

# Climate KIC's system perspective on a Sustainable Nordic Alternative Protein Industry

– 18. November 2019

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# Agenda

Introduction to Climate KIC's focus on System Innovation

Climate KIC Deep Demonstration as a method to foster System Change

Approach to Food System Challenges

A Sustainable Nordic Alternative Protein Industry

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EIT Climate-KIC is a European **knowledge and innovation community** working to accelerate the transition to a **zero-carbon economy** through **whole systems** transformation



We educate the next generation of Climate entrepreneurs and change makers



We run the world's largest climate change start-up accelerator




We bring together partners from academia, business and cities/regions on major innovation projects



# Our 10-year track record in climate innovation




A background image of a city skyline at sunset, with a dark grey semi-transparent box on the right side containing text.

Continuing to work through gradual, incremental changes will not be enough. What is needed now is a fundamental transformation of economic, social and financial systems that will trigger exponential change in decarbonisation rates and strengthen climate resilience.

*EIT Climate-KIC's Transformation in Time strategy document*

The easy stuff is done.  
What lies ahead is  
unprecedented and  
far more difficult.



**We need innovation  
to change whole systems;**  
new ideas and approaches  
acting simultaneously on  
multiple levers of change to  
trigger transformation to a  
net-zero emissions,  
resilient future.



10 years of experience has taught us that achieving the systemic change we need requires a different order of innovation.

