

# PLANTPRO CHALLENGE

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Projektet og første resultater fra  
PlantProChallenge i Skanderborg

nnovationsfonden

# AGENDA

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- ☐ **PlantPro Projekt** – hvad handler projektet om, og hvad sker der ellers?
- ☐ **PlantPro Challenge** – første resultater og observeringer fra studiet i Skanderborg
- ☐ **Fremtid** – hvad skal der til, for at vi spiser mere planterig i Danmark?

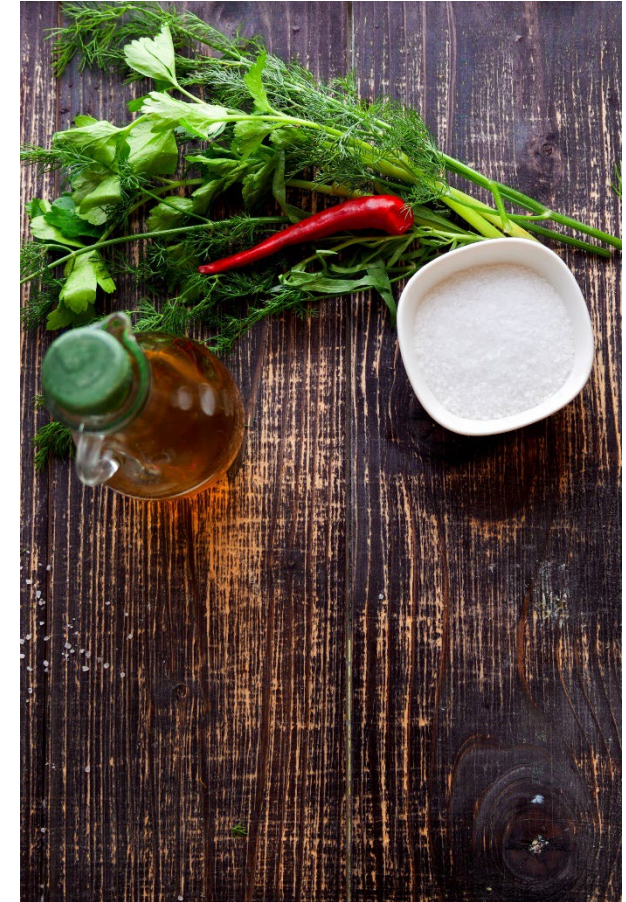


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# PLANTPRO PROJEKT – HVAD HANDLER PROJEKTET OM, OG HVAD SKER DER ELLERS?

# PROJECT PLANTPRO – WHO

- ✓ **8.4 mill DKK investment by IFD**
- ✓ **April 2021- March 2024**
- ✓ **18 partners:**  
MAPP Centre / Aarhus University, Food Science / University of Copenhagen, Copenhagen Business School, Plantebranchen, Dansk Vegetarisk Forening Simple Feast, Beyond Coffee, Thinktank OneThird, Circular Food Technology, Møllerup Brands, Food Innovation House, Orkla, Naturli, Planteslagterne, Upfield, Eachthing, Rema 1000 and Fair Trees



FORSIDE / INVESTERINGER / INVESTERINGS Historier

**Nyt stort projekt kobler plante-baserede fødevarer og mad-spild for at styrke Danmark i den grønne omstilling**

**/nnovationsfonden**

**<https://mgmt.au.dk/plantpro/>**

# PROJECT PLANTPRO - WHAT

PlantPro contributes to **accelerating an efficient green consumer behaviour transition** towards more plant-rich diets and reduced food waste.



**Plant-Rich diets**

**Reduced food waste**



**Technology acceptance**

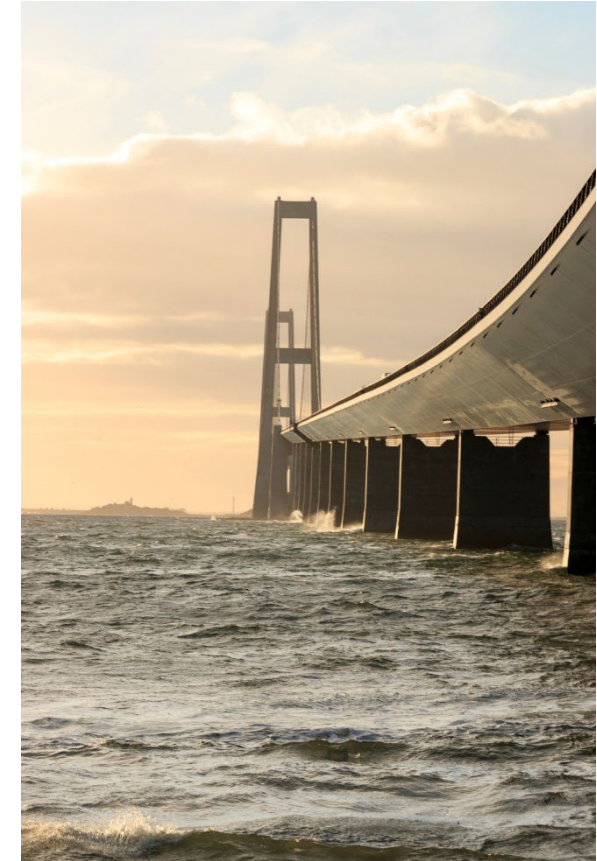


# PROJECT PLANTPRO – WHY

Climate solutions with a **very high level** (2/5) of impact in the agriculture and food area:

- reduced food waste
- plant-rich diets

- ❑ In Denmark, animal-based foods constitute 30% of the diet but cause 75% of the climate impact.
- ❑ Food waste in agriculture, food production and households accounts for approx. 8–10% of total human-caused GHG emissions.



