

DIFFERENT PATHWAYS TO MEAT REDUCTION

Report of the PlantPro Project (Workpackage 2.1)



PlantPro: Accelerating an efficient green
consumer transition |
Funded by Innovation Fund Denmark | grant
nr 0224-00044B

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Key findings

Transition to reduced meat consumption has started

- Two-thirds of Danes would like to reduce meat consumption or are already reducing meat intake.
- Majority of consumers is aware that meat reduction is associated with benefits for the climate and the environment.
- Reducing the meat portion size in meals is a promising starting point because three-quarters of consumers is willing to eat meals with smaller portions of meat (compared to what they are used to).

While many Danish consumers are willing to reduce their meat consumption and eat meatless meals with vegetables, the bigger challenge is that many consumers are not willing to eat plant-based proteins (i.e. legumes and meat substitutes)

- If asked to choose a meal without meat, the great majority of consumers prefer to have vegetables instead (followed by legumes and meat substitutes*).
- Legumes are perceived as healthy and sustainable. However, especially taste and preparation of legumes hinder consumers to substitute meat with legumes.
- Perceived bad taste and high prices of meat substitutes are major barriers for consumers.
- In contrast to the general Danish population, consumers following a mostly plant-based diet have a strong preference for both, meals with vegetables and meals with legumes, and are also relatively positive towards meals with meat substitutes.

*Meat Substitutes = Products that mimic meat in terms of taste and texture

About this document

This report is an outcome of the PlantPro project (grant nr 0224-00044B) funded by Innovationsfund Denmark.

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PlantPro project partners

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Food sector partners

Plantebranchen

Dansk Vegetarisk Forening

Thinktank OneThird

Beyond Coffee

Orkla

Naturli

Circular Food Technology

Dava Foods/ Møllerup Brands

Food Innovation House

Planteslagterne

Upfield

Eachthing / Datacontexts

FairTrees

Rema 1000

Nemlig.com

PlantPro

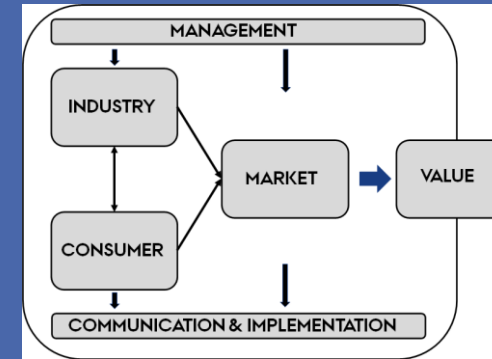
Accelerating an efficient green consumer transition

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

PlantPro is funded by Innovation Fund Denmark. The project runs for three years, from 1 April 2021 to 31 March 2024. The project is a collaboration between the MAPP Centre at the Department of Management at Aarhus University, Department of Food Science at University of Copenhagen, Copenhagen Business School, Plantebranchen, Dansk Vegetarisk Forening, Thinktank OneThird, Simple Feast, Beyond Coffee, Circular Food Technology, Møllerup Brands, Food Innovation House, Orkla, Naturli, Planteslagterne, Upfield, Eachthing, Rema 1000 and Fair Trees.

Throughout the project, PlantPro will identify key success factors in industry and societal transitions, map consumer factors that determine acceptance and behaviour across consumer lifestyle groups, assess environmental impact, and measure the effect of nudging, information, and motivation on behavioural change in public and private settings under real-life context. It will deliver a catalogue of marketing and policy actions.

The commercial value created consists of market growth for innovative plant-based food and food upcycling businesses. The societal value created consists of the achievement of climate targets and sustainable development goals. The overall goal is to contribute to the development that a greater share of the broader population consumes more plant-rich diets in ways that at the same time reduce food waste in the system.



The work package structure focuses on the industry (WP1), the consumer (WP2), and the interplay of both in the market (WP3). WP1 aims to identify which key success factors shape sustainable industry and societal transitions in the food and other sectors, in Denmark and abroad. WP2 aims to map the consumer factors that determine the acceptance and behaviour across different consumer lifestyle groups, and the respective environmental impact of it. WP3 aims to assess the impact of actions to nudge, inform or motivate behaviour change among consumers in different public and private choice contexts.

See more at <https://mgmt.au.dk/plantpro>

Aim of the study

The aim of WP 2.1. of the PlantPro project is to:

- Explore the status-quo of meat consumption and meat reduction among Danish consumers
- Investigate differences between consumer segments and identify what works best for whom (*Danish population vs. Danish consumers already highly interested in plant-based dietary styles*)

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Research Setting

The report is based on **two online surveys** with Danish consumers. **Sample 1** reflects the Danish population in terms of gender, age, place of residence and education. **Sample 2** consists of individuals already highly interested in following a plant-based dietary style. Data collection was done in cooperation with the help of the Danish Vegetarian Society (DVF) who invited their members to participate in study 2.

The following slides show comparisons between the general population and consumers highly interested in plant-based diets.

1

General sample of the Danish population (In the following called: *Population-sample*)

- Online survey conducted in summer 2022
- n=838 Danish consumers
- Quotas for gender, age, education and origin were used to reflect the Danish population
- Data collection through the market research institute Norstat A/S, Copenhagen

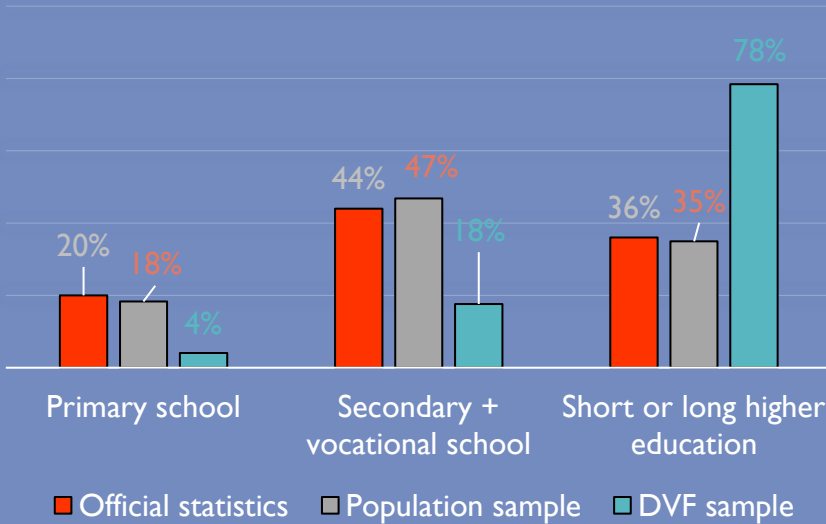
2

Sample of individuals interested in plant-based diet (In the following called: *DVF-sample*)

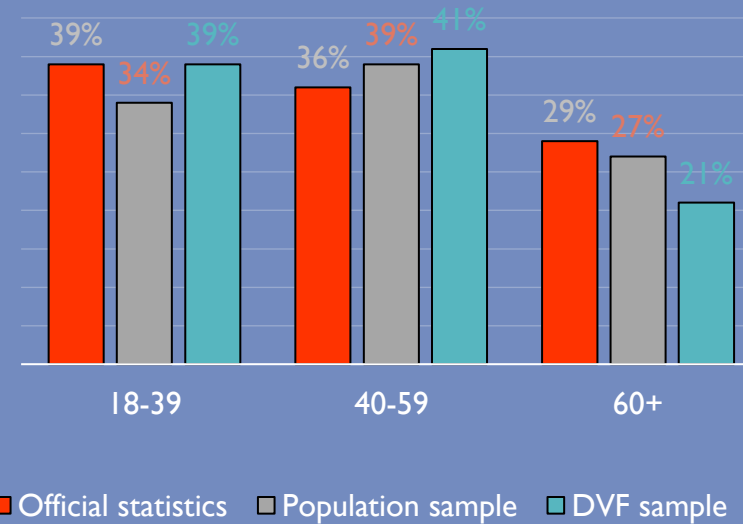
- Online survey conducted in cooperation with DVF (invited members of Danish Vegetarian Society (DVF) via social media channels) in summer 2022
- n= 467 members of Dansk Vegetarisk Forening

Research Setting: Sample description

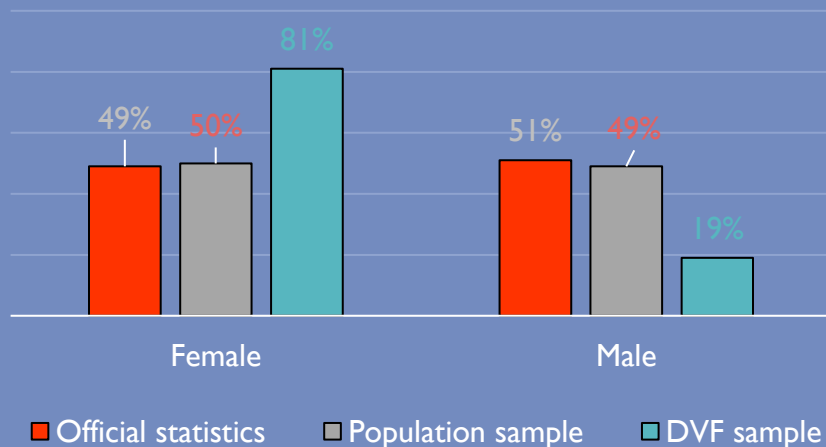
Distribution of attained educational level



