



# The Whey Beyond Cheese

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# The challenge of meeting demand for the next generation of Whey products

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# Volac Product Areas

## Human Nutrition

The Good Whey Co.

## Performance & Dairy Ingredients

## Animal Nutrition

Rumen-protected fats, forage conservation and young animal nutrition

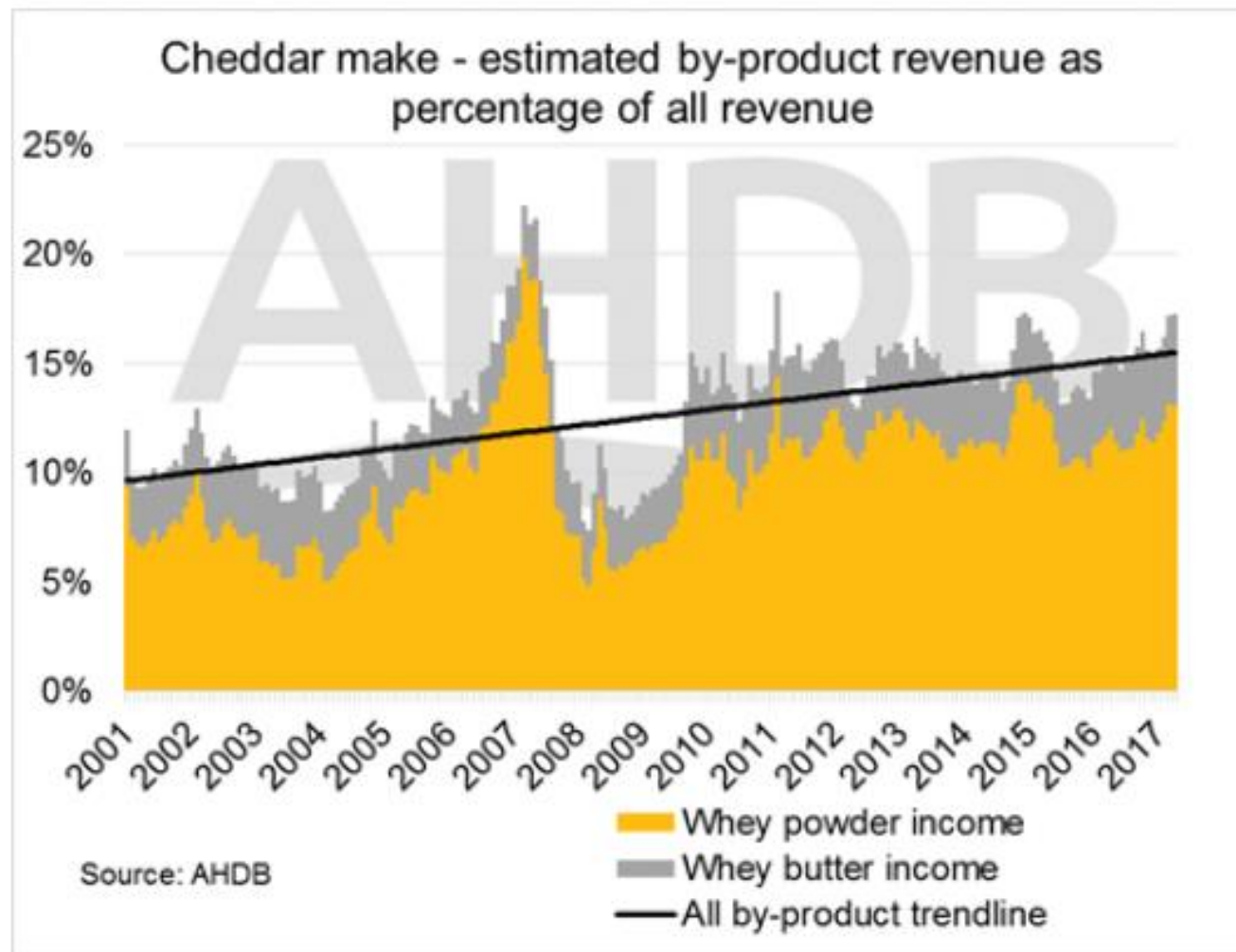


**Do you see Whey as a headache for your business or as an opportunity to add real value?**

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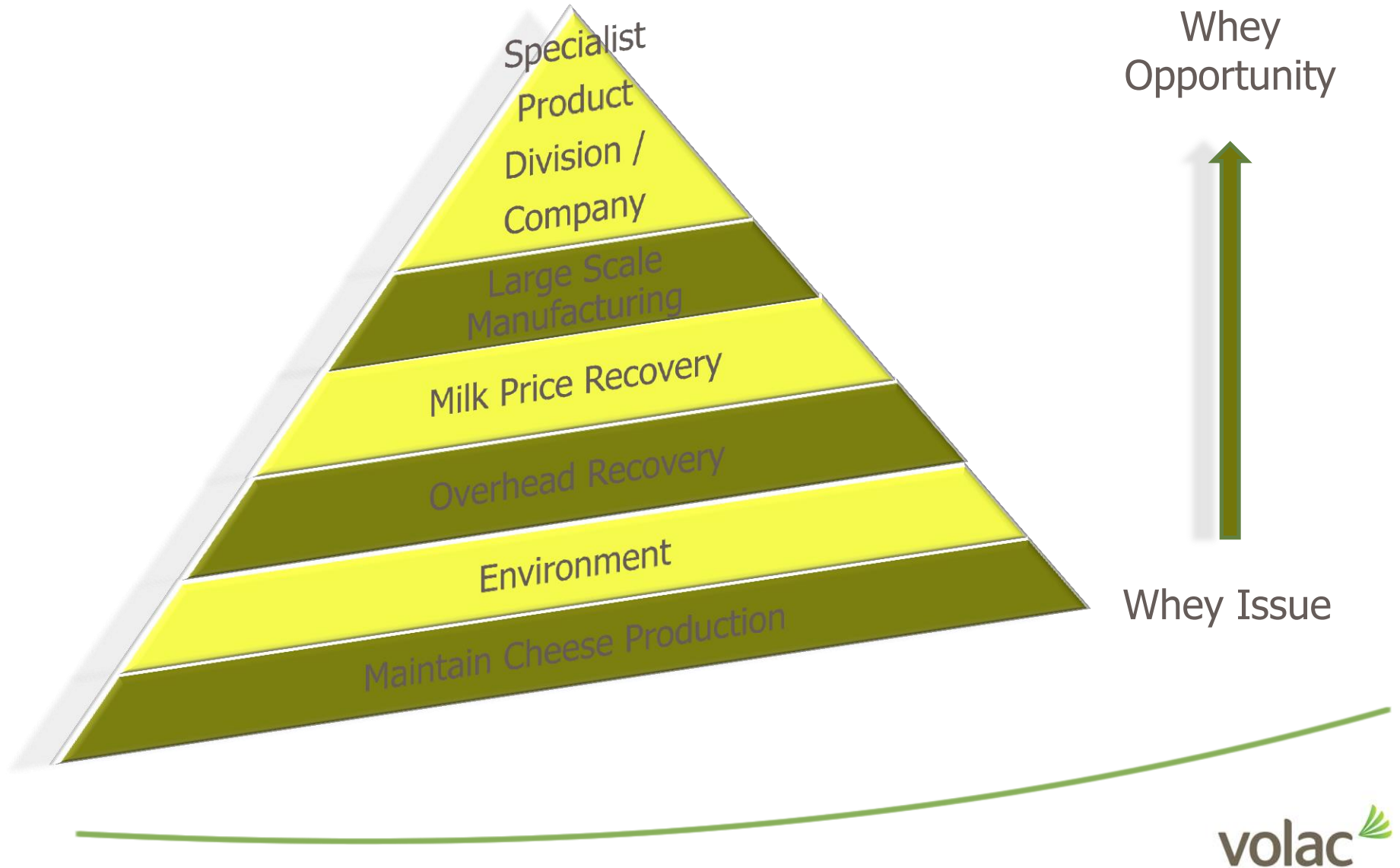


