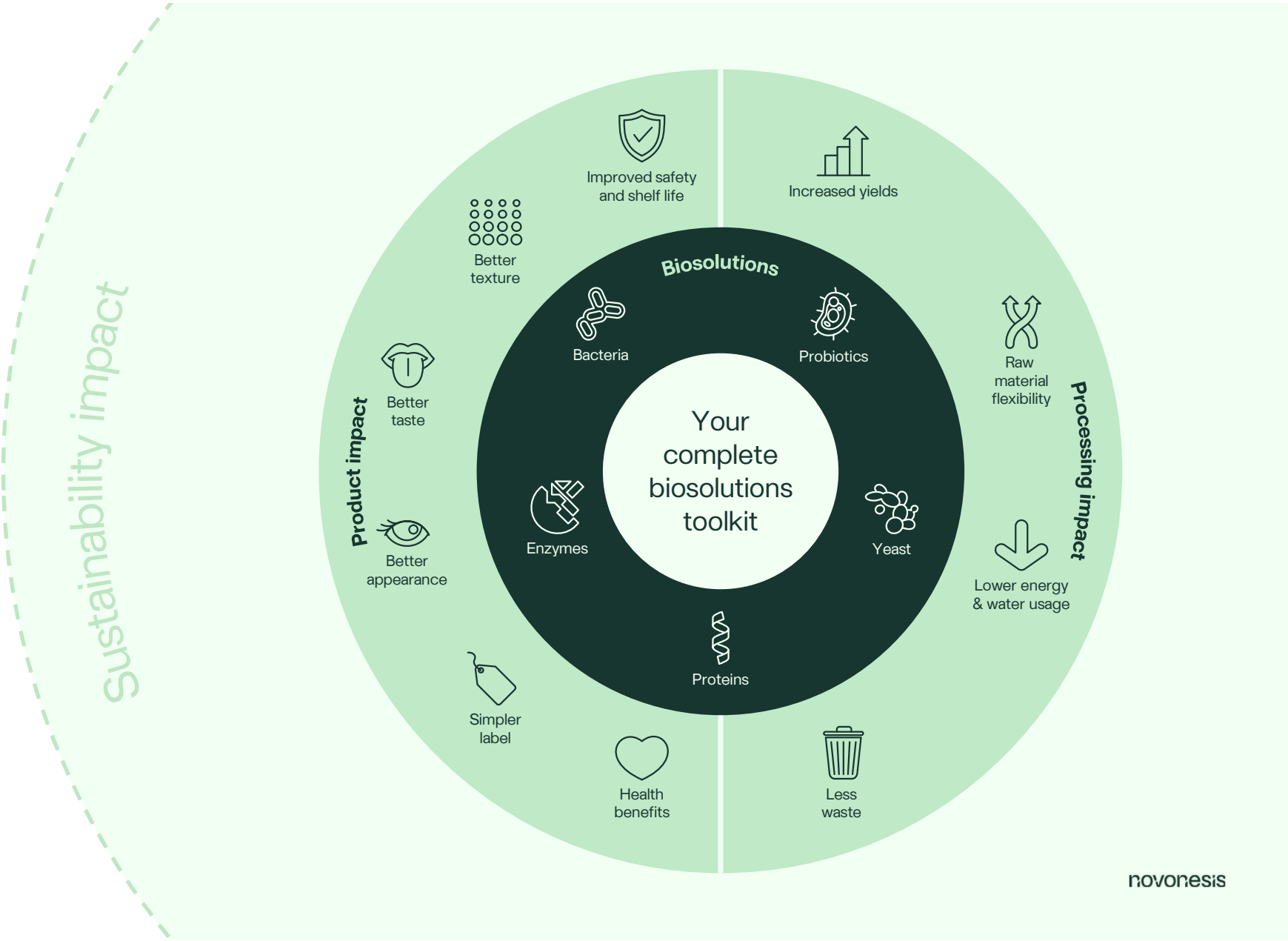
Biosolutions are life's own agents of change. And they have the power to transform businesses for success.

By 2050 we'll need to feed 2 billion more people

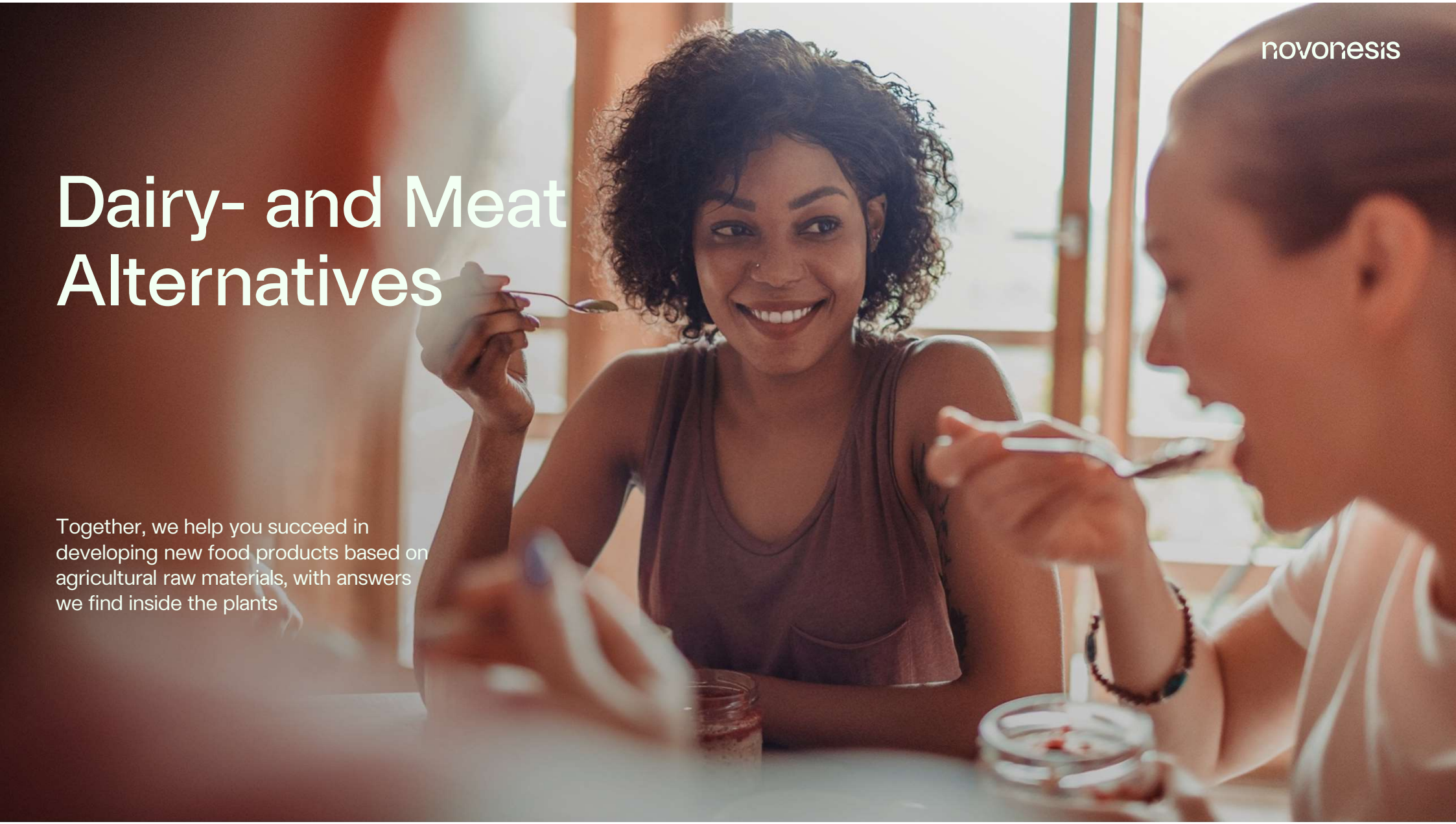
Purely dedicated to biology

Biosolutions are tiny but mighty enzymes and microbes.

The right combination helps transform your products, your processes and your impact on the planet.



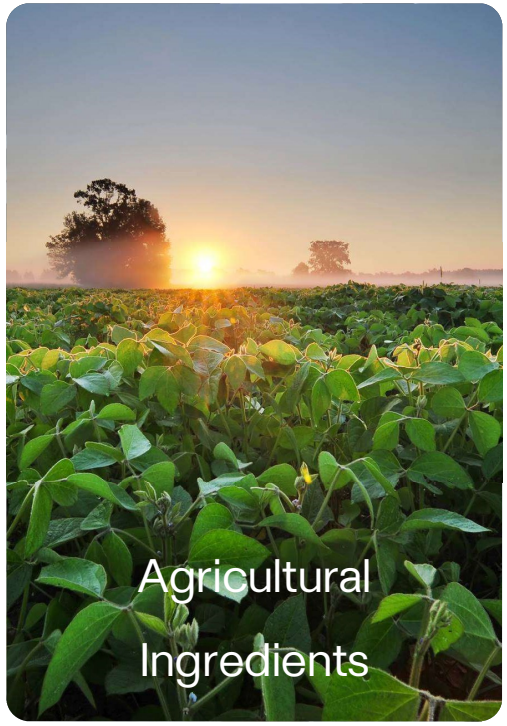
novonesis

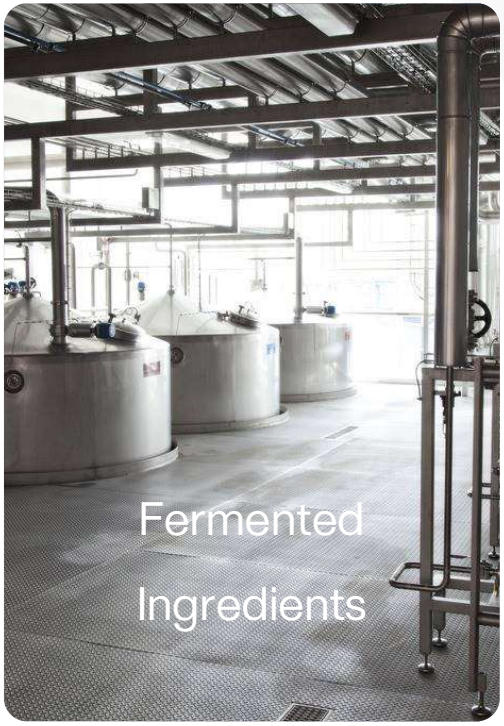


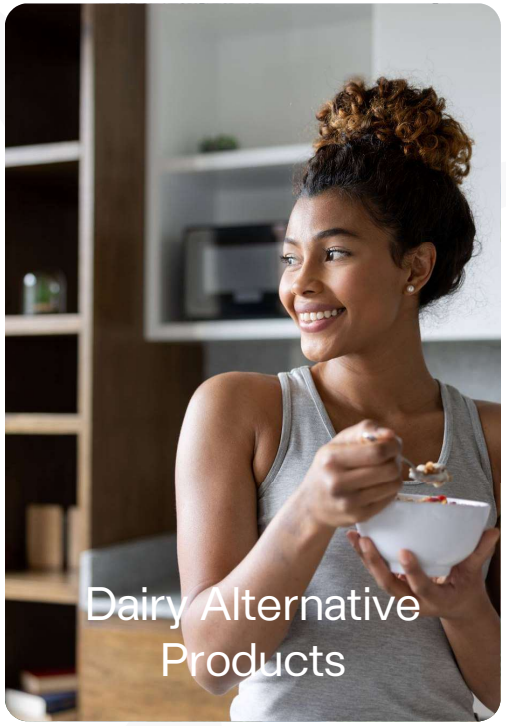
Dairy- and Meat Alternatives

Together, we help you succeed in developing new food products based on agricultural raw materials, with answers we find inside the plants

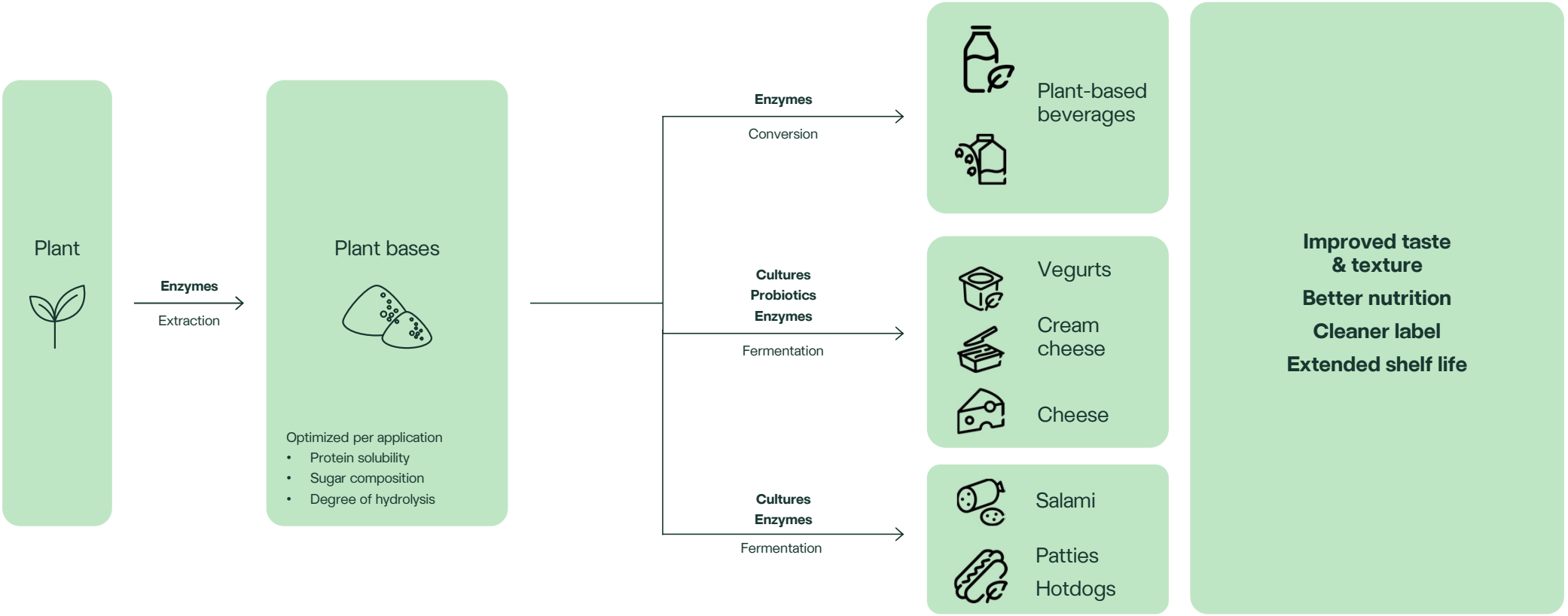
Our involvements on creating a more sustainable food system – future food categories







Novonesis – addressing the whole value chain, from extraction of bases to consumer product manufacture



Increased yield, optimized process & efficiency

novonesis

Enabling a transformation of our food systems require our collective efforts

Vision

Highly important with national and regional strategies to enable sustainable food production systems (from field to fork)

Funding

Access to funding opportunities that foster development of fundamental knowledge, interdisciplinary alignment and business-enabling inventions

Collaboration

Shared commitment to build new knowledge, insights, and technologies across public-private entities

Public- and private funding opportunities and collaborations are important for Novonesis and our customers to help enable transformation of food systems

Plant2Food

Several LoI and LoS...

Plantefonden

FUTURE DAIRY

AgriFoodTure

AQRIFood

RePlanted

HYCheese

GUDP

FermPro

Animal free protein

NNF: ProFerment

Important benefits for Novonesis from funded public-private collaborations

Fundamental Knowledge

Equipment and Technology

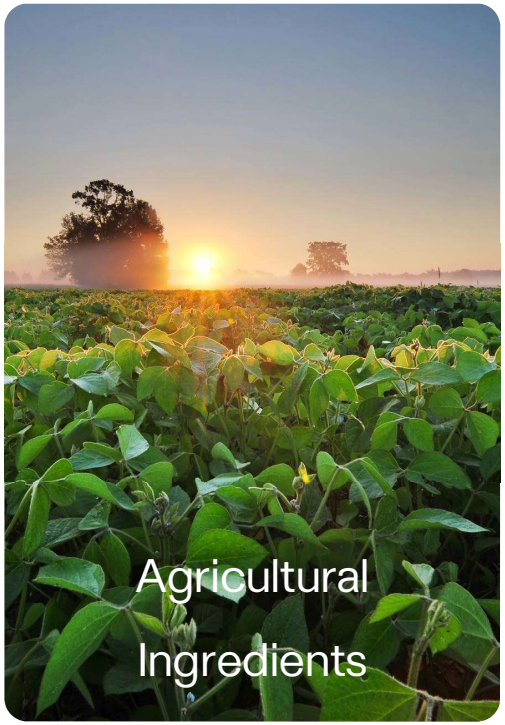
Talents

Partnership

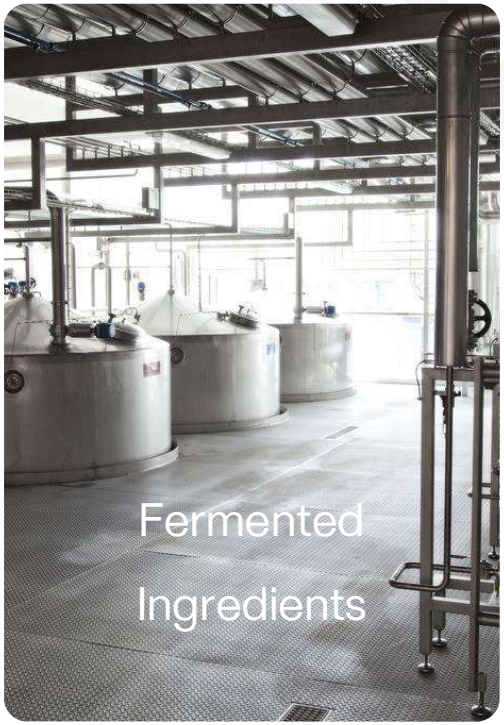
Possible obstacles and dilemmas

- Conflicting expertise
- Number of funding bodies and proposals
- IP and technological advancement
- Industrial relevance and impact
- Partners with scale-up capabilities

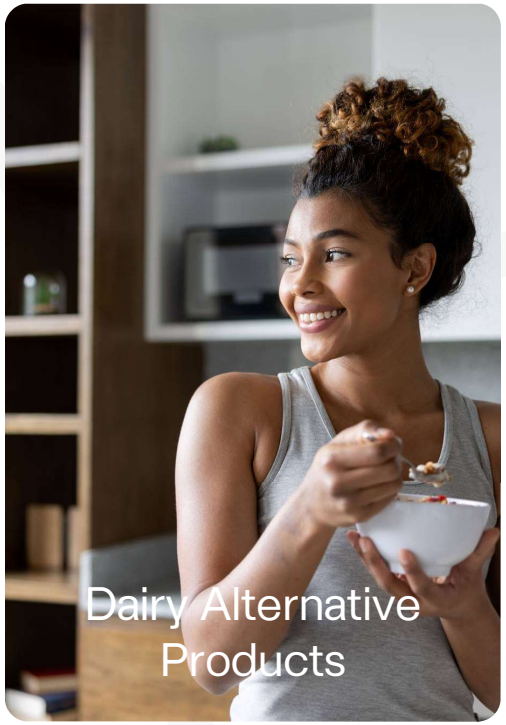
Ensure research activities and funding opportunities towards industrial trends for future food categories



- What are critical quality and functionality parameters?
- How to measure and consistently deliver on these?
- What are relevant crops to focus on?

