NEXTGEN PROTEINS

Insights on consumer acceptance of microalgae, insect and single-cell proteins in foods

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Webinar on consumer acceptance of alternative proteins

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NEXTGEN PROTEINS

Objective

- Gain a European view on consumer attitudes towards alternative protein sources and processes as well as food containing alternative proteins
  - Focus on protein sources and processes under development in the NextGen proteins project

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 862704.

Methods

- **Large online survey** in Finland, Germany, Iceland, Italy, Poland, Sweden, and UK with in total of 6600 respondents
  - The design of the survey was based on findings from a Focus group study done in 2020 in Finland, Germany, Iceland and Italy
  - Data collection in May-June 2021
  - 1000 adult consumers (ages 18 – 75 y.) per county (600 in Iceland)
    - a nationally representative sample based on age, gender, level of education, area of residence

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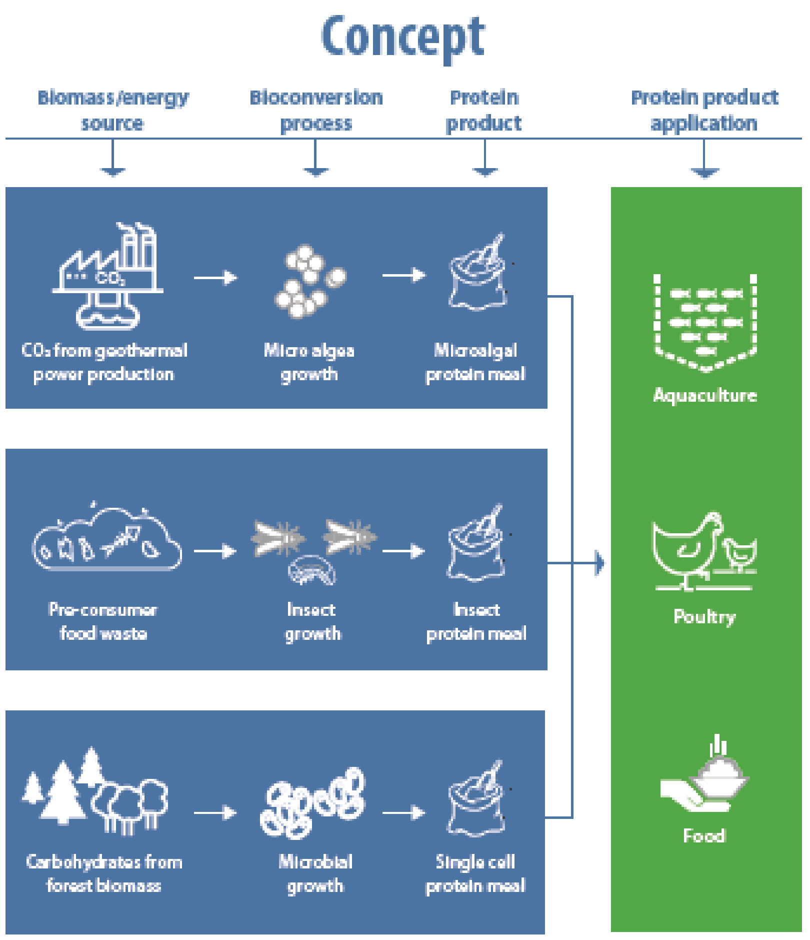
Methods / NextGen proteins

Three concepts for alternative protein production, all utilizing industrial side-streams for bioconversion processes of protein production

- **Spirulina microalgae** using CO_2 emissions and waste heat from a geothermal power plant for its growth (VAXA, www.vaxa.life)
- **Crickets (insects)** using plant-based wasted food biomass for the growth (Entocube, www.entocube.com)
- **Torula yeast (single-cell protein)** cultivated on substrate made of forest biomass (Arbiom, www.arbiom.com)