<https://innovationsfonden.dk/sites/default/files/2019-11/innovations-fund-denmark-climate-solutions-panel-plausible-solutions-compressed.pdf>

Lassen, A. D., Christensen, L. M. & Trolle, E. Development of a Danish Adapted Healthy Plant-Based Diet Based on the EAT-Lancet Reference Diet. *Nutrients*, 738 (2020).

IPCC (2019). Food Security. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. (2019).

# PROJECT PLANTPRO - HOW

## 1 - Industry:

- Key success factors and barriers through company interviews
- Transition processes through transition cases

## 2 - Consumers:

- Consumer segment differences via various survey data
- Dietary change and barriers through observation study
- Environmental impact comparison through LCA

## 3 - Market:

- Nudges and policy recommendations through experiments in retail & canteen, meal and product sensory testing, peer influence effect



### Industry

What are the key success factors of the plant-based industry and the major drivers of green societal transitions?



### Consumers

Which consumer factors determine acceptance and behaviour across different consumer lifestyle groups? What is the environmental impact of plant-based diets and upcycled food?



### Markets

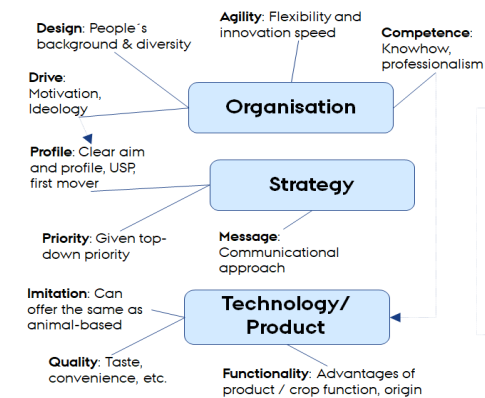
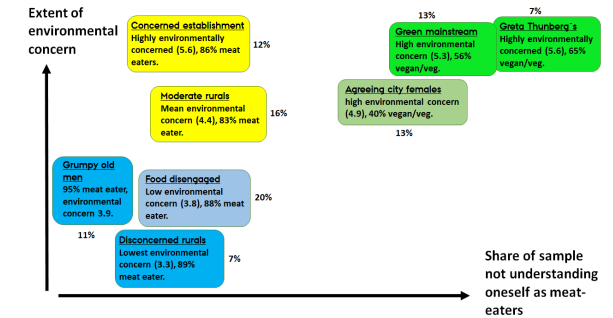
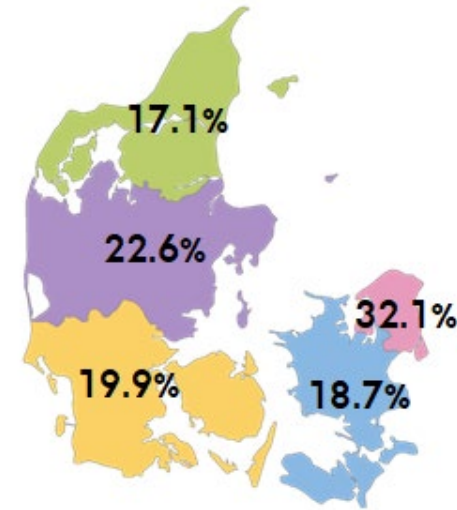
What is the effect of nudging, information, peer influence, and motivation on behavioural change in public and private settings under real-life context in the market?

# PROJECT PLANTPRO – WORK SO FAR

1) National **representative consumer survey** conducted in 2021 – to be repeated twice during the project  
(see <https://mgmt.au.dk/plantpro/activities/benchmark-survey>)

2) Industry and expert interviews on the **development path, success factors and influence factors** on the plant-based sector

3) Case **studies on other food-related transitions** and the potential learnings





# PLANTPRO CHALLENGE – FØRSTE RESULTATER OG OBSERVERINGER FRA STUDIET I SKANDERBORG



MAPP CENTRE – RESEARCH ON VALUE CREATION  
IN THE FOOD SECTOR  
DEPARTMENT OF MANAGEMENT  
AARHUS UNIVERSITY

2022

JESSICA ASCHEMANN-WITZEL  
PROF. DR. HABIL.