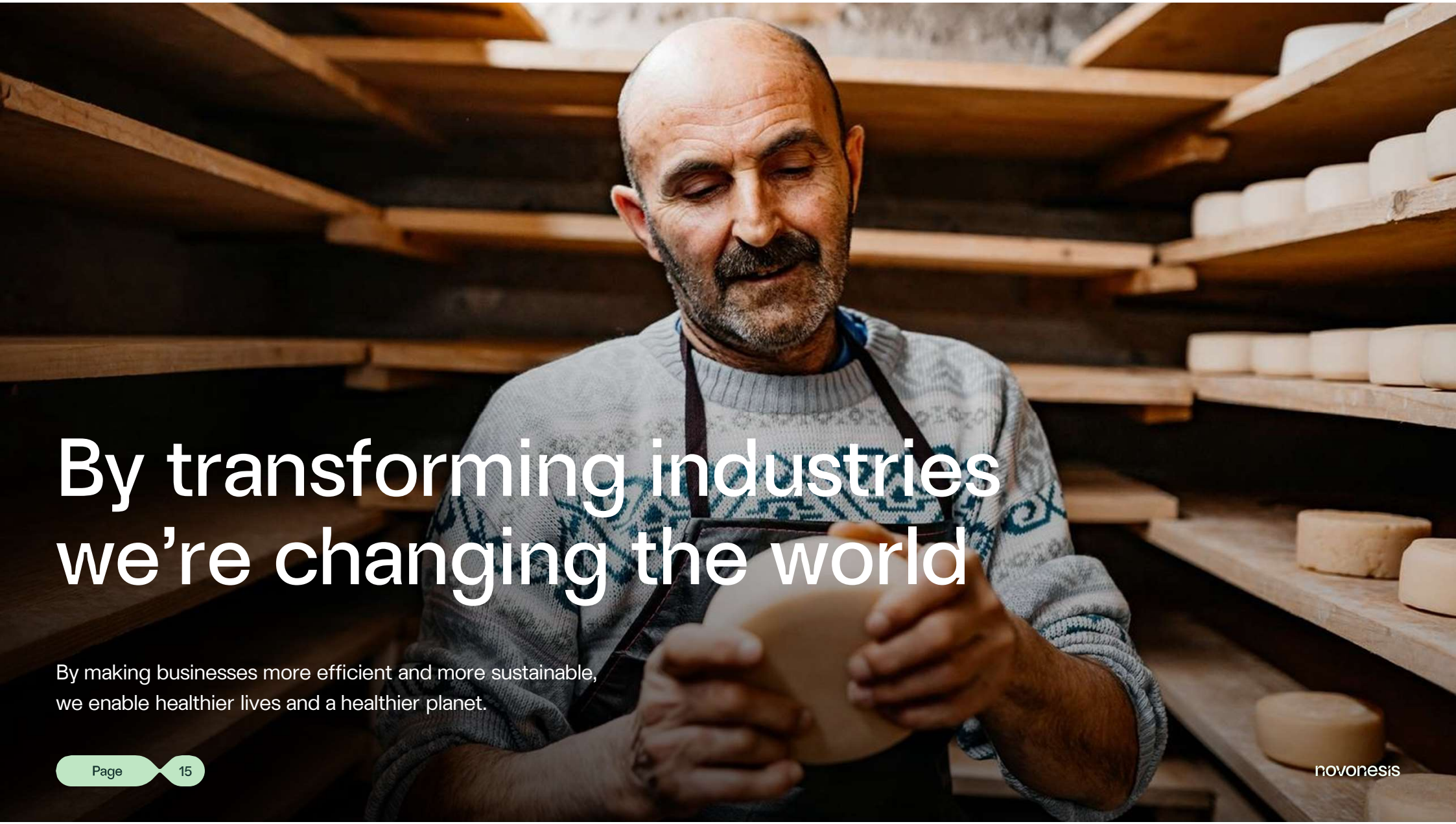


- What properties should these special ingredients deliver on?
- What manipulations are essential downstream?
- How to guide regulatory bodies to enable approval of safe food ingredients?



- What ingredient combinations enable healthy and tasty products?
- Which analytical tools and methods are required to create these products?
- How to best assess nutrition and health for plant-based products?
- How to compile and convert large data sets into predictive models?
- What new manufacturing equipment and –processes are required for new food products?
- What is required for full utilization of raw materials and zero waste products?

novonesis



By transforming industries we're changing the world

By making businesses more efficient and more sustainable,
we enable healthier lives and a healthier planet.

novonesis

Thank you.

<Place>
<Date>

novo nordisk
foundation
Benefitting people and society

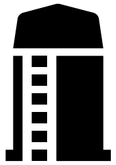
Introducing the purpose of the series of symposia

FAST-FORWARD
SYMPOSIUM
PLANT-BASED FOOD

Thomas de Bang
Senior Scientific Lead

Plant-based food is central for food systems transformation

Many **challenges** exist across the plant-based food value chain hindering transition.

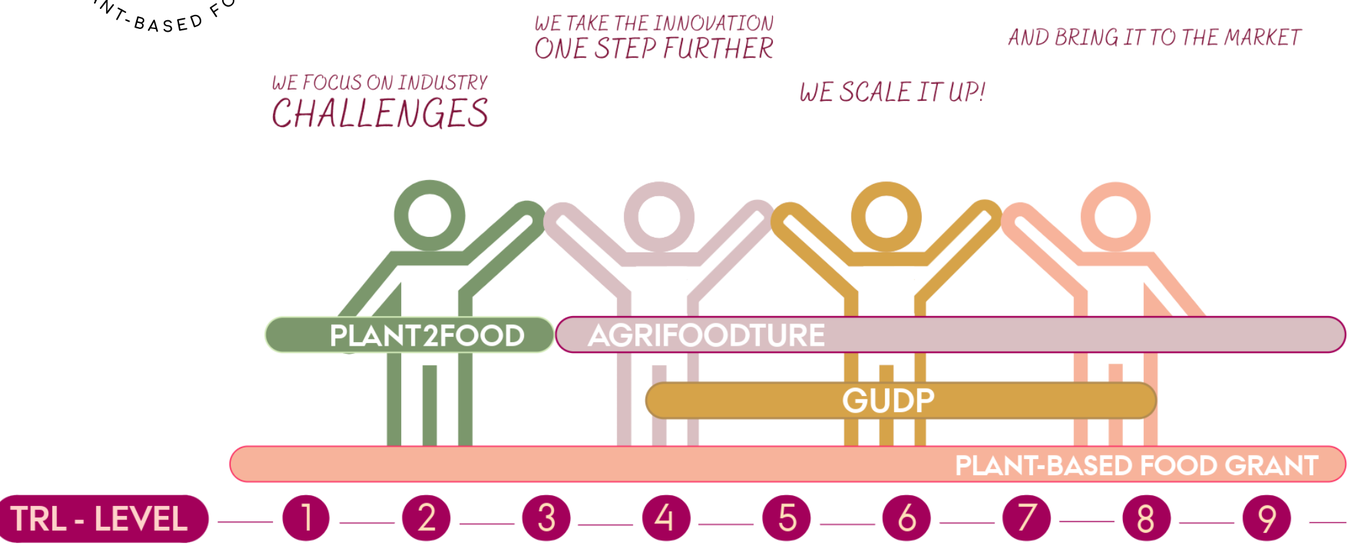

Big **potential** for value creation and better solutions through breaking down siloes

Great **opportunity** in building upon strong Danish tradition for collaboration and trust.

FAST-FORWARD SYMPOSIUM PLANT-BASED FOOD

Focused partnerships and collaborations across the value chain are key for impact

FAST-FORWARD SYMPOSIUM PLANT-BASED FOOD



Collaboration **across** the value chains and **between** funded projects to create synergy and propel the transition.

Three symposia over three years

Purpose

Create synergy, alignment, and awareness between existing funding schemes and ongoing research projects and activities to identify gaps and challenges.

The three symposia:

1. Match-making and raise community awareness
2. Public-private partnerships
3. Impact investments

Enjoy the day!

PLANT2FOOD

LISE LYKKE STEFFENSEN
Member of the Steering Committe
CEO NordGen

THE PLANT2FOOD PLATFORM

- 5-year platform (2023-2027)
- Up to 200 M DKK
- Sponsored by the Novo Nordisk Foundation
- Collaboration between four universities

Academia

AARHUS UNIVERSITET

WAGENINGEN UNIVERSITY & RESEARCH

DTU Technical University of Denmark

UNIVERSITY OF COPENHAGEN

Industry

Food & Bio Cluster Denmark

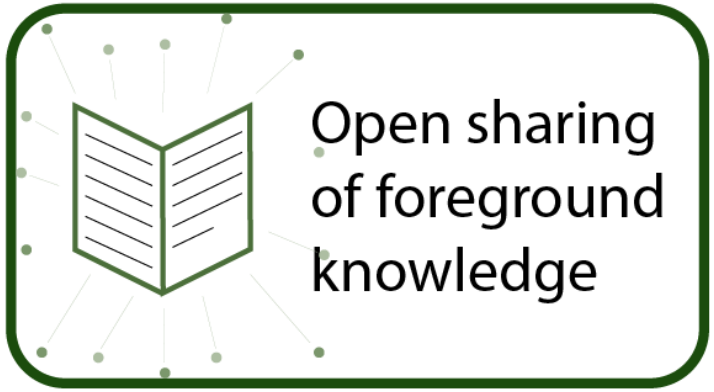
THE MISSION

To accelerate the transition to a more sustainable food system, which is healthy for both the planet and its population.

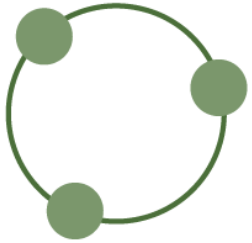
THE PLANT2FOOD PLATFORM

Focus on plant-based foods

Only pre-competitive research



Open sharing of foreground knowledge



Building of intersectoral collaborations

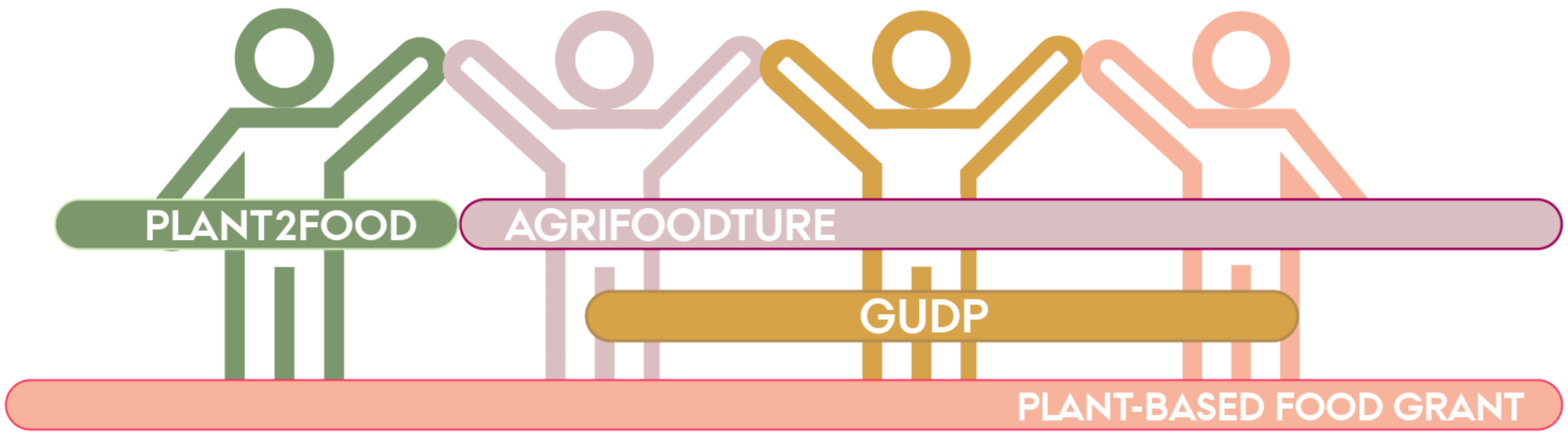
FAST-FORWARD SYMPOSIUM PLANT-BASED FOOD

WE FOCUS ON INDUSTRY
CHALLENGES

WE TAKE THE INNOVATION
ONE STEP FURTHER

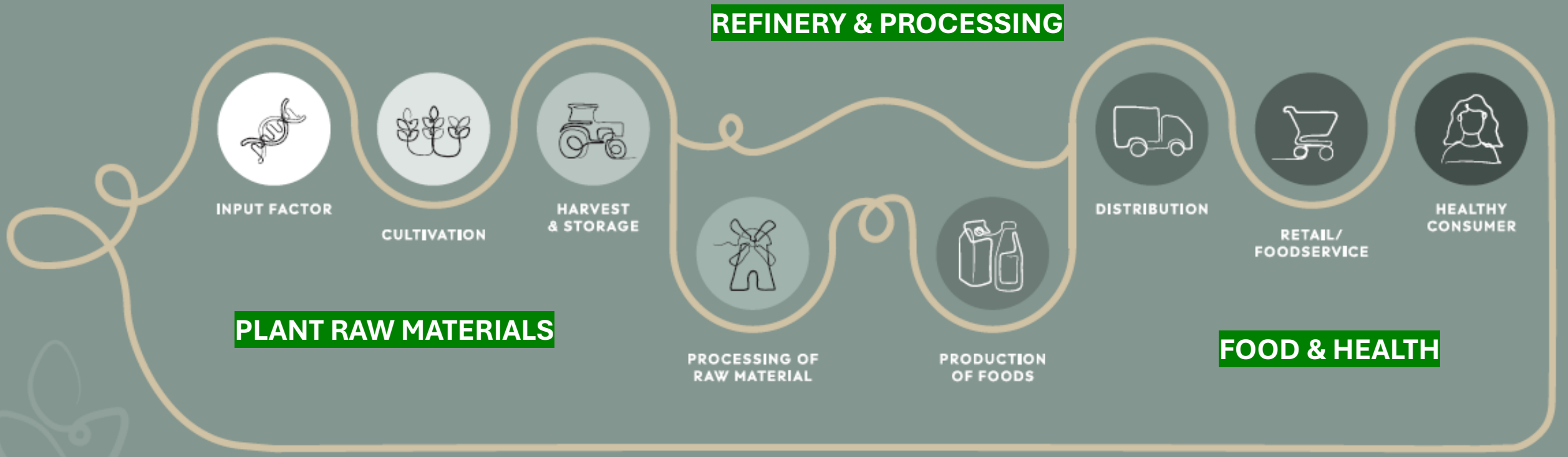
WE SCALE IT UP!