Incremental

System innovation

Transformational

Project finance model

Portfolio finance model

Single projects and  
incremental change

Portfolio of connected innovation  
projects that learn from each other

Siloed and fragmented  
activities - focus on tech

Wide appreciation of  
change levers



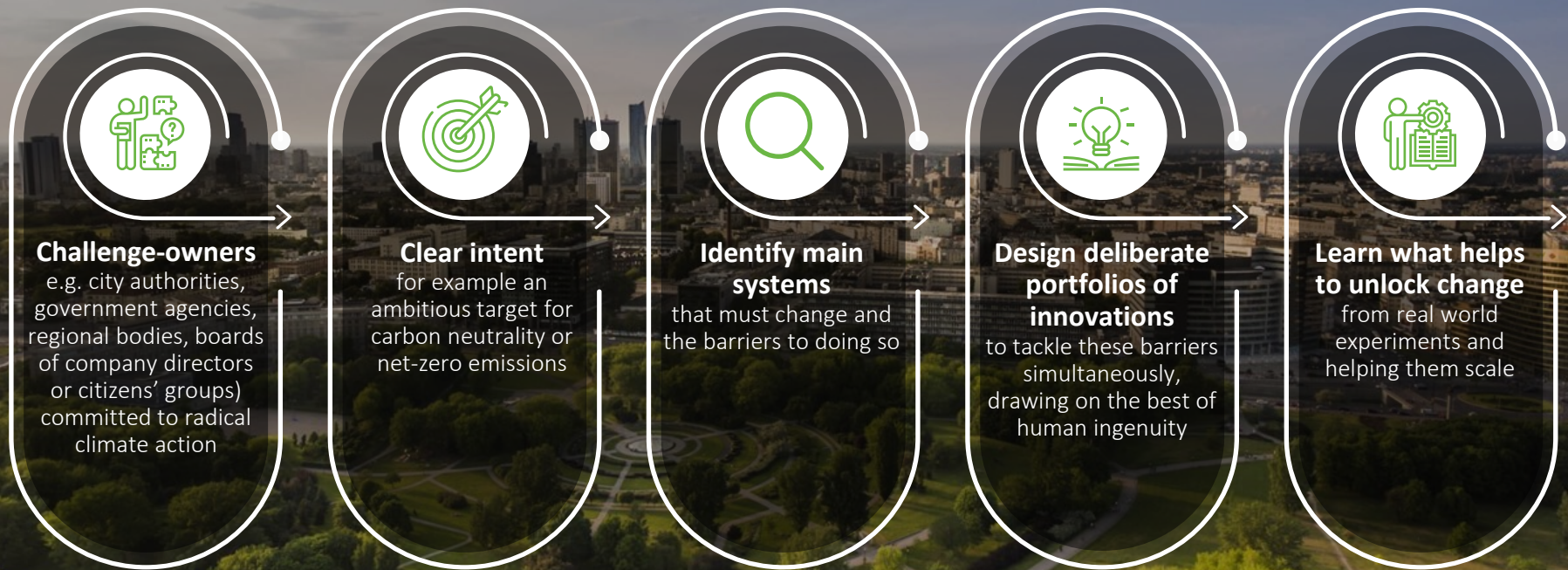
SECTION 2

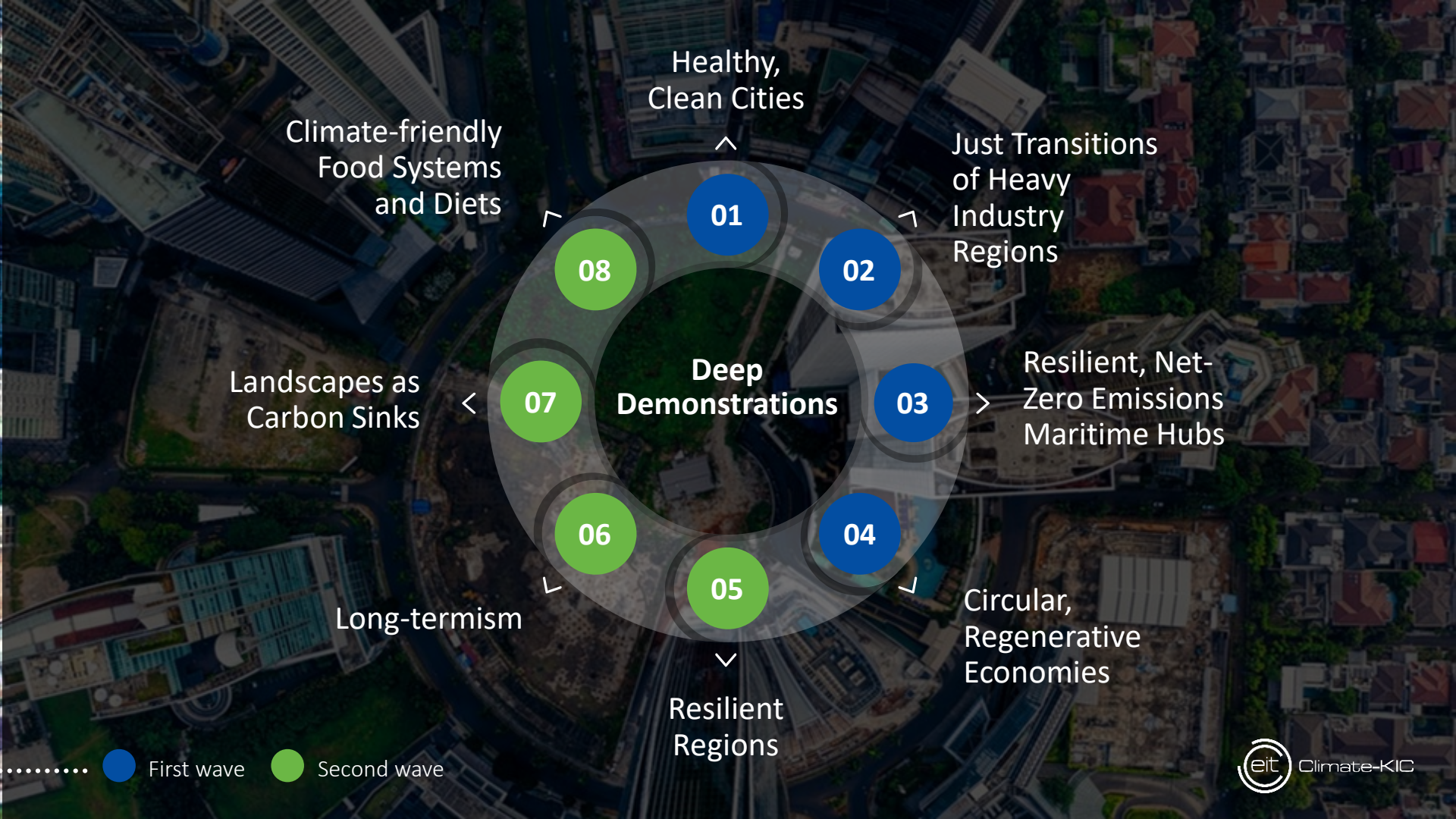
# Systems innovation in Climate-KIC Deep Demonstrations