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Main findings of the survey

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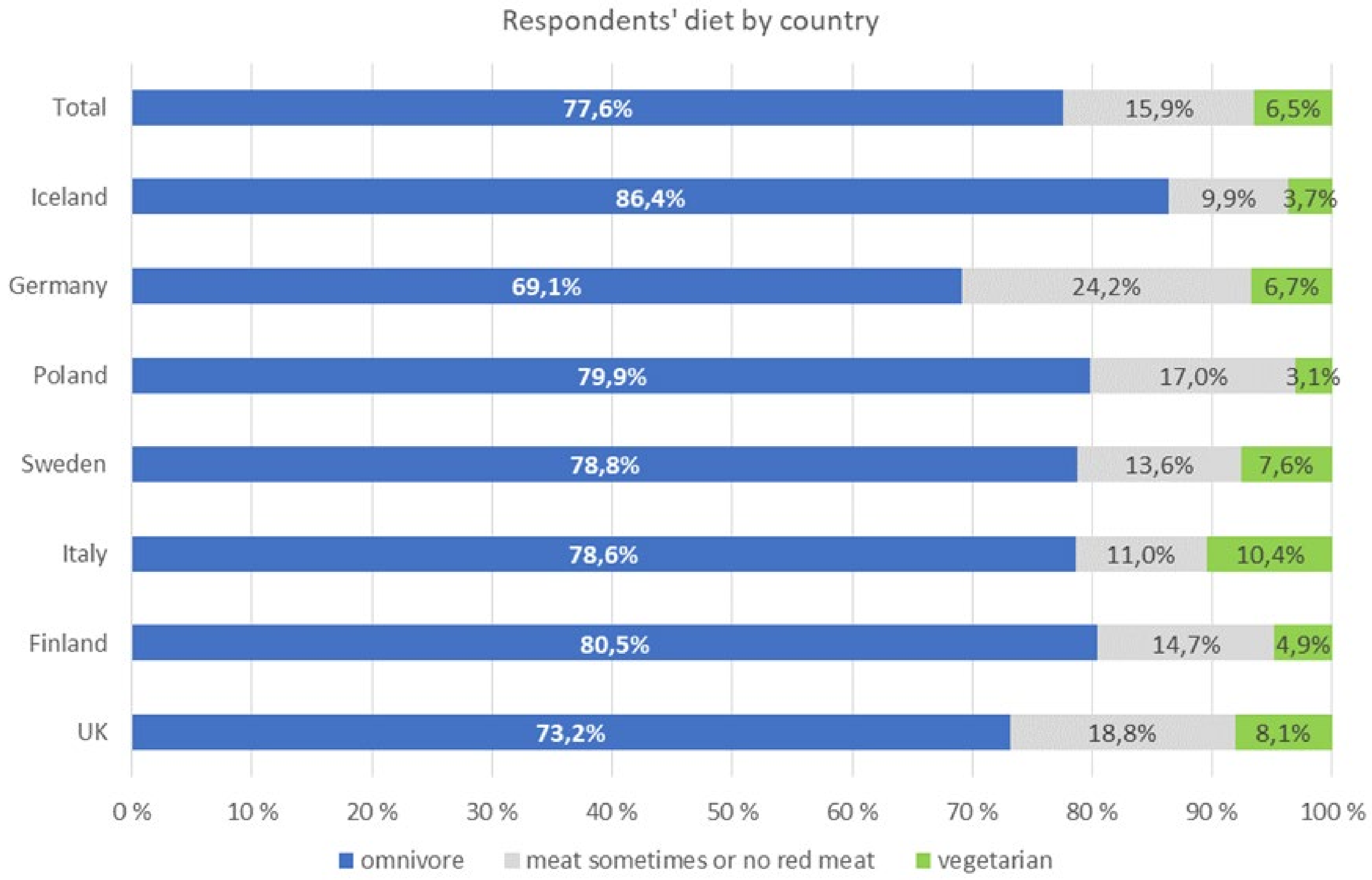
Background information on respondents´ diet



Respondents´ diet by country

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Main findings of the survey #1

- **Consumers' attitudes** towards the NextGen proteins, their production and application in food **were mostly positive or neutral**
  - Only a minority of respondents had negative views varying around 10 % - 20 % in case of Torula and microalgae, but around 30 – 50 % in the case of NextGen insect concept
  - Respondents' positive attitudes were largely based on expected positive consequences for sustainability