AND BRING IT TO THE MARKET



TRL - LEVEL 1 2 3 4 5 6 7 8 9

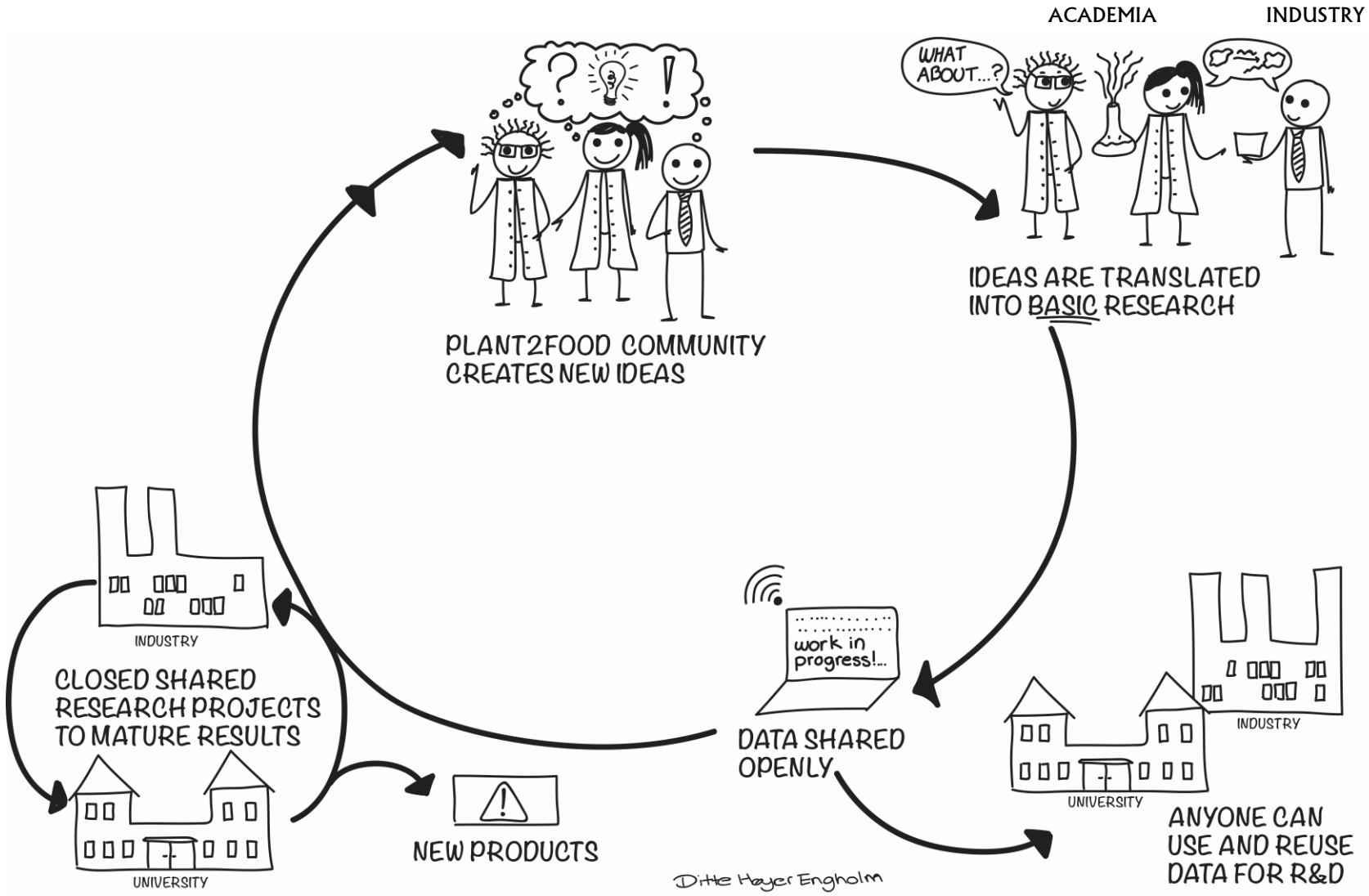
Plant-based value chain



PLANT2FOOD SUPPORTS

PRECOMPETITIVE AND OPEN COLLABOTRATIONS

+ IP



No IP

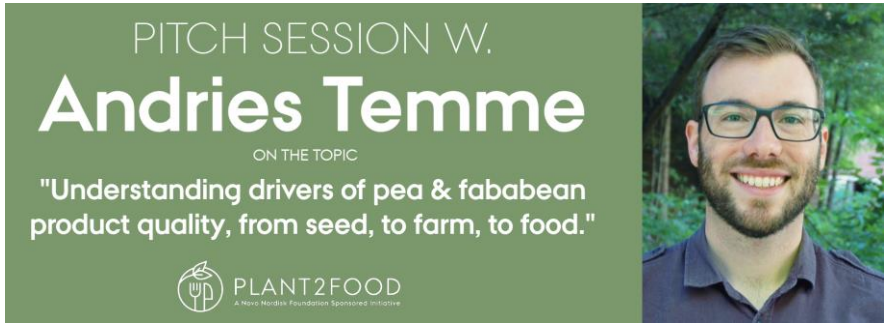
WHY PRECOMPETITIVE AND OPEN SHARING OF RESULTS

- Accelerates discoveries and innovations by bringing together university researchers and industry in patent-free collaborations where the results are shared publicly.
- The set-up acts as building blocks for downstream innovation that everyone is free to use for commercial purposes.
- The model is particularly suitable for early-stage mission-driven problems that are too complex for any party to solve alone.

PLANT2FOOD
A Novo Nordisk Foundation Sponsored Initiative

A plant-based hub for academia & industry experts

- Suggest ideas for research projects
- Find new collaboration partners
- Apply for funding for a research project
- Stay up to date on upcoming events



PLANT2FOOD
200 million DKK to support grant's between 1.5-8 million DDK

- Get the basics right and avoid unrealistic goals
- Accelerate innovation and enhance problemsolving
- No IPR and No NDA
- No funding to – or from – companies
- Low administrative burden
- Support for inspiration and matchmaking
- **Opportunity to co-creation and a possibility to adress the barriers to accellerate the potential of plant-based foods…**

TWO CALL ROUNDS

2024	2025
DEADLINE: 02 October 2024 12:00 GRANT: 17 M DKK/ 2.28 M € DECISION LETTERS: January 2025	One call in 2025 (tbd)

Plant2Food Hub

- Create an online profile
- Apply for funding
- Watch pitch sessions
- Find project partners
- Stay updated on news and events

Sign up

Plant2Food Secretariat

- Help with finding project partners
- News and events
- General questions about call rounds
- Guidance to WorldLabs

Programme Manager
Mette Damborg Hansen
meha@au.dk
+45 9350 8266

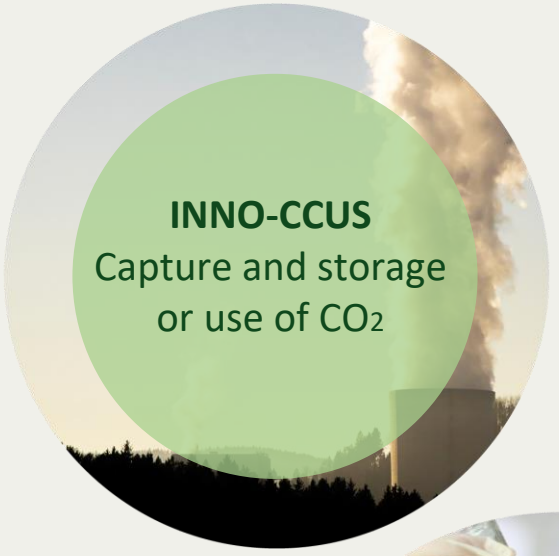
Administrative Coordinator
Cathrine Depenau
cdepe@au.dk
+45 9350 9991

Thank you

PLANT2FOOD
A Novo Nordisk Foundation Sponsored Initiative


AgriFoodTure
Leading the green transition
of Danish food and agriculture

INNOMISSIONS



INNO-CCUS
Capture and storage or use of CO_2

MissionGreenFuels
Green fuels for transport and industry (Power-to-X, etc.)

AgriFoodTure
Climate and ecofriendly agriculture and food production

Trace
Circular economy with focus on plastic waste and textiles

AgriFoodTure

VISION

AgriFoodTure wants to position Denmark as the leader for innovative, disruptive solutions that enable the green transition of the agri-food system and contribute to:

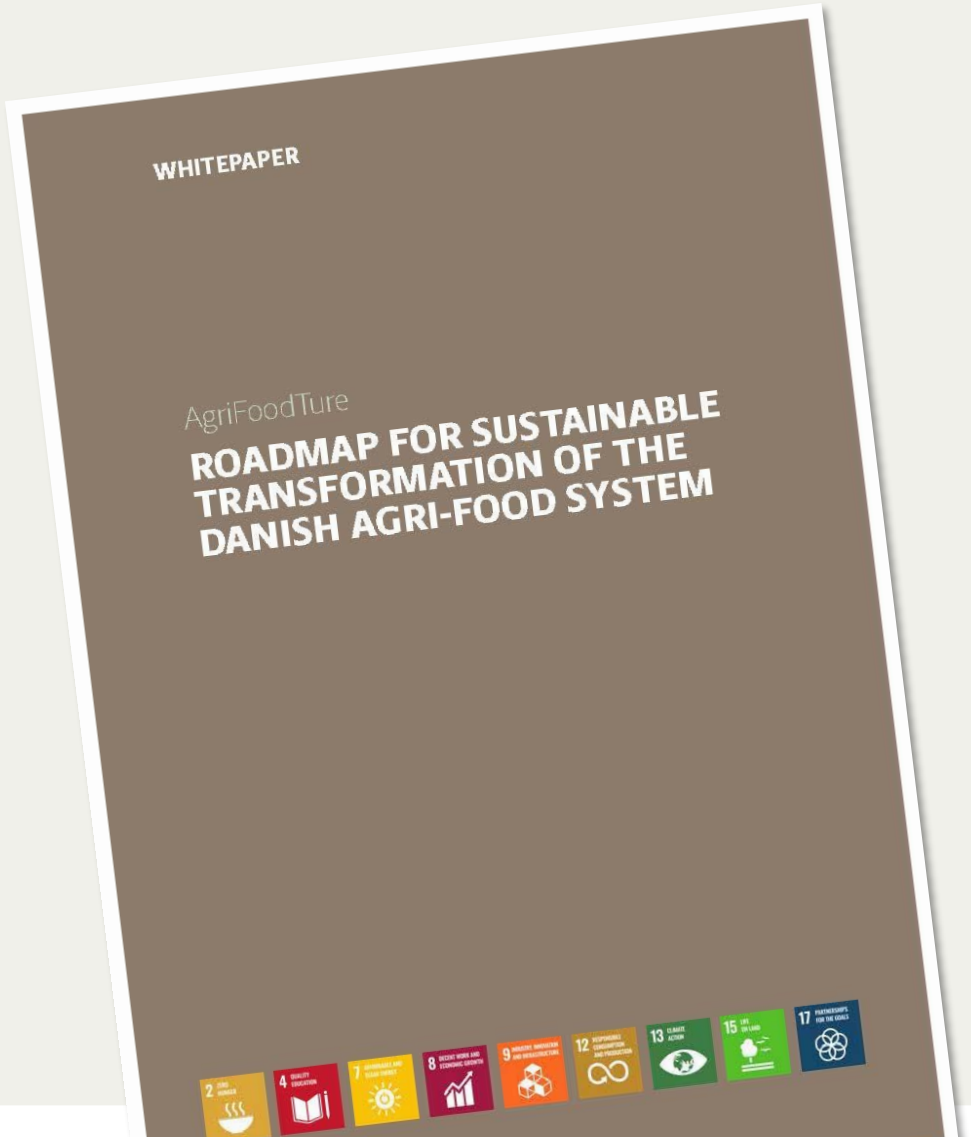
- **Achieving** a 70% reduction in greenhouse gas emissions in Denmark by 2030 and net-zero emissions by 2050.
- **Protecting** the environment and supporting Danish nature and biodiversity.
- **Increasing** the competitiveness of Danish business and industry.

MISSION

- The mission is to power a new generation of green export opportunities, securing the climate, environment and biodiversity while safeguarding food production and employment.
- AgriFoodTure will work fast to create strong, results-oriented research and innovation collaborations that build solutions across relevant fields of specialist expertise.
- Within agriculture, where plants, animals, soil, water and energy are closely interconnected, AgriFoodTure will apply a circular, holistic approach to create sustainable solutions for Denmark and the world.

AgriFoodTure

SUSTAINABLE TRANSFORMATION

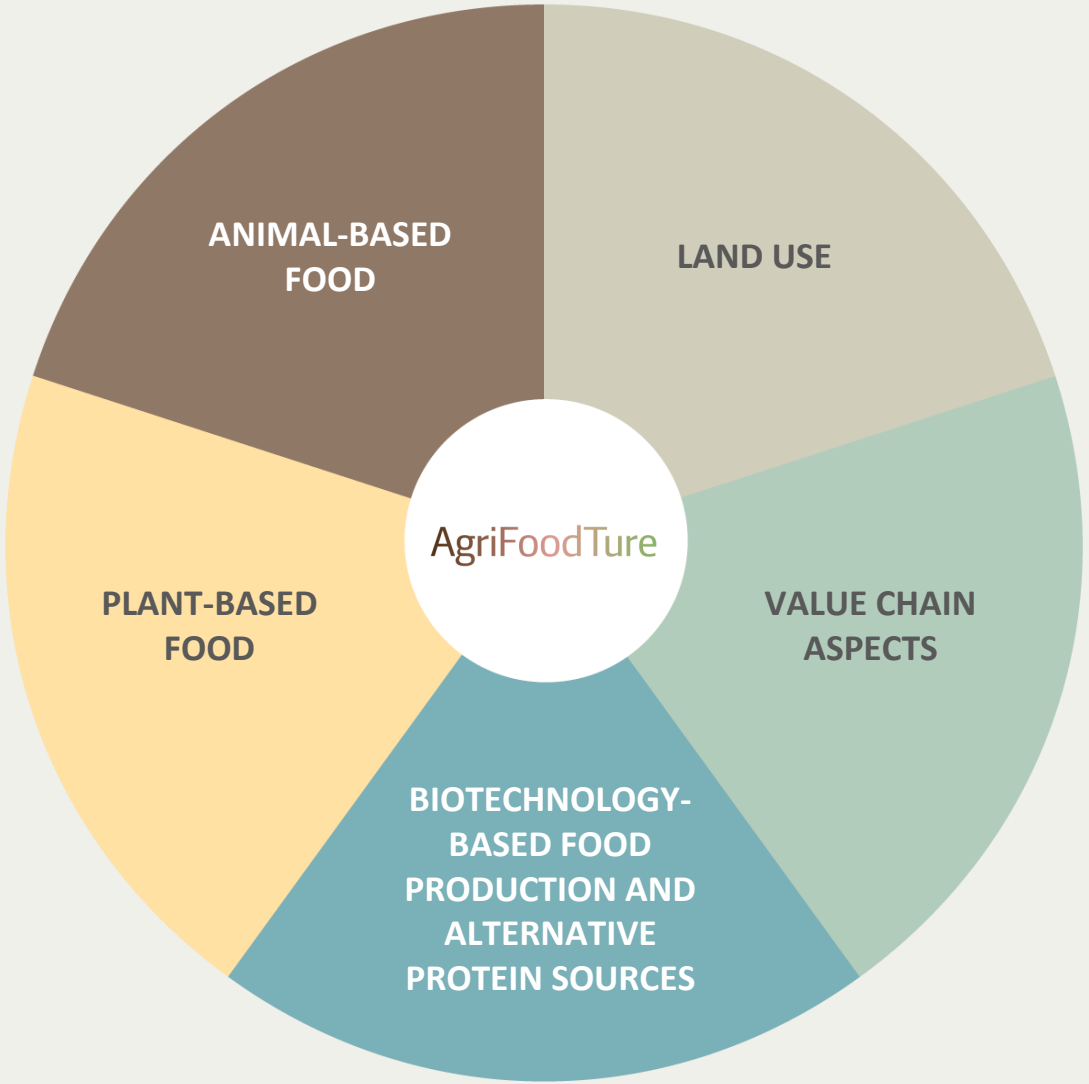


A collaborative effort with contributions from more than 300 researchers from eight Danish universities, sector organisations and industries

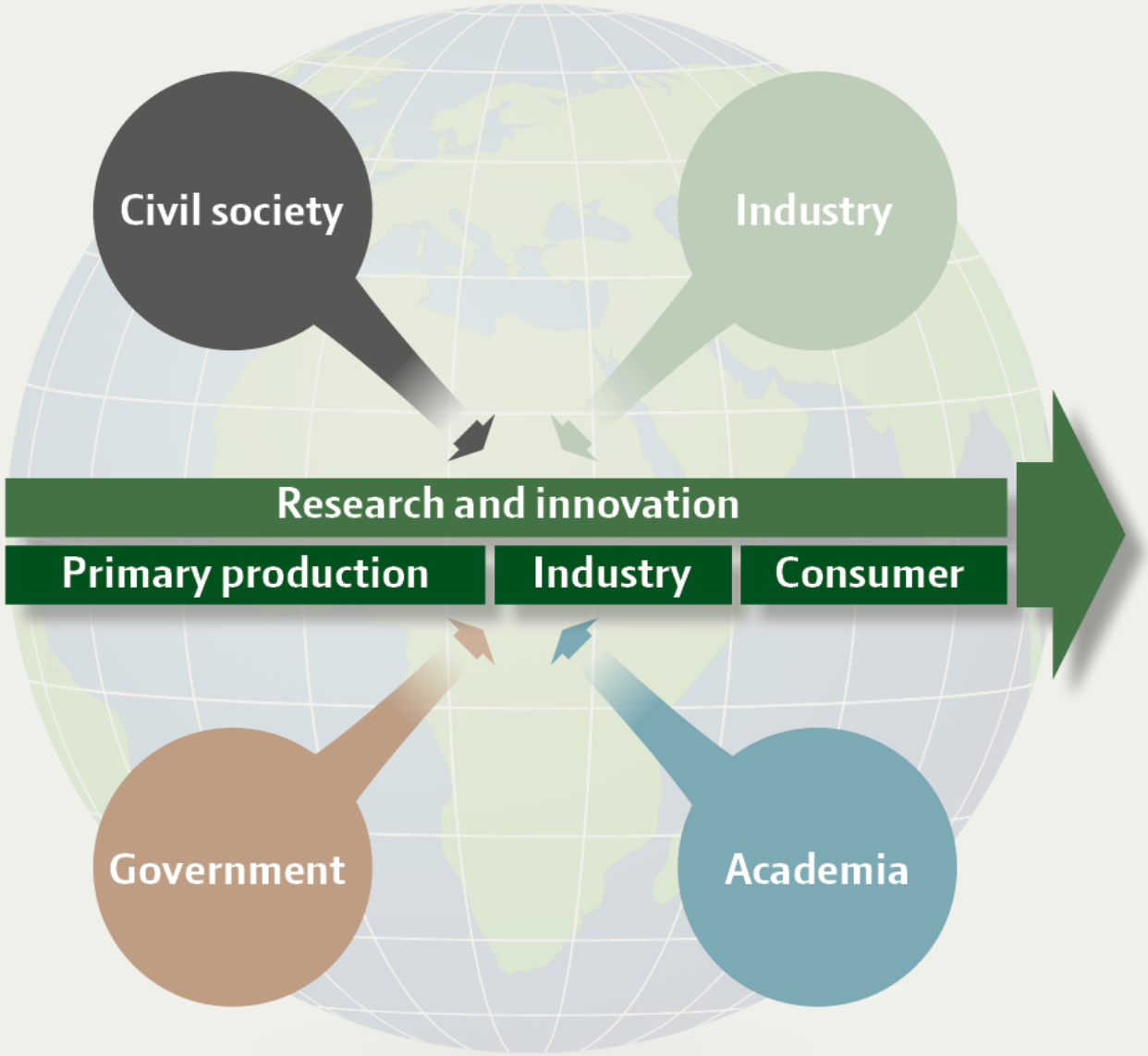
AgriFoodTure

FOCUS AREAS

The AgriFoodTure roadmap has identified five tracks which together will contribute to reaching the 2030 and 2050 goals and visions.