# What are 'Deep Demonstrations'?

Showcases of the rapid, far-reaching and unprecedented change we now need





Healthy,  
Clean Cities

Just Transitions  
of Heavy  
Industry  
Regions

Resilient, Net-  
Zero Emissions  
Maritime Hubs

Circular,  
Regenerative  
Economies

Resilient  
Regions

Long-termism

Landscapes as  
Carbon Sinks

Climate-friendly  
Food Systems  
and Diets

Deep  
Demonstrations

01

02

03

04

05

06

07

08

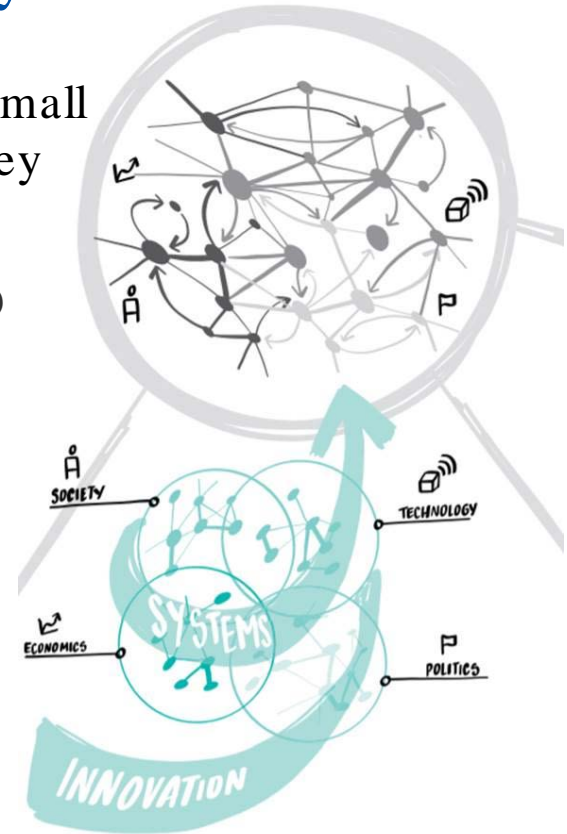
..... ● First wave ● Second wave



# Leverage points as a point of power in a system

A leverage point is a place in a system's structure where a small shift in one thing can produce big changes in everything. They are the effective points of intervention in a system.