# AIM OF PLANTPRO CHALLENGE

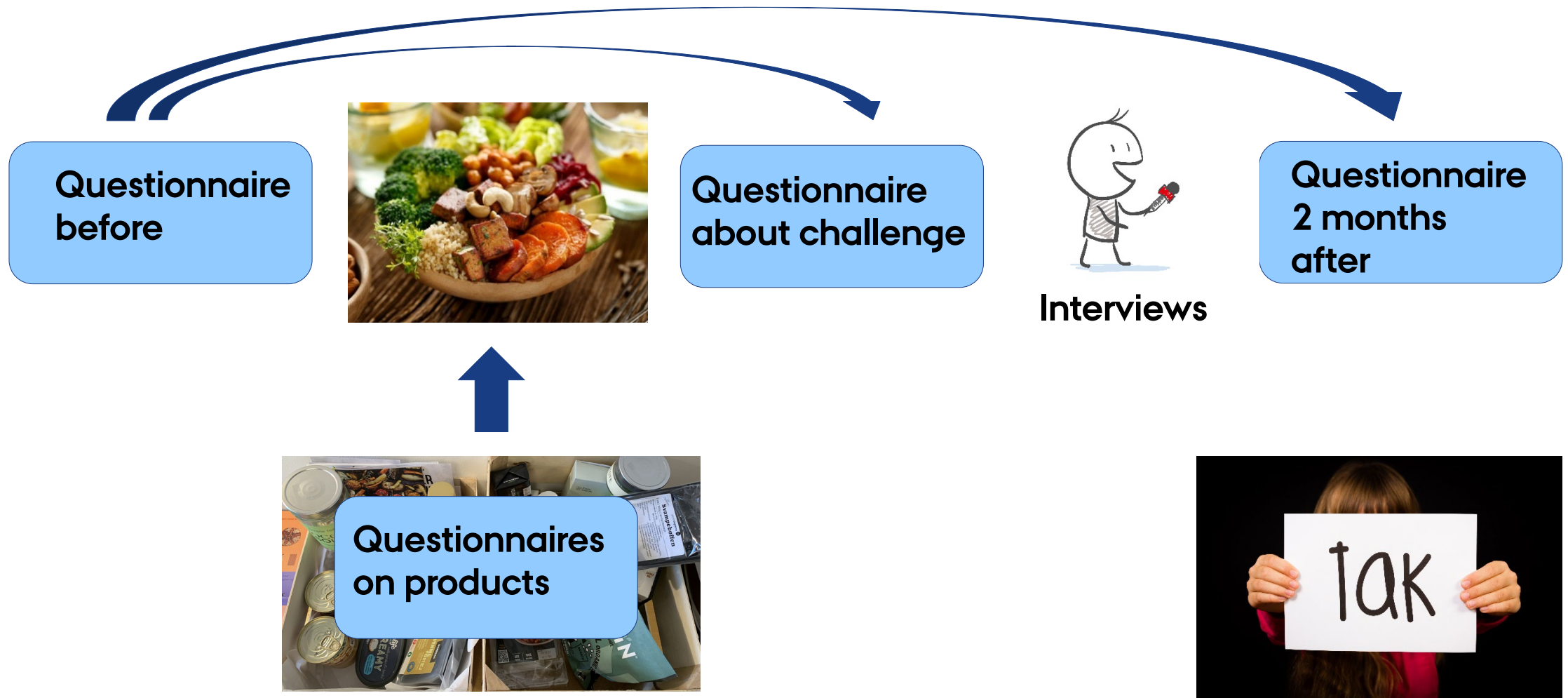
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**How does perception, attitude and behaviour change while eating more plant-based?**

- What are opinions and beliefs about plant-based food and eating before versus after?
- How does confidence in eating more plant-rich change through trying to do so?
- Which experiences and observations do participants have on products, meals, barriers and solutions?



# METHOD OF PLANTPRO CHALLENGE



# RESPONDENTS IN PLANTPRO CHALLENGE

Variable	Representative national sample	PlantPro Challenge participants
Gender	50-50 female/male	¾ female respondents
Age	Ø 44 years	Ø 43 years
Household	27% single, 38% 2-person, 35% multi-person household	4% single, 25% 2-person, 71% multi-person household
