



Plant-based or organic? Competitors or allies?

- Experiences from Denmark

October 19th 2024



Rune-Christoffer Dragsdahl, Secretary-General, The Vegetarian Society of Denmark
& Board Member of the Danish Government's Fund for Plant-Based Foods



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



(Image credit: Getty Images)



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Sustainable Food and Agriculture

Food diet + Add to myFT

Denmark leads the way in incentivising low-meat diets

Policy carrots have kept livestock farmers sweet so far — but sticks may yet be needed



How Denmark Made The Plant-Based Action Plan Possible

Daniela De Lorenzo Contributor @

I write about sustainable food & agriculture production systems.

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Nov 23, 2023, 08:26am EST





About the Vegetarian Society of Denmark

The main plant-based organization in Denmark

Founded in 1896

Vision:

To create a sustainable, ethical and healthy food system

Mission:

To advance plant-based food through knowledge, collaboration and action

Motto:

We believe that every plant-based meal makes a difference

4.200 members

22 paid staff (+ volunteers)





Outline of this presentation

- 1. History, definitions and facts about organic and plant-based
- 2. Organic and plant-based in Denmark
- 3. Denmark's plant-based policy initiatives
- 4. Reflections



History, definitions and facts about organic and plant-based



What does 'organic' mean?



1. A standard/labelling scheme (e.g. EU organic label)
2. Multiple sustainability practices
(also often referred to as "agro-ecology")
3. A philosophy:

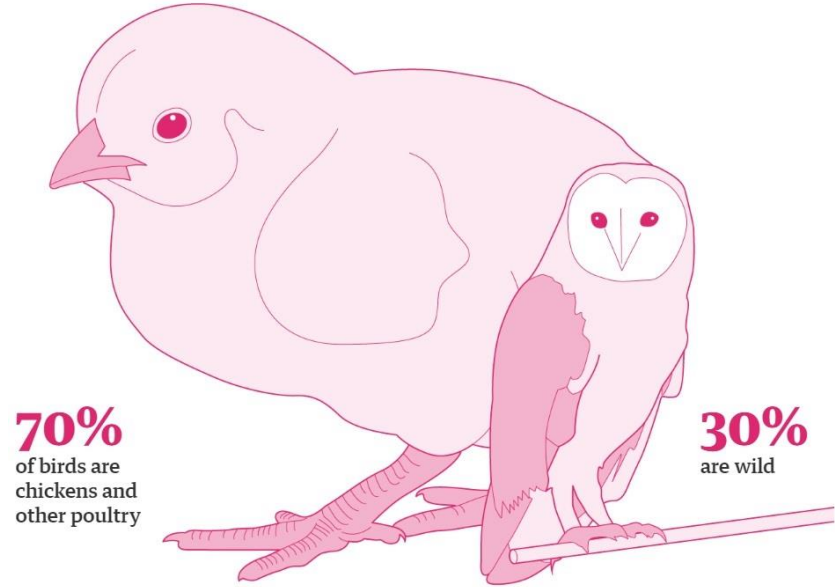
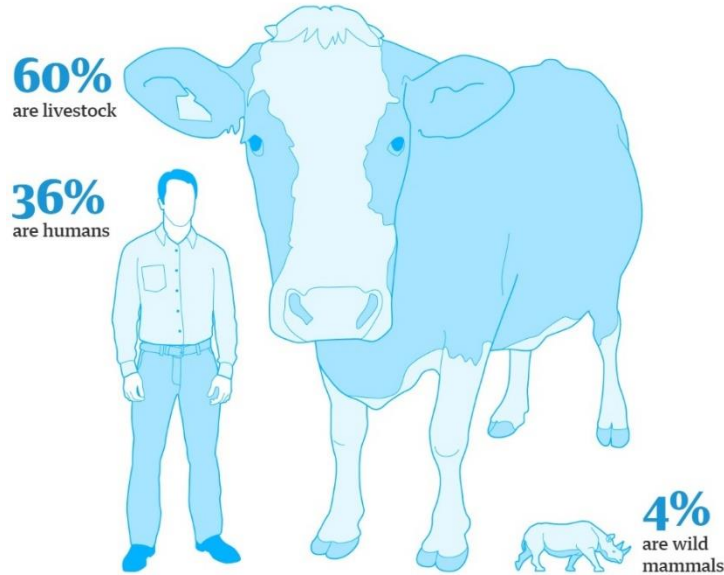
Organic: From the greek word *organikos*
(relating to the organ of a body)