QUADRUPLE HELIX



AgriFoodTure

AgriFoodTure Projects

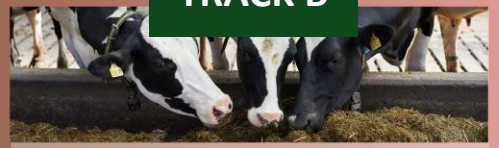
TRACK A

MitiChar

ZeroEmission

FOFE

TRACK B



MABICOW

GrassProtein

LOWHIGH

CH4VENT

PERMA

ClimateReach

TRACK C

AQRIFood

Climate Friendly Plant Biologicals

REPLANTED

HyCheese

TRACK D

SAFEPRO

UPFORCRABS

MuscleFuel

MYCOFLAVOR

AgriFoodTure

CALLS FOR PROJECTS

Themes for Upcoming Calls

Theme 1

Social Sciences and Humanities projects

11 mDKK

Theme 2

Themes across the AgriFoodTure roadmap

~ 30 mDKK

Theme 3

Accellerating impact towards 2030

42 mDKK

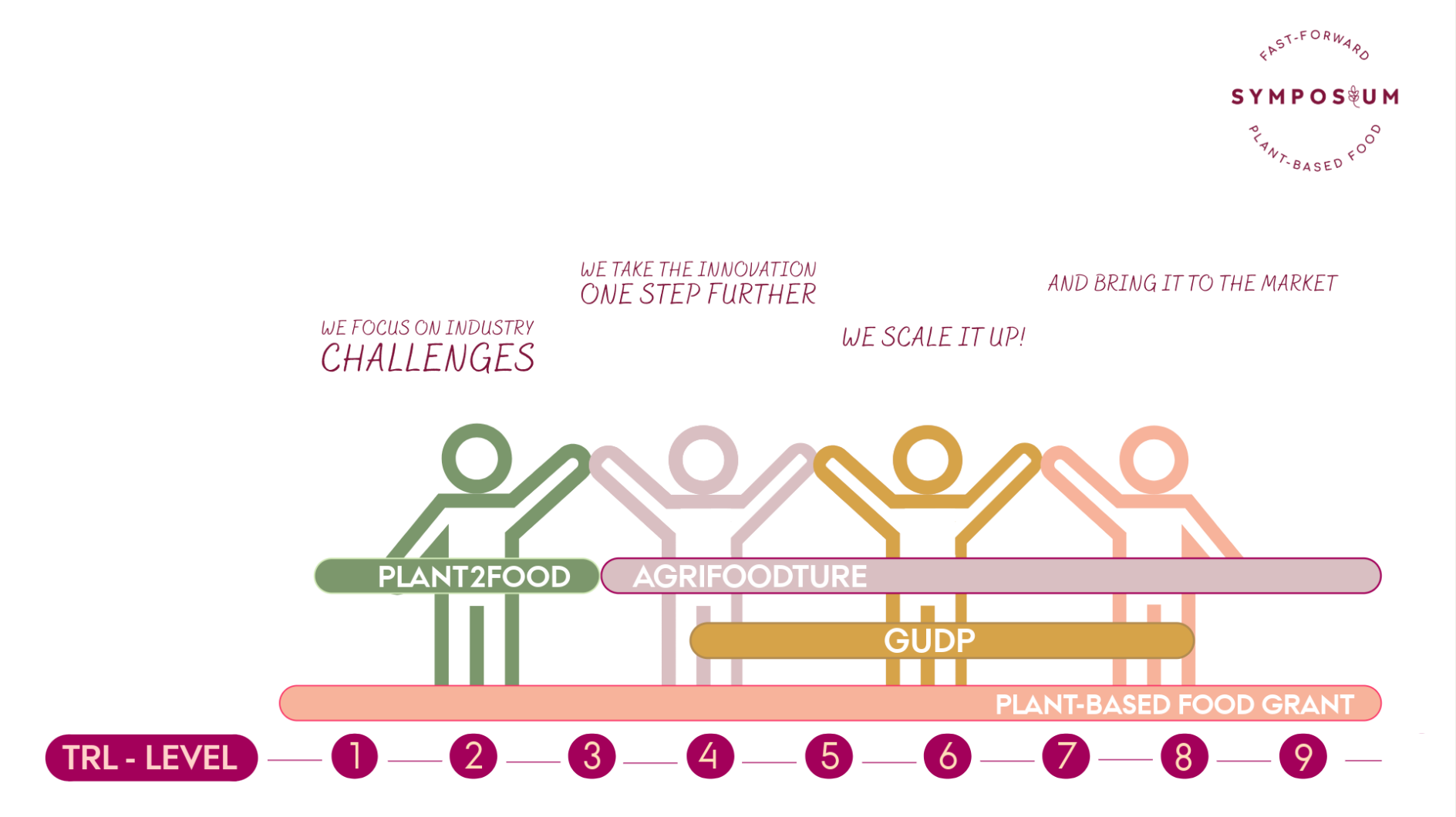
Theme 4

Activities spanning two or more innomission areas (realize the ambitions in the 4 roadmaps)

60 mDKK

AgriFoodTure

Technology Readiness Level (TRL)



WHO CAN APPLY

- Ambitious, cross-cutting research and innovation projects that deliver impact to the AgriFoodTure roadmap.
- A project should consist of partners that are active participants in both the design of project, the realization of the project and the active implementation of the results from the project.
- Relevant collaborations across businesses, research institutions and public institutions must also be striven for.

AgriFoodTure

STAY IN THE LOOP

Newsletter
agrifoodture.com/newsletter

Linkedin
linkedin.com/company/agrifoodture

Funded by the European Union
NextGenerationEU

Innovation Fund Denmark

AgriFoodTure

PLANT-BASED FOOD GRANT

History

Vision

The vision of the Plant-Based Food Grant is for plant-based foods to play a meaningful role in benefiting the development of the food industry and the health of people and the planet.

Six focus areas

The Plant-Based Food Grant
- In brief

Stimulating Demand

1) **Increasing the proportion of plant-based foods in public and private institutional kitchens and food services**

2) **Increasing the household consumption of plant-based foods among Danes**

3) **Increasing the demand for Danish plant-based foods in export markets**

Stimulating Supply

1) **Increasing the quantity and quality of the plant-based products that appear on the market**

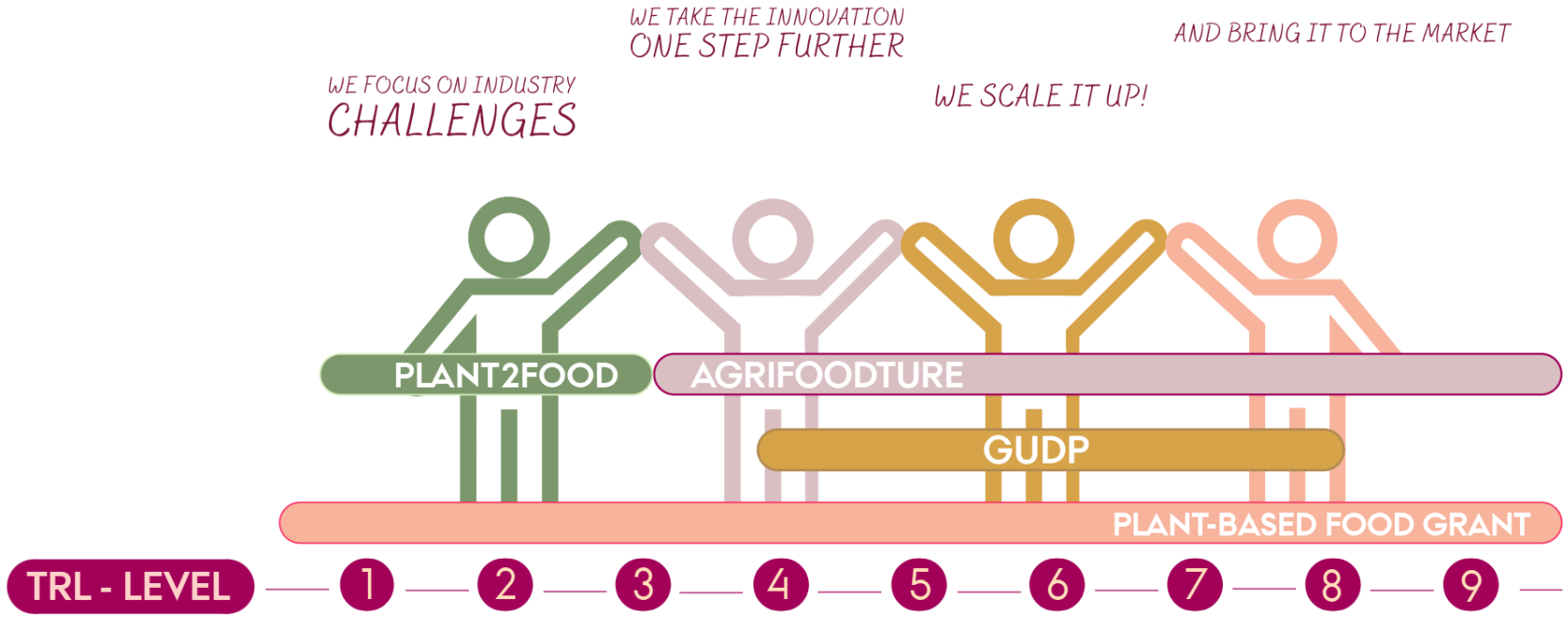
2) **Increasing the volume of Danish plant-based food production both on land and offshore**

Building sectoral bridges

1) **Strengthening the entire value chain**

TRL-level compared

FAST-FORWARD SYMPOSIUM PLANT-BASED FOOD



Approx. **90 million** DKK/Year

50% of the funds to organic foods

ONE application round per year, next window opens mid. February 2025.

At least **60% of** Food Grant resources will go to partnership projects

Grants 2023

97 applications for a total of 204 mio. DKK

”This is world history. Denmark is a front runner.”

”In 2023 we prioritisded support for smaller projects in order to maximise our reach and societal influence. I hope, that when looking back at that moment in 10 years, we recall the beginning of a Danish succes, but also the moment in which a global movement was set in motion.”

Forbes

Forbes

BBC

Home News Sport Business Innovation Culture Travel Earth Video Live

Denmark: The major pork producer trying to wean itself off eating meat

1 December 2023

Share

By India Bourke, Features correspondent

The Plant-Based Food Grant
- In brief

Funding 2024-2026

2024:

- Applications: 101
- amount applied for: 334 million DKK
- Funds available: 122 million DKK
- Earmarked for research: 34,5 million DKK

2025 and 2026:

- Funds available: 120 million DKK
  - A political agreement named "Green Fund" gave the Food Grant an additional 30 million DKK for each of the application rounds 2025 and 2026.

Management

The Plant-Based Food Grant
- In brief

Focus

Value chain focus

Strong emphasis on project partnerships

Application oriented research

No business plan needed

Thank you for your time

- The floor is open

www.plantefonden.dk

GUDP

GREEN DEVELOPMENT-
& DEMONSTRATION PROGRAM

GUDP – in brief

GREEN DEVELOPMENT- & DEMONSTRATION PROGRAM

GUDP finances innovative projects that promote green and economic sustainable development within Danish agriculture, fishing, aquaculture, and foodservices.

HISTORY
- Established in 2009

STRATEGY
- Focus areas
- Zoom-in on future food production
- A value chain approach

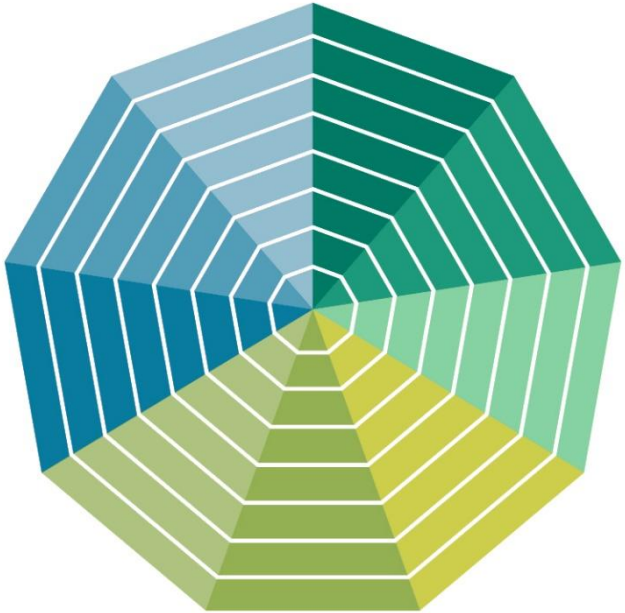
BOARD & MEMBERS
- Appointed by the minister

BUDGET & FUNDING
- Approx. 200mio. DKK annually
- Additional funding some years
- In total, >600 funded projects
- In total, > 3.2bn. DKK

APPLICATION WINDOWS 2024
- Two application rounds annually
- Next application round early June
- Extraordinary funds in 2024:

BioSolutions, climate friendly food, food systems, alternative proteins, food waste

GUDP – at it's core



PRIORITIES

- Green & economic effects
- The doubble bottom line

- Project quality
- Team members

PROJECT TYPES

- Development projects
- Demonstration projects
- Applied research
- Networking projects

The floor is open

THANK YOU FOR YOUR TIME

@GUDP

WWW.GUDP.DK

GUDP@LBST.DK

RETOX-PRO

removal of mycotoxins by legume fermentation
to improve plant protein quality

FOSS

FERM FOOD

AARHUS UNIVERSITY

DTU

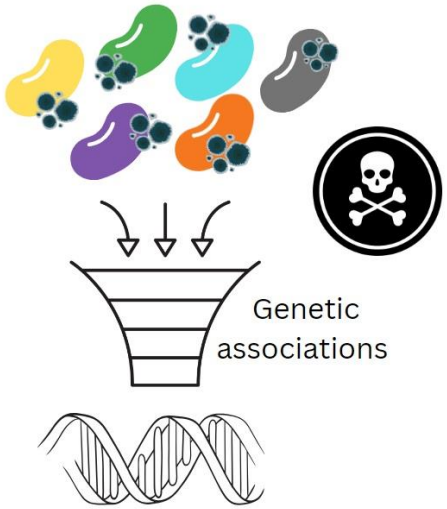
AALBORG UNIVERSITY

BUSINESS ACADEMY AARHUS

PLANT2FOOD
A Novo Nordisk Foundation Sponsored Initiative

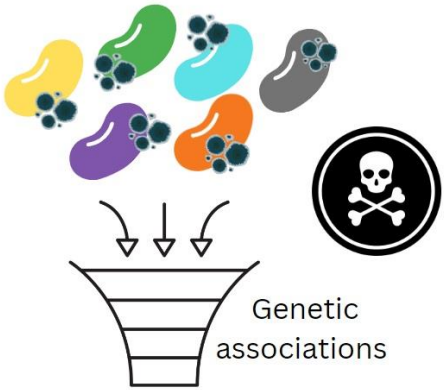
novo nordisk fonden

Genetically diverse legumes contaminated with mycotoxins



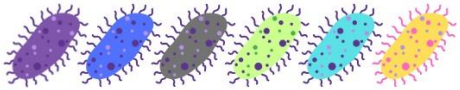
Plant genes confering desired fermentation qualities

Genetically diverse legumes contaminated with mycotoxins

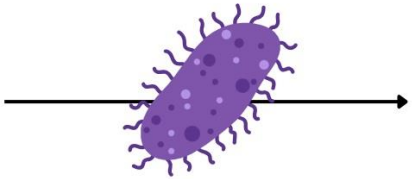


Genetic associations

Plant genes confering desired fermentation qualities



Screening of bacterial collections for mycotoxin removal efficiency

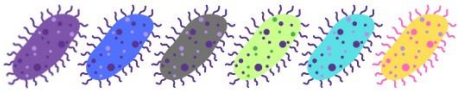


Elite mycotoxin degrading microbes

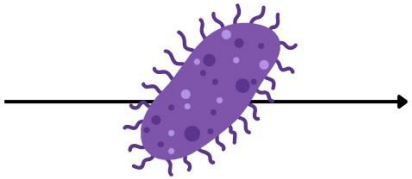
Genetically diverse legumes contaminated with mycotoxins