Education	56% have higher education	74% have a higher education
Environmental concern	Ø 4.6 (on 7 scale)	Ø 4.6 (on 7 scale)
Cooking competence	Ø 5.8 (on 7 scale)	Ø 6.2 (on 7 scale)
'Eating less meat benefits my personal health'	Ø 4.1 (on 7 scale)	Ø 5.2 (on 7 scale)
'Eating less meat benefits the climate'	Ø 5.1 (on 7 scale)	Ø 6.3 (on 7 scale)

# AIMS OF PARTICIPANTS - DIET

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Are you planning to ... ?

- eat vegetarian - 16.5% yes
- eat vegan - 2.5% yes
- eat flexitarian - 72.7% yes



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# FOOD FREQUENCY – EXAMPLE BEANS & CO

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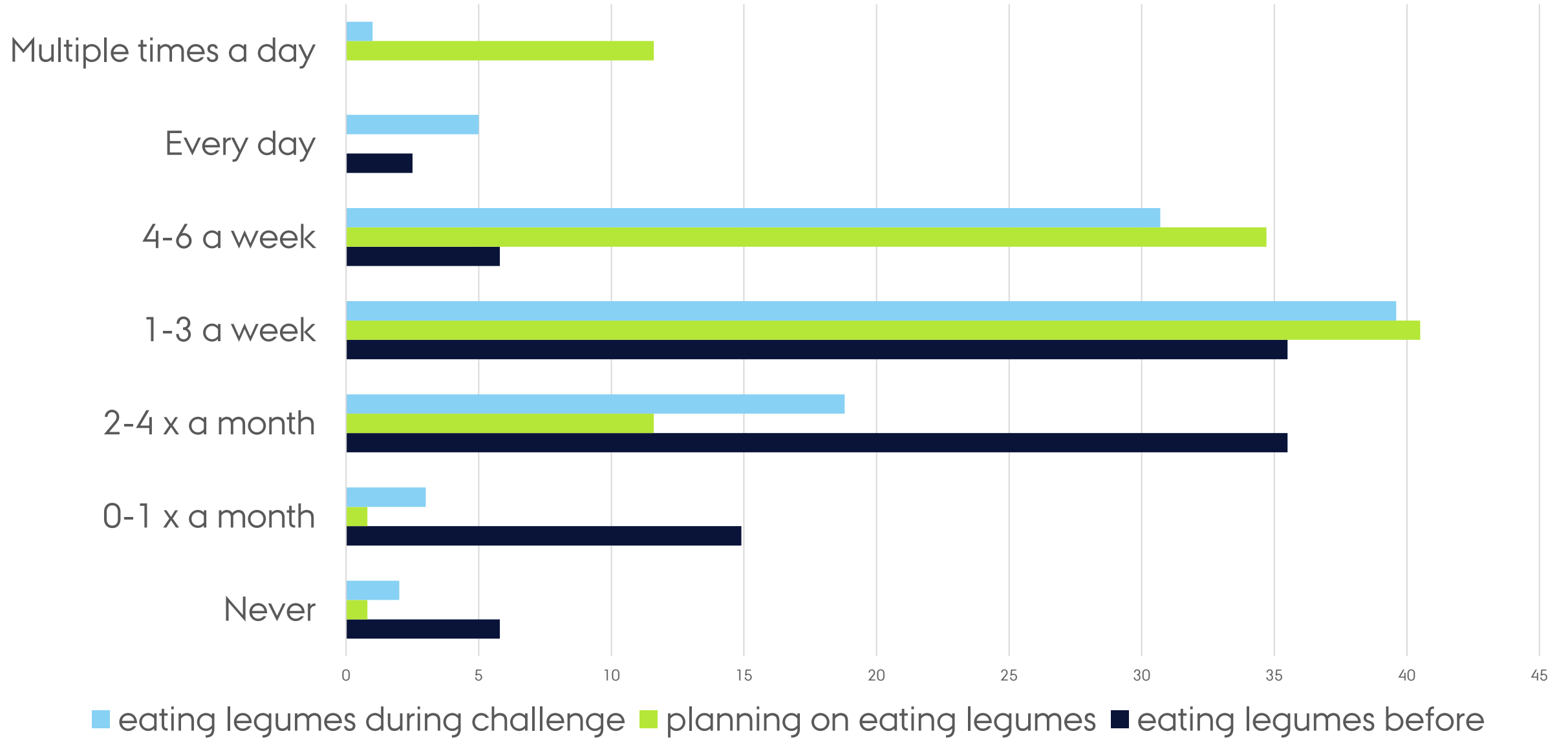
**How often are you ... ?**  
legumes (lentils, beans, chickpeas)