Ecology / Økologisk: From the greek words *oikos* + *logia*
(‘house learning’)

Key message: **Holism. Relations between parts. Resources.**



The distribution of mammals and birds in the world



In other words: An "organic" (holistic) view of the world entails less livestock and more plant-based production



The productivity of organic farming (cf. FAO)

- “The performance of organic agriculture on production depends on the previous agricultural management system. An oversimplification of the impact of conversion to organic agriculture on yields indicates that:
 1. In **industrial countries**, organic systems decrease yields; the range depends on the intensity of external input use before conversion;
 2. In the so-called Green Revolution areas (**irrigated lands**), conversion to organic agriculture usually leads to almost identical yields;
 3. In **traditional rain-fed agriculture** (with low-input external inputs), organic agriculture has the potential to increase yields.”




Scenarios for feeding the world with organic production

Source: Potsdam Institute & Universität Klagenfurt – for Friends of the Earth 2009

	CROP YIELDS	FAO intensive	FAO intensive	Inter-mediate	Inter-mediate	Wholly Organic	Wholly Organic
	LAND USE CHANGE	Massive	Business as Usual (BAU)	Massive	BAU	Massive	BAU
DIET	LIVESTOCK SYSTEM						
Western high meat	Intensive	+/-	-	-	-	-	-
Western high meat	Humane	-	-	-	-	-	-
Western high meat	Organic	-	-	-	-	-	-
Current trend	Intensive	+	+	+	+/-	-	-
Current trend	Humane	+	+	+	+/-	-	-
Current trend	Organic	+	+/-	+/-	+/-	-	-
Less meat	Intensive	+	+	+	+	+/-	-
Less meat	Humane	+	+	+	+	+/-	-
Less meat	Organic	+	+	+	+	-	-
Fair less meat	Intensive	++	+	++	+	+/-	+/-
Fair less meat	Humane	++	+	++	+	+/-	+/-
Fair less meat	Organic	++	+	++	+	+/-	-

Strategies for feeding the world more sustainably with organic agriculture

[Adrian Muller](#) , [Christian Schader](#), [Nadia El-Hage Scialabba](#), [Judith Brüggemann](#), [Anne Isensee](#), [Karl-Heinz Erb](#), [Pete Smith](#), [Peter Klocke](#), [Florian Leiber](#), [Matthias Stolze](#) & [Urs Niggli](#)

Nature Communications **8**, Article number: 1290 (2017) | [Cite this article](#)

158k Accesses | **424** Citations | **1921** Altmetric | [Metrics](#)

Abstract

Organic agriculture is proposed as a promising approach to achieving sustainable food systems, but its feasibility is also contested. We use a food systems model that addresses agronomic characteristics of organic agriculture to analyze the role that organic agriculture could play in sustainable food systems. Here we show that a 100% conversion to organic agriculture needs more land than conventional agriculture but reduces N-surplus and pesticide use. However, in combination with reductions of food wastage and food-competing feed from arable land, with correspondingly reduced production and consumption of animal products, land use under organic agriculture remains below the reference scenario. Other indicators such as greenhouse gas emissions also improve, but adequate nitrogen supply is challenging. Besides focusing on production, sustainable food systems need to address

Researchers from
Switzerland
(*Nature*, 2017):

Animal share of dietary
protein has to be **reduced**
from 38 % to 11 %

Then **the whole world**
can be fed by
organic production



The case of Denmark: Organic and plant-based



Organic policies lead to more plant-based consumption

- Policies for public sector kitchens
- Copenhagen: Organic target 90 % (of all food). Current level: 87 %.
- High organic targets => More plant-based consumption (also less chicken and fish because of prices – so reduces animal suffering)
- Training kitchen professionals on “organic conversion” => More plants
- Excellent way to get more plants into the kitchens





Danish Center for a Plant-Based & Organic Future

Vision

"Danish Center for a Plant-Based & Organic Future" aims to strengthen the knowledge base for a more plant-based, organic food system from farm to fork.