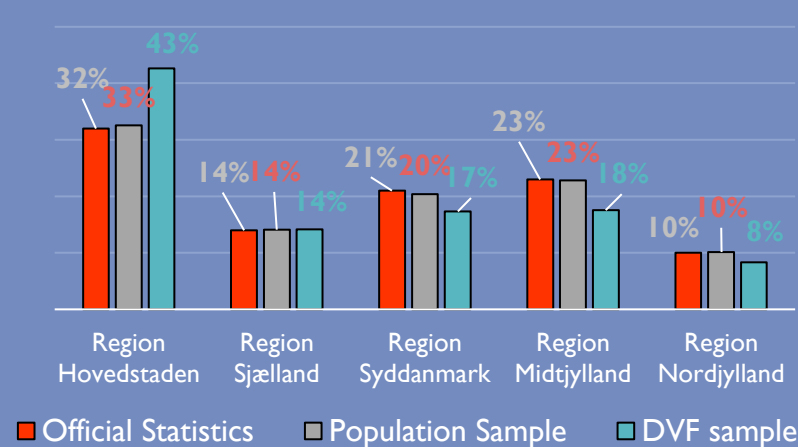
Age distribution



Gender distribution



Geographic distribution

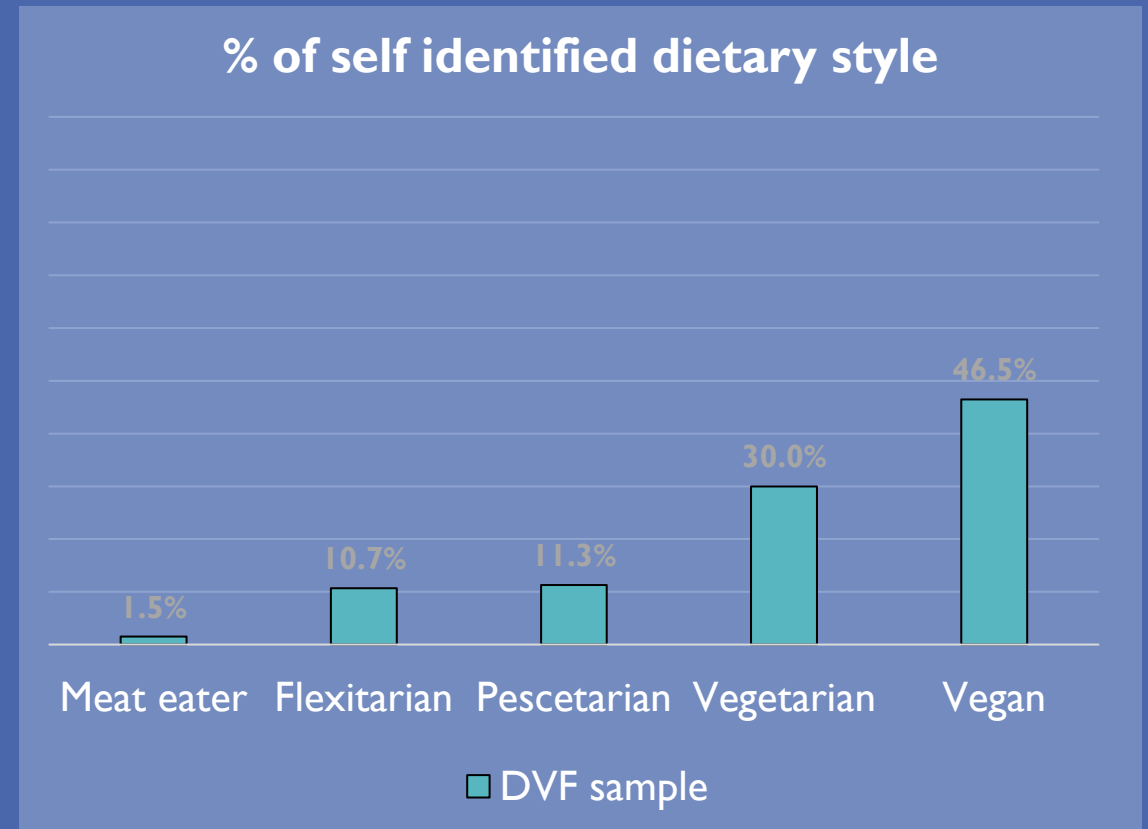
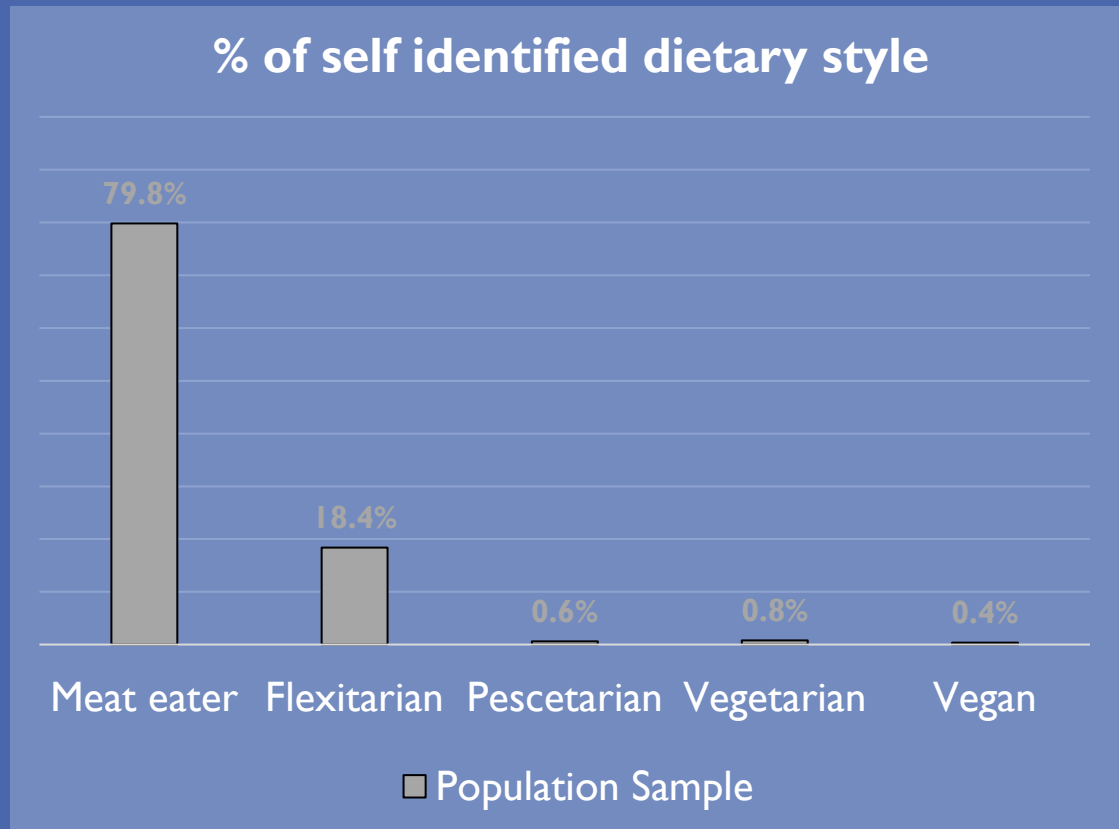


- More women among those interested in plant-based diets
- Higher educational level among those consumers interested in plant-based diets
- Similar age distribution in both samples. Average age of 49 years in general population sample and 46 years in sample of people interested in plant-based diets
- Slightly larger proportion of consumer interested in plant-based diets living in 'Region Hovedstaden'

Status Quo of Meat Consumption

Status quo of meat consumption:

Dietary style

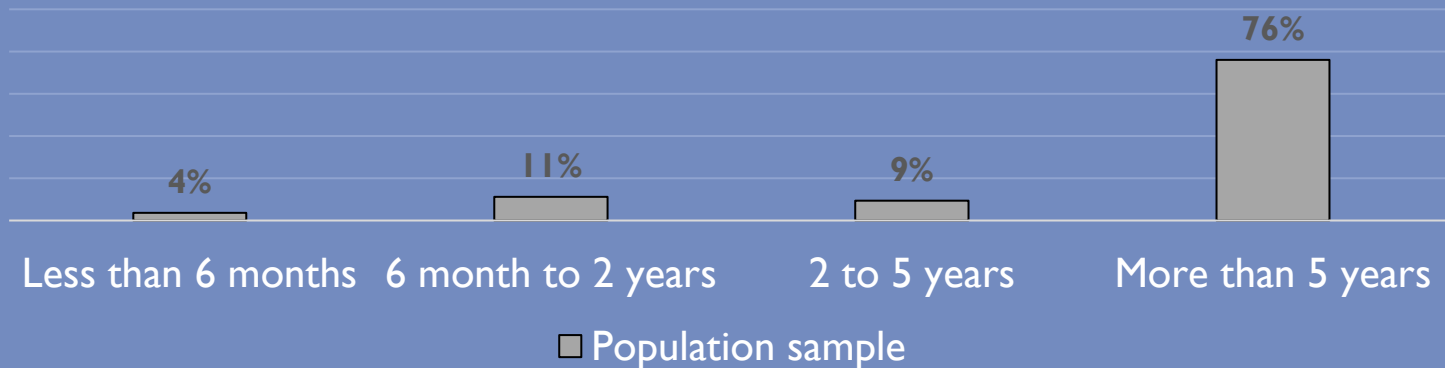


Nearly 20% of Danes are already following a flexitarian dietary style

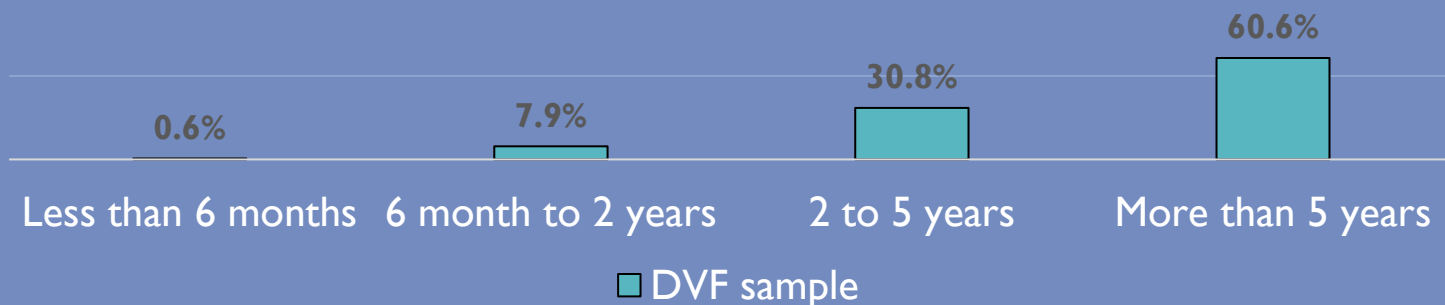
Status quo of meat consumption:

Duration of current dietary style

For how long have you followed your current diet?



For how long have you followed your current diet?