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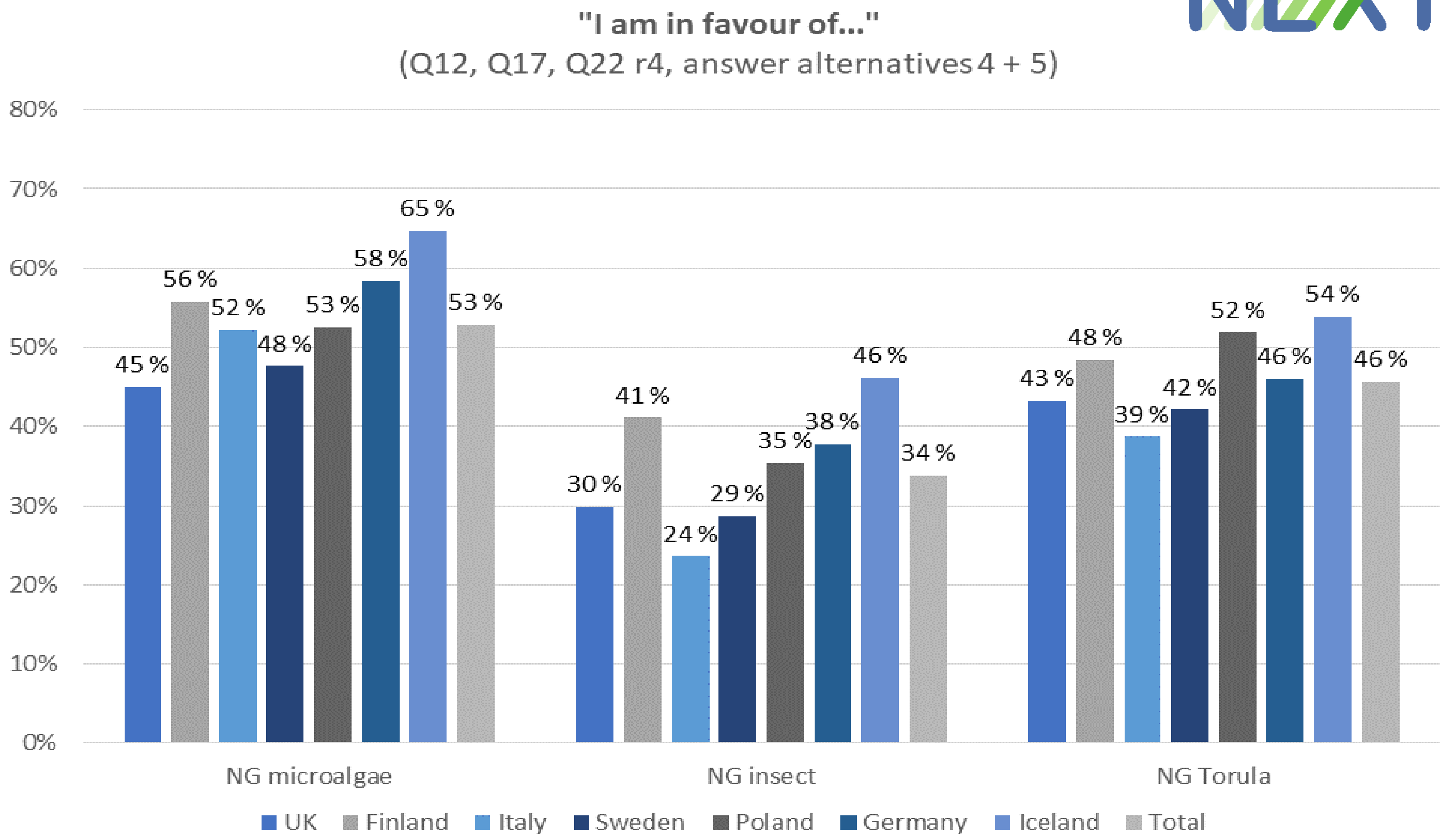
Positive attitudes towards NextGen proteins



Percentage of respondents indicating that they are “in favour of” three NextGen concept by country

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Main findings of the survey #2

- Because novelty and unfamiliarity of these concepts, **a large share of consumers did not know what to think**
  - Around 30 – 40 % of respondents (depending on the concept and country) had neutral attitude towards the NextGen concepts
  - Accordingly, large share of consumers do not have strong negative prejudices or preconceptions towards these production methods and ingredients

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Main findings of the survey #3

- The NextGen concepts are regarded as a good thing in principle, but **personal interest is lower**
  - Although **consumers** are receptive for the sustainability related message and value these benefits, they **seem to have relatively low belief in personal benefits related to the use of NextGen proteins**

➢ **The positive overall attitude do not directly turn into positive attitude towards the use of NextGen proteins in foods**