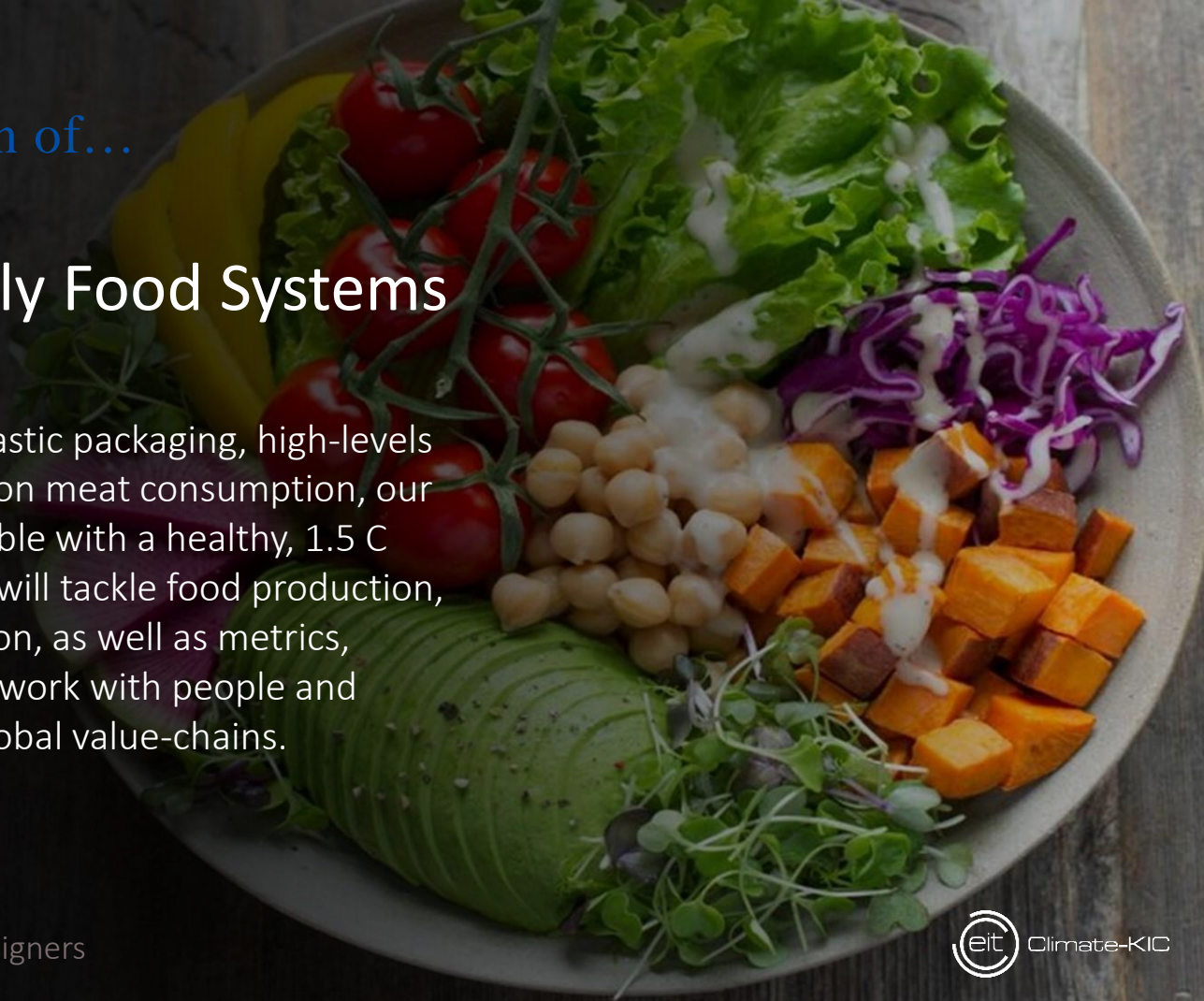
- Individual behaviour (demand, changed expectations and moral switches)
- Organisational governance (key stakeholders and decisionmakers)
- Policy (multi-level governance, regulatory frameworks)
- Finance (supply of funding, effective carbon and resilience accounting)
- Technology
- Skills
- Market structures (alternative models and values)
- Information flows
- Citizen engagement
- Production systems



A deep demonstration of...

## ■ Climate-friendly Food Systems and Diets

Whether it's widespread plastic packaging, high-levels of food waste or diets high on meat consumption, our food systems are incompatible with a healthy, 1.5 C future. This demonstration will tackle food production, distribution and consumption, as well as metrics, policies and habits. We will work with people and places and at the level of global value-chains.