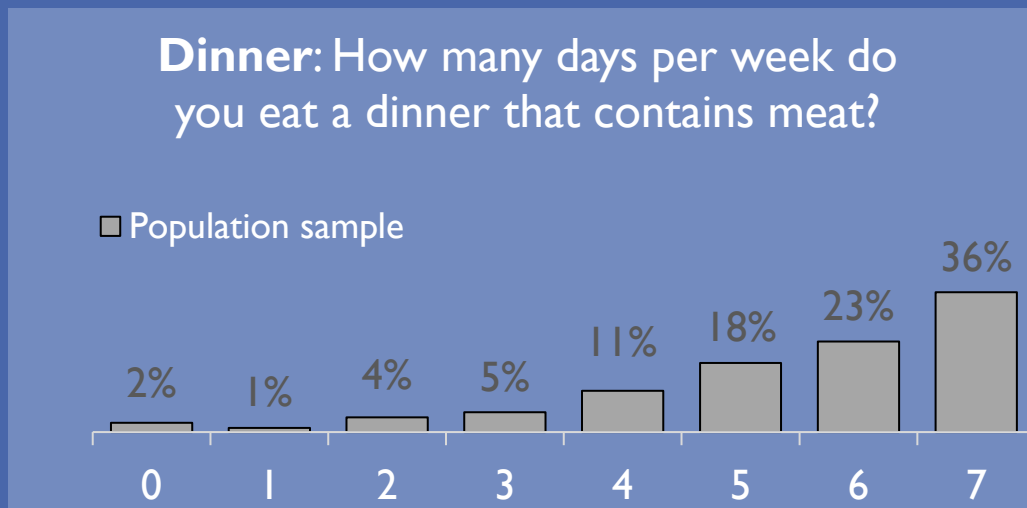
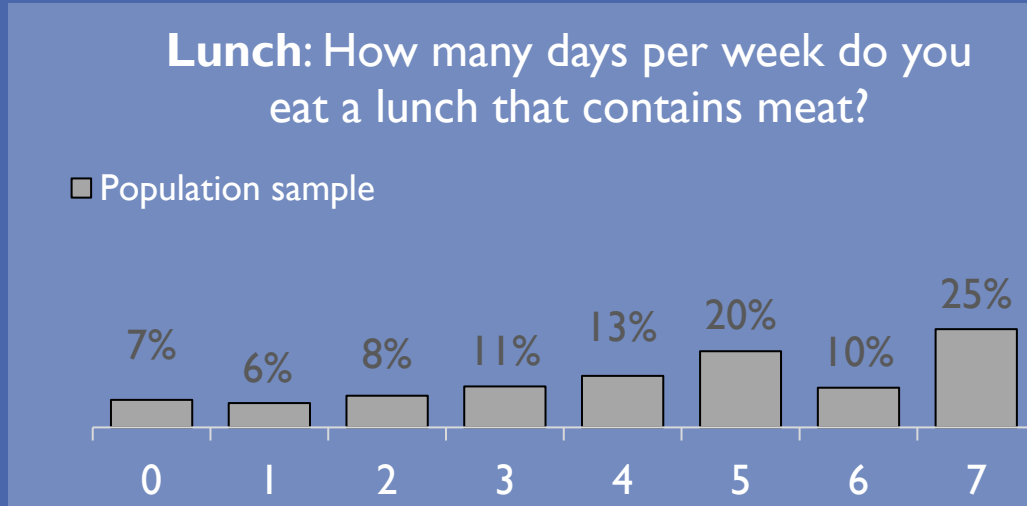


Change in dietary styles is happening:

- A quarter of the Danish consumers have changed their dietary style within the last 5 years
- 40% of consumers interested in plant-based diets have changed their dietary style within the last 5 years

Status quo of meat consumption:

Lunch and Dinner with meat



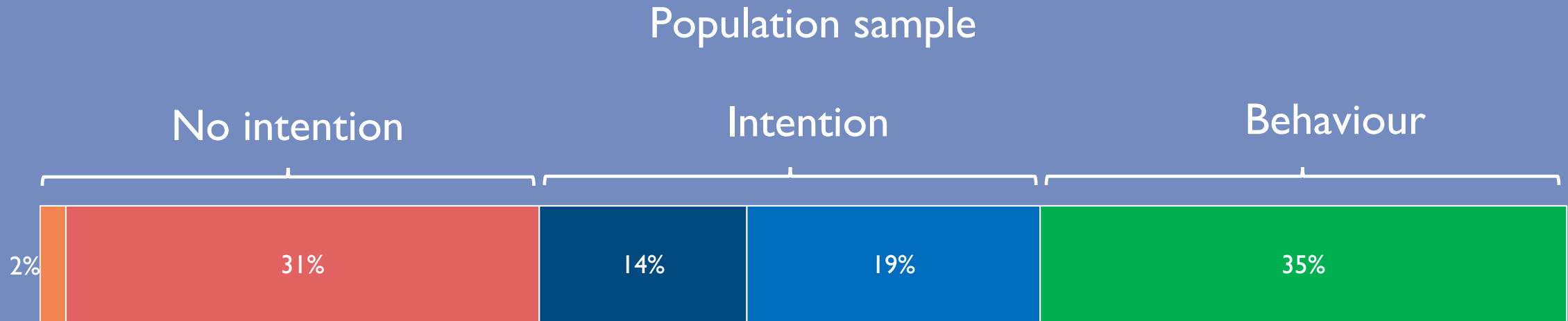
Meat more common in dinners than in lunches:

- 60% of Danes have dinner with meat 6-7 days per week
- 35% of Danes have lunch with meat 6-7 days per week
- 12% of Danes have dinner *without* meat every second day or more often
- One third of Danes have lunch *without* meat every second day or more often
- Almost 90% of consumers interested in plant-based diets never eat lunch or dinner with meat

Status Quo of Meat Reduction

Status quo of meat reduction:

What is your stance on reducing meat consumption?



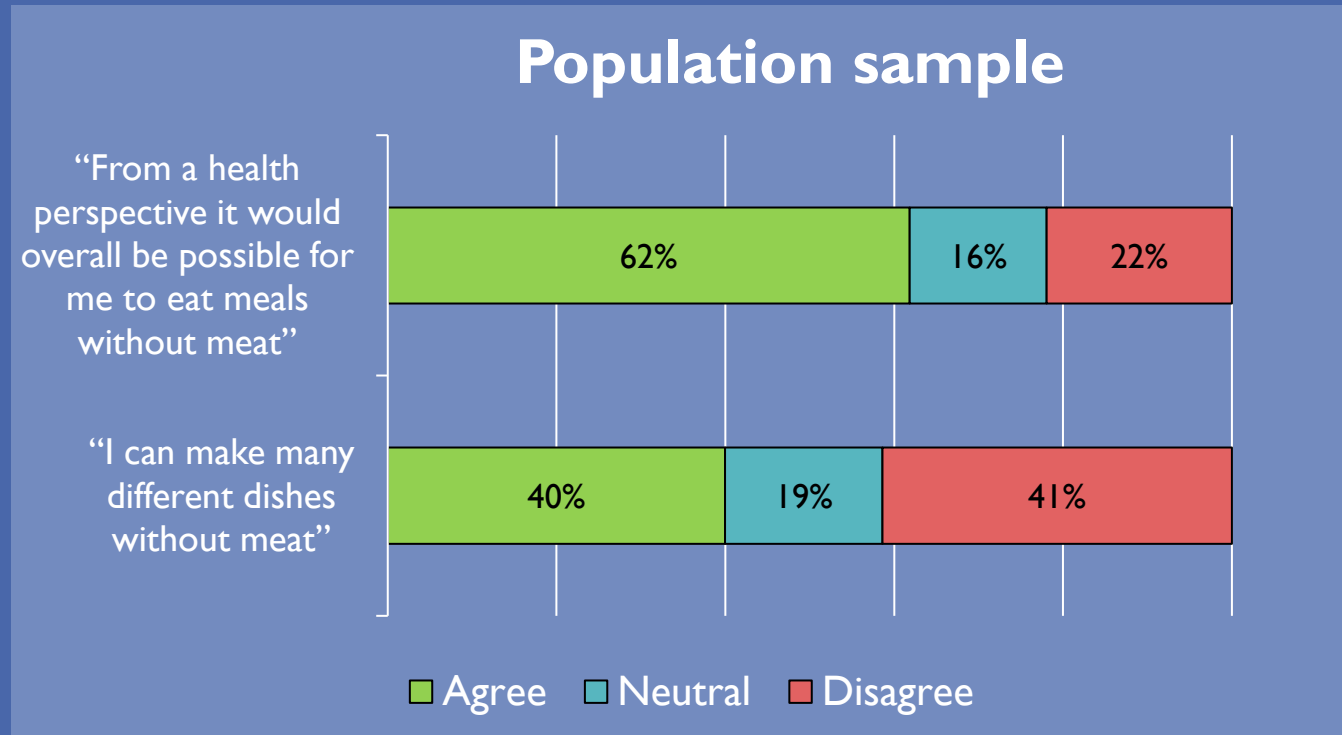
- More than 60% of Danish consumers intend to or have already reduced meat consumption.