The aim is to contribute to Denmark and the World living up to the EAT-Lancet Commissions scenario and the UN's 17 Sustainable Development Goals in order to create a sustainable food system.

Based on mutual trust – leading to an official MoU



 Danish Center for a
Plant-Based & Organic Future

 Vegetarian Society
of Denmark

 ORGANIC
DENMARK



Avoid identity

Being a vegan
Being a vegetarian
Being a meat eater

Focus on action

Eating plant-based
A vegetarian meal
A vegan product





Collaboration with Denmark's biggest farmers' union on a plant-based R&D strategy

- Collaboration between:
 - Danish Agriculture & Food Council
 - Vegetarian Society of Denmark
 - Frej (a think tank)
- Vision: Denmark as a plant-based superpower
- Danish strong positions:
Organic / Clean label
- Calls for more investments in R&D



Plant-Based Foods

R&D Strategy for a New Area
of Growth in Denmark's Food
Production System

November 2020



From Feed to Food

- Vision report from six organizations about an organic, plant-based food system
- **Starts with focusing on the market potential**
- Greenpeace Denmark, Animal Protection Denmark, The Conservation Union of Denmark, Green Transition Denmark, Danish Plant-Based Foods Association, Vegetarian Society of Denmark
- **Calls for a national action plan on plant-based foods**
- with the minister at the end of the table
- 18 concrete proposals
- 4 ideas for financing the other proposals



Dansk Vegetarisk Forening

GREENPEACE

Danmarks Naturfredningsforening



DYRENES BESKYTTELSE

GRØN OMSTILLING





Danish Network for Plant Proteins

Bonduelle Nordic
4BetterLife
Bispebjerg og Frederiksberg Hospitaler
Bornholms Landbrug & Fødevarer
Changing Food
Concito
Concito
Contemphary
Coop Analyse
Dagrofa
Dansk Cater A/S
Dansk Erhverv
Dansk Industri - Fødevarer
Dansk Vegetarisk Forening
De Samvirkende Købmænd
Dyrenes Beskyttelse
Erhvervsakademi Aarhus, Center for Laboratorie- og Fødevareteknologi
Food & Bio Cluster Denmark
Food Organisation of Denmark
Food Solutions
Forbrugerrådet Tænk
Foreningen Frøsamlerne
FOSS Analytical A/S
Freelance
Frugtformidlingen
GreenUpdate.dk
Hanegal A/S
Horesta
Hotel- og Restaurantskolen
Human Ernæring, Københavns universitet
Hærkram
ICROFS
IFAU Institut for Fødevarestudier & Agroindustriel Udvikling
INGLEBY FARMS ApS
Institut for Fødevarevidenskab, Københavns Universitet
Institut for Plante- og Miljøvidenskab, Københavns Universitet
Invest in Denmark - Udenrigsministeriet
Jens Møller Products ApS
KF Miljø ApS
Klimarådet
KMC
Konsulenthuset Rybjerg

Kost og Ernæringsforbundet
Kryta A/S
Københavns Kommune, Børne- og Ungdomsforvaltningen
Lagkagehuset
Landbrug & Fødevarer
Lantmännen Schulstad A/S
Lejre Kommune
Lidl Danmark
Madkulturen
MAPP Center, Aarhus Universitet
Meyers
Meyers Madhus
Microgreens DK
Miljøbevægelsen NOAH
Mindful Food Solutions
Møllerup Brands A/S
NatuRem Bioscience ApS
Naturli' Foods A/S
Nestlé Danmark A/S
Novozymes A/S
NudgeCase
Nutrilution
Organic Plant Protein
Plantebranchen
Pure Dansk ApS
Quinoa Quality ApS
Rådet for Grøn Omstilling
SAGRO
SEGES
Simple Feast
Spiselauget
Syngenta Nordic A/S
Tangsnedkeren ApS
Teknologisk Institut
The Meatless Farm
Tvødemose
Tænketanken Frej
Veganer.nu
Veggeday
Verdensmål i Hverdagsliv
Økologisk Landsforening
Økologisk VKST
Årstideme