- eating legumes? (before)
- planning on eating legumes?
- eating legumes? (during)



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## Legumes - during challenge, plans, and before



# PRODUCT FEEDBACK

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Positive assessment of products (taste, texture, ease of use) – but:

- ❑ ... purchase likelihood tends to be *lower* than rating of product experience (comments on high prices)



# PRODUCT FEEDBACK

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*“Virkelig lækker produkt. Men da jeg googledde prisen tabte jeg kæben. Prisen bliver nok årsagen til, jeg ikke køber det - det er ellers virkelig lækker og lige min smag.”*





# PRODUCT FEEDBACK

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Positive assessment of products (taste, texture, ease of use) – but:

- ❑ ... purchase likelihood tends to be *lower* than rating of product experience (comments on high prices)
- ❑ ... **legumes, seeds and drinks assessed *more* positively compared to meat and cheese alternatives** (comments on processing, certain ingredients and health and climate questions)





# PRODUCT FEEDBACK

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*"Jeg synes, det er problematisk, at spise ret meget af sådanne industri forarbejdede produkter."*

*"Meget kunstig konsistens, vil hellere undvære, et kunstigt produkt som ikke tilførte retten noget godt."*



# PRODUCT FEEDBACK

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Positive assessment of products (taste, texture, ease of use) – but:

- ❑ ... purchase likelihood tends to be *lower* than rating of product experience (comments on high prices)
- ❑ ... legumes, seeds and drinks assessed *more* positively compared to meat and cheese alternatives (comments on processing, certain ingredients and health and climate questions)
- ❑ ... **taste is subjective and individual** 😊



# PRODUCT FEEDBACK

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*"Vild gode"*

*"Smagte virkelig dårligt"*

*"Vi er forelskede!"*



# PRODUCT FEEDBACK

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## Doing a blind test:

*"Har lavet blind test og kunne næsten ikke smage forskel fra "alm" remulade og syntes faktisk denne var lækrest."*

## Cater to different priorities:

*"Lækkert, nemt og noget min mandlige kæreste forstår, fordi der er noget at bygge måltidet op omkring."*

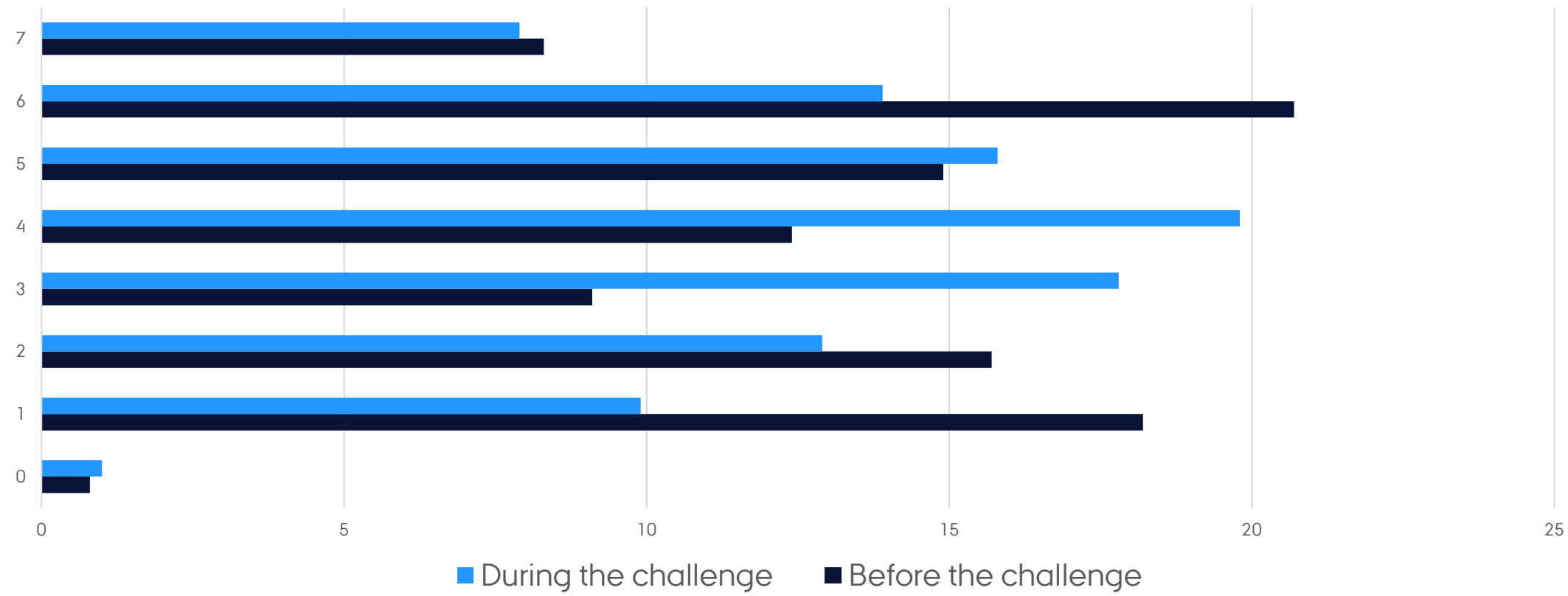
## Recipes and information:

*"Fungerede rigtig godt i retten. Det er godt med inspirationer på hjemmeside til opskrifter. Ærgerligt at co2-effekten ikke er højere ift. kylling."*

# CHANGES



Days **dinner** without meat (% of respondents)

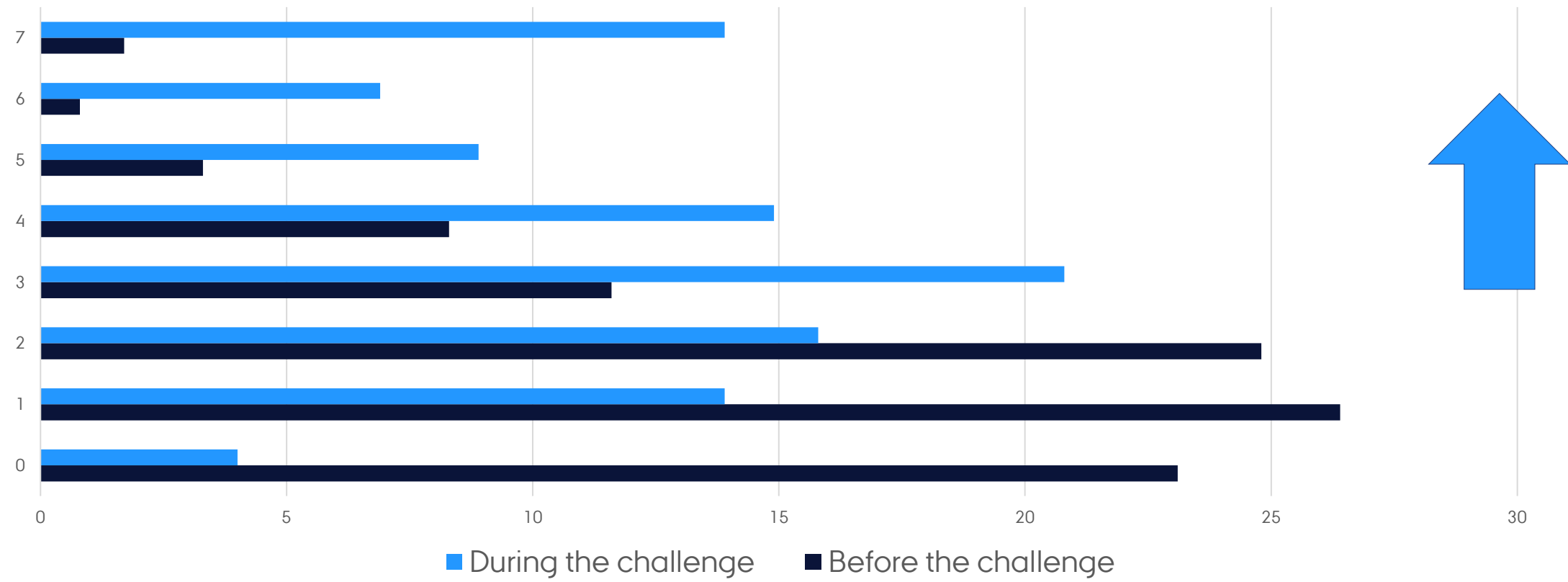




# CHANGES

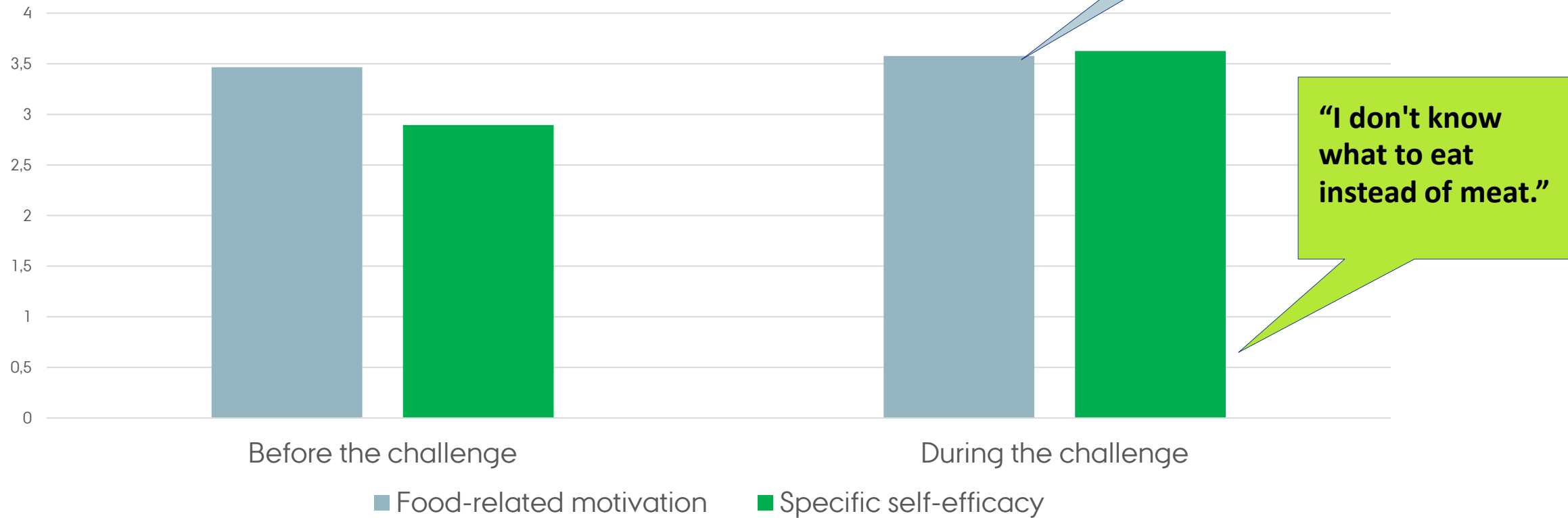


Days **lunch** without meat (% of respondents)



# CHANGES

Changes in food-related motivation and  
(lack of) specific self-efficacy



# USE OF INFORMATION SOURCES

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According to participants in the survey after the PlantProChallenge:

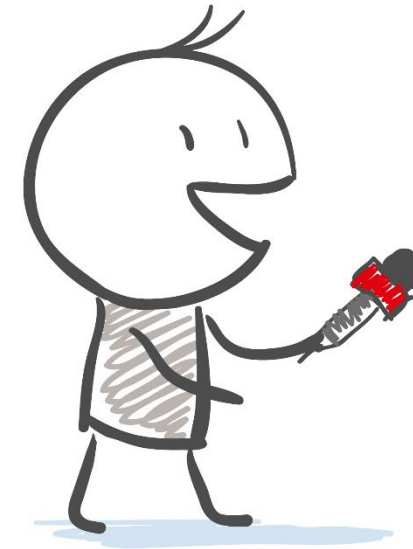
- ☐ 66% tested the recipes
- ☐ 74% read the information provided
- ☐ 90% looked for additional recipes
- ☐ 33% asked friends for inspiration
- ☐ 5% read further information



# IMPRESSIONS FROM INTERVIEWS

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- ☐ 56 households contacted
- ☐ We contacted households that differed in environmental and food interest
- ☐ 13 interviewed or interview agreed so far
- ☐ Interviews online or at home
- ☐ 30-60 min



Interviews

# IMPRESSIONS FROM INTERVIEWS

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## Sharing a portion for dinner:

*"...vi spiste ikke ret meget kød på den måde, at vi spiste kød næsten til alle måltider, men ikke ret meget. Altså vi DELER sådan et kyllingebryst eller vi DELER et stykke kød og så har vi en masse tilbehør"*



## Interviews



# IMPRESSIONS FROM INTERVIEWS

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Realizing how difficult it is:

*"...det der kød betød mere, end vi troede. (...) Jeg føler ikke vi spiser mindre end før, men vi spiste lidt før. Vi var ikke sådan storforbrugere før"*

*"Jeg synes ikke, det er svært at finde (opskrifter), det jeg synes der er med vegetariske retter, hvis de skal smage godt, så er der tit meget fedt – eller kalorierigt."*



**Interviews**

# IMPRESSIONS FROM INTERVIEWS

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**Challenge as an inspiration and joint project:**

*"Det der med hele tiden at dyrke og finde ny smag synes jeg er super spændende."*

