



# « Workshop on Aquatic food products and new marine value chains »

FOOD 2030 CONFERENCE



**Fish by-products processing for food and food ingredients**

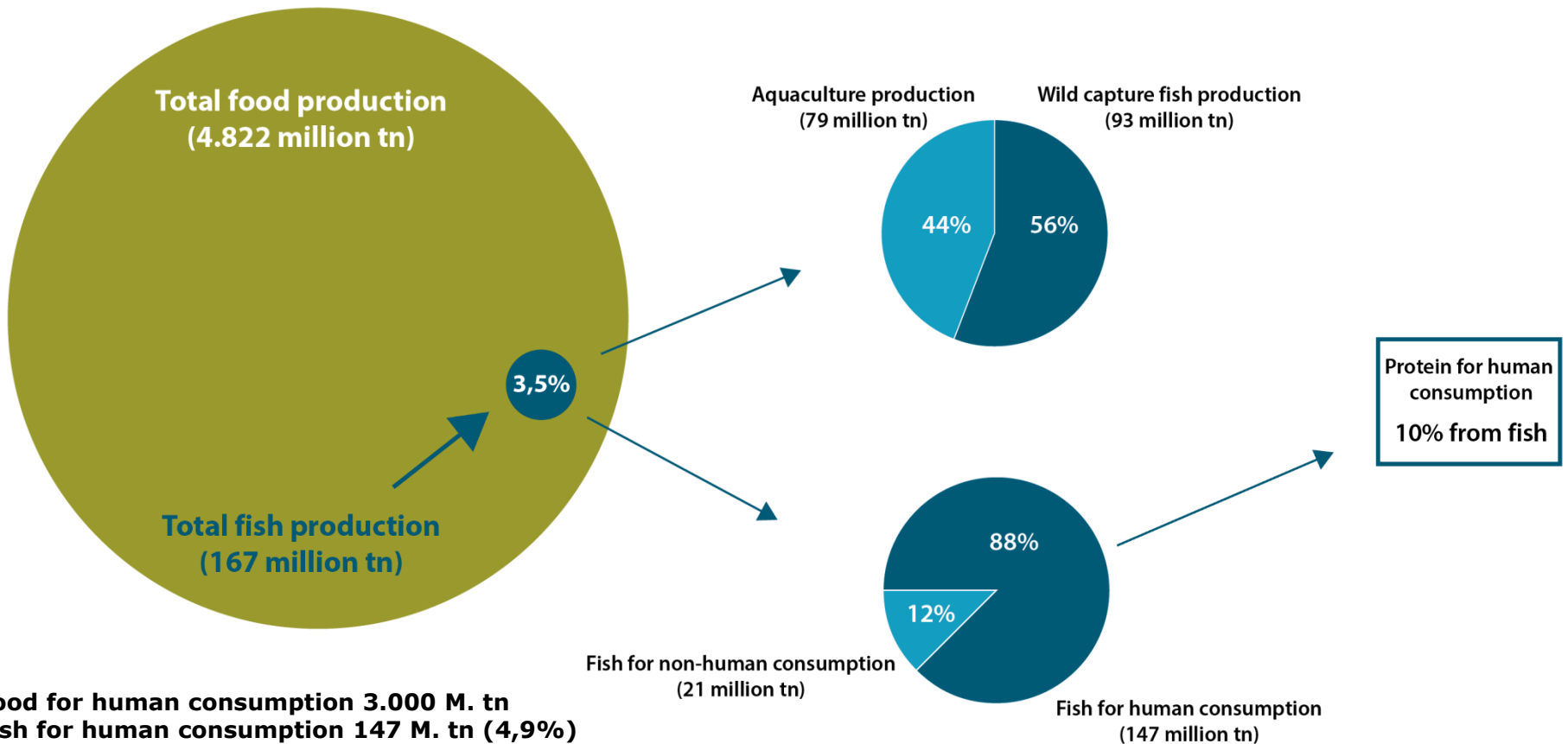
*Jonas R. Vidarsson - Matís*

*12 October 2016*

## Session topic

***Possibilities and challenges of using currently underutilised fish biomass for producing food and food ingredients.***

## Facts and figures



## How much is “underutilised”?

### ***Biomass lost as discards at sea 8% on average***

- EU finfish discards 20-60%

### ***Utilization in processing of finfish 30-75%***

- Common to have 40% utilization for finfish