■ I have done so in the past, but I do not eat like this anymore
■ I would like to do this, but I do not know how I could do it
■ I am doing this already

■ I am not doing this, and I am not willing to
■ I would like to do this, and I already know how I could do it

Status quo of meat reduction:

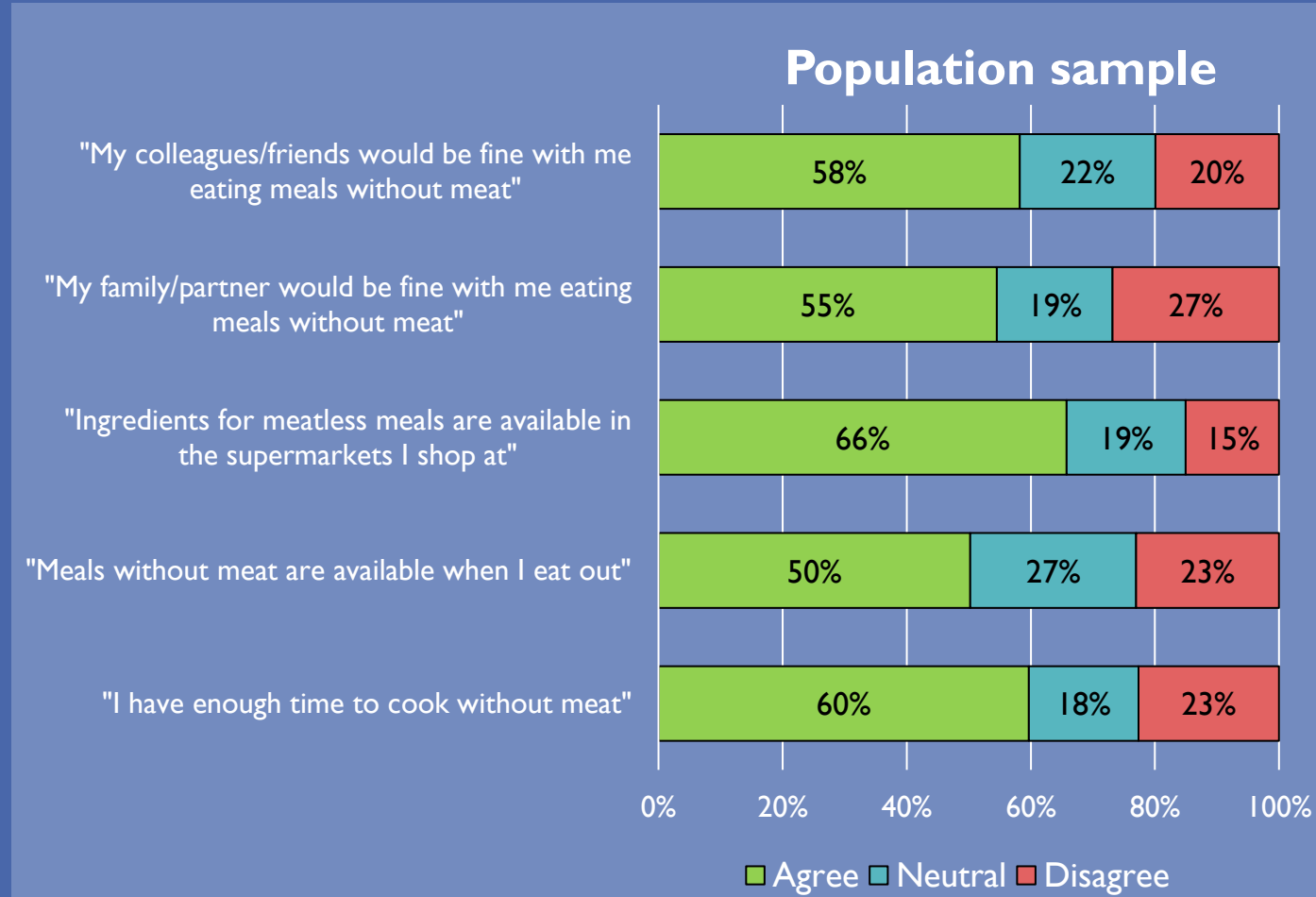
How capable are consumers to adopt plant-based diets?



- More than 60% of Danish consumers feel that from a health perspective it is possible for them to eat meals without meat
- 40% of Danish consumers feel skilled to make dishes without meat
- In contrast, more than 97% of individuals interested in plant-based diets agree to both items

Status quo of meat reduction:

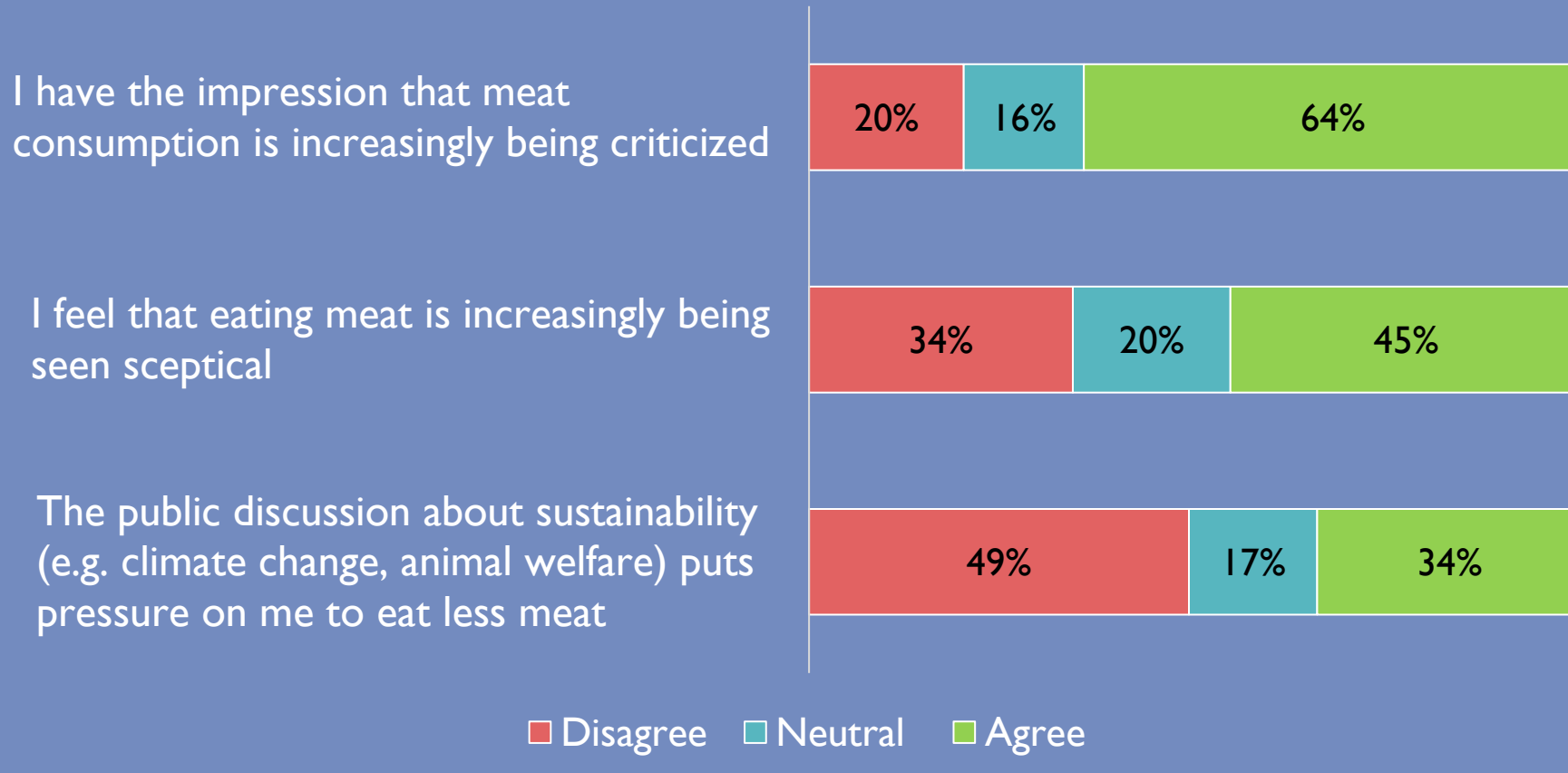
How easy is it to choose plant-based meals over meat?



- Majority feels that their environment is supportive of meals without meat – both the social environment and the physical environment
- Even more individuals interested in plant-based diets feels that their environment is supportive.

Status quo of meat reduction:

Do Danish consumers feel external pressure to reduce meat intake?



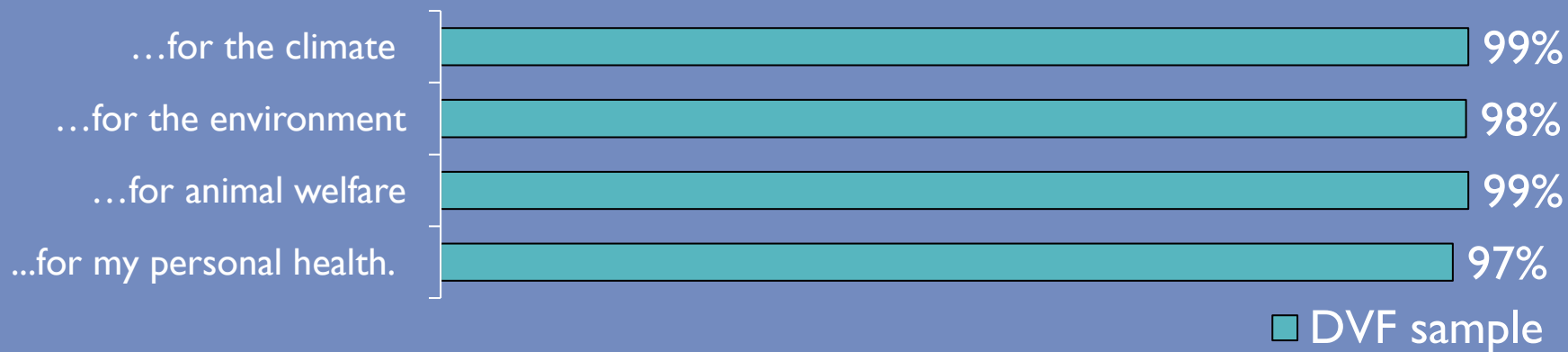
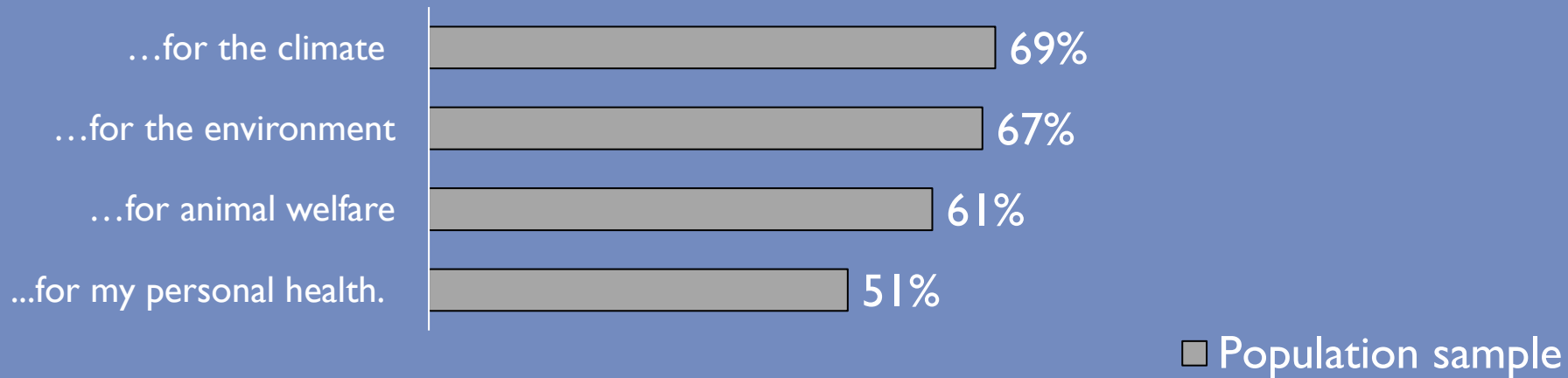
- Danish consumers are increasingly more aware about the negative image of eating meat
- Danish consumers feel an increased socio-political pressure to reduce meat consumption

Measured on a 7-point scale from 1=completely disagree to 7=completely agree, 1-3 considered as disagree, 4 as neutral, and 5-7 as agree

Status quo of meat reduction:

Motivations to eat less meat

Eating less meat is beneficial for...