NETVÆRK FOR
FREMTIDENS
PLANTEPROTEINER
I DANMARK



250+ professional members.
Seminars, network meetings,
inspiration papers



in Denmark's
largest newspaper





Plant-based vs. Organic: Cases of tensions: **How would you solve them?**

- Vegan activists demonstrating at cattle farms on "Organic Day"
- Vision report: "From Feed to Food 2" with 67-95 % livestock reduction
- Organic Denmark co-authoring; reaction from Arla and Danish Crown
- Some stakeholders telling us (DVF) we are **too** organic
– vs. Organic Denmark wanting us to mention organic **more**

MED ET MERE PLANTEBASERET DANSK LANDBRUG

KAN VI NÅ KLIMAMÅLET,
 SKABE TITUSINDVIS AF ARBEJDSPLADSER
 OG FÅ DEL I ET MARKED
 PÅ 1.800 MILLIARDER KRONER

LANDBRUGET I DAG

60% af Danmarks samlede areal
 opføres af landbrugs
 af det dyrkede areal går til
 foderproduktion
 80% af landbrugsarealet bliver
 brugt til dyrkning af mad
 direkte til mennesker
 11%



Vi opfordrer indtrængende regeringen og Folketinget til at vise handlekraft og sætte en ny retning for
 landbruget - til gavn for Danmark, dansk landbrug og klimaet. Landbruget skal dyrke meget mere mad til
 mennesker frem for foder til dyr for at nå Danmarks klimamål.

I dag udgør landbruget 31 procent af Danmarks klimabelastning. Den største andel kommer fra produktionen af foder og animalske fødevarer, der udgør 89 procent af landbrugets udledning. Det skyldes blandt andet, at vi bruger enorme arealer på at producere foder til dyrene. Og det er endda uden at medregne importeret sojafoder, som presser vigtige skovområder i Sydamerika.

Vi skal skabe muligheder og se potentialet i at gå foran. Danmark er før gået forrest på områder som viden og energi og teknologi. Nu har vi mulighed for at gøre jorden for endnu en grøn vækstsucces. Der ventes et hastigt voksende marked for de lande, som udvikler fremtidens klimavenlige fødevarer.

Verdensmarkedet for plantebaserede fødevarer som hvedebrød, plantebæffer, quinoa, bælgfrugter og næste generation af produkter ventes at nå 1.800 milliarder kroner allerede i 2035. Vi kan skabe mellem 18.000 og 27.000 nye bæredygtige danske arbejdspladser, hvis vi kan få blot en ti til procent af markedet.

Vi skal sætte på at blive førende i at dyrke og udvikle plantebaseret mad og drikke, som er sunde, velsmagende og økologiske. Og samtidig omlægge resten af landbrugsproduktionen, så den leverer et rent vandmiljø, en rig natur og sænker klimabelastningen.

Vi skal sætte en visionær kurs for dansk landbrug nu. Ellers bliver klimamønstret ifølge De Miljøøkonomiske Vismænd dyrt for danskerne og resten af dansk erhvervsliv. Vi har ikke tid og råd til at vente, og det har naturen og klimaet heller ikke.

Læs mere i visionsrapporten "Fra Foder til Føde".

RENT HAV, MERE NATUR, LAVT KLIMAAFTRYK OG EKSPORTINDTÆGTER

VI KAN FÅ DET HELE MED ET MERE
 PLANTEBASERET DANSK LANDBRUG

Hvad foretrækker verden at spise?

I store dele af verden er der interesse for plantebaserede alternativer til kød.

☒ Kødliggende alternativer lavet af planter ☐ Kød



Mosaic GlobalScan (2023). A global survey of plant-based food consumption. The survey shows that plant-based food consumption is growing rapidly in many countries, particularly in Asia and Europe.

Over 4 milliarder mennesker skal spise grøntere. Der vinderes FNs fødevarer- og landbrugsorganisation er afgørende for, at vi når klimamålet. Og her i Danmark påtager klimarådet, at vejen til en bæredygtig dansk fødevarerproduktion er at sætte på plantebaserede fødevarer.

Verdensmarkedet for plantebaserede fødevarer som hvedebrød, plantebæffer, quinoa, bælgfrugter, andre planteprotein og næste generation af fermenterede produkter ventes at nå 1.800 milliarder kroner allerede i 2035. Der ventes således et enormt marked for plantebaserede fødevarer for de lande, som investerer i fremtiden nu.