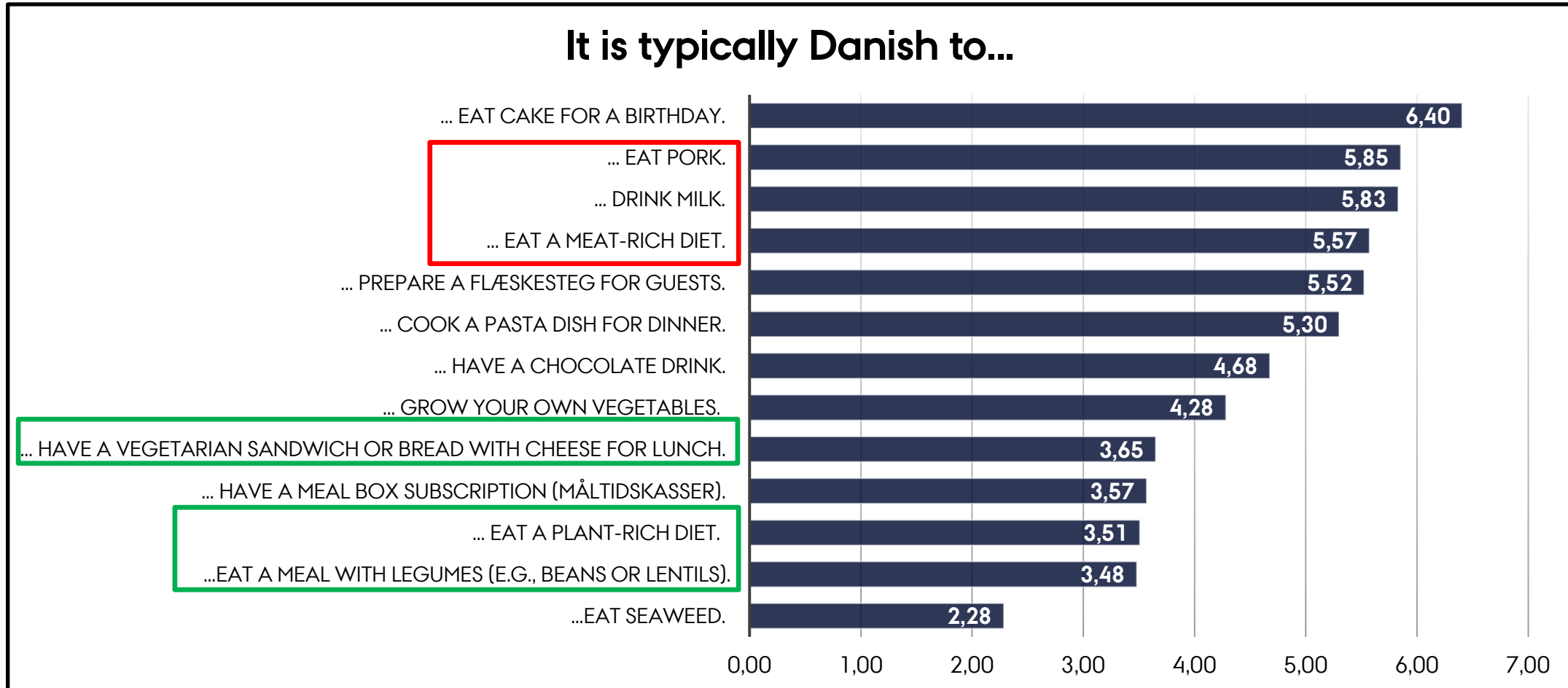
*"... min datter var meget på, at det skulle vi. Og det er jo sådan at hvis børnene er motiverede, så forgår tingene meget, meget nemmere."*



**Interviews**

# FREMTID – HVAD SKAL DER TIL, FOR AT VI SPISER MERE PLANTERIG I DENMARK?

# PLANT-BASED & DANISH CULTURE?



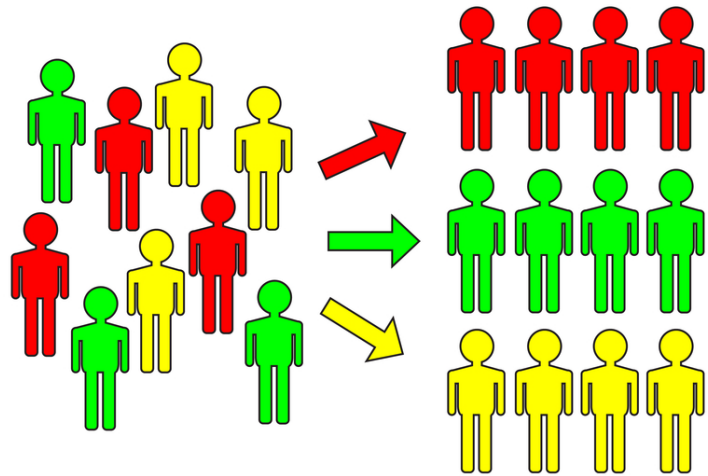
# CONFLICT 'PLANT VS MEAT' ?

	Disagree (1/2/3)	Neutral (4)	Agree (5/6/7)
I perceive the public discussion around food as highly polarized.	12.8%	30.3%	56.9%
I would like people to be more tolerant towards different dietary choices.	11.9%	19.6%	68.4%
I feel judged for my food choices.	59.8%	17.7%	22.6%
I think food consumption is a matter of personal freedom.	11.4%	17.5%	71.1%
When someone appears to lecture me about which food to eat, I have found myself reacting with the opposite.	40.8%	25.6%	33.7%
I perceive there is a narrative based on 'us' versus 'them' when it comes to eating meat or plant-based foods.	18.0%	20.6%	61.4%