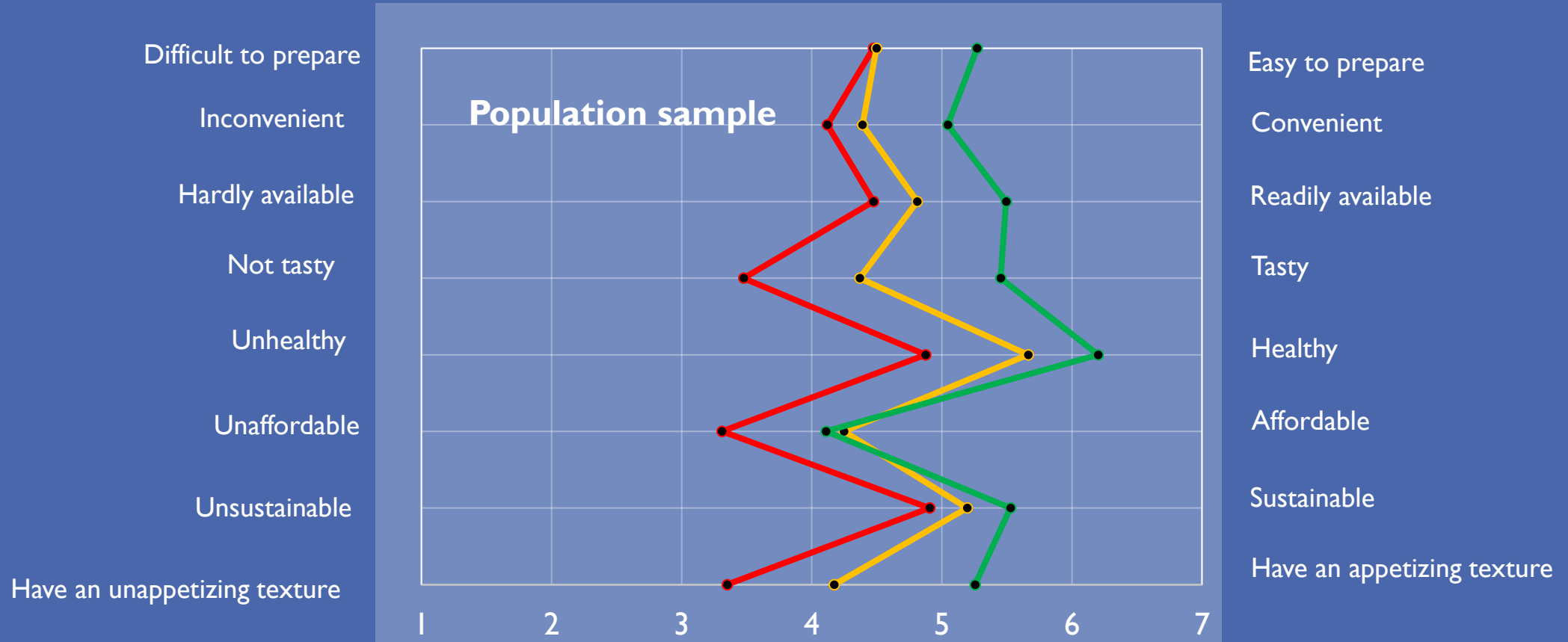


- Two-thirds of the Danish population agree that meat reduction is beneficial for the climate and the environment
- Every second Dane sees personal health benefits in eating less meat
- Consumers interested in plant-based diets unanimously agree that meat reduction is beneficial in many respects

**Target groups
for different
kinds of plant-
based foods**
What works for
whom?

Target groups for plant-based foods:

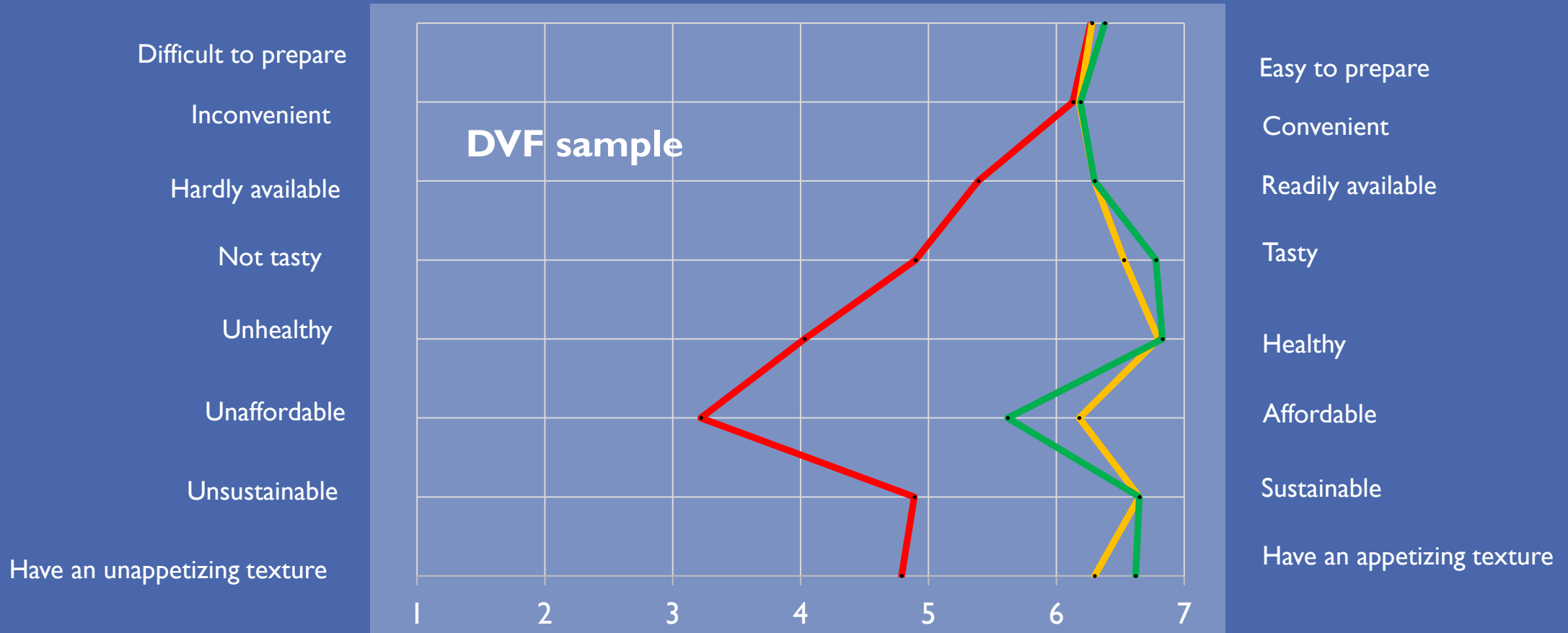
What is your opinion on meals without meat but with meat substitutes, legumes, vegetables?



- Compared to meals with legumes or vegetables, meat substitutes are the least preferred option for Danish consumers

Target groups for plant-based foods:

What is your opinion on meals without meat but with meat substitutes, legumes, vegetables?



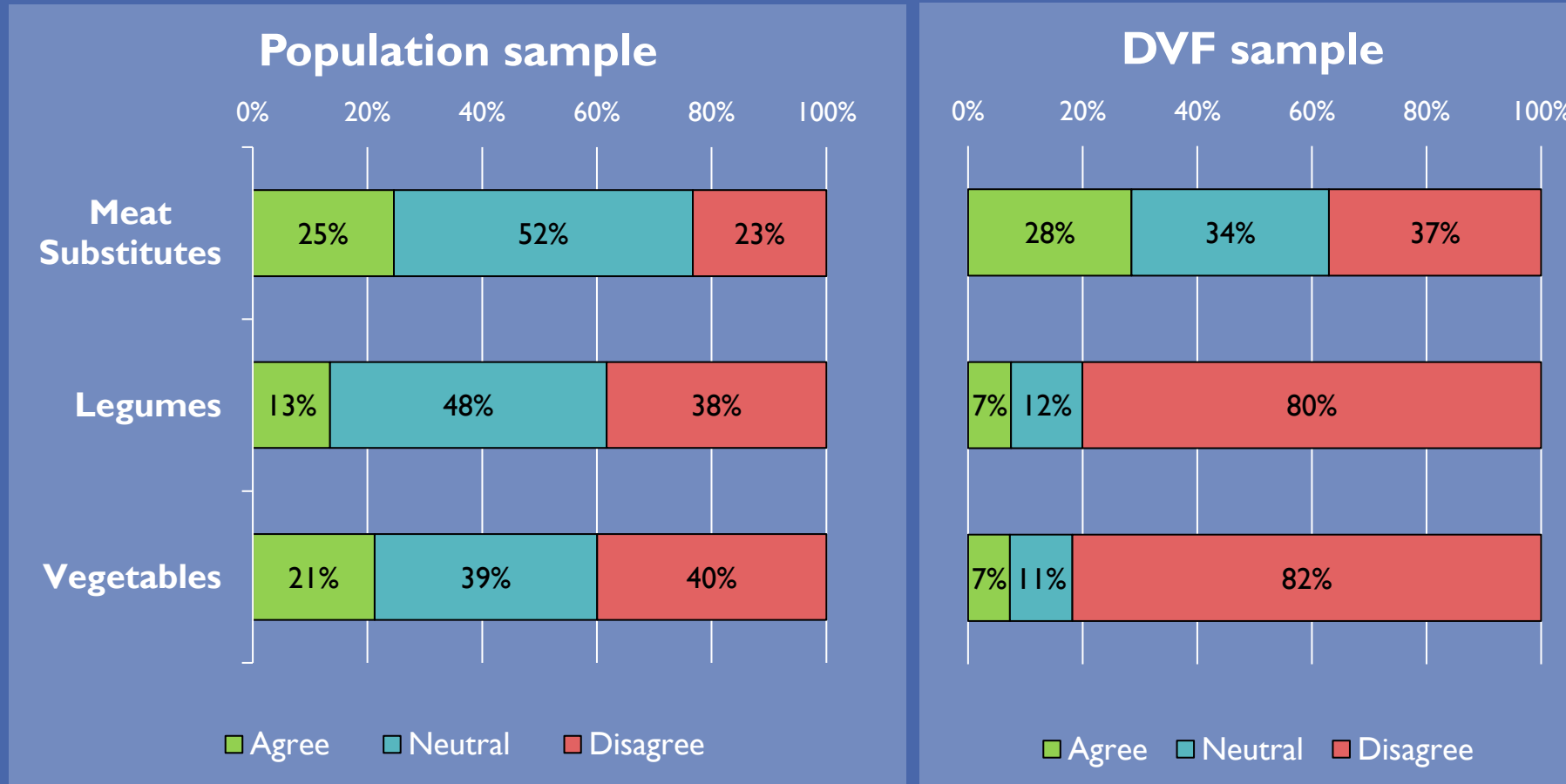
- Individuals interested in plant-based diets see the advantage of meat substitutes in terms of convenience and preparation. Perceived bad taste and high prices of meat substitutes are major barriers for consumers.