Danmark har en række dygtige virksomheder, som er i fuld gang med at udvikle fremtidens plantebaserede fødevarer. Flere har vundet priser. Nogle eksporterer allerede til store dele af verden.

Det er den stags virksomheder, vi som samfund skal sætte på. Vi skal blive førende i at dyrke og udvikle plantebaseret mad og drikke, som er sundt, velsmagende og økologisk.

Københavns Universitet, Aarhus Universitet og Danmarks Tekniske Universitet allieret, at Danmark investerer mindst 600 millioner kroner årligt, hvis vi skal være verdensførende. Vi kan skabe mellem 20.000 og 40.000 nye bæredygtige danske arbejdspladser, hvis vi kan få blot en ti til procent af markedet.

Danmark er før gået forrest på områder som viden og energi. Nu har vi mulighed for at gøre jorden for endnu en grøn vækstsucces. Hvis vi ikke tænker langsigtet nu, bliver omstillingen dyrt for danskerne og resten af dansk erhvervsliv.

Vi opfordrer indtrængende regeringen og Folketinget til at vise handlekraft og sætte en ny retning for landbruget. Danmark skal producere mere mad til mennesker - frem for foder til dyr.

Hverken vi, naturen, klimaet eller dyrevelfærd kan vente.

Der skal investeres milliarder i fremtidens løsninger - nu.



Idealism (possibly fundamentalism)

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COMPASSION
in world farming
ciwvf.org

The
Vegan Society

Idealism



Organic

Unprocessed / Healthier



Business



Conventional

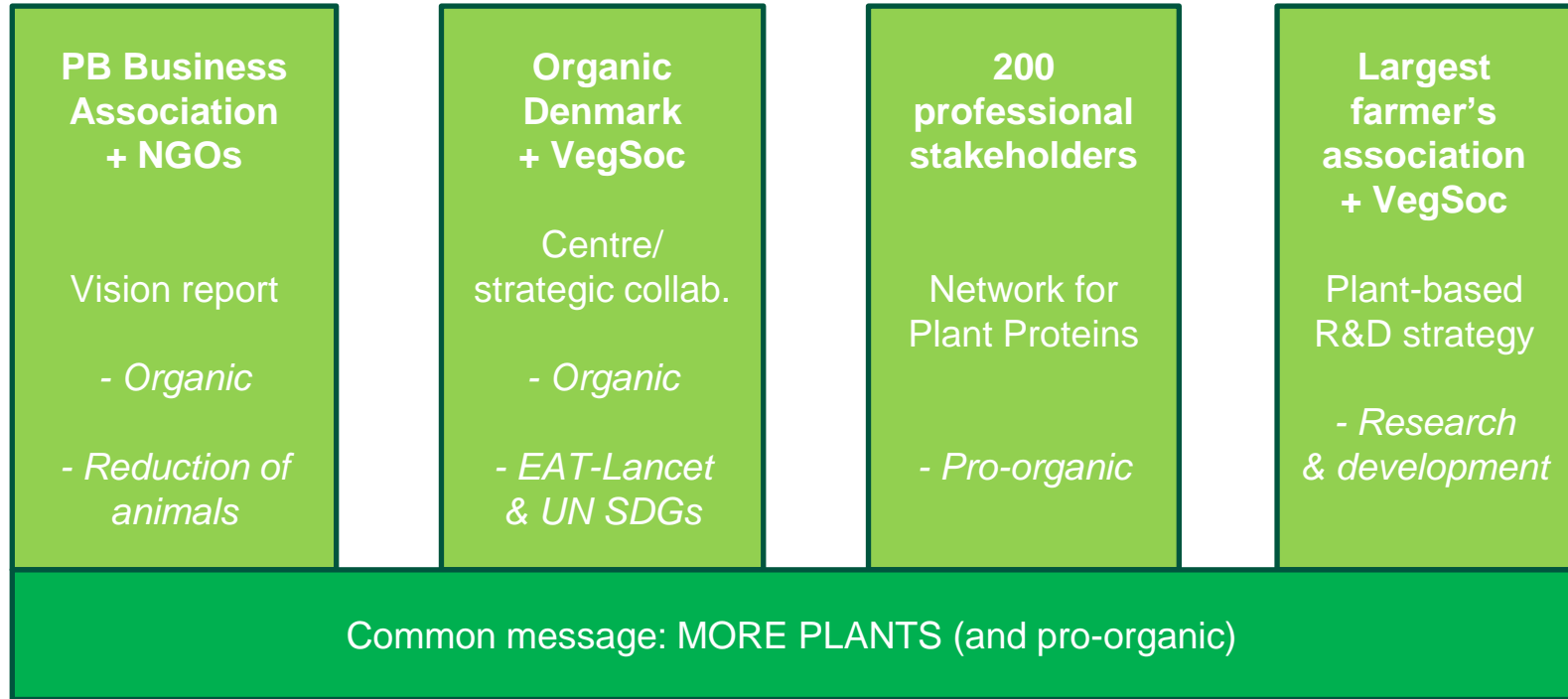
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Realism (possibly conservatism)



