Project FINEST
and
Nutritional value of plant-based meat analogues in Sweden

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Network to innovate: Plant proteins and new food products

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FINEST - Food Innovation Enabling Sustainable Transition

Granted by FORMAS , Swedish Research Council for sustainable development

Facts about FINEST

- One of four national research centres financed by FORMAS , Swedish Research Council for sustainable development 2020-2024
- 48 MSEK for 4 years with the possibility for financing another 4 years.
- 2+1 PhD students and 3 Postdocs
- About 30 researchers from RISE , Uppsala University and Chalmers
- 15 external partners
- Coordinator: Karin Östergren
- Homepage: https://www.ri.se/sv/finest

FINEST

- Address large societal challenges, through joint development and innovation in value chains.
- We do this by linking technical and social science research, in active collaboration with actors from the food sector.
- We initially focus on developing three very different value chains:
  - Swedish forest berries,
  - Protein from legumes
  - Experimental production of food.

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LRF, The Green Dairy Sweden, Gropro, Solina, ICA , Lantmännen, Swedish Food Federation, Mycorena, Umeå Kommun, Region Västerbotten, Culinar, Axfoundation, Hushållningssällskapet, Skira, IKEA, STIOS Utveckling.

PhD and postdocs

FINEST overarching research questions

What is needed to achieve a sustainable transition and what are the possible paths?

How can the system transition for the Swedish food sector be described in relation to the selected value chains / networks?

Which are the most important barriers and opportunities for innovation?

How can current and acquired knowledge be transformed into practical guidelines and tools used for decision support?

How can innovation in value chains or networks be conceptualized in order to achieve a sustainable transformation?

What is the role of the market for a sustainable future system?

How are new business models developed, tested and evaluated in the food chains?

How do major players work to develop their ability to innovate?

What type of sustainability indicators are needed to guide research and stakeholders from early development to implementation?

How can better conditions for collaborative innovation and value chain effects be created?

How do different types of actors, including large and small companies, collaborate on innovation?

How can sustainability and nutrition be better designed together?

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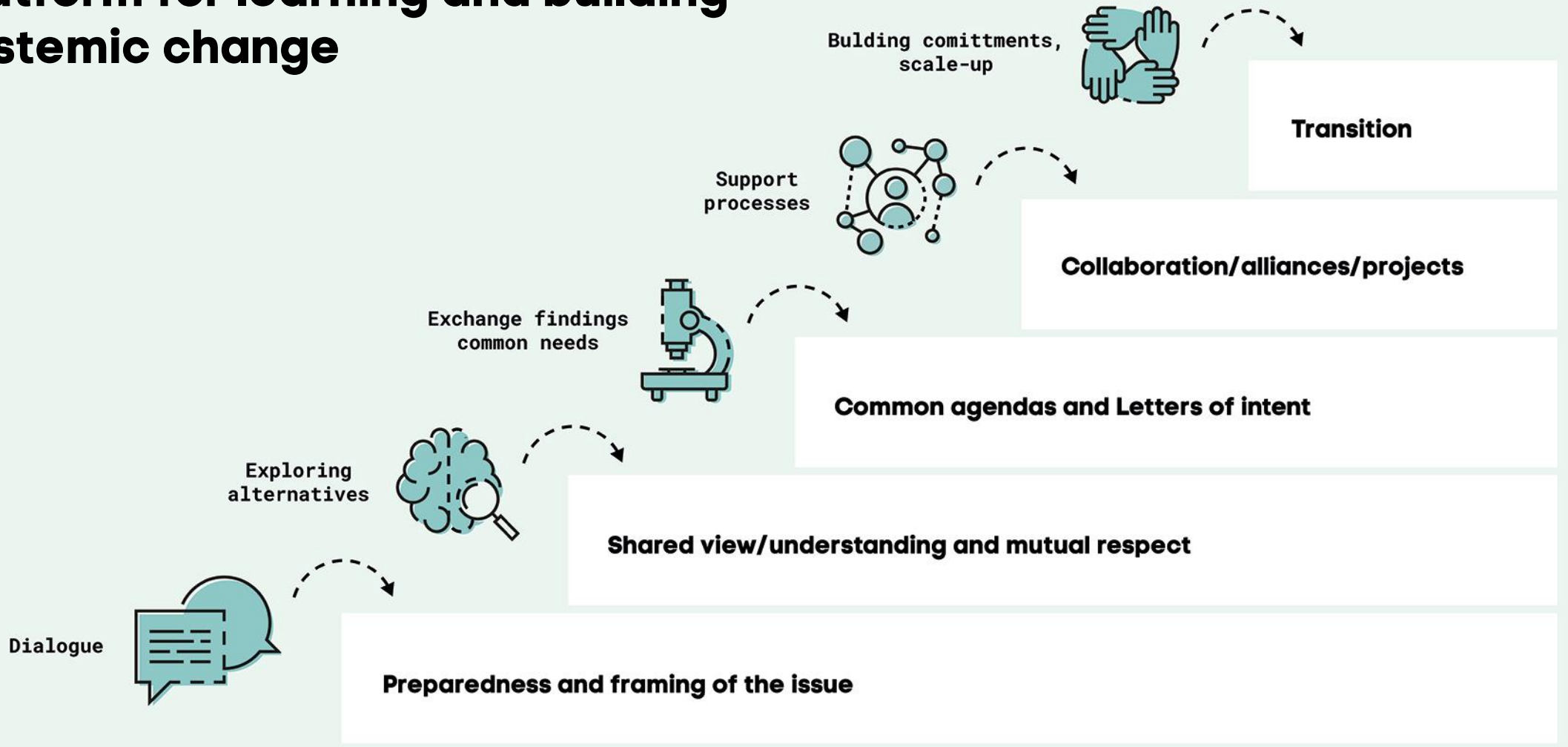
FINEST Food transition lab is a platform for learning and building systemic change