# CONSUMER SEGMENTATION APPROACH

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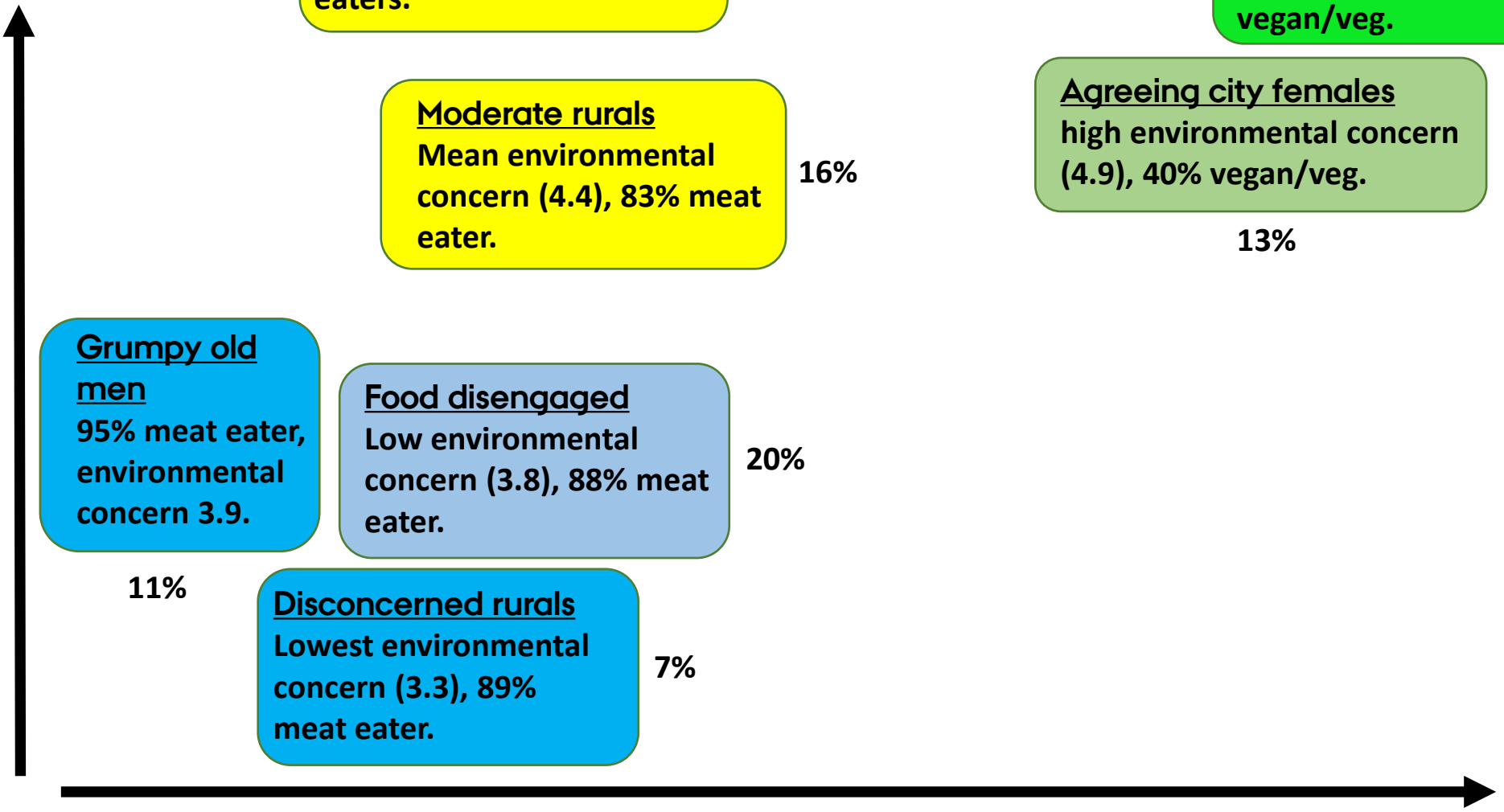
**1) Segment identification based on mainly psychographic variables.**

**2) Segment characterization based on mainly sociodemographic variables.**

**3) Segment names that help understanding.**

Names that describe the most relevant distinctions - might exaggerate and stereotype to carve out the differences.

Extent of  
environmental  
concern



Share of sample  
not understanding  
oneself as meat-  
eaters

# KONKLUSION

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- ❑ **PlantPro Challenge** – viser at pris, smag, skepsis og bekymring om processering af ‘imitat’-produkter, og at finde og etablere de rette hverdagsretter, er barrierer
- ❑ **Fremtid** – bedre, enklere og mindre dyre produkter, at vænne sig til mindre kød som det nye normale

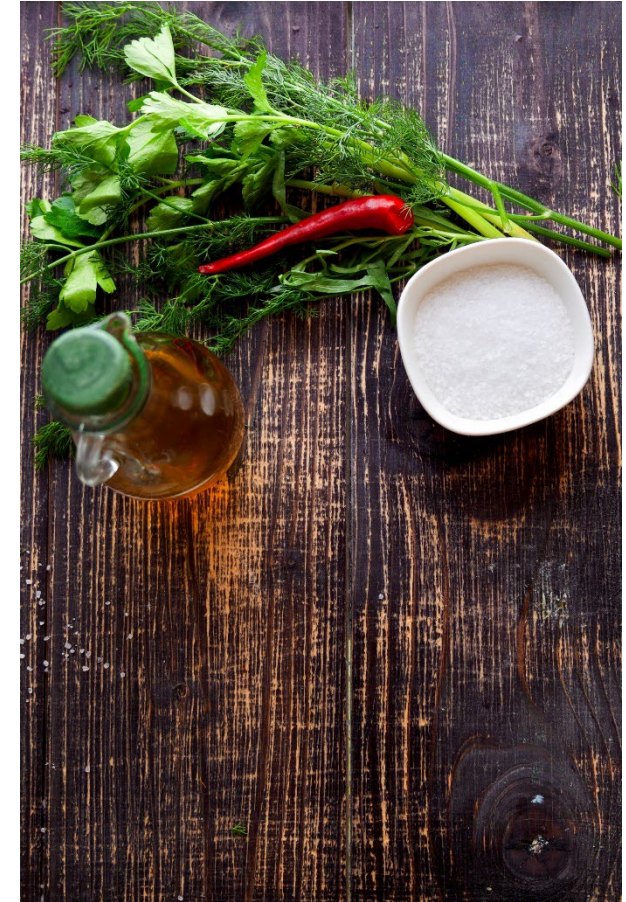


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# THANK YOU!

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PlantPro contributes to accelerating an **efficient green consumer behaviour transition** towards more plant-rich diets and reduced food waste.

We aim to fill a knowledge gap on factors that drive consumer behaviour change towards more sustainable plant-rich diets and upcycled foods and greater acceptance of sustainable food technologies.

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