The combined effect of four Danish initiatives



**Effect: Political support for plant-based foods
(incl. synergies with organic)**



Denmark's plant-based policy initiatives



The Plant-Based Food Grant



- **100 mio. Euros (12 mio. Euros a year 2023-2030)**
50 % earmarked *organic* plant-based foods
- 11 board members (farmers, businesses, researchers, consumers, green organizations)
- Official website and strategy at plantefonden.lbst.dk
- The Fund will support projects from farm to table:
 - 1. Increasing consumption
 - Professional kitchens (public & private)
 - Private consumption (incl. retail, nudging, etc.)
 - Export activities
 - 2. Developing production
 - Product development (R&D)
 - Developing primary production (seeds, trials, etc.)
 - 3. Strengthening collaboration across the value chain



Examples of projects supported in first round of the Plant-Based Food Grant

- A vegetarian/vegan chef's education (will be fully government-sponsored incl. stipends for all)
- Integrate pulses in curriculum - and meals - at farmer's schools
- Post-education of kitchen professionals
- National pulses campaign with most retailers
- Various nudging projects targeting professionals
- Developing plant-rich recipes for elderly and sick people
- Several R&D projects: Texture/taste of alternative proteins, esp. fermentation





Earmarked funding for Plant-Based Foods

- 2021: 14 mil. DKK (organic only)
- 2022: 39 mil. DKK (organic only)

- 2023: 65 mil. DKK (50 % organic)
- 2024: 94 mil. DKK (50 % organic)
- 2025: 94 mil. DKK (50 % organic)
- 2026: 94 mil. DKK (50 % organic)
- 2027: 94 mil. DKK (50 % organic)
- 2028: 94 mil. DKK (50 % organic)
- 2029: 94 mil. DKK (50 % organic)
- 2030: 94 mil. DKK (50 % organic)



Earmarked funding for Plant-Based Foods

- 2021: 14 mil. DKK (organic only)
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- 2023: 65 mil. DKK (50 % organic)
- 2024: 94 mil. + 35 mil. = 129 mil. DKK (50 % organic)
- 2025: 94 mil. DKK (50 % organic)
- 2026: 94 mil. DKK (50 % organic)
- 2027: 94 mil. DKK (50 % organic)
- 2028: 94 mil. DKK (50 % organic)
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- 2030: 94 mil. DKK (50 % organic)



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- 2025: 94 mil. + 30 mil. = 124 mil. DKK (50 % organic)
- 2026: 94 mil. + 30 mil. = 124 mil. DKK (50 % organic)
- 2027: 94 mil. DKK (50 % organic)
- 2028: 94 mil. DKK (50 % organic)
- 2029: 94 mil. DKK (50 % organic)
- 2030: 94 mil. DKK (50 % organic)



Denmark's "Action Plan for Plant-based Foods"



"Plant-based foods are the future. [...]"

We continue to become more people on a planet where **climate change** puts society under pressure. There is a great demand for food, especially in times of crisis, as **the war in Ukraine** has shown us. There is competition over the areas that both must be used to secure a **clean water environment**, development of renewable energy, **increased nature and biodiversity**, crops for food and feed and at the same time deliver a significant reduction of greenhouse gas emissions. In addition, **the nutritional and health consequences of unhealthy eating habits**.