Proteins from Swedish legumes as alternatives to dairy and meat

Research focus: Comparison between different process routes for the product characteristics

- concentrates, dry and wet processes
- fava beans and peas

Sustainable nutrition

Designing sustainable supply chains (MCA)

Perspectives for the future

- Better understanding of sustainable transition and innovation processes
- Filled knowledge gaps leading to more attractive, nutritious and sustainable products from legumes, wild forest berries and from experimental value chains
- Established a new ways of thinking and working together (research, business and policy)
- Established a platform generating new projects

Nutritional quality of plant-based meat analogues in Sweden

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Background

- Growing number of meat-analogues on the market

- The importance of nutritional quality of meat-analogues increases as more consumers choose these products

- Need for more knowledge on nutritional quality of meat-analogues
- Few systematic overviews published – none from the Nordic countries.

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Aim

Map the nutritional profile and assess the nutritional quality of plant-based meat analogues, in relation to

- Recommended intake according to the Nordic Nutrition Recommendations
- Comparable meat references

Method

- Web-based screening - main retailers and manufacturers websites
- Nutrient declarations, ingredient lists, front-of-pack labelling

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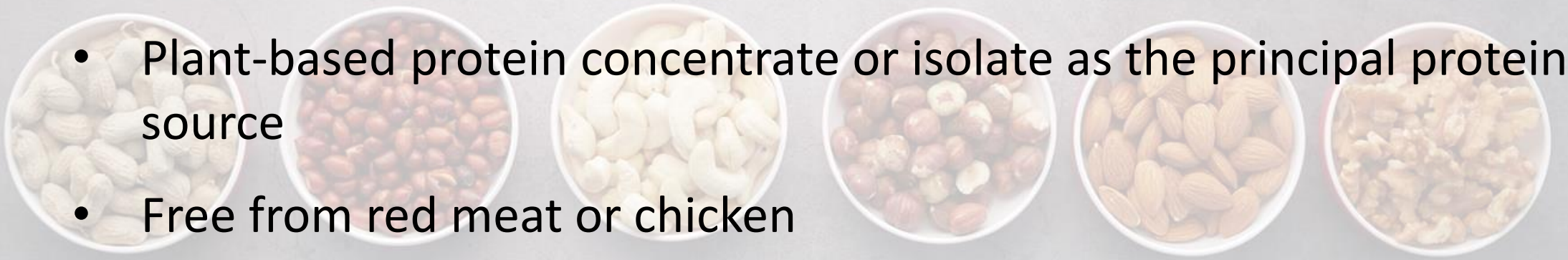
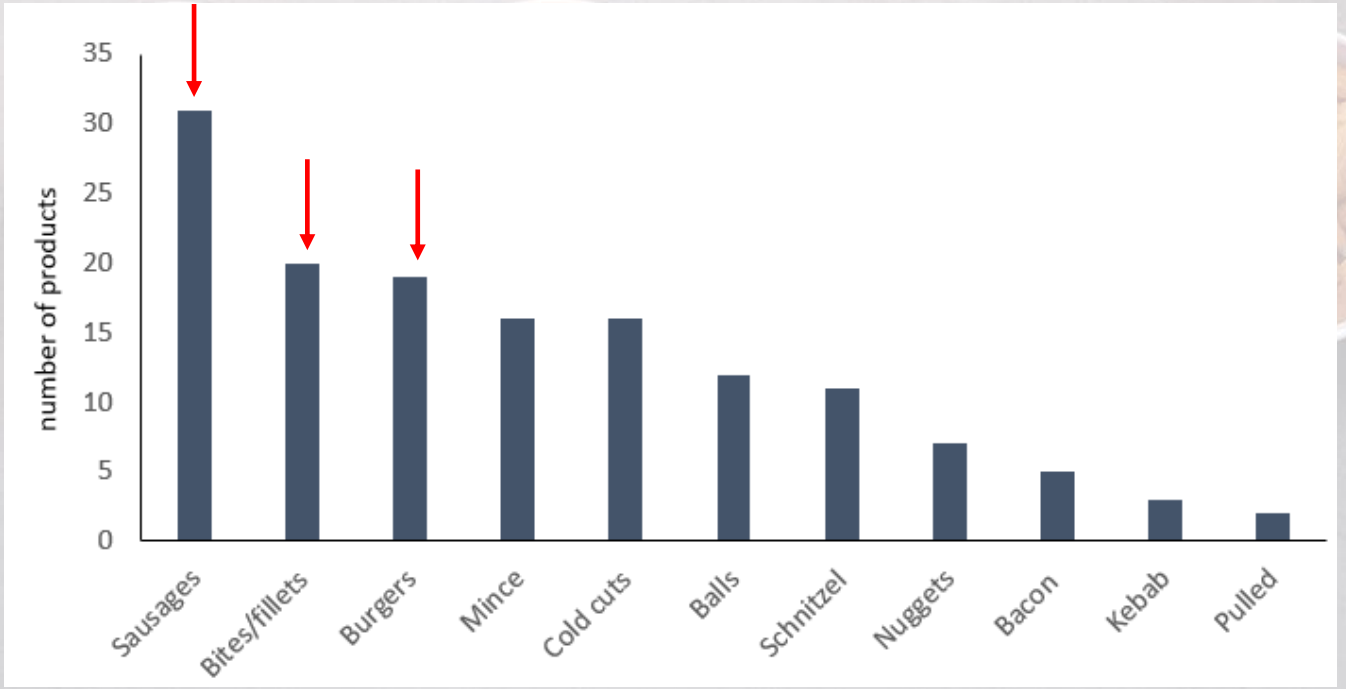
Meat analogues – definition