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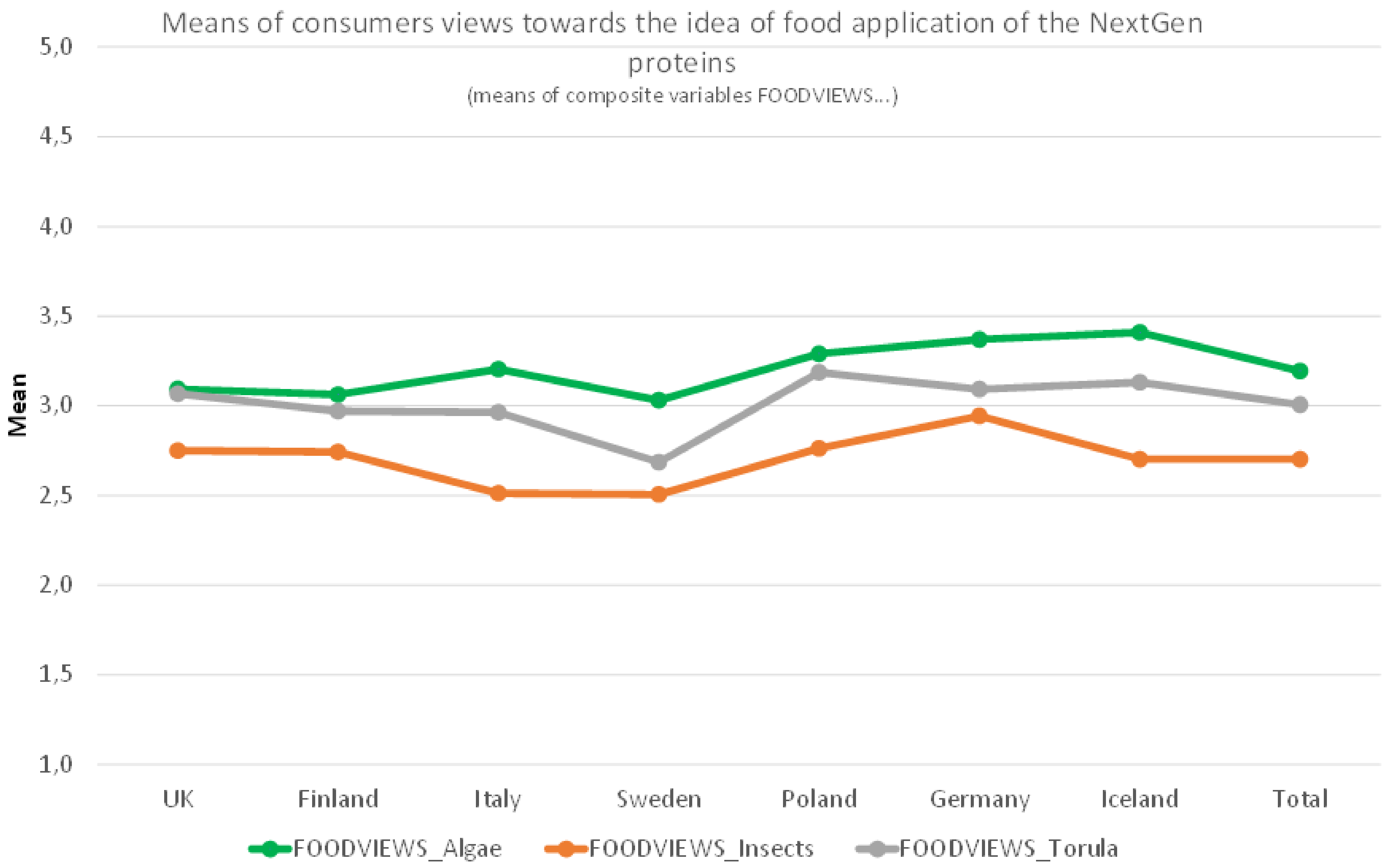
Main findings of the survey #3



Comparison of mean ratings of imagined characteristics of food applications by NextGen concept and country. (1 = the negative ends of the scales … 5 =positive ends of the scales)

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Main findings of the survey #3