Increased production and consumption of plant-based foods is part of the answer to these challenges."

Signed by the Minister of Food and Agriculture



Denmark's "Action Plan for Plant-based Foods"



Ifølge en markedsfremskrivning fra Københavns Universitet er der 15 plantebaserede proteinalgrodter, som er egnede til dyrkning i Danmark. Dermed er der stort potentiale for et solidt dansk bidrag til den nødvendige globale omstilling af landbruget til et i højere grad plantebaseret fødevarergrundlag. Det er regeringens vision, at Danmark deltager aktivt i denne omstilling, og at dansk landbrugsproduktion, landbrugseksport og den danske befolknings kostvaner inspirerer resten af verden til en grøn omstilling af fødevarer systemerne. Det er i den sammenhæng vigtigt at have fokus på at fremme sunde, klima- og miljøvenlige plantebaserede fødevarer.

Regeringen sætter med denne handlingsplan følgende mål for den danske plantebaserede fødevarer sektor:

- Den samlede danske plantebaserede værdikæde skal styrkes og sammenhængskraften i de enkelte værdikædeled skal øges.
- Der skal afsættes flere plantebaserede fødevarer. I 2021 blev der afsat for ca. 32 mia. kr. årligt i den danske detailhandel. Regeringen har en ambition om at øge afsætningen af plantebaserede fødevarer.

- Eksportindsatsen for plantebaserede fødevarer skal understøtte den videre udvikling af sektoren. I 2023 og 2024 skal brandingen af den danske plantebaserede fødevarer sektor sæges styrket gennem en indsats via Food Nation og understøttet af de danske ambassader.
- Det danske råvaregrundlag skal styrkes gennem tilskud og udviklingsindsatser.
- Forskning og innovation skal styrkes gennem offentlig-private samarbejder. Regeringen vil arbejde for etableringen af strategiske forsknings-samarbejder mellem staten og interessenter på landbrugsområdet, herunder evt. en eller flere eksterne aktører (fleks. virksomheder, private fonde eller andre lande). Samarbejderne kan være med til at skabe grundlaget for, at danske fødevarer virksomheder kan blive førende inden for plantebaseret fødevarerproduktion.

Regeringen mener, at den plantebaserede fødevarer sektor skal fremmes gennem en kombination af greb på både udbuds- og efterspørgselsiden. Med landbrugsaftalen og denne handlingsplan er der foreslået en række initiativer, der fokuserer på et eller flere led af værdikæden i den plantebaserede fødevarer sektor.

“There is a great potential for a solid Danish contribution to the necessary global transition of agriculture to a more plant-based food base.

It is the government's vision that Denmark participates actively in this transition, and that Danish agricultural production, agricultural exports and the diet of the Danish population **inspire the rest of the world** to a green transformation of the food systems.”



A few examples from Denmark's "Action Plan for plant-based foods"

Education & public sector kitchens:

- Integrating relevant knowledge about plant-based foods **in the education system**, incl. the education of nutrition assistants, the dairy education and at farmer's schools
- The government will work on **recommendations for plant-based diets in public institutions** (*based on the official dietary guidelines, which are pro-plant-based*)

Exports and internationalization:

- The branding of plant-based food sector should be supported by the **embassies**
- Denmark will work to **promote plant-based foods internationally** (incl. in the EU)

Research & development:

- The government would like to support **more research** on plant-based foods
- The government will work for **innovation-friendly regulation** in Denmark and the EU
- Working towards **strategic research collaborations between the government and external stakeholders** (e.g., companies, private foundations, or other countries)



Reflections



Reflections

- We can't afford not to ally ourselves with clearly relevant allies
- We should dare collaborate, even if some of our core supports disagree
- We should help each other, while of course respecting differences
- Embrace the entire plant-based spectrum, but aim for quality
 - We need whole-foods/organic AND technology
 - Fermentation: Whole-foods/organic + technology + texture/umami
- Fair criticism of organic regulation vs. unfair criticism
 - We wouldn't want plant-based, vegetarian and vegan regulations to be undermined either
- "Regenerative agriculture" (**vague, ambiguous**)
is increasingly used to undermine organic (which has **clear standards**)