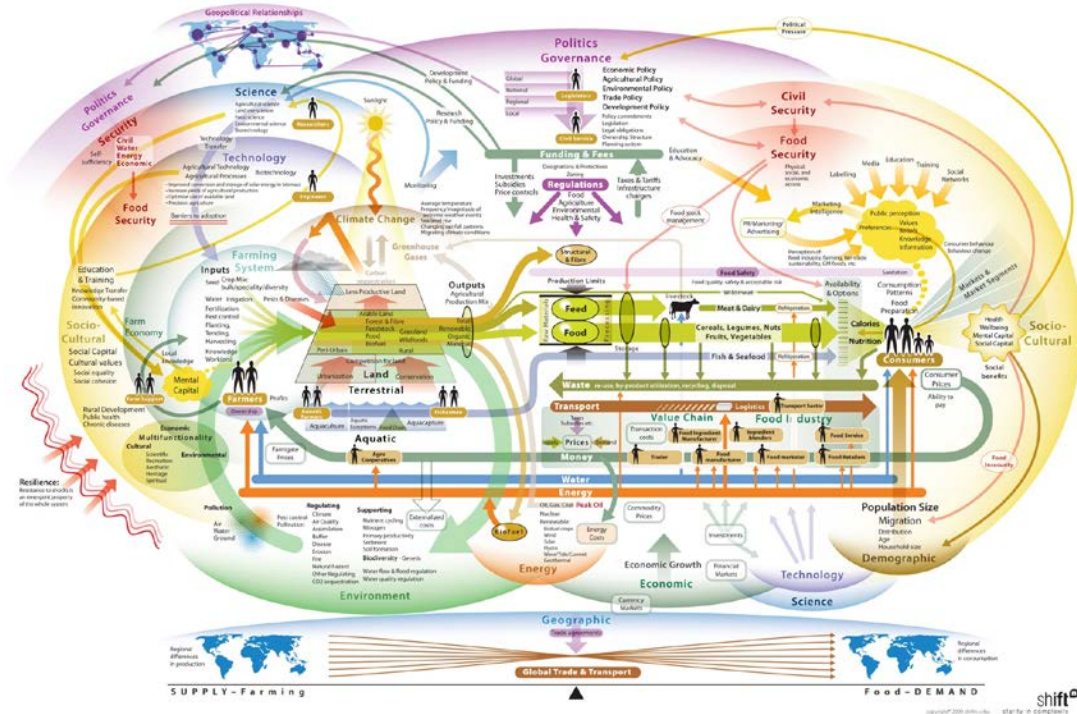


# The food system is a complex adaptive system

- Complex because there are many interrelations;
- Adaptive because external drivers (climate change as example) as well as internal changes set chains of events in motion.

It is only possible to understand the effect of changes after they have occurred.

<https://shiftn.com/contact>



<https://www.cerealsgrains.org/publications/cfw/2019/jan-feb/Pages/CFW-64-1-0010.aspx>

# Food system as a chain of complex sub systems

- From farm to fork
- Land use for both food and feedstock
- Circular element of handling waste
  - Biorefining for high value product
  - Bioenergy as last resort
- Overarching policy elements related to hunger, food security, food policy and recommendations for sustainable and healthy diets





# Engaging with stakeholders and challenge owners

## *Food systems main stakeholders*



Farmers



Food industry



Civil society



International organizations



Agriculture and Livestock



Health



Distributors



Food industry suppliers  
(qu chemicals, packaging, etc.)