Measured on a 7-point scale from 1=completely disagree to 7=completely agree

Target groups for plant-based foods:

Perceived resource intensity of alternatives to meat

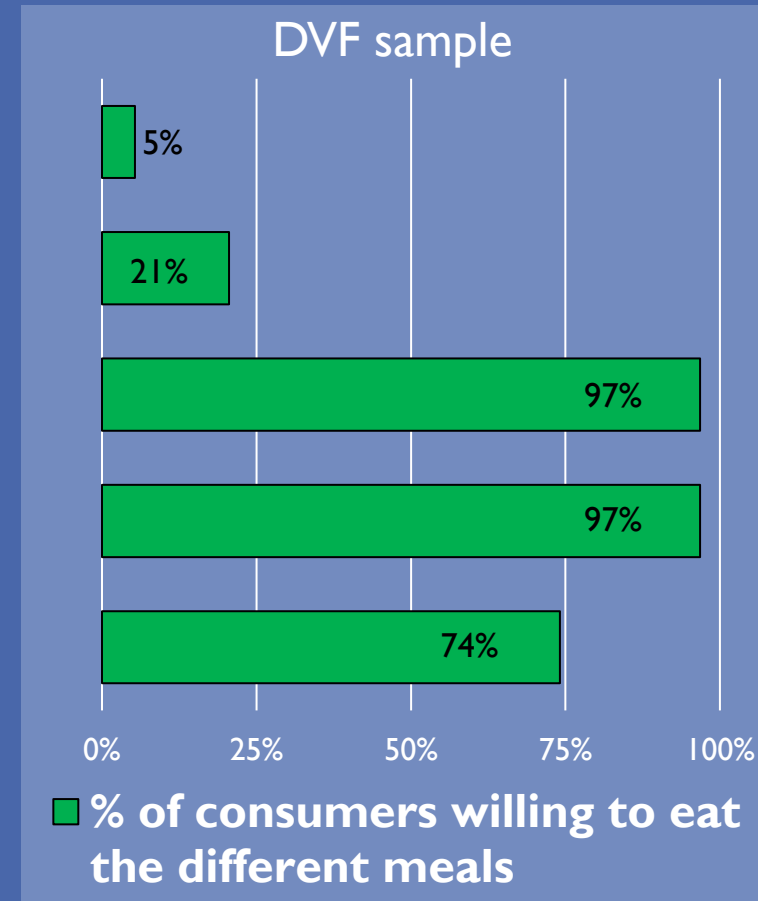
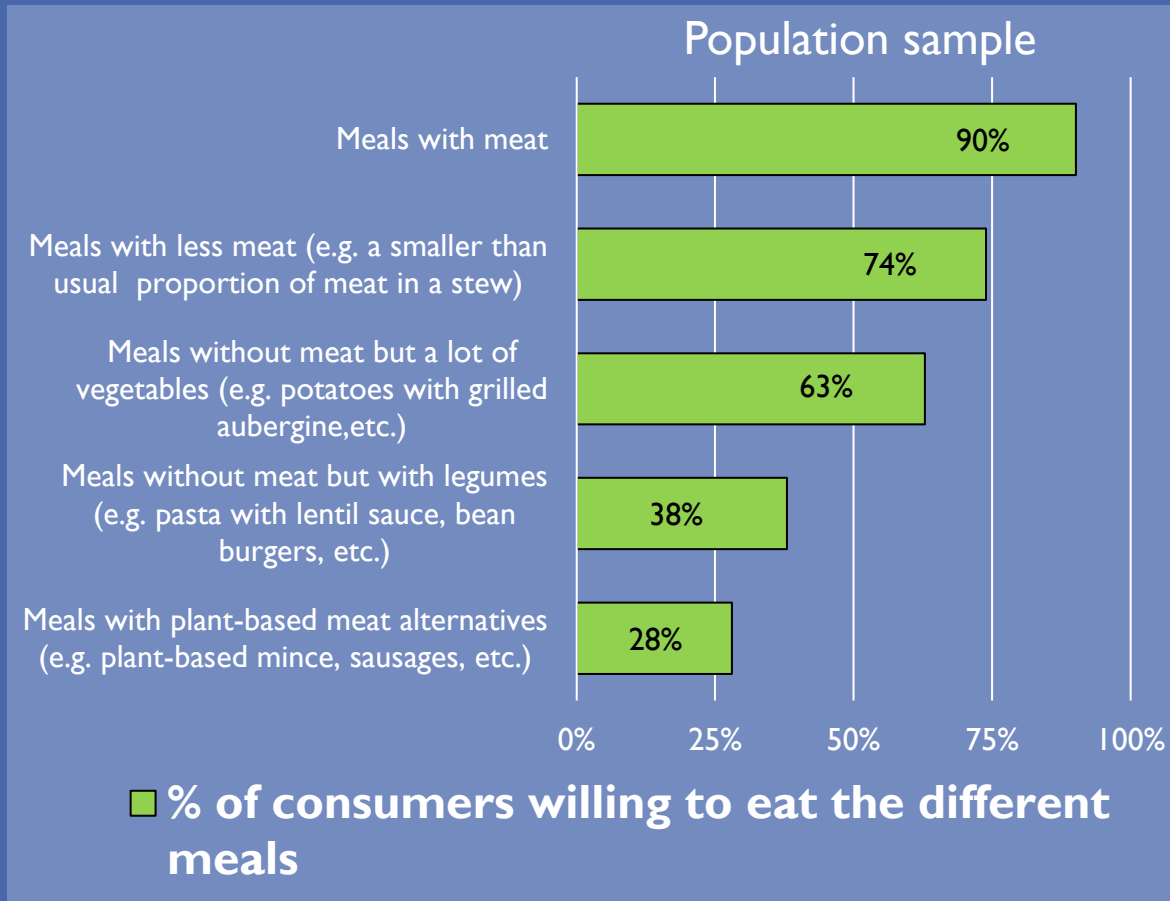
I think that the production of meat substitutes / *vegetables*/ *legumes* uses a lot of resources.



- Many Danish consumers are not aware of resource intensity of plant-based foods

Target groups for plant-based foods:

How willing are you to eat the following meals?



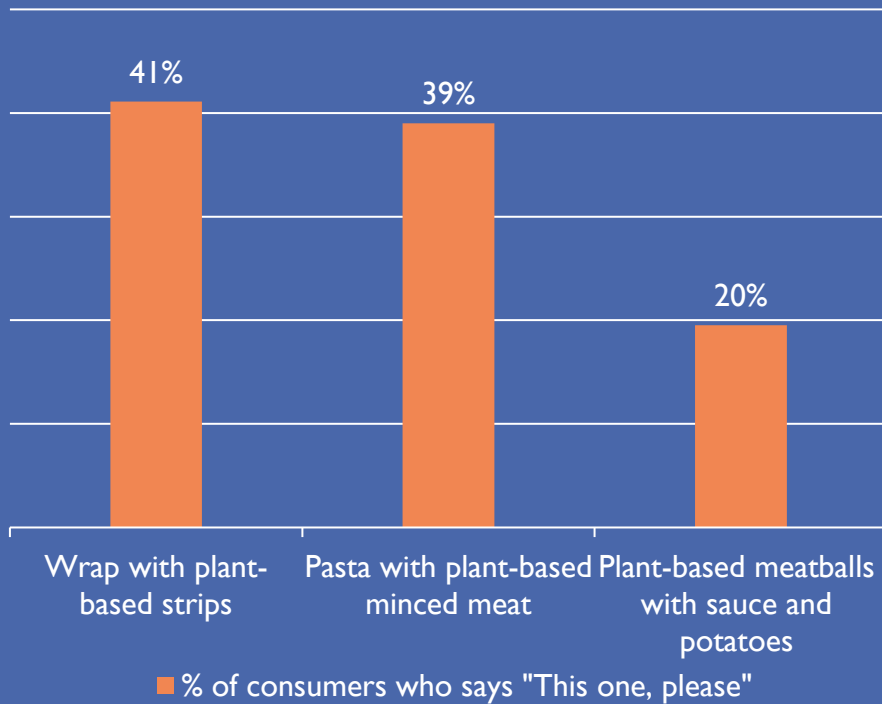
The two samples behave in an opposite way.

- Less meat is the most promising transition pathway for Danish consumers.
- Legumes still untapped potential.
- Meat substitutes are less preferred.