Genetic associations

Plant genes confering desired fermentation qualities



Screening of bacterial collections for mycotoxin removal efficiency



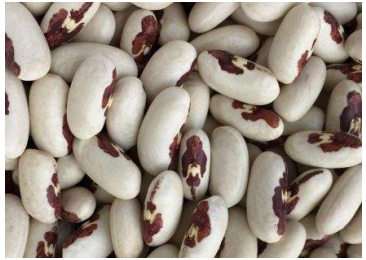
Elite mycotoxin degrading microbes

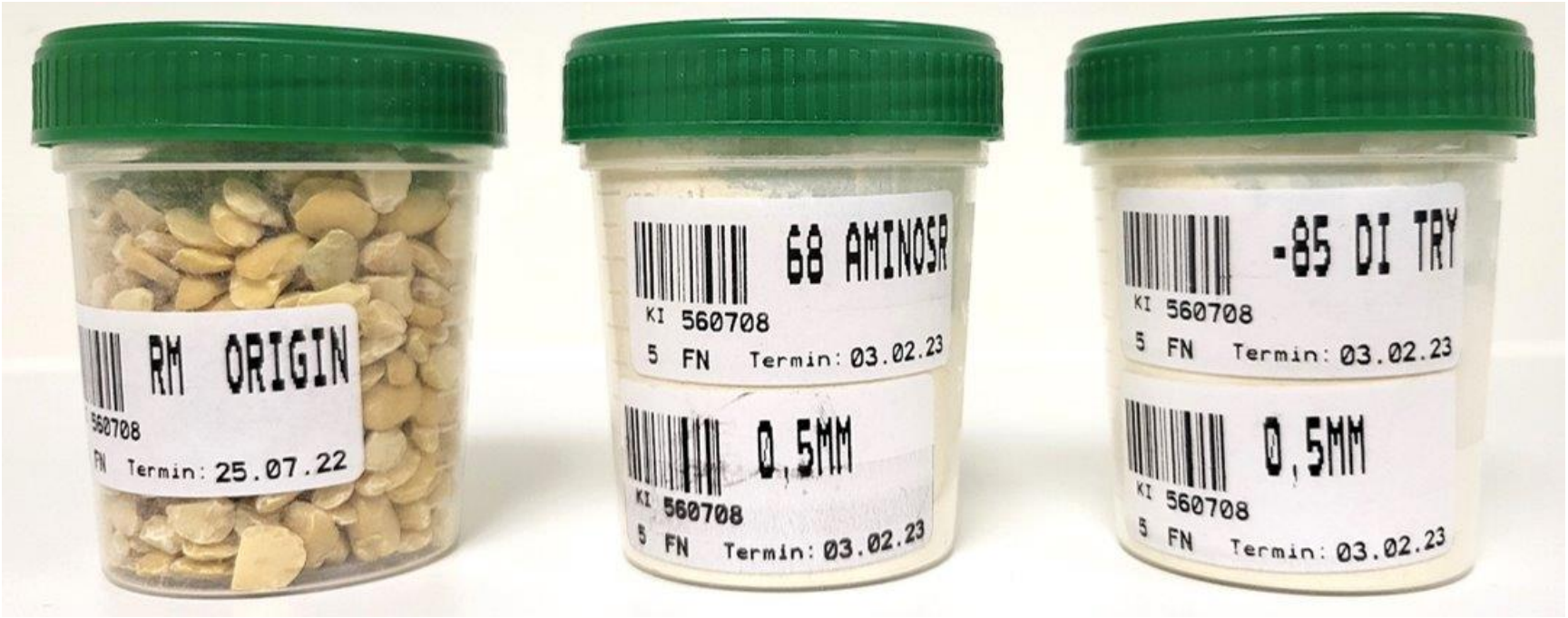
Safe food ingredients





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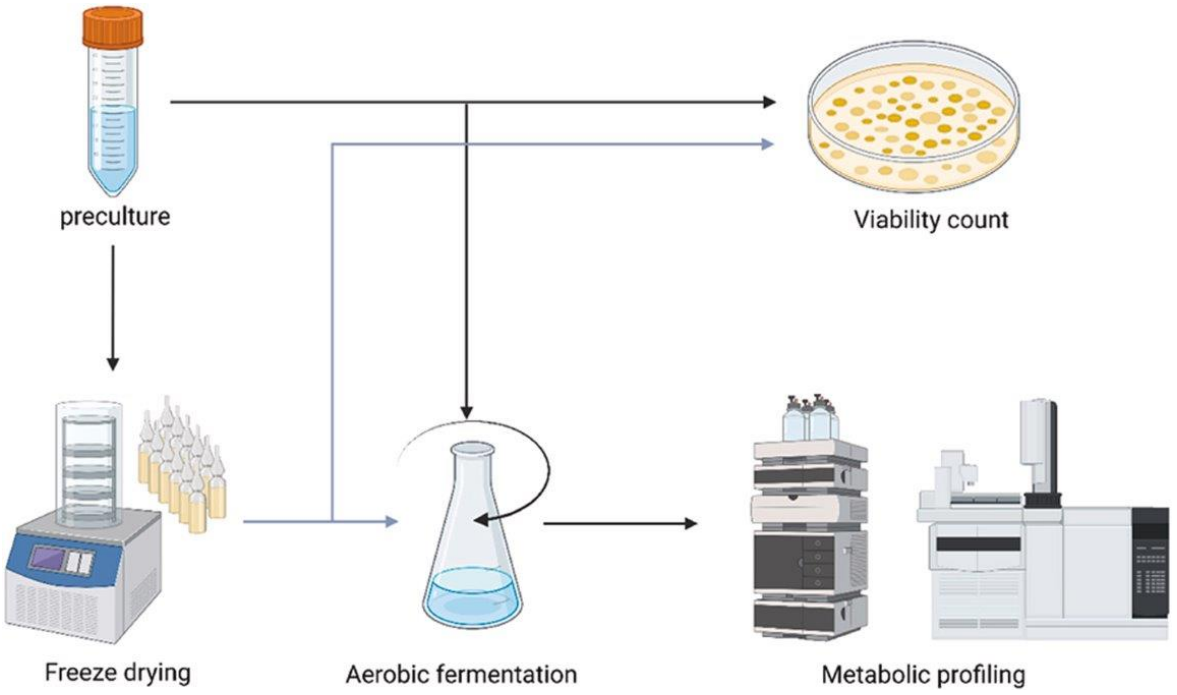
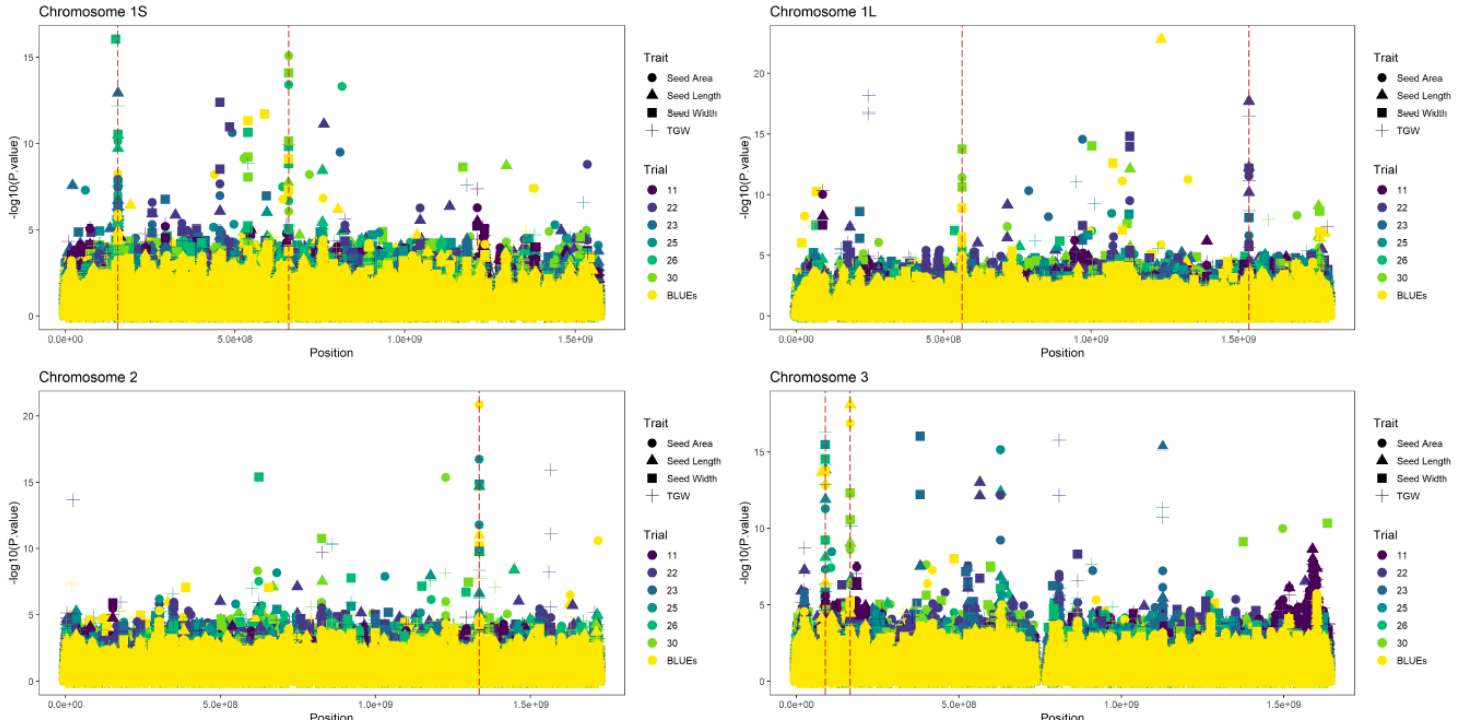

preculture
Viability count
Freeze drying
Aerobic fermentation
Metabolic profiling


Chromosome 1S
Chromosome 1L
Chromosome 2
Chromosome 3
-log10(P value)
Position
0.0e+00
5.0e+08
1.0e+09
1.5e+09
Trait
Seed Area
Seed Length
Seed Width
TGW
Trial
11
22
23
25
26
30
BLUEs

Gelatinization properties

Sensory tests for off-flavor

RETOX-PRO

removal of mycotoxins by legume fermentation
to improve plant protein quality

Join RETOX-PRO

Stig U. Andersen

sua@mbg.au.dk

Hang Xiao (DTU) | Marcin Nadzieja (AU) | Mette Skau Mikkelsen (FOSS) | Stig U. Andersen (AU) | Claus Heiner Bang-Berthelsen (DTU) | Reinhard Wimmer (AAU)
Svend Secher Dam (EAAA) | Connie Melchjorsen (EAAA) | Rikke Matthiesen (Ferm Food)

Data-driven design of synergistic microbial communities targeting high-quality plant-based food (MiCoP)

MiCoP

PLANT2FOOD
A Novo Nordisk Foundation Sponsored Initiative

UNIVERSITY OF COPENHAGEN

WAGENINGEN UNIVERSITY & RESEARCH

Dansk Vegetarisk Forening

BIOLean

novonesis

Organic Plant Protein

Pure Dansk

NIZO FOR BETTER FOOD & HEALTH

Arla

FERM FOOD

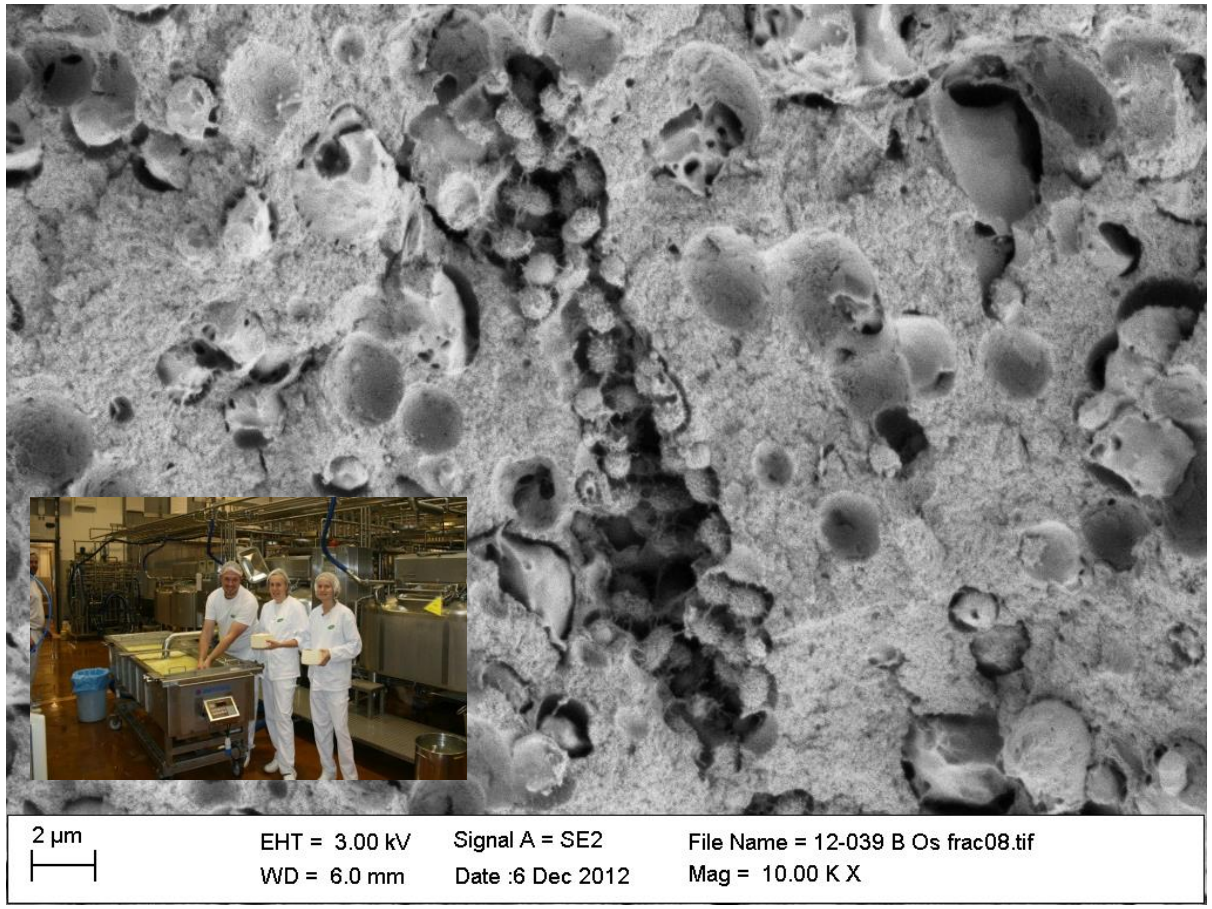
HANEGAL MERE END ØKOLOGI

Project duration:
February 2024 – January 2028

Budget: ~12.5 mio DKK

Background for the proposal – fermentation of plant-based food

We have extensive knowledge on cultures for milk-based products – but what about plant-based products?



Fermentation can:

- improve taste and texture
- enhance bioavailability of nutrients
- optimise shelf life and safety

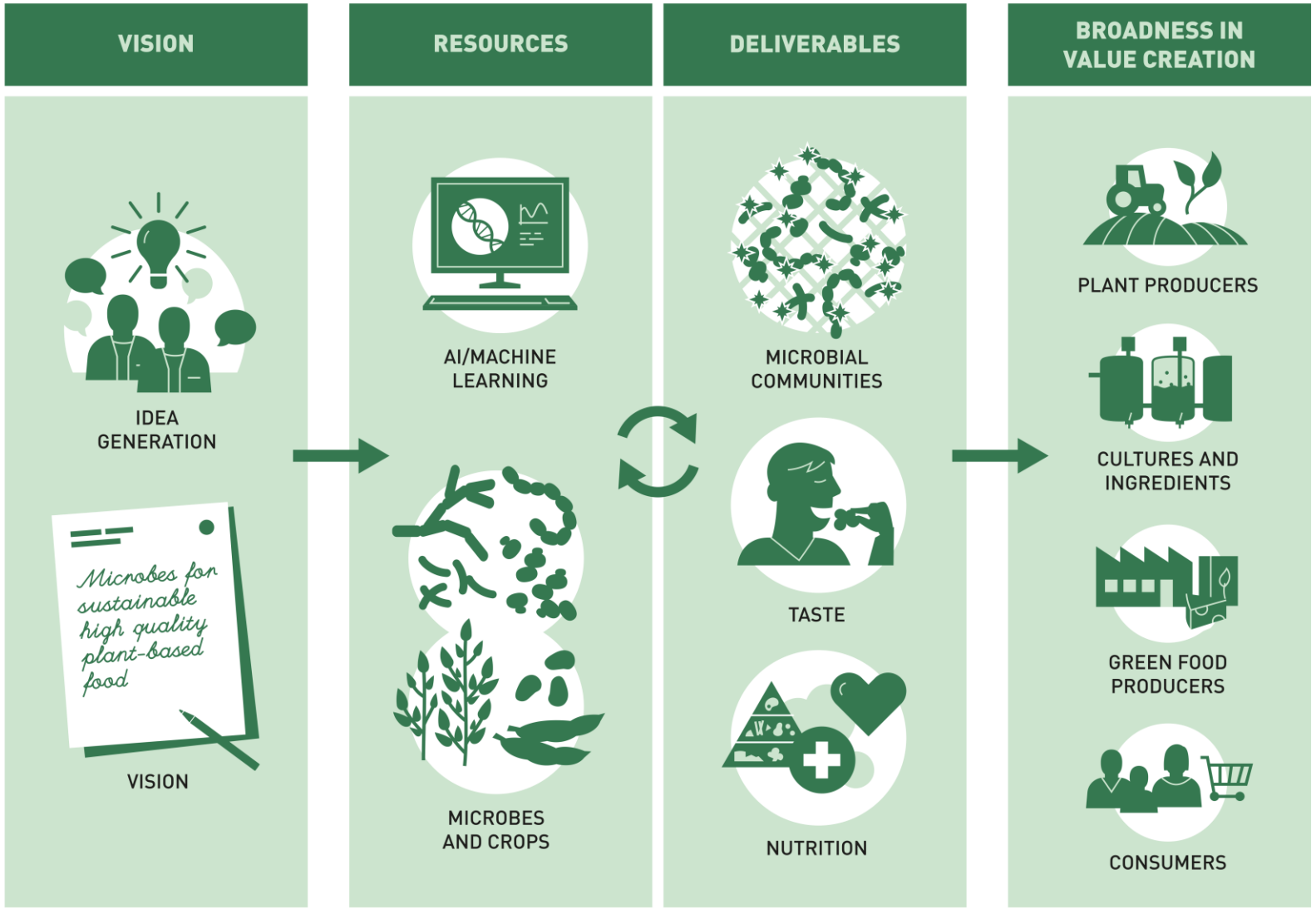
Plant materials are:

- very diverse, complex, etc.
- very different from e.g. milk matrices

Fermentation of plants requires detailed knowledge on:

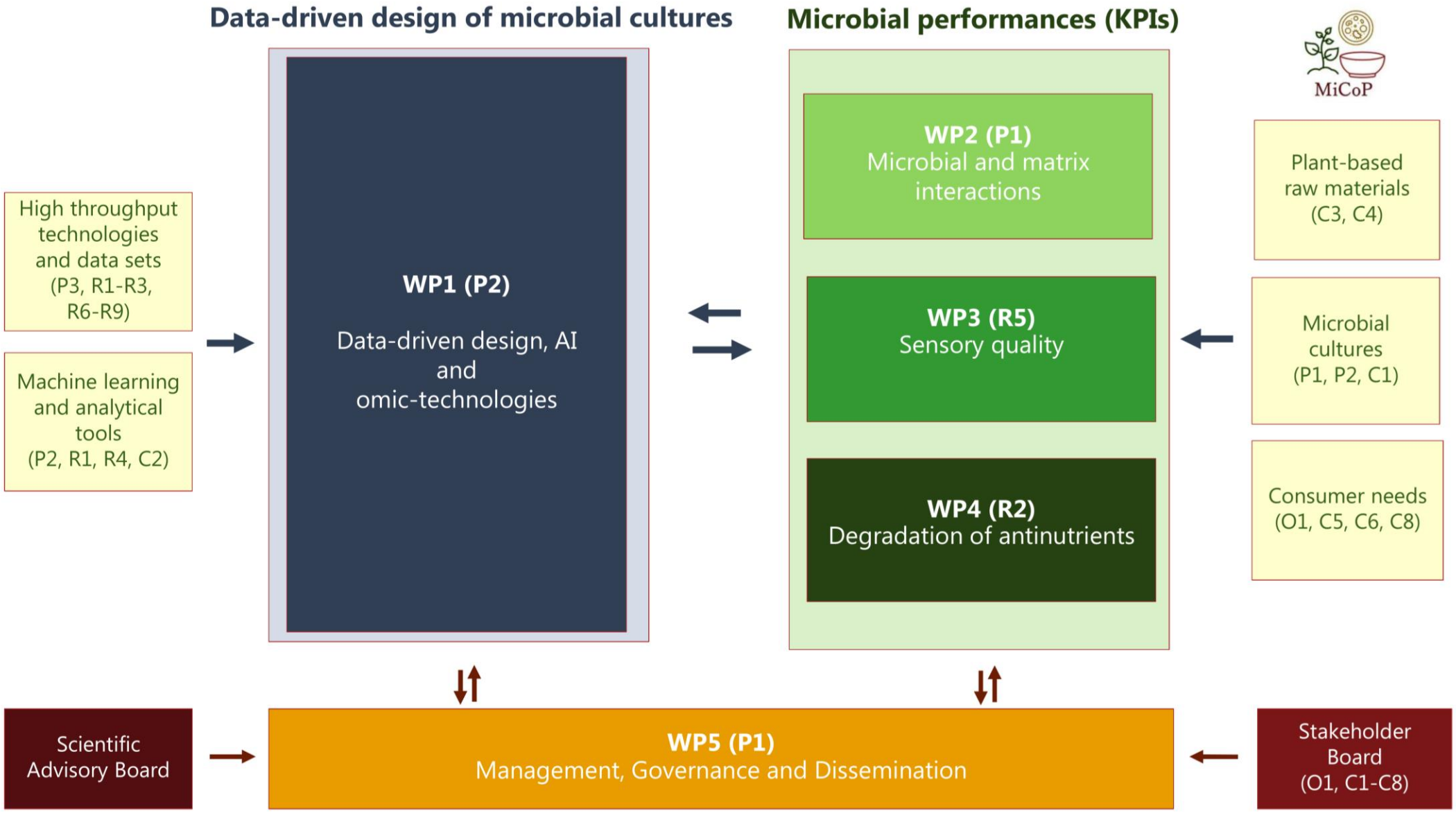
- how microbes interact with plant cells
- enzymes required for degradation of plant cells
- best cultures and practices for optimised flavour. nutritional properties and shelf life

MiCoP: from vision to broadness in value creation



MiCoP

Project overview



O&Os

Outputs:

- ✓ A generic AI/ML model to predict required properties and combinations of microorganisms to effectively transform plant-based raw materials into high quality food
- ✓ Revealing yet unexplored possibilities for improving palatability, increasing bioavailability of essential nutrients, and enhancing shelf life
- ✓ Innovation within the ingredient and food industries enabling sustainable product development

Overall outcome:

- ✓ Fermentation as a game changer in the transition to a more plant-based diet
- ✓ Sustaining the already strong Nordic food culture
- ✓ Addressing several SDGs, especially within good health and well-being (SDG3) and responsible consumption and production (SDG12).

Plant2Food - lessons learned

Why Plant2Food?

- Interesting new initiative
- Opportunity to do fundamental research
- Collaboration with other universities
- Can employ PhD students
- Integrate applied aspects with excellent industrial partners

Advises:

- Start in due time
- Get familiar with the Plant2Food platform
- Find the right number of partners
- Involve the partners from an early stage
- Consider the dissemination strategy

"I have never tried that before, so I think I should definitely be able to do it" - Pippi Longstocking

PLANT2FOOD
A Novo Nordisk Foundation Sponsored Initiative

MiCoP

Thank you for your attention...!

UNIVERSITY OF COPENHAGEN

WAGENINGEN UNIVERSITY & RESEARCH

BIOLean

Dansk Vegetarisk Forening

HANEGAL MERE END ØKOLOGI

Pure Dansk

novonesis

NIZO FOR BETTER FOOD & HEALTH

Arla

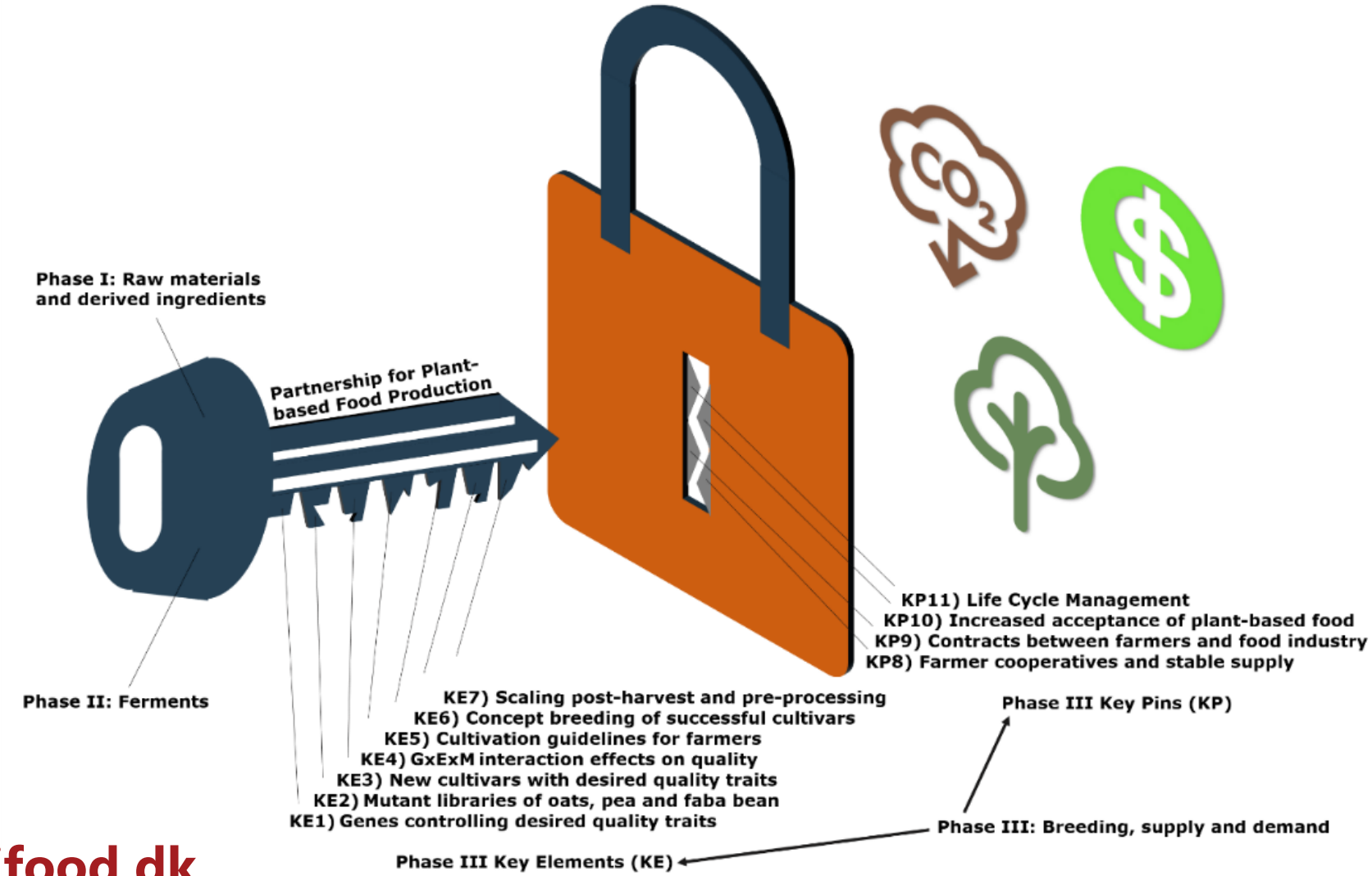
Organic Plant Protein

FERM FOOD

UNIVERSITY OF COPENHAGEN
AgriFoodTure
Innovation Fund Denmark
Funded by the European Union NextGenerationEU

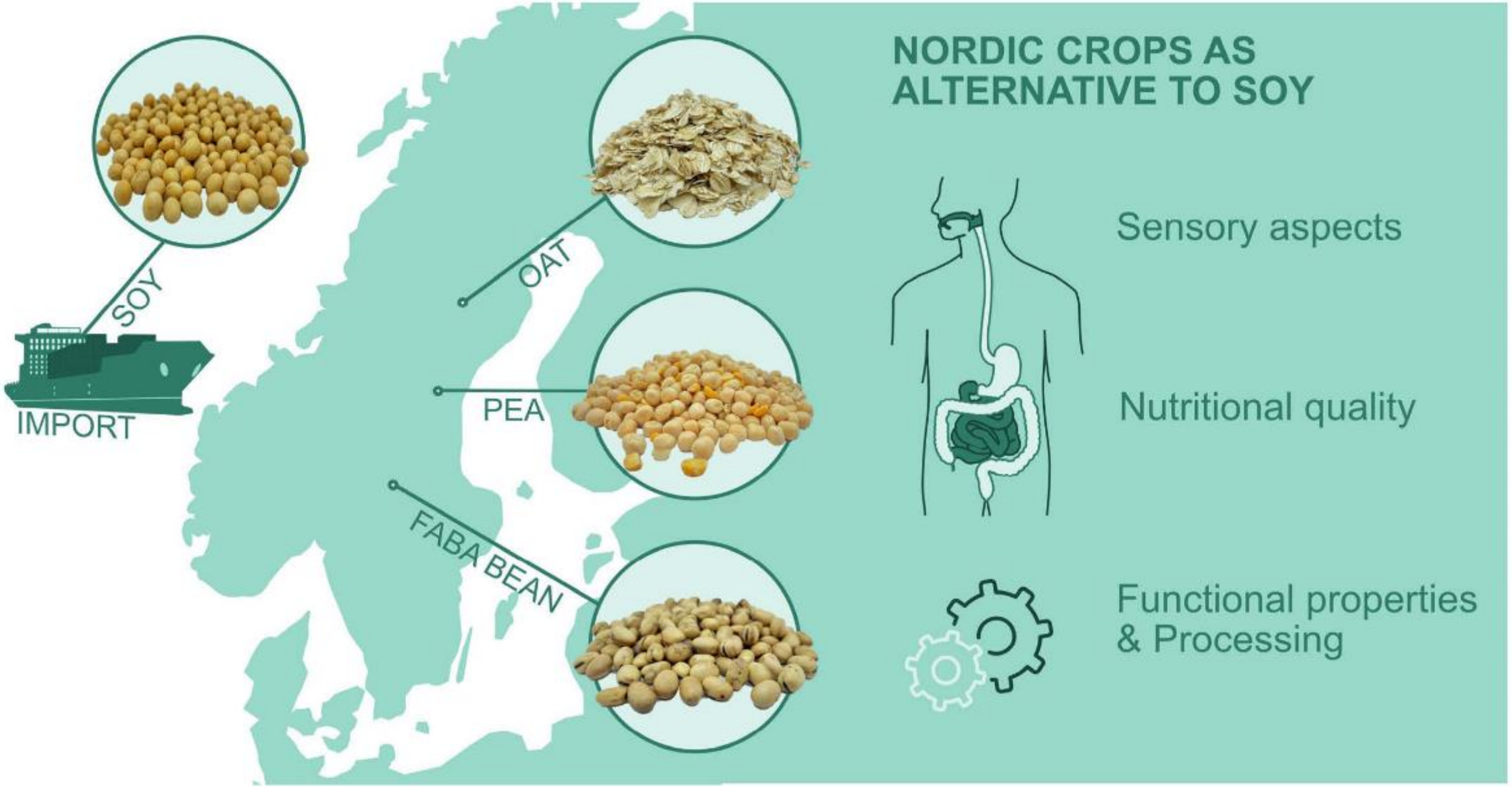
AQRIFood Pitch at Fast Forward Plant-based Food Symposium

Unlocking the potential for Denmark to become a global leader in plant-based food production



www.aqrifood.dk

Christian Bugge Henriksen
E-mail: cbh@plen.ku.dk



Source: Auer et al. (2023). Nordic Crops as Alternatives to Soy—An Overview of Nutritional, Sensory, and Functional Properties. Foods 12, 2607

Sejet planteforædling

List of varieties used in the project

OATS
Caddy
Delfin
Dominik
Galant
Lion
Max
NORD 20/127
NORD 20/223
Oskar
Scotty

PEAS
Akooma
Astronaute
Bagoo
Greenway
Ingrid
Kaplan
Karacter
Manager
Orchestra
Skol

FABA BEANS
Apollo
Birgit
Futura
Lynx
Protina
Stella
Taifun
Tiffany
Vertigo
Victus

dlg

Key learnings from AQRIFood Phase I

- ✓ The nutritional quality of the tested commercial varieties of oat, pea and faba bean is very similar with respect to bulk protein and minerals, but some varieties differ significantly in their content of anti-nutrients
- ✓ There are large differences between the functional properties of the tested commercial varieties of pea and faba bean with respect to water and oil holding capacity, protein solubility, foamability, emulsification and gelation
- ✓ The sensory quality of the commercial pea varieties varies significantly, with respect to green pea, yellow pea, and nutty flavors, as well as bitter aftertaste. Correspondingly, the faba bean varieties exhibit significant differences in bitter taste, astringent mouthfeel, and bitter aftertaste





Next steps within and beyond AQRIFood Phase I

- Complete the scoring of varieties based on their nutritional, functional and sensory quality characteristics
- Share information about which varieties are suitable for different types of plant-based food applications
- Engage with farmers, raw material traders and food manufacturers to develop a business model for scaling the production of suitable cultivars for selected plant-based food applications

Next steps within and beyond AQRIFood Phase I

- Phase II: Applying microbial fermentation and enzymatic treatments to further improve the desired quality characteristics of the most suitable cultivars of oat, pea and faba bean

- Phase IIIB: Optimizing cropping systems and management practices to further improve the desired quality characteristics of the most suitable cultivars of oat, pea and faba bean

- Phase IIIC: Identifying and manipulating the genes controlling the desired quality characteristics using fast-track traditional breeding technologies (TRAITOMIC EMPOWERING NATURE) and/or new gene technologies (CRISPR)

KØBENHAVNS UNIVERSITET

HyCheese

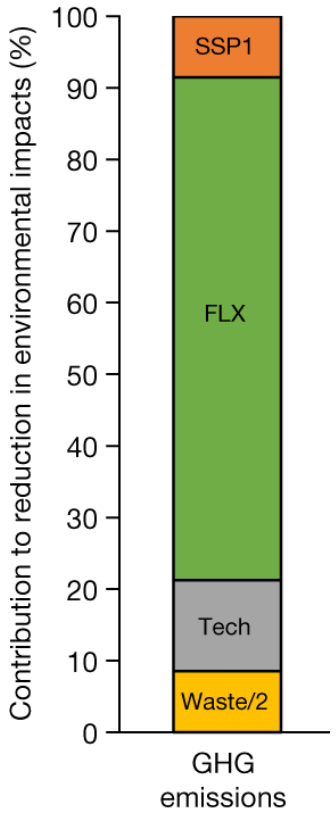
Pitch @ Plant Food Symposia 2024
23 May 2024
Lilia Ahrné

Innovation Fund Denmark AgriFoodTure
Funded by the European Union NextGenerationEU

Duration: 48 months (01.01.2024 to 31.12.2027)
Budget: 19 876 834 kr (12 945 109 kr)

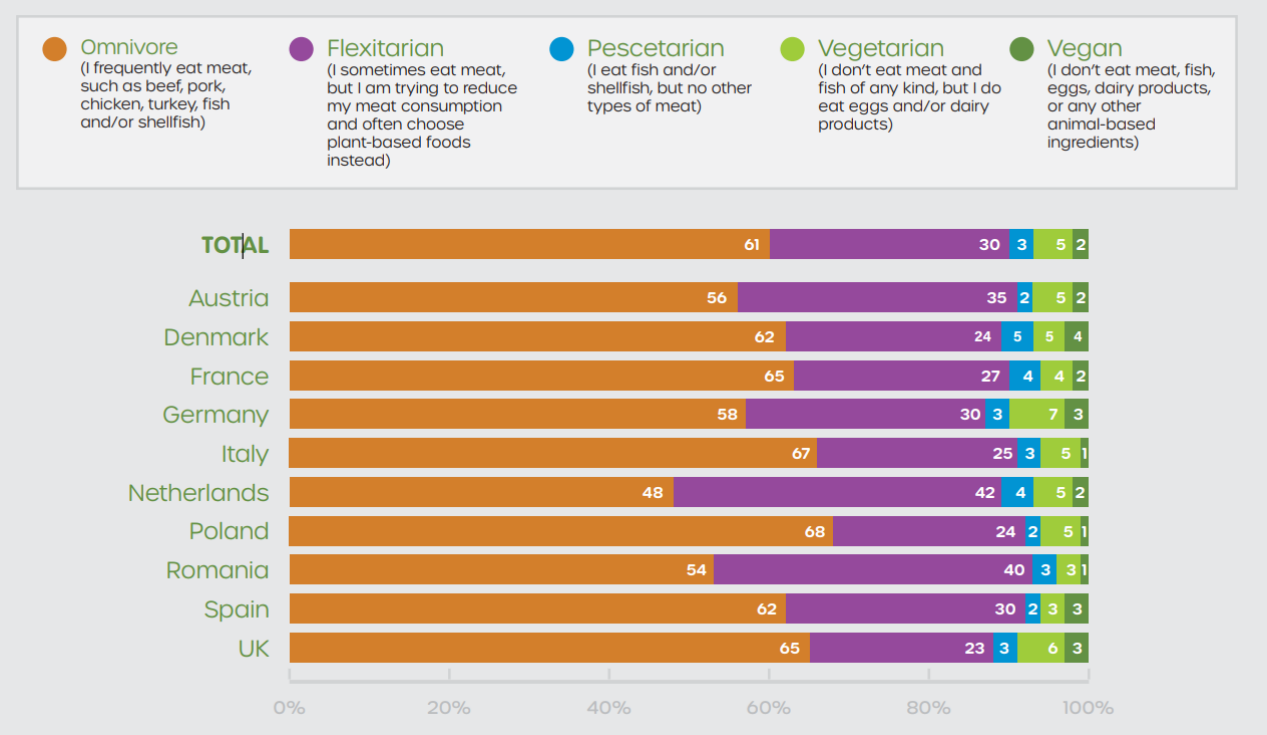
Background

A reduction in animal protein consumption is an effective way to reduce GHG emissions