Research institutions



Governments



Environment



Education



Catering and hospitality



Retailers



Consumer information organizations



Banks



Industry and Trade



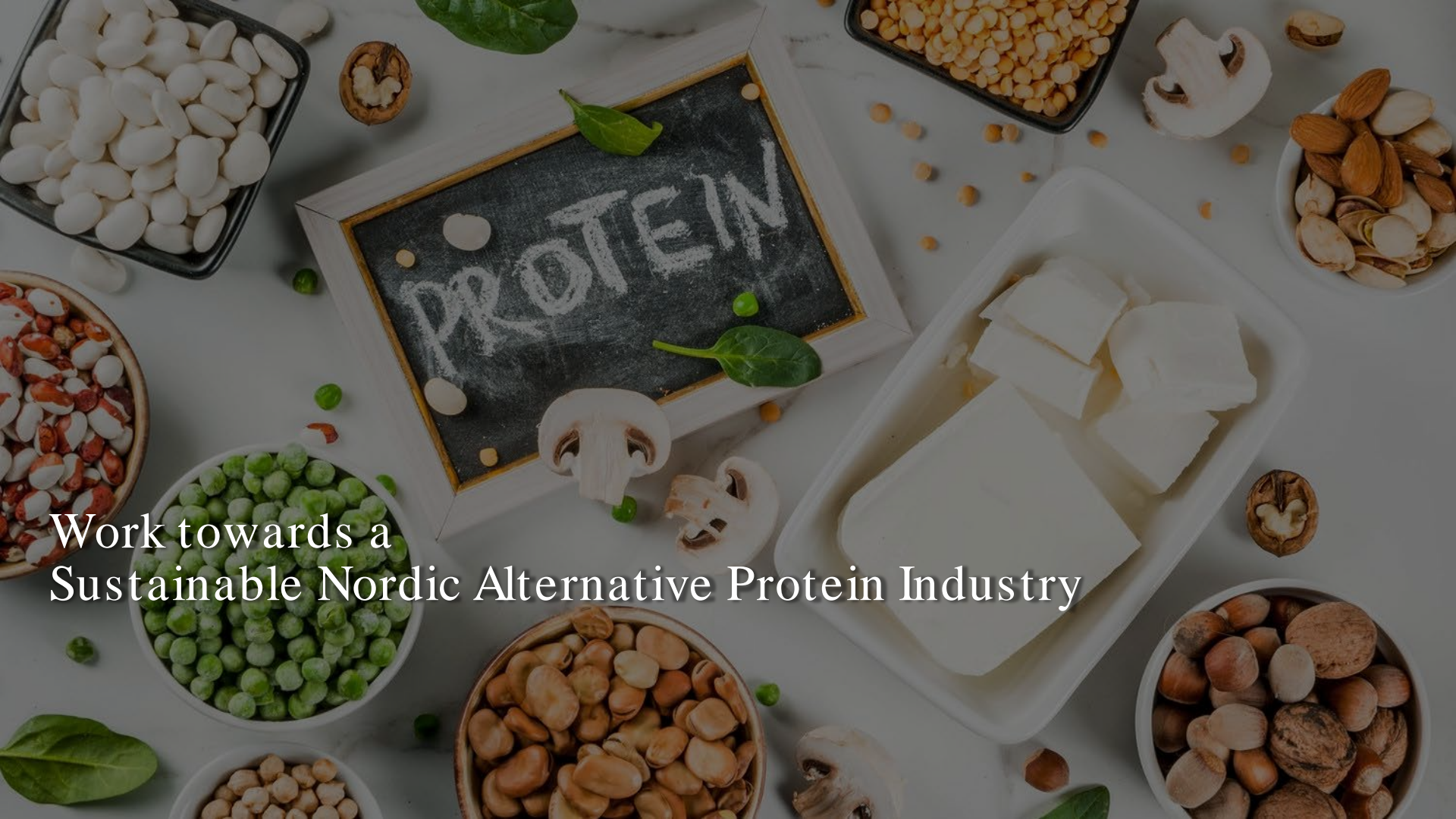
Finance

# A way of mapping the relationships of the food system to its drivers

Wageningen, June 2018





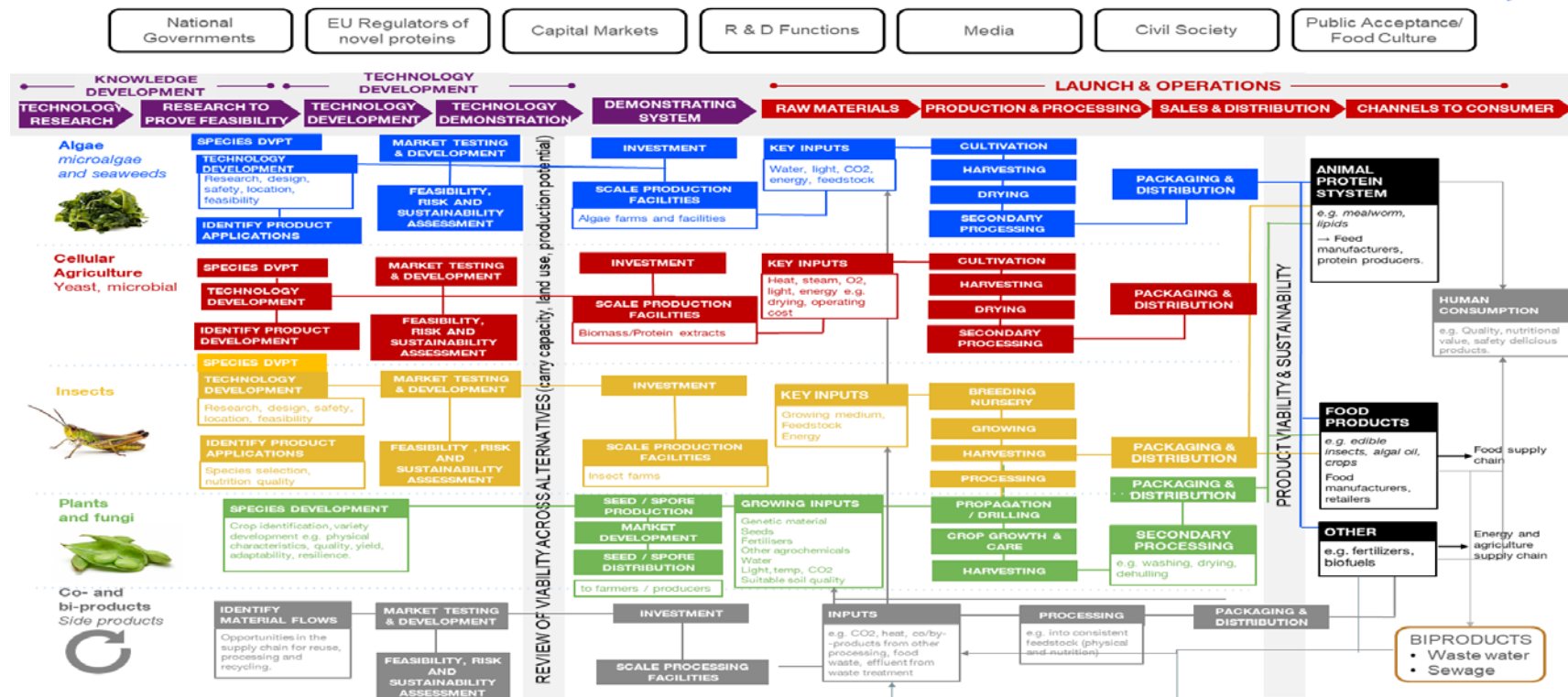


Work towards a  
Sustainable Nordic Alternative Protein Industry

# Value chains and key development phases

## - Findings from SNAPI Workshop November 2018

### Alternative Protein System Map





# Recommendations from SNAPI workshop

## - World Food Summit, Copenhagen - August 2019



1. Establish a Nordic supercluster of stakeholders from the entire value chain and work jointly on the whole value chain (layered cake), not in single isolated layers and siloes .
2. Work on attracting alternative funding and societal capital. Use capital best for a green and climate positive turnover.
3. Map current diet recommendations to visualize the consequences for climate change, jobs, environment, nutrition and highlight improvements for health, climate and sustainability.
4. Identify existing gaps to be worked on related to key levers of change regarding knowledge, technology, consumer behaviour and policy.
5. Identify relevant need for research on especially nutritional value of new alternative protein products and how that research can be used and benefit industrial stakeholders.
6. Focus on education is necessary to inform society – potentially starting with schoolchildren and kindergarten and moving up through the entire educational system to inform about of bioeconomy opportunities and challenges (e.g. cartoons and experiential learning).