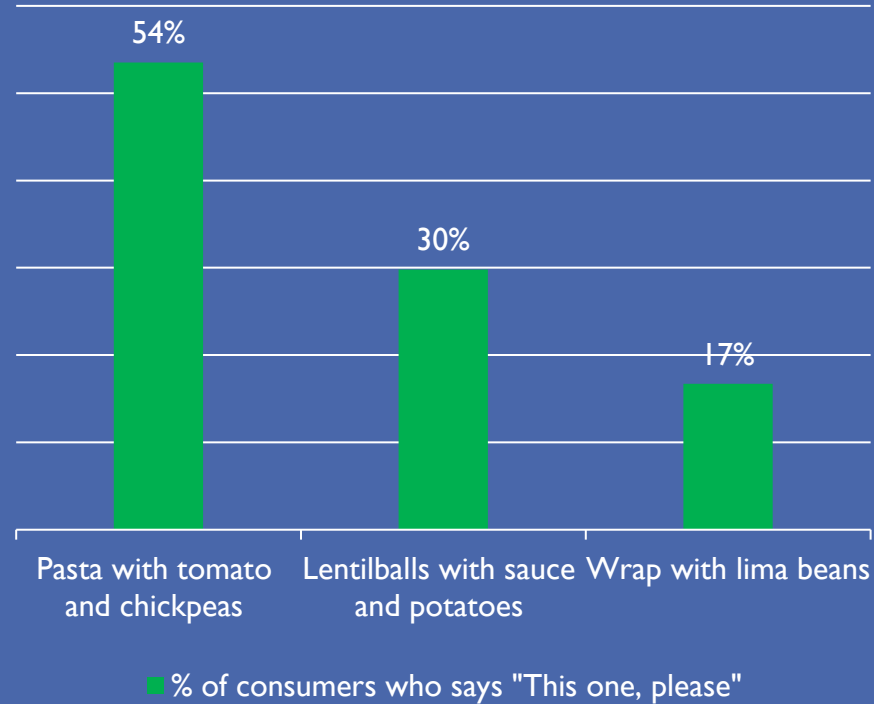
Target groups for plant-based foods:

Willingness-to-eat meat substitutes and legumes

If you could choose between the following three dishes which one would you choose?



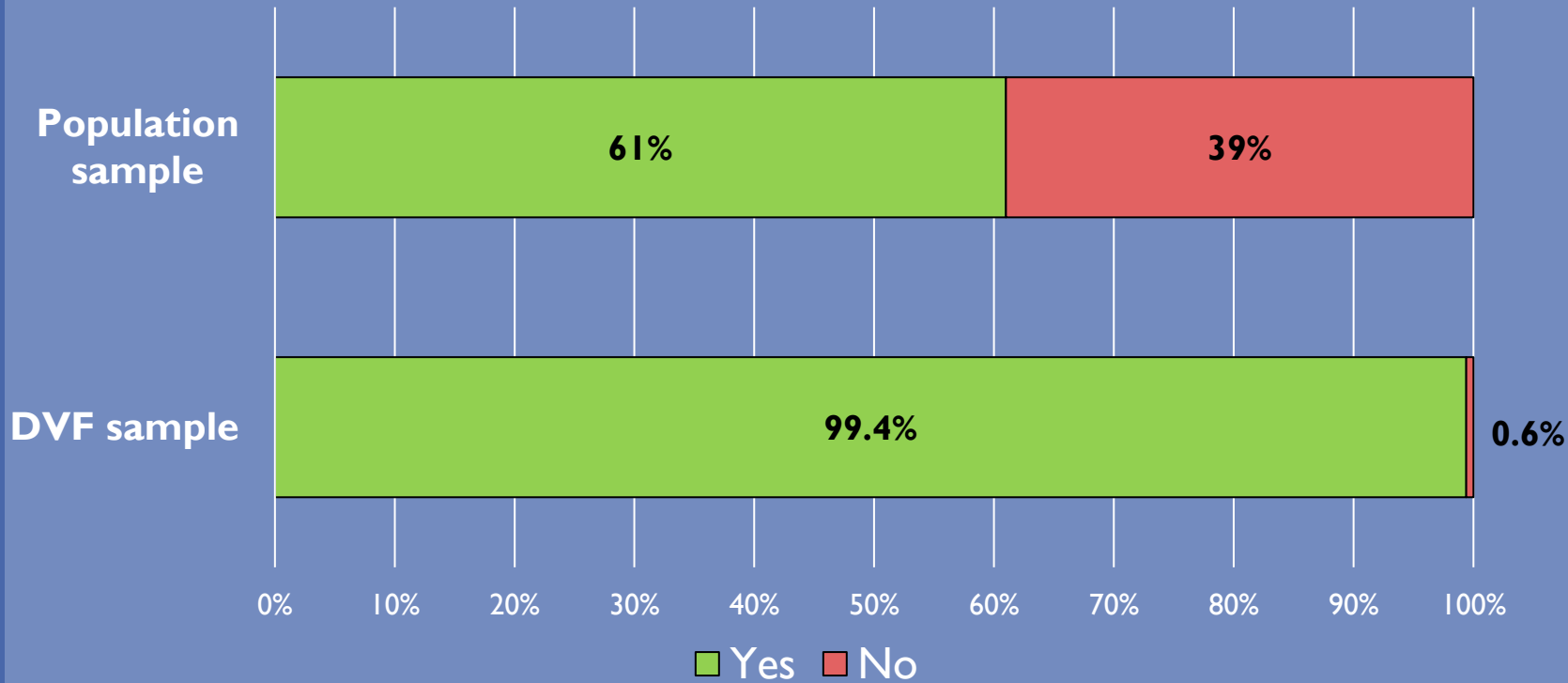
If you could choose between the following three dishes which one would you choose?



- When asked to decide for a meal with meat substitutes consumers prefer *wrap with plant-based strips* and *pasta with plant-based minced*
- When asked to decide for a meal with legumes consumers prefer *pasta with tomato and chickpeas*

Target groups for plant-based foods: What's up with meat substitutes?

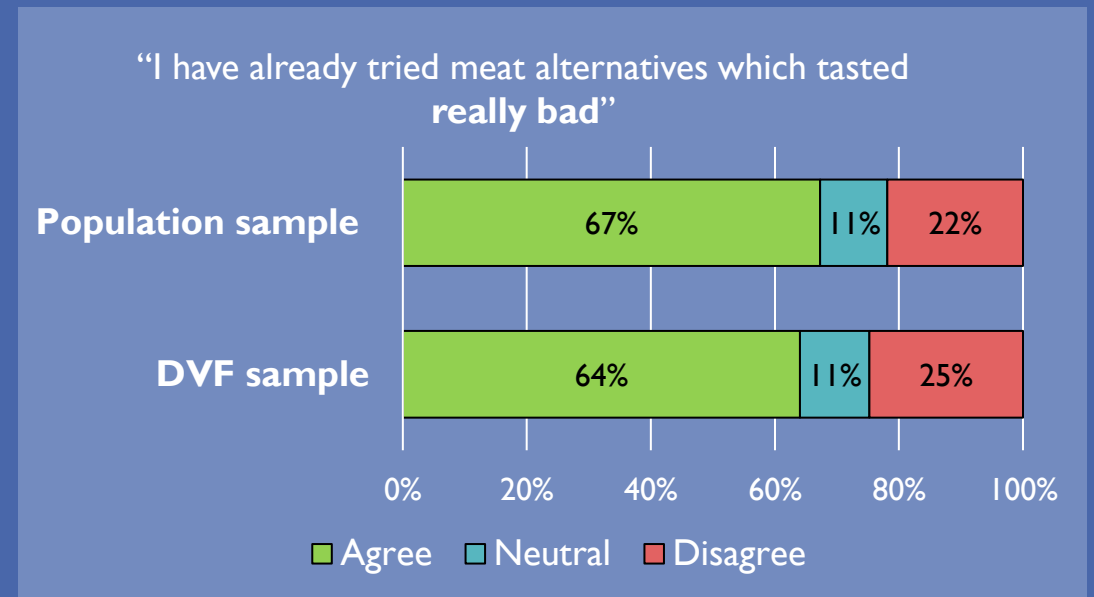
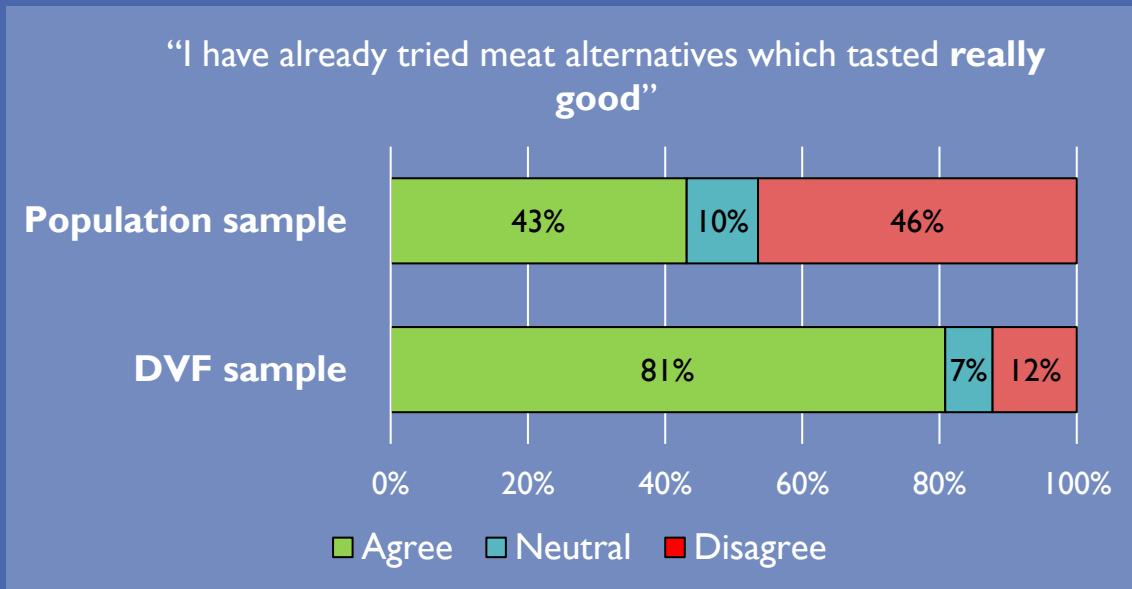
“Have you ever tried a meat alternative that mimics meat in taste, texture, and functional aspects, but does not contain meat (e.g., plant-based minced meat, plant-based sausages, plant-based burger patties)”?