Idealism (possibly fundamentalism)

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COMPASSION
in world farming
ciwvf.org

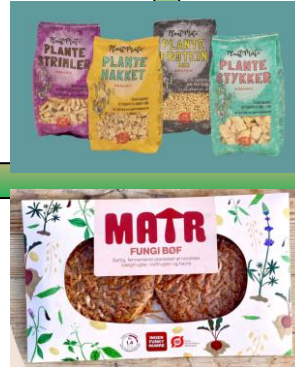
The
Vegan Society

Idealism



Organic

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Conventional

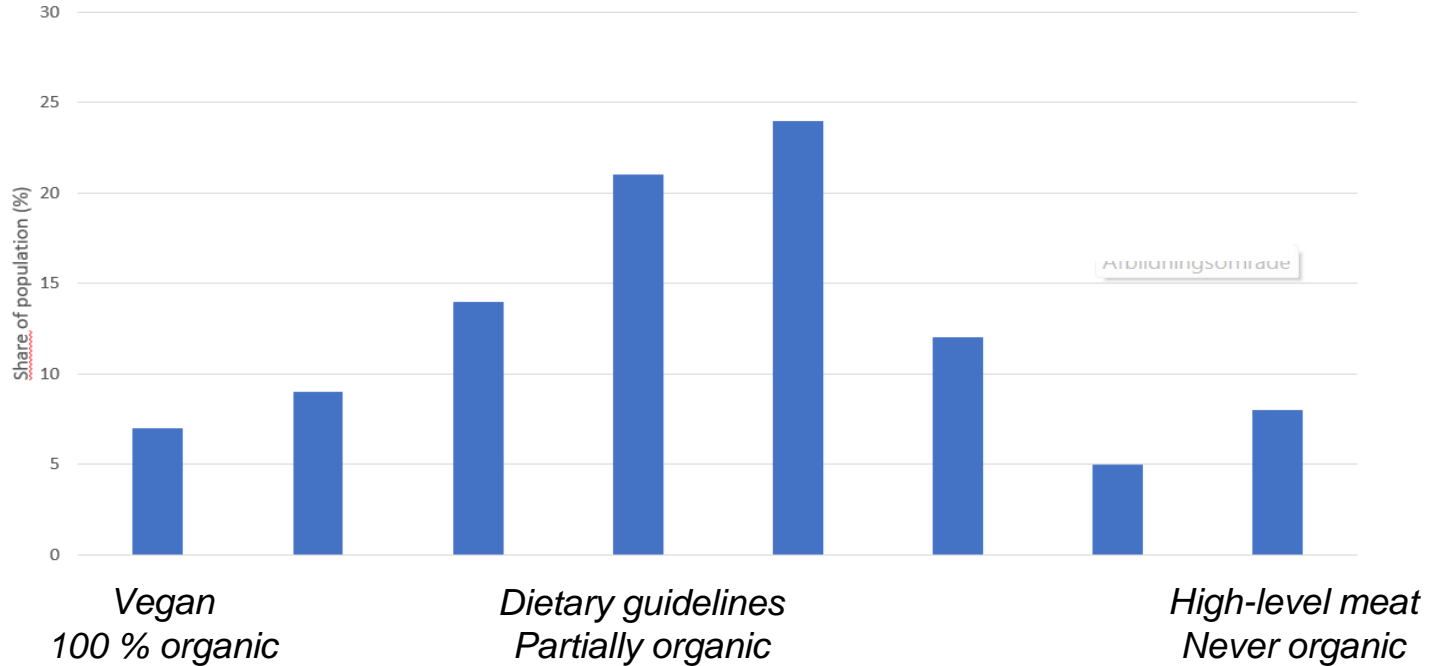
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Realism (possibly conservatism)



"We are all in the same boat" – the more conservative you are, the more you need idealists to bring balance!!!



Hypothetical normal distribution of diets within a population, as more people change their diets



Reflections

- What could you do to increase collaboration with others in the green movement?
- Who would be your most natural allies?
- Who could be high-risk, but also high-reward, allies for you?
- What are the barriers, obstacles, risks?



Thank you!

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