# Contribution Whey to Milk price



# Whey – issue or opportunity?

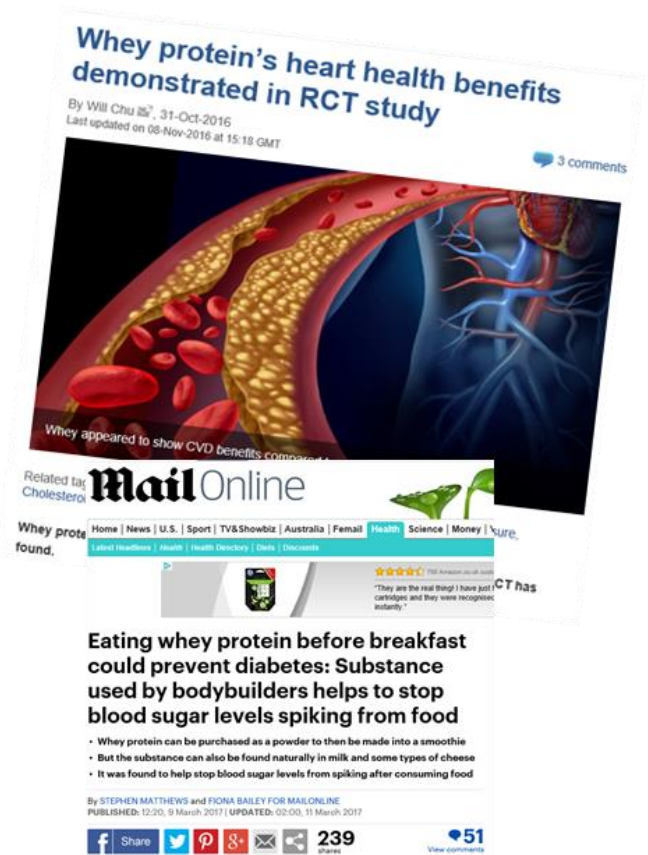
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# Current Whey Protein research

## Future focus on both protein quality and function:

- From PDCAAS to DIAAS – establishing dairy's highest amino acid quality
- Sarcopenia – whey as the best to maintain long-term quality of life
- Bioactive peptides – discovering additional health benefits (diabetes, heart health)
- Beyond basic nutrition – specific benefits of whey components (GOS, phospholipids)