- 60% of Danish consumers have tried meat substitutes
- Only 0.6 % of individuals interested in plant-based diets have not tried those products

Target groups for plant-based foods: What's up with meat substitutes?

(If answered “yes” to the previous questions, what is your stance on the following statements?)

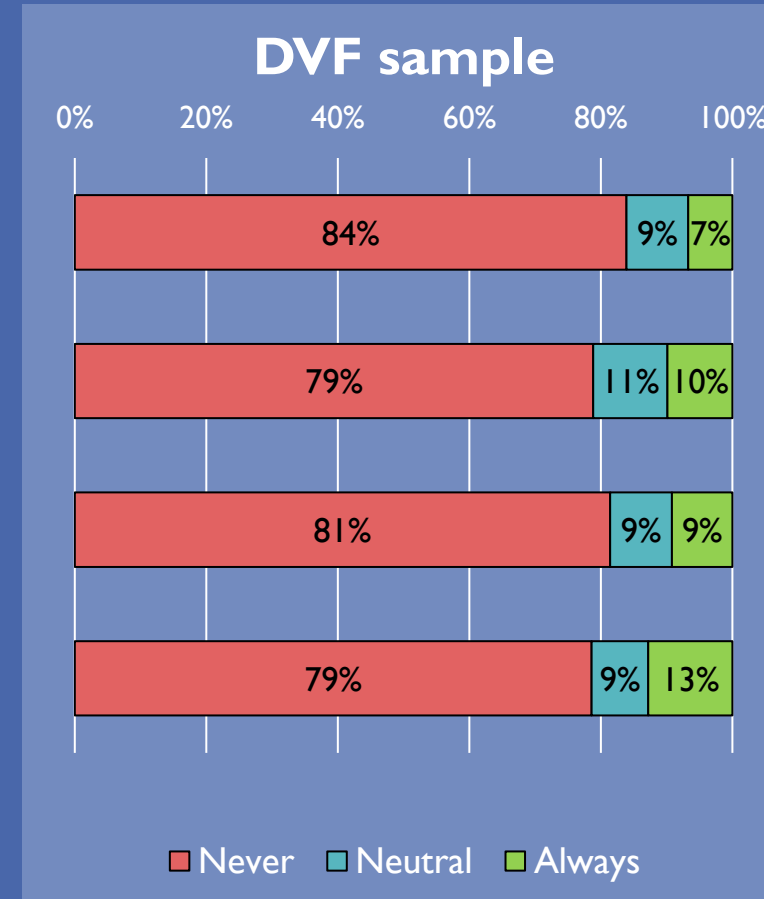
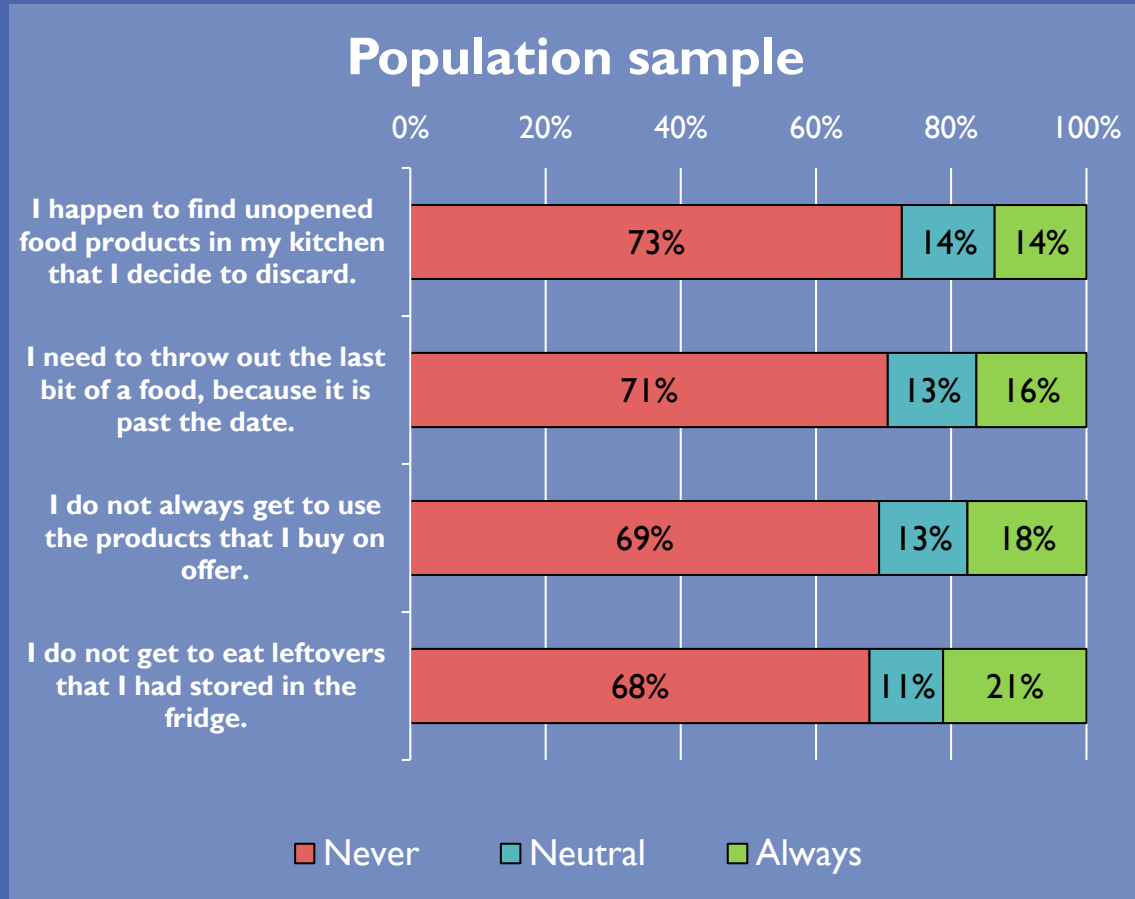


- Danish consumers have more negative than positive taste experiences with meat substitutes
- Individuals interested in plant-based diets have had more positive taste experiences with meat alternatives

Target groups for plant-based foods:

Food waste-related behavior

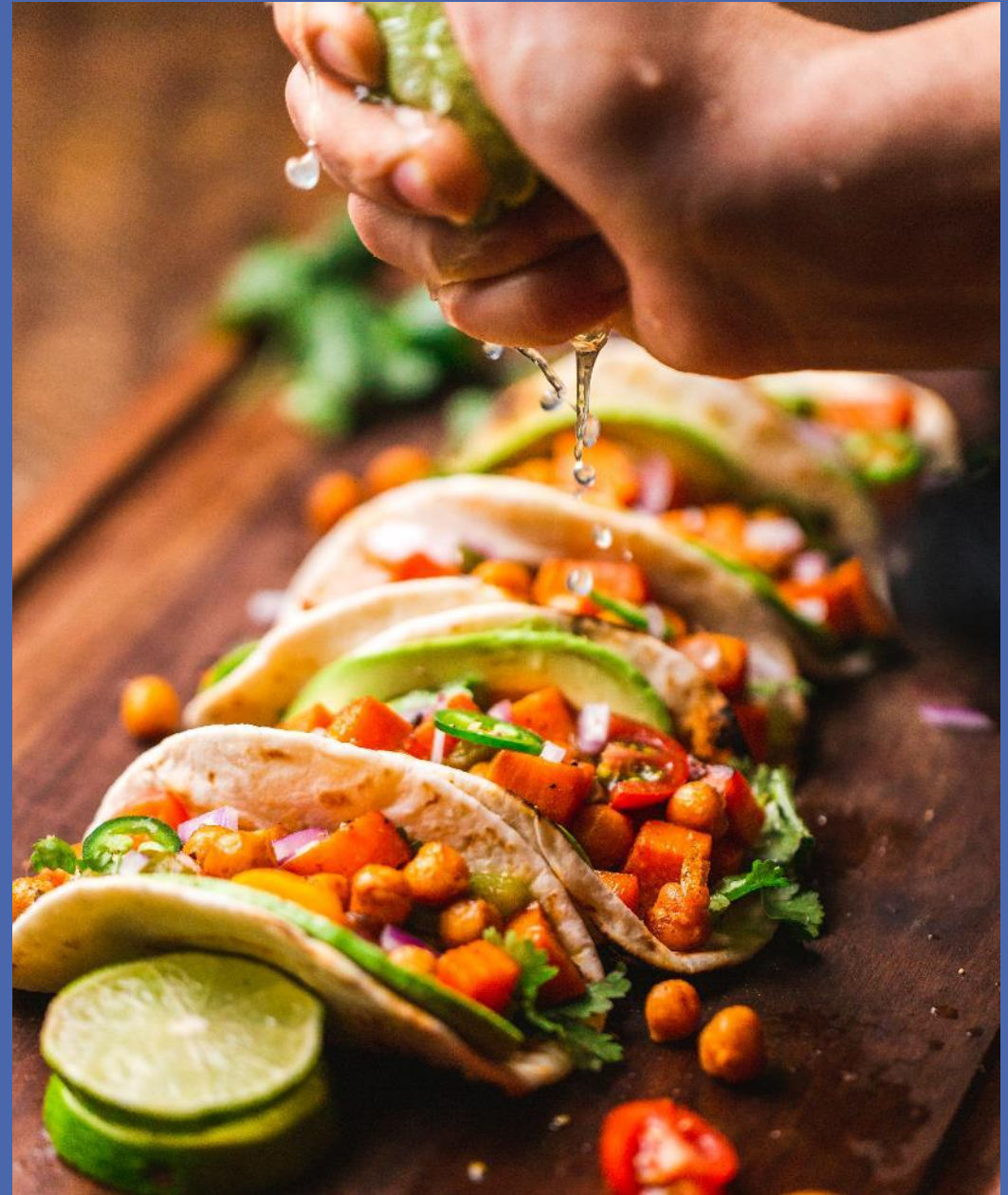
How likely is it that following situations occur in your household?



- Individuals already interested in plant-based diets waste less food than average Danish consumers

Recommendations

- Nudge consumers to reduce meat portion size in meals (for example in public kitchens)
- Make meals with legumes more attractive (for example in public kitchens, supermarkets)
- Provide positive taste experiences for consumers
- Make consumers constantly aware of benefits of plant-based foods (for example through public or private campaigns)





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