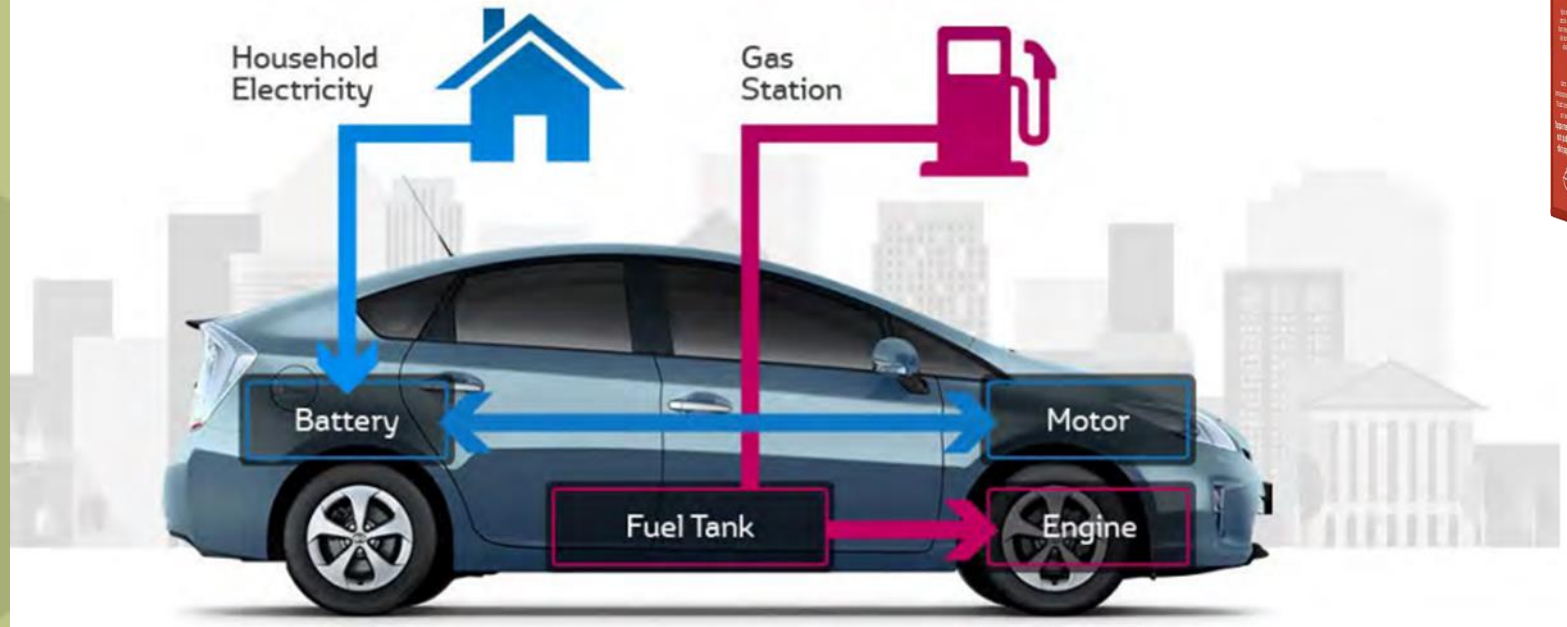
M. Springmann et al , Nature, 562 (2018), pp. 519-525

Most consumers are not ready to completely swap animal protein for plant protein-based foods - Flexitarians



https://smartproteinproject.eu/wp-content/uploads/FINAL_Pan-EU-consumer-survey_Overall-Report-.pdf

Hybrids – a way to a lower CO_2 footprint



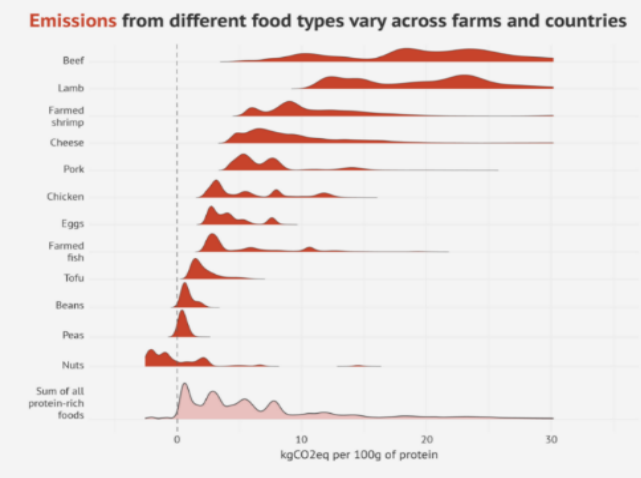
Butter + Rapeseed Oil (15%)

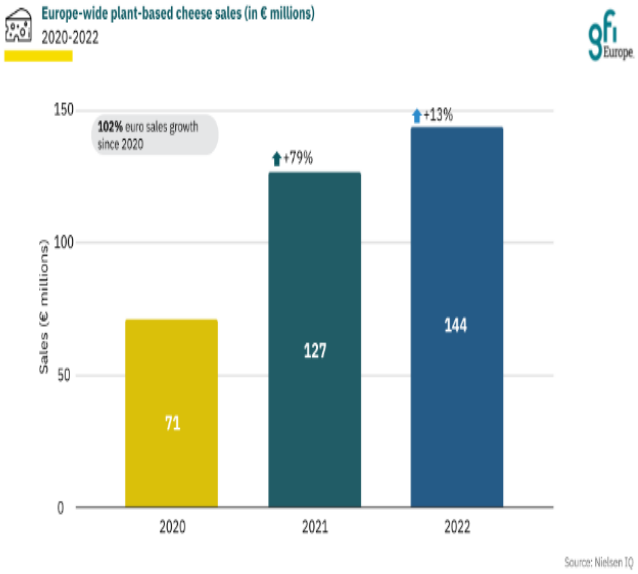
Tomate + Cream

Milk + palm oil

Milk + oats

Cheese is ripe for hybrid disruption



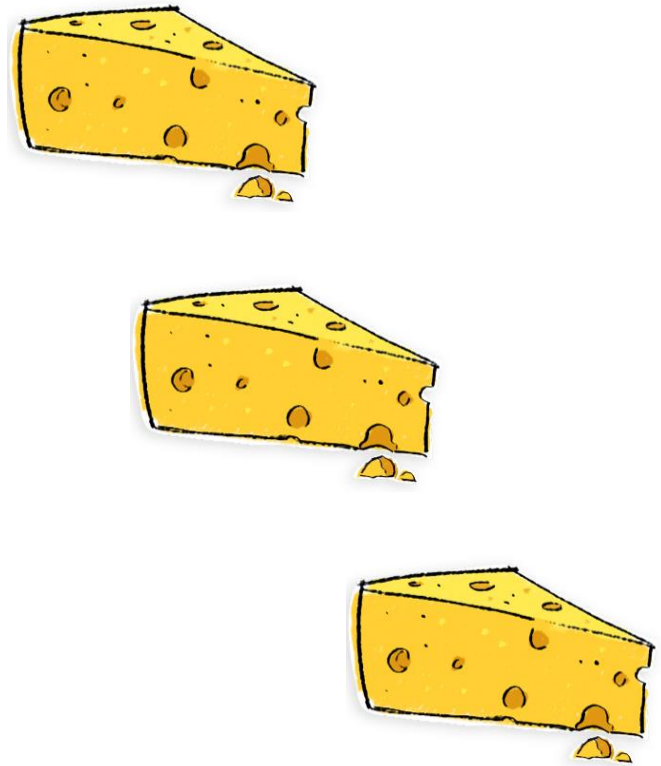


Current plant-based cheese alternatives have low sensorial (taste and texture) and nutritional value, being low in protein and typically consisting of a mixture of oil, starch and stabilizers.

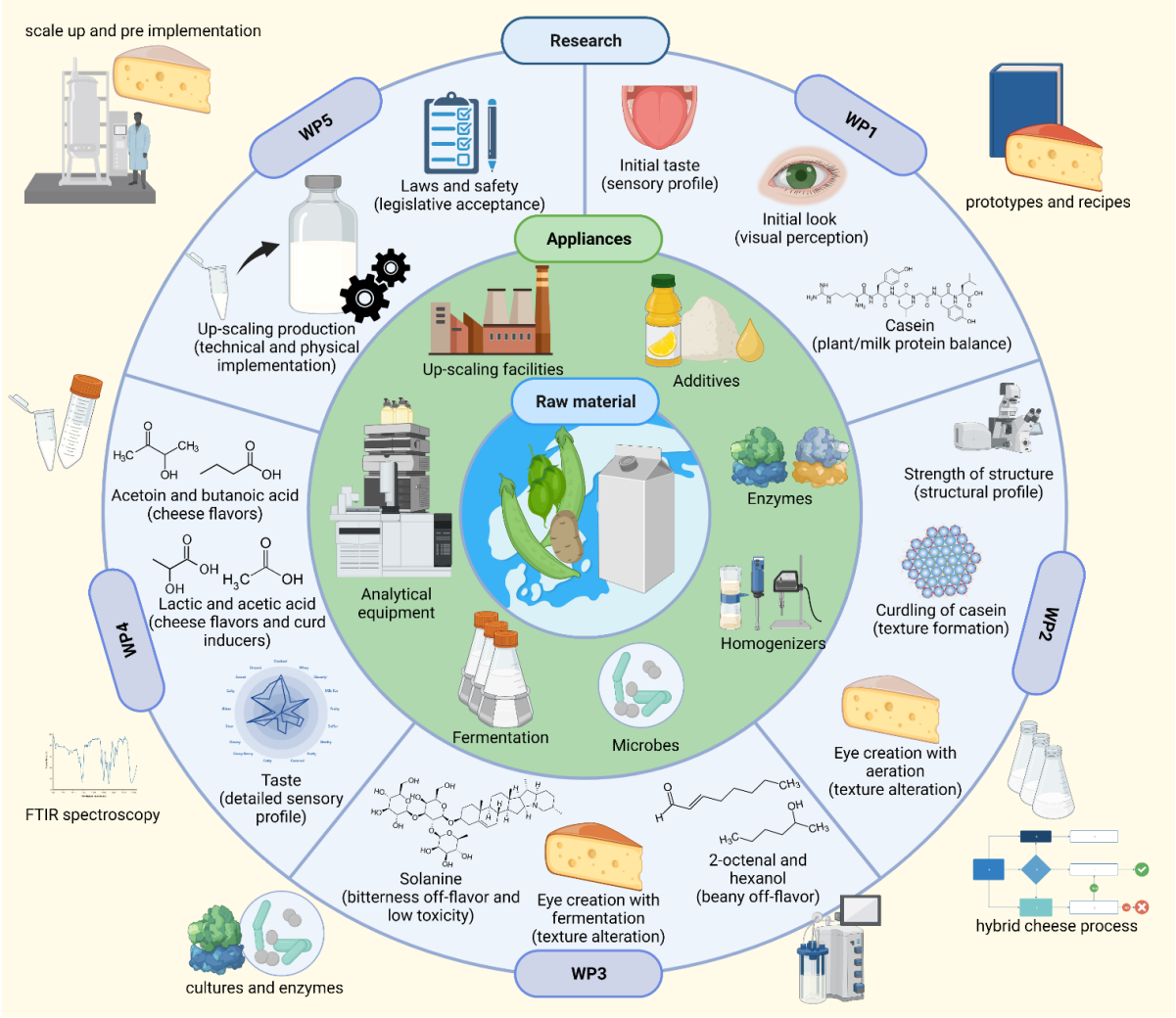
Objective of HyCheese

The overall aim is to create technological approaches and know-how to accelerate the development of a new generation of **sustainable and affordable** hybrid hard **cheeses containing 40 to 80% plant proteins**.

We will combine gastronomic science, cheese-making knowledge and new approaches to plant and cheese processing to produce **tasty and appealing cheeses** based on **Nordic raw materials**.



The Science of HyCheese



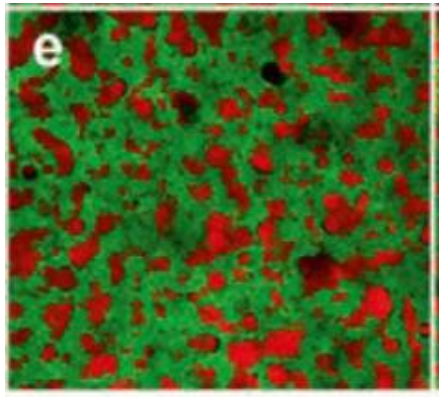
Gastronomy
Processing
Material science
Fermentation
Enzymes
Flavour development
Monitoring quality

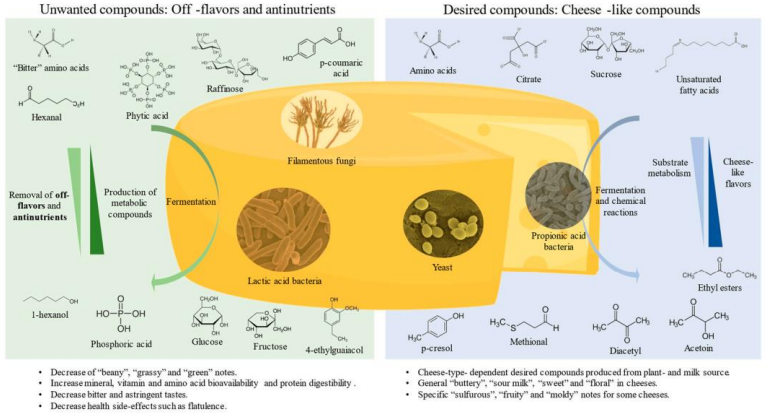
Sensorial Properties

Texture

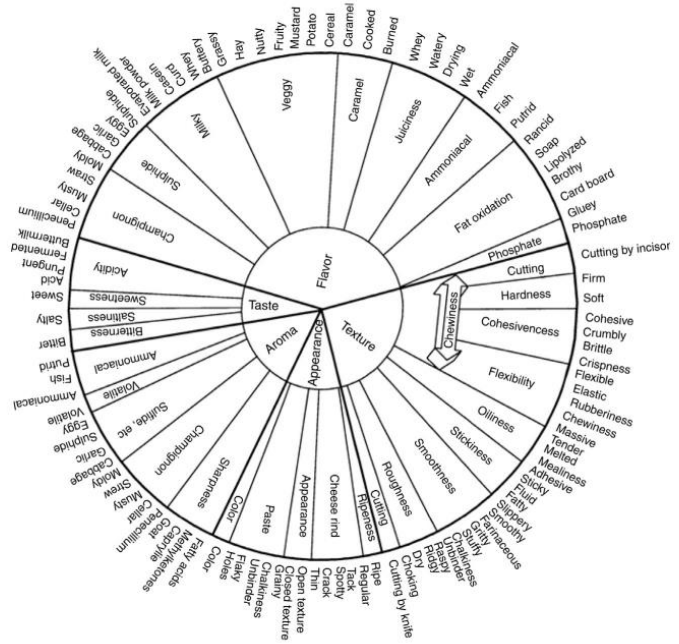
Taste

Appearance



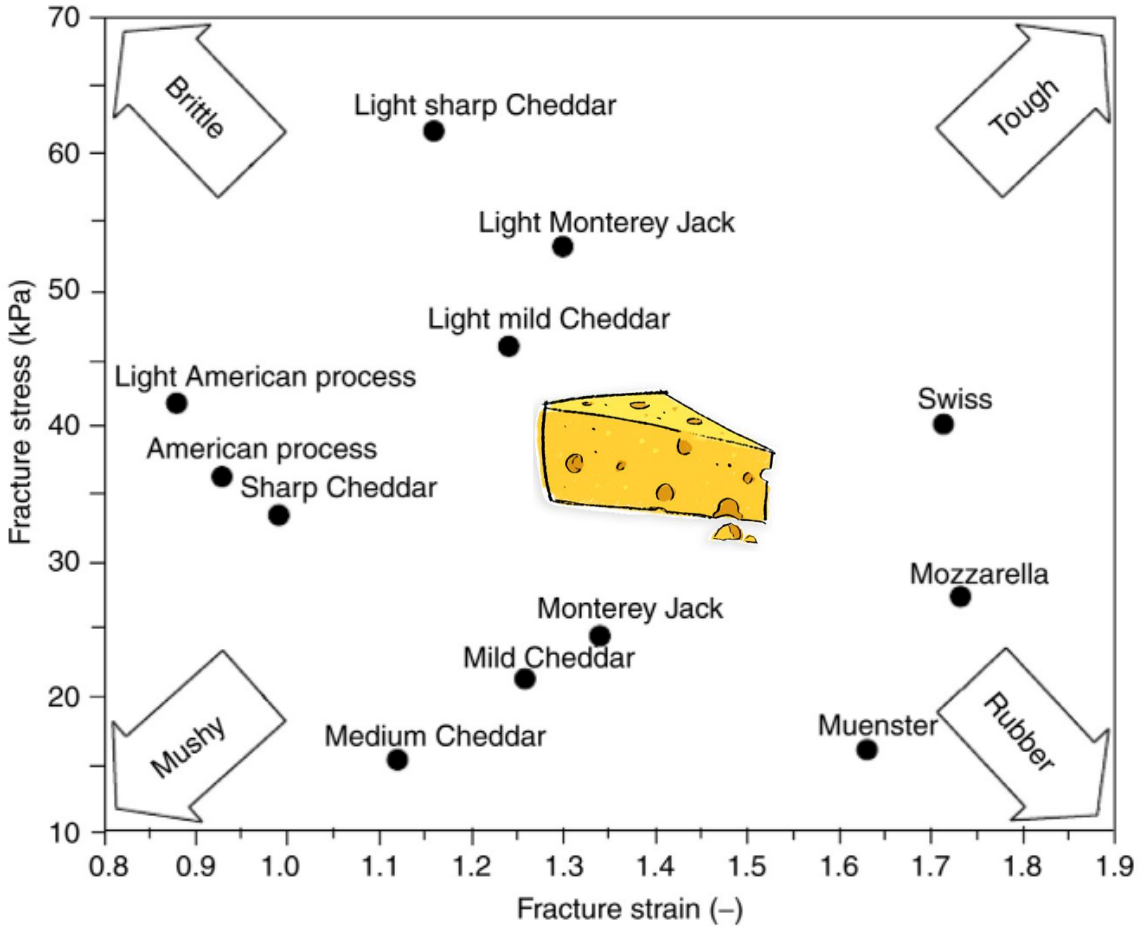


Genet et al (2023) https://doi.org/10.3390/fermentation9070667



K. Muthukumarappan, G.J. Swamy (2017) http://dx.doi.org/10.1016/B978-0-08-100431-9.00010-3

Desired outcome
Know-how to produce an excellent cheese!