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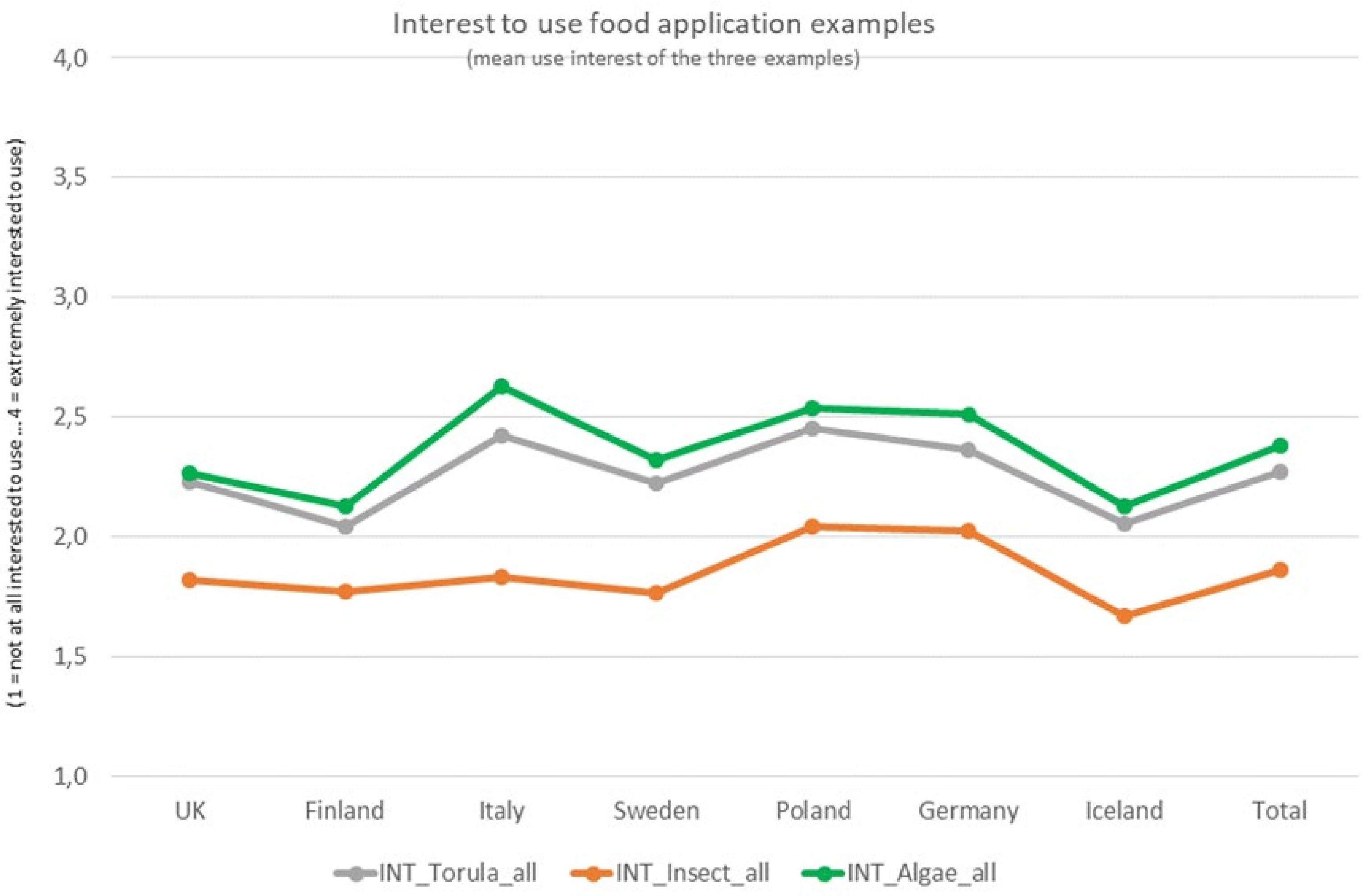

Interest to use the food application examples by concept and country. Means of use interest of three product examples.

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Main findings of the survey #4

- Whether consumers will choose to use NextGen or other alternative protein products will much depend on
  - **sensory quality**
  - how they are **convinced about** other **personal benefits**, such as wholesomeness
  - how transparent and **trust**ed is the food value chain

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Conclusions

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- **The overall principle of NextGen proteins was valued**, but there is a long way to go before they would create good business in mainstream food applications
- Instead, **niche applications and business** could be found already in a short run
- **Boosting of consumer acceptance and trust** towards alternative proteins is of high importance

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Full report

Full report of the study

"Consumer views about the Next Generation proteins for food in Europe" by A. Arvola, M. Kulju, K. Pennanen, J. Paasi (VTT); I. Matullat (TTZ); K. Sveinsdottir, H. Briem (MATIS)

can be found at https://nextgenproteins.eu/our-work/

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