# Inspiration from Canadas Supercluster initiative

- Strategy to drive commercially successful innovation, fostering growth and creating jobs across Canada. Over the next four years, \$950 million will be invested into SMEs and larger companies, establishing Canada as a global leader in five industry sectors: Digital Technology; **Plant Protein**; Advanced Manufacturing; AI-Powered Supply Chains; and Oceans.
- Clustering is the concept of working together – sometimes with unconventional partners, or with a company that is elsewhere on the value chain – to enhance innovation, leading to new discoveries or overcoming challenges.

**Supercharging  
Canada's job  
market with  
more than  
50,000  
new jobs**



**Increasing  
Canada's GDP  
by more than  
\$50 billion  
over 10 years**



**Innovation  
everywhere in  
every corner  
of Canada**



**New partners  
innovating  
together**



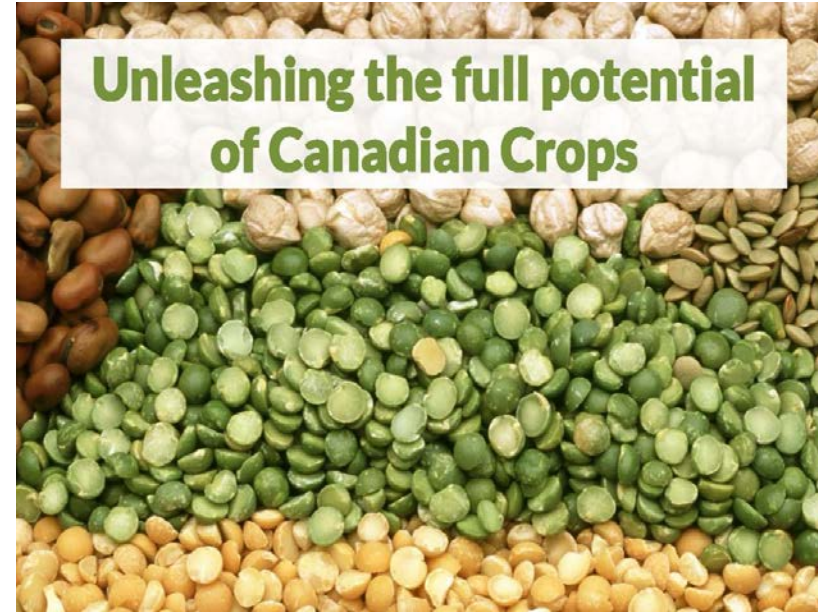
**Superclusters  
will grow  
regional  
economies**





# Aim of Canadas Protein Industries Supercluster

- Based in the Prairies, the **Protein Industries Supercluster** will use plant genomics and novel processing technology to increase the value of key Canadian crops, such as **canola, wheat and pulses** that are coveted in high-growth foreign markets, such as China and India, as well as to satisfy growing markets in North America and Europe for plant-based meat alternatives and new food products.
- Building on Canada's worldwide reputation as a leader in agricultural production, this supercluster will make Canada a leading source for plant proteins and, ultimately, feed the world.



GDP impact over 10 years (in billions)	Job creation over 10 years
More than \$4.5 billion	More than 4,500 jobs

# A Nordic Supercluster on Alternative Protein


- with aim to create the most sustainable region in the world



A **supercluster** is a large group of smaller galaxy clusters or galaxy groups; it is among the largest-known structures of the cosmos.

The Milky Way is part of the Local Group galaxy group (which contains more than 54 galaxies), which in turn is part of the Virgo Cluster, which is part of the Laniakea Supercluster.



A person in a light-colored jacket and dark pants stands on a rocky mountain peak, holding a trekking pole. They are looking out over a vast, layered mountain range under a dramatic, cloudy sky. The scene is captured in a cinematic style with muted colors.

Thank you for your attention

Let's collaborate





Climate-KIC is supported by the  
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