# Three categories exist that reflect the goals and behaviours of all consumers

**Performance Nutrition**  
“products and strategies to optimise performance and push physical limits”



**Active Nutrition**  
“optimise health and counter the process of ageing”

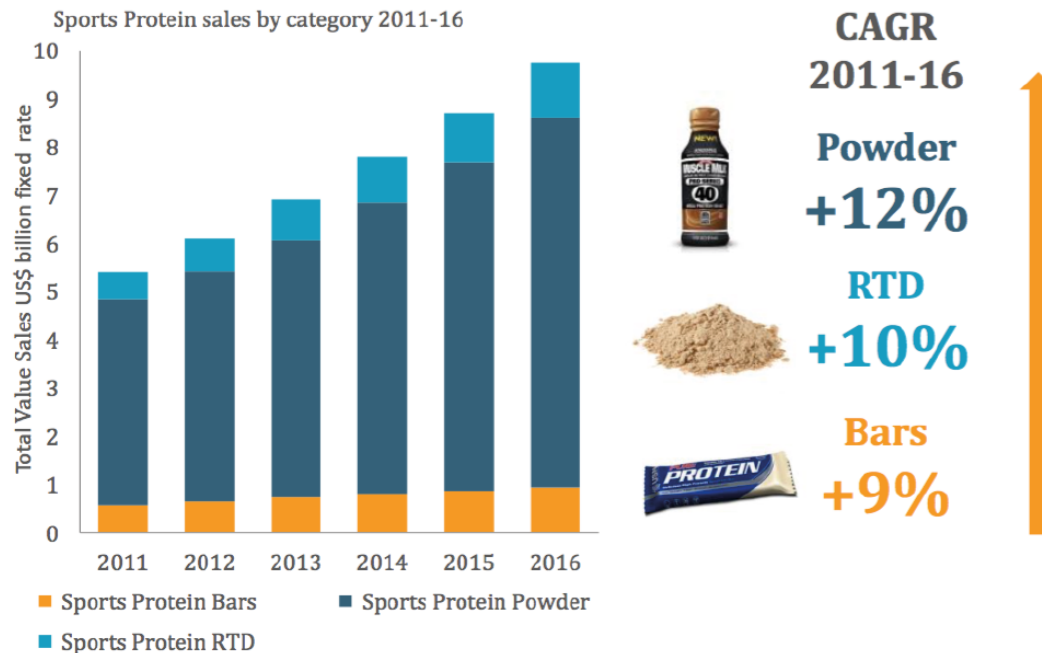


**Health & Wellness**  
“making better nutrition decisions more often”



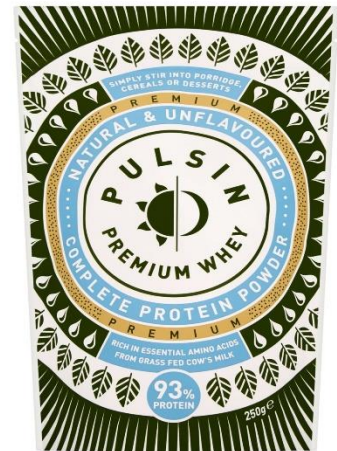
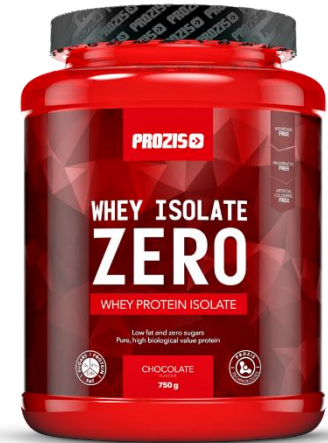


# Protein is the core ingredient and represents a global “macro” trend



*Euromonitor International; data presented at HiE, Nov 2016*

# Whey is exciting!



# What if demand for Whey grows faster than for cheese?

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- Rising demand for nutritional products (including sports drinks and protein supplements), backed by health trends in the developed world and rising incomes and awareness of the benefits of dairy in the emerging world.
- Product development by leading food and beverage manufacturers.
- The nutritional functional characteristics of whey.
- Rising demand for infant milk formula (IMF), driven by rising incomes and rising female workforce participation in emerging countries.
- The need for food and beverage companies to offer lower cost dairy products to unlock the demand potential of lower income regions, with whey ingredients one of the options to deploy

## Market Size

Volume growth sluggish

Market characterised by Pricing, segmentation and NPD

Emphasis on Follow-On and GUMs to drive growth

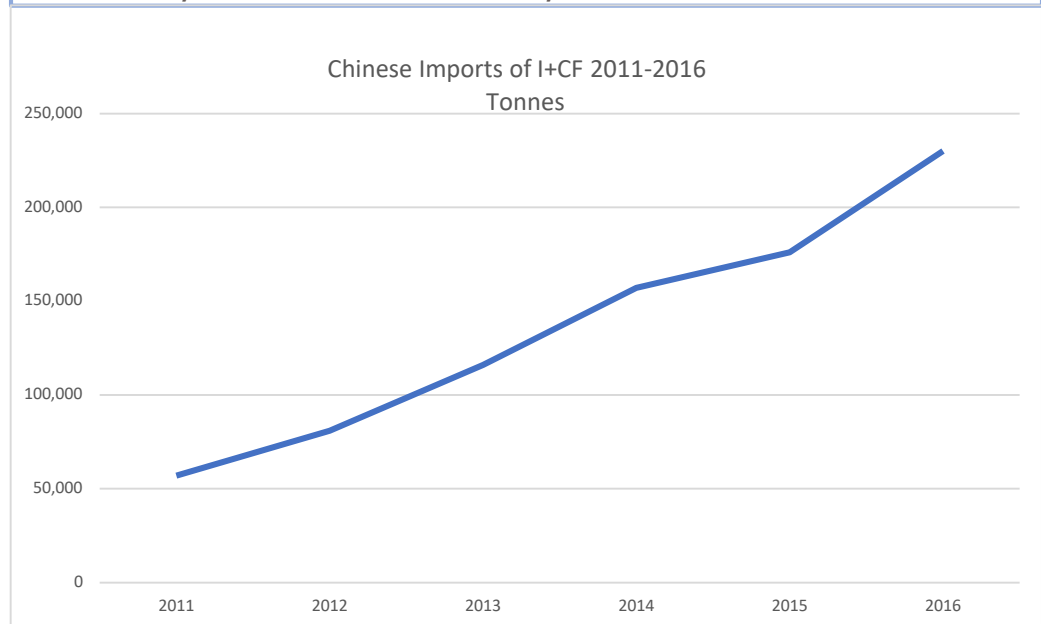
China demand for imported retail-ready product continues to grow

Capacity investments?

China imports of Infant + Child Formula 2011 – 2016

CAGR 32% pa

From 57,000 tonnes to 230,000 tonnes

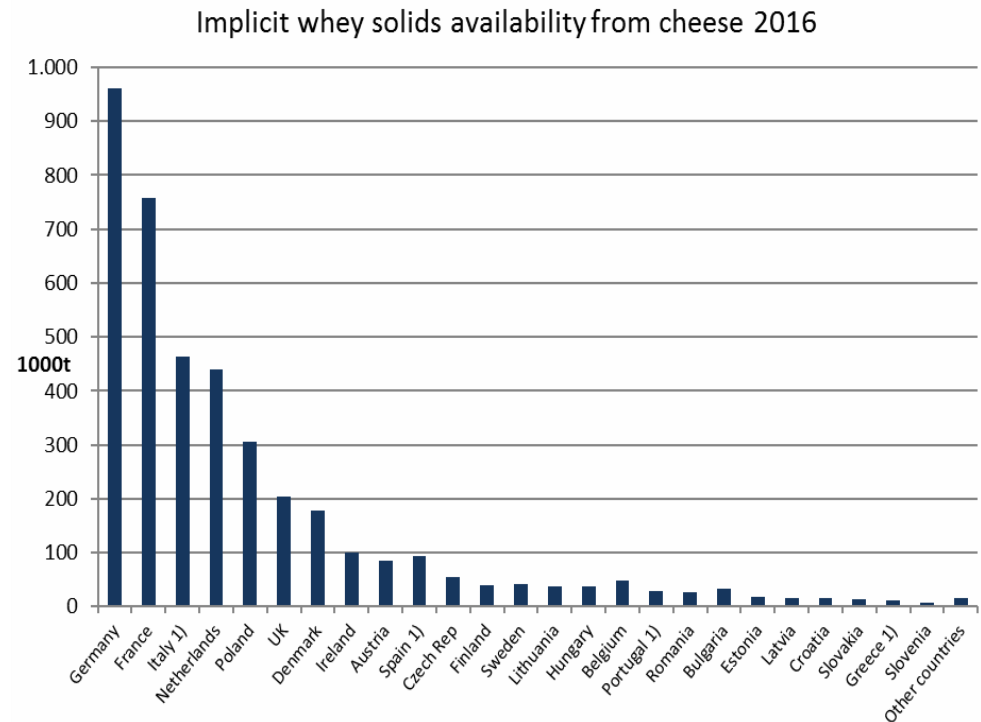




# Total implicit Whey availability in 2016 in the EU-28

- Applying different yield rates to the different types of cheese produced yields a total implicit whey solids availability of **4.03m tonnes in 2016**

- Conversion rates used:
  - 1kg of (semi) hard cheese and soft cheese yields 0,495 of whey solids
  - 1kg of fresh cheese yields 0.33 kg of whey solids



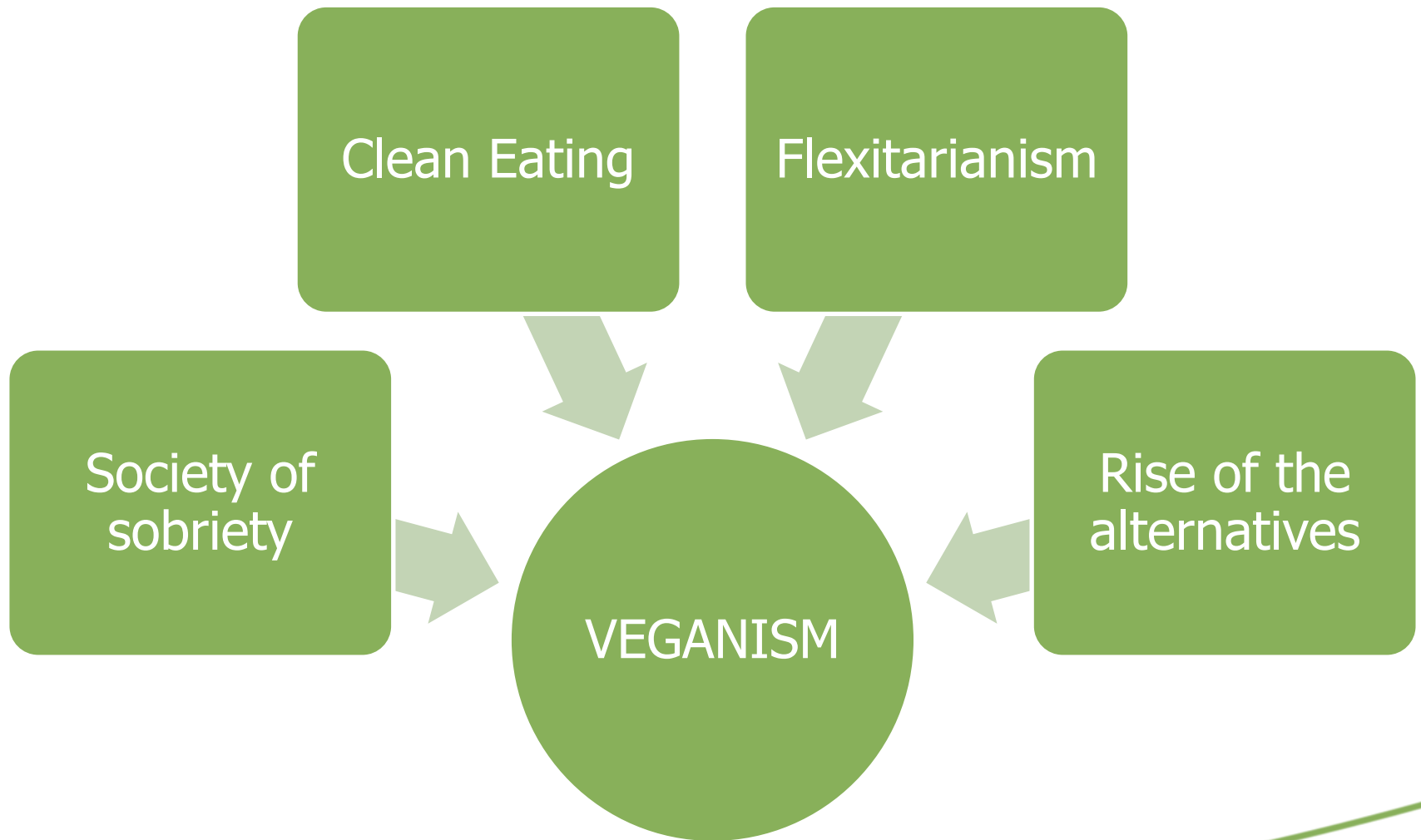
# Vegan Products

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# Drivers of growth

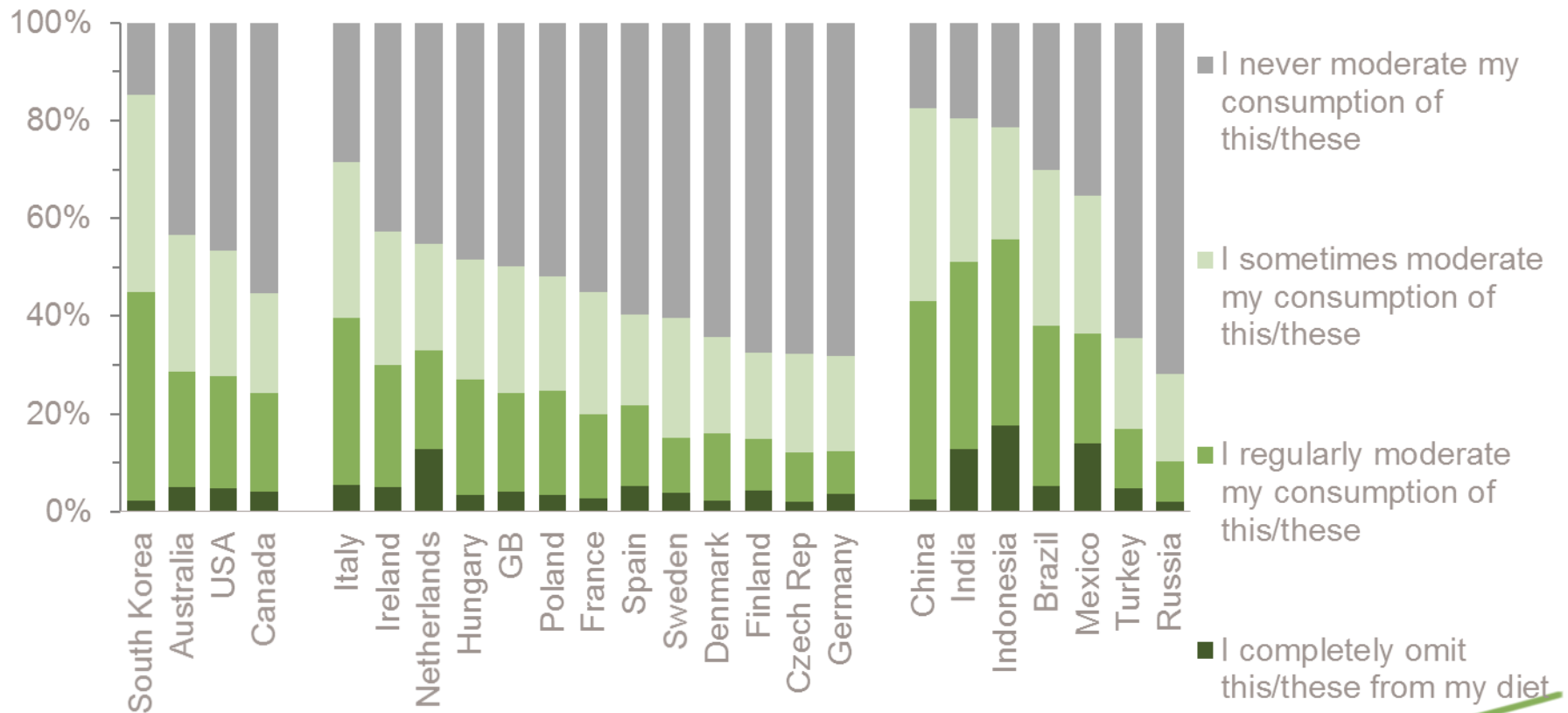
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# Market Size

Which of the following applies to how you consume these food groups? 2015" | Dairy

Over 20% of UK respondents regularly moderate dairy consumption



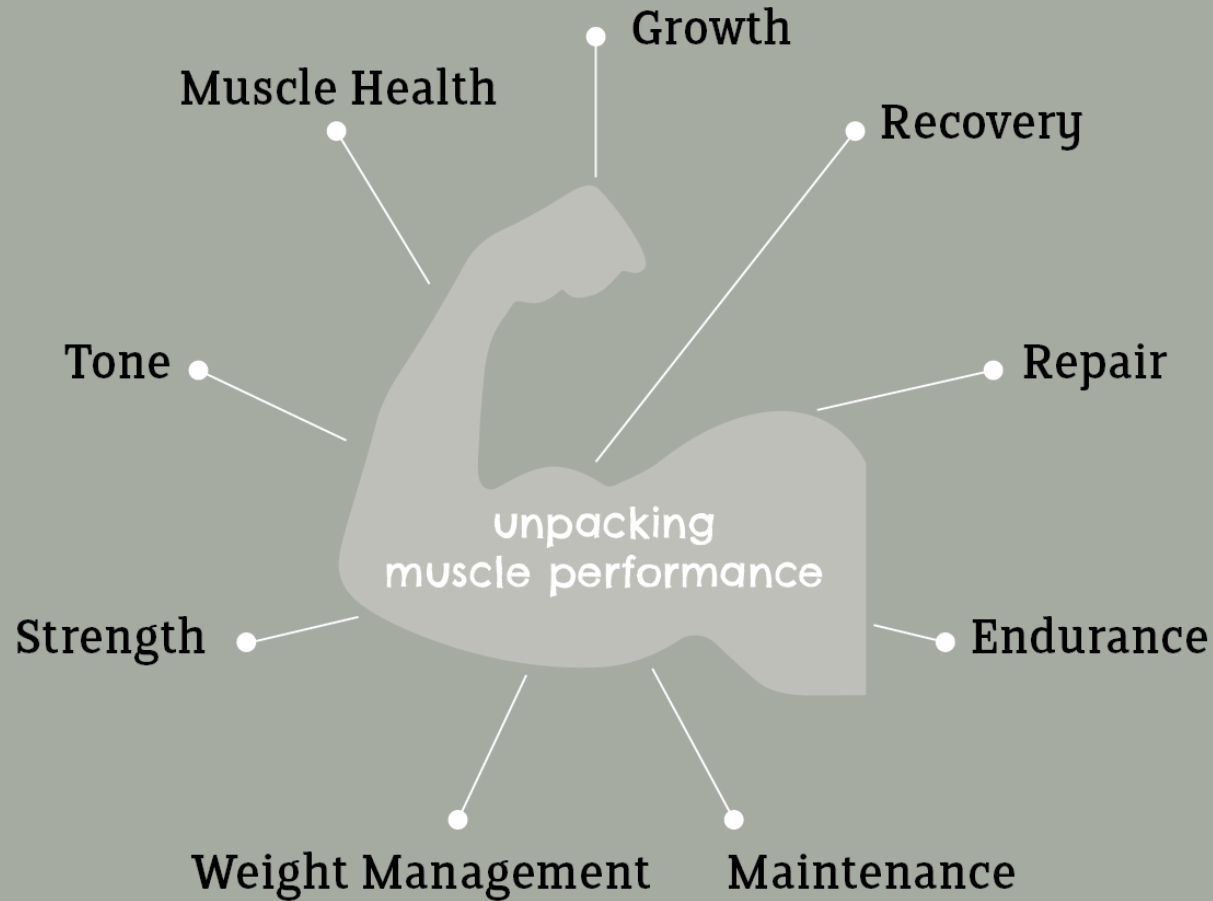


# Conclusion

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- Whey is an important issue for cheese makers to consider
- The whey industry is changing which brings threats from consumer perception, IMF markets and from substitution
- There are great opportunities but need to understand how to commercialise the science

# Volactive impact





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