- Use Nordic raw materials and ingredients
- Understanding of structure formation & matrix interaction to create a cheese
- Potential of enzymes & cultures
- Minimalizing side streams

Thank You!

Audu

by plan't dairy

Supported by:

DEN EUROPÆISKE UNION
Den Europæiske Fond for Regionaludvikling
Vi investerer i din fremtid

BIOSOLUTIONS ZEALAND

Beyond Beta

Innovationsfonden

FONDEN FOR PLANTEBASEREDE FØDEVARER

CITY OF AARHUS

Danmarks Erhvervsfremmebestyrelse

Food & Bio Cluster Denmark

NORLYS Vækstpulje

We are...
re-thinking
the dairy industry

... We are on a mission

plan•t
dairy

Our products should make the shift to new dairy with less CO2 easy

Team

plant dairy

STRICTLY CONFIDENTIAL

Founders Team

Jakob Skovgaard
CEO

Paul Cornillon
Chief R&D Officer

Jesper Colding
Chair and Commercial lead

Collaboration contract / LOI

	Academia	Dairy solutions	Plant ingredients	Novel food ingredients
Core partners (to date)	University of Copenhagen	Chr. Hansen – Improving food & health	Roquette – Offering the best of nature	remilk.
Other collaboration partners (examples)	Aarhus Universitet	Arla Foods Ingredients – Discovering the wonders of whey; REDUCED; lactosan	AAK; Agrana	Melt & Marble

Team members

Brian Dohn
Chief Operations Officer

she /her

Stine Nykjær Lennert (1/8)
Commercial director

R&D

Amalie

Lisbeth

Vivian

.. + dedicated resources at University of Copenhagen and Aarhus University

Commercial

Arun

René

Ulrik

Teemu

Advisors & investors

Kaarthik Krishnamurthy
Advisor and Investor
Exec. FMCG & mrkt

Niels Thomsen
Advisor, Supply chain
CEO Juhayna (Egypt)

Poul Erik Jensen
Advisor; Professor, Plant based food biochemistry

Carsten Dahl
Investor, Board Professional, ex-PWC

Christer Åberg
Advisor, Board Professional, ex-Axfood, ex-Arla

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FUTUREDAIRY – the project

Audu by planet dairy

AARHUS UNIVERSITET

novonesis

FUTUREDAIRY – the project

plant dairy

Non-animal dairy favorites

A ‘Danbo cheese’

A natural ‘yoghurt’

- Great taste
- Nutritious - high in protein
- Functionality like dairy

Minimum **70%**

CO2e reduction

Plant based

Precision fermentation based

Upcycled side-streams

Why the Plant Based Food Fund ?

FONDEN FOR
PLANTEBASEREDE
FØDEVARER

- ✓ Purpose
- ✓ Timing
- ✓ Budget size
- ✓ Development stage
- ✓ Collaboration partners

Advice for others ?

plant dairy

1. Be ambitious

2. Create a roadmap

3. Prepare well
   - Partners
   - Aligned purpose
   - Plan

FIGO- Consumer driven innovation in the green transition

-a project funded by Plantefonden

Who are we and who am I?

TEKNOLOGISK
INSTITUT

FIGO- Consumer driven innovation in the green transition

Purpose

To enhance the plant-based food sector by

-engaging consumers more in product development

-implementing consumer-driven innovation methods

Idea

Without consumer acceptance and repeat purchases, even "perfect" plant-based products cannot succeed!

Considering consumer perceptions, habits, and attitudes throughout the innovation process mitigates the risk of creating unsuccessful products.

Educating food producers on engaging with consumers is crucial for transitioning towards a more plant-based diet.

Expected results

...to drive a shift in food culture and increase the consumption of Danish plant-based foods.

FIGO will make consumer-driven innovation accessible to SMEs by developing (>3) consumer-driven innovation methods for this segment

7 new plant-based solution products will be developed

Why plantefonden?

FONDEN FOR
PLANTEBASEREDE
FØDEVARER

Best advice for applying for funding

- Read the call text carefully
- Different funds different focuses
- Talk to the fund and be honest about what you would like to do
- Write a great proposal –and dont get discouraged if not successfull (the first time) – Either you win or you learn ;)

FOOD SOLUTIONS

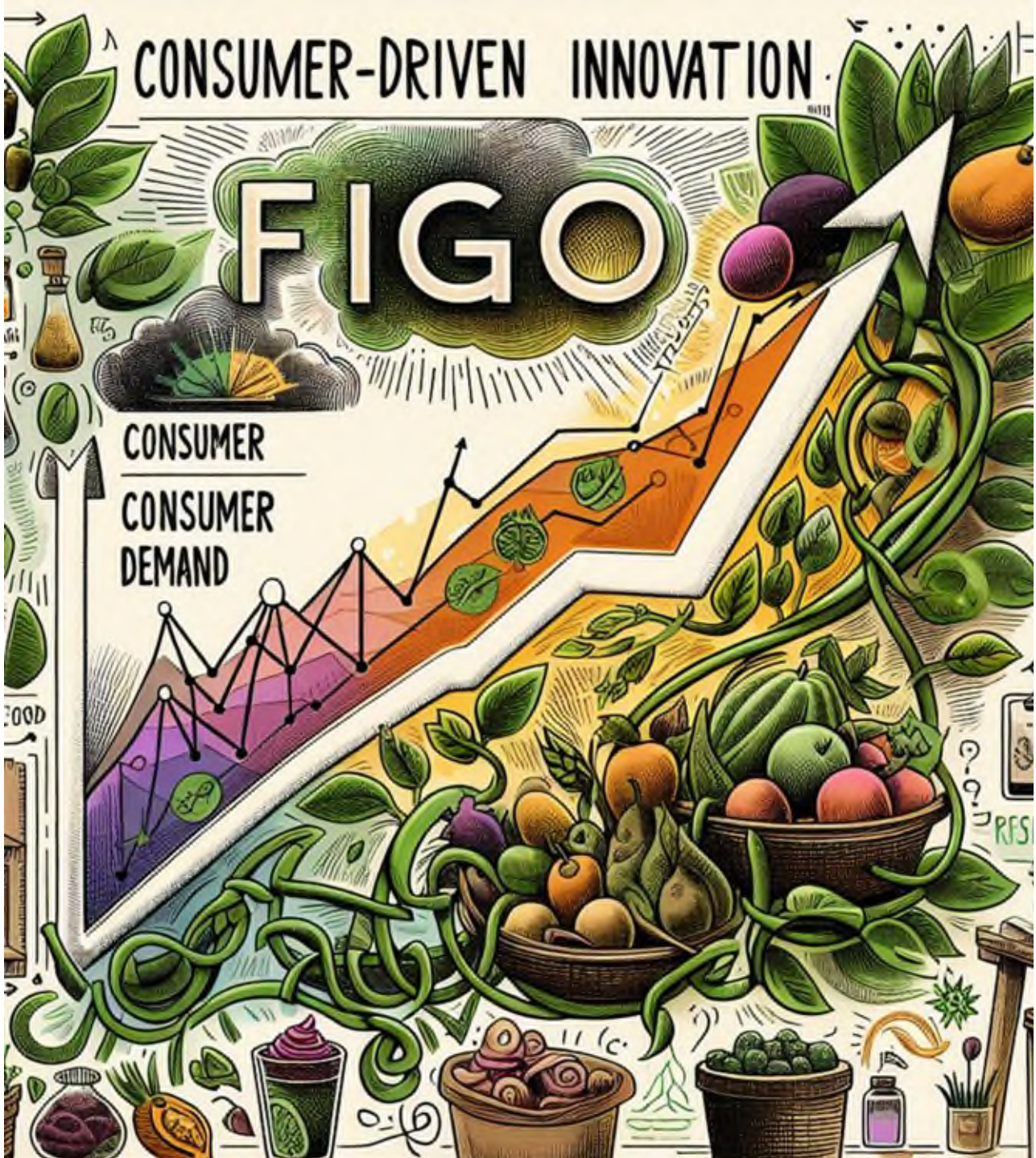
TEMPTY FOODS

Dansk Vegetarisk Forening

TEKNOLOGISK INSTITUT

ABSALON
UNIVERSITY COLLEGE ABSALON

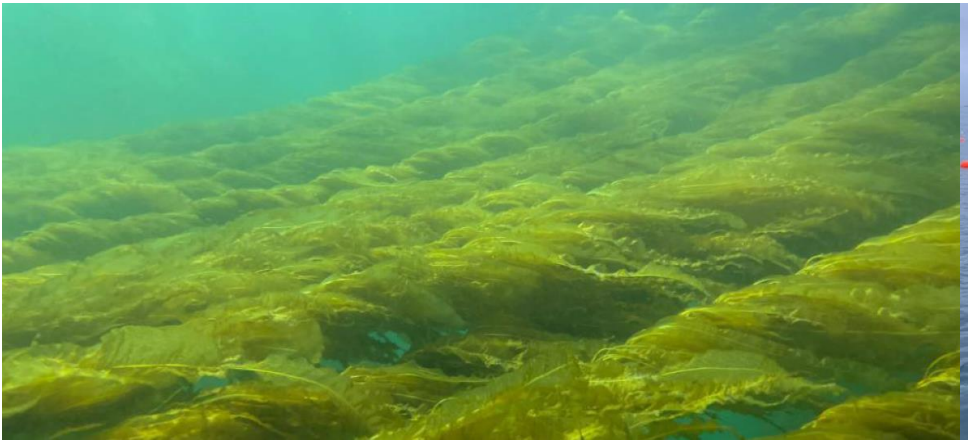
FONDEN FOR PLANTEBASEREDE FØDEVARER



A GUDP project by Royal Greenland, Nordic Marine Nutrition, KU and DTU

VALUEKELP:

Low energy stabilisation of seaweed and development of new high value food products



The driver to apply the GUDP fond

SERMITSIAQ AG

FORSIDEN INDLAND NUUK POLITIK ERHVERV POLITI UDLAND KULTUR SPORT FISKERI & FANGST JOB

TEMAER Kuannersuit/Kvanefjeld Hudlidelser Nye Lufthavne Ritalin Spiral-Kampagnen Forfatningskommissionen

Royal Greenland på tangeventyr

Grønlands største virksomhed har foretaget millioninvestering i tangdyrkning, og håber på at høste over 30 tons næste år.

Ministeriet for Fødevarer, Landbrug og Fiskeri

gudp

- Royal Greenland has initiated a scale-up test production for farming of wild seaweed in Greenland
- Royal Greenland and Nordic Marine Nutrition will develop seaweed-based food products, like pesto and salat
- Limited investigation has been put into stabilising and preserving the seaweed between the harvest and the production site

Work packages and structure of the project

WP1: Processes for stable intermediates

WP2: Development of high value and safe products

WP3: Life cycle analysis (LCA) of seaweed and sustainable diet

WP4: Project management

DTU Fødevareinstituttet

KØBENHAVNS UNIVERSITET

Work packages and structure of the project

WP1: Processes for stable intermediates

- Wash, cutting
- Acidification
- Salting
- Storage and transportation
- Microbiological food safety

WP2: Development of high value and safe products

- Product development (finished products, ingredients for plant-based foods)
- Shelf-life and sensory
- Microbiological food safety

WP3: Life cycle analysis (LCA) of seaweed and sustainable diet

- Sustainable use of seaweed products in the diet, e.g., as a substitute for meat
- Climate effect of optimized intermediate product processes

WP4: Project management

DTU Fødevareinstituttet

KØBENHAVNS UNIVERSITET

Plant Food Symposia 2024, 23 May, Middelfart, Denmark

Pitches from funded projects

Grant: 34009-21-1836

Tempeh – a solution for eating healthy and environmentally friendly

Presenter: Rikke Højer, senior lecturer, PhD

University College Absalon
Nutrition and Health
Center for Health and Rehabilitation
Campus Slagelse, Denmark

Project Information

Grant: 34009-21-1836

Project title: Tempeh – a solution for eating healthy and environmentally friendly

Project period: 01.07. 2021 to 31.08. 2024

Project partners:

- Contempehrary *(private company)*
- Dansk Tang (Danish Seaweed) *(private company)*
- University College Absalon, Nutrition and Health
- University of Copenhagen (KU FOOD)

Project funding: 4.75 mil. Dkk

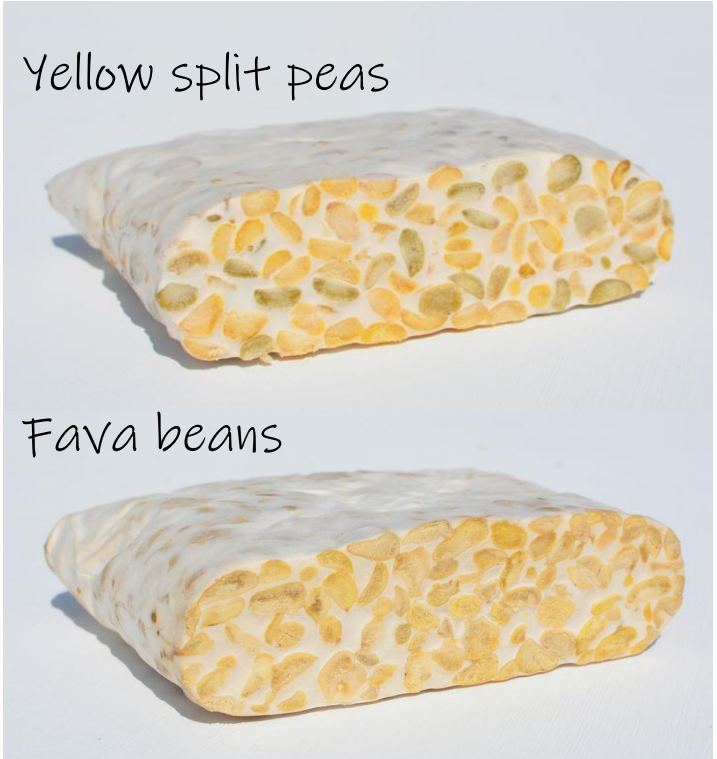
Project idea

Grant: 34009-21-1836

- The Danish dietary guidelines focus on both health and climate, recommending that we consume significantly less meat and instead choose vegetable protein sources (e.g. legumes) [1]

- Tempeh* is a natural, healthy, protein-rich food with high protein quality that **doesn't mimic meat but is a unique product in itself**. Thus, tempeh contributes to the supply of plant-based foods in a completely new way

- Tempeh can also be made from locally grown protein-rich crops, providing innovative opportunities for using sustainable ingredients. By using local ingredients, unique flavor variations are created, as well as sustainable resource utilization compared to tempeh made from imported soy



**Tempeh is a traditional Indonesian food item, which is originally made of soybeans fermented with the mold Rhizopus spp. The result is a white cake-like structure that can be sliced and prepared in various ways, e.g., fried or baked.*

Project aims

1. Production upscaling

2. Expanding the range of tempeh versions by using local ingredients and quality optimization

3. Facilitate the introduction of tempeh to Danish consumers

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Examples of studies and results

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WP1. The manufacturing process: Upscaling made possible – demand ↑

WP2. Incorporating locally harvested seaweed as ingredient

WP2. Shelf life studies with sensory testing
Usability testing with food professionals
Usability testing of recipes

WP3. Co-creation workshops with families, food professionals, and experienced tempeh users

WP3. Serving tempeh dishes in work place and institution-based canteens – High willingness to try + liking

Fava beans + sea salad

Why GUDP?

- Industry and research institutions collaborate, exchange, and develop knowledge and experience aimed at developing better practices → applied research
- Project ideas have to be economically sustainable → Business idea
- Unique - close collaborations between industry and research institutions → Knowledge is immediately utilized

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Advice when applying…

- Provide help for small companies – there is a lot of paperwork
- Submit two days before the deadline → it can be a challenging phase
- As a knowledge/research institution, close contact with the companies is important, so their input is ensured and it becomes embedded within the companies
- Pair project partners who are unfamiliar with each other, as it fosters networking opportunities

References & acknowledgements

Grant: 34009-21-1836

[1] The Danish Veterinary and Food Administration (2021). The official Dietary Guidelines - good for health and climate.

Graphics and photoes
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For more information…
Contact:
Rikke Højer
E-mail: rho@pha.dk
Tel.: +45 72482220

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