- Designed to mimic red meat or chicken
- Plant-based protein concentrate or isolate as the principal protein source
- Free from red meat or chicken



Selected results – unpublished data

- 24 brands, 142 products, 11 categories



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Protein

- Similar or smaller contribution from meat analogues than from meat reference
- Within group variations, especially for sausages

Saturated fat

- Meat anlogues low in saturated fat, in general
- Large variation within groups, explained by **a few high-content products**
- Lower contribution from meat analogues than from meat references, for most categories

Salt

Burgers and sausages:

- Smaller or similar contributions from meat analogues than from meat references, on average

Bites/fillets:

- Larger contribution from meat analogues than from meat reference

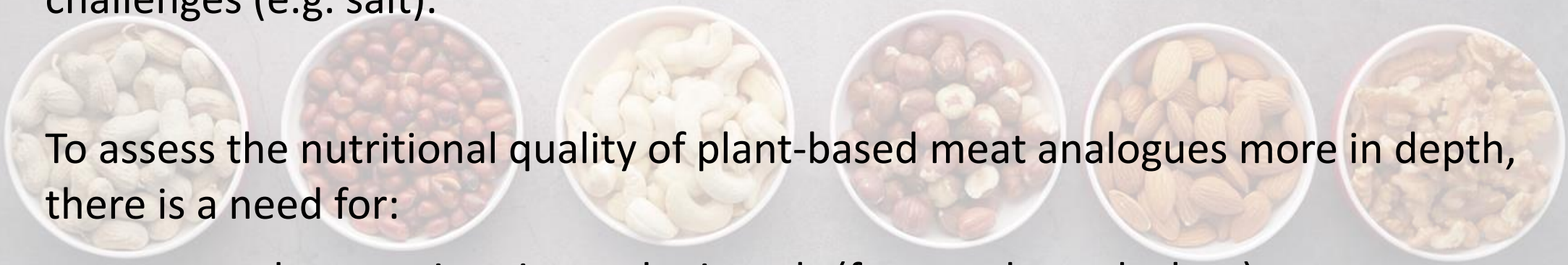
- 100 g of a meat analogue could contribute up to 50% of recommended daily intake.
- Possibilites to limit salt content of nutritional relevance

Iron

- Limited data – iron content declared on few products
- Higher contribution from meat analogues than from meat references (also for non-fortified products)
- **Bioavailability?**
  - Non-heme iron (plants) *vs* heme iron (meat)
  - Anti-nutrients in plants, e.g. phytate

Overall conclusions

Considering macronutrients and salt, plant-based meat analogues on the Swedish market have potential nutritional strengths (e.g. fiber and saturated fat) but also challenges (e.g. salt).



To assess the nutritional quality of plant-based meat analogues more in depth, there is a need for:

- more data on vitamins and minerals (few products declare)
- more knowledge on the bioavailability/nutritional quality of nutrients (e.g. iron, protein, fibre)
- more knowledge on nutritional effects of processing of meat analogues.

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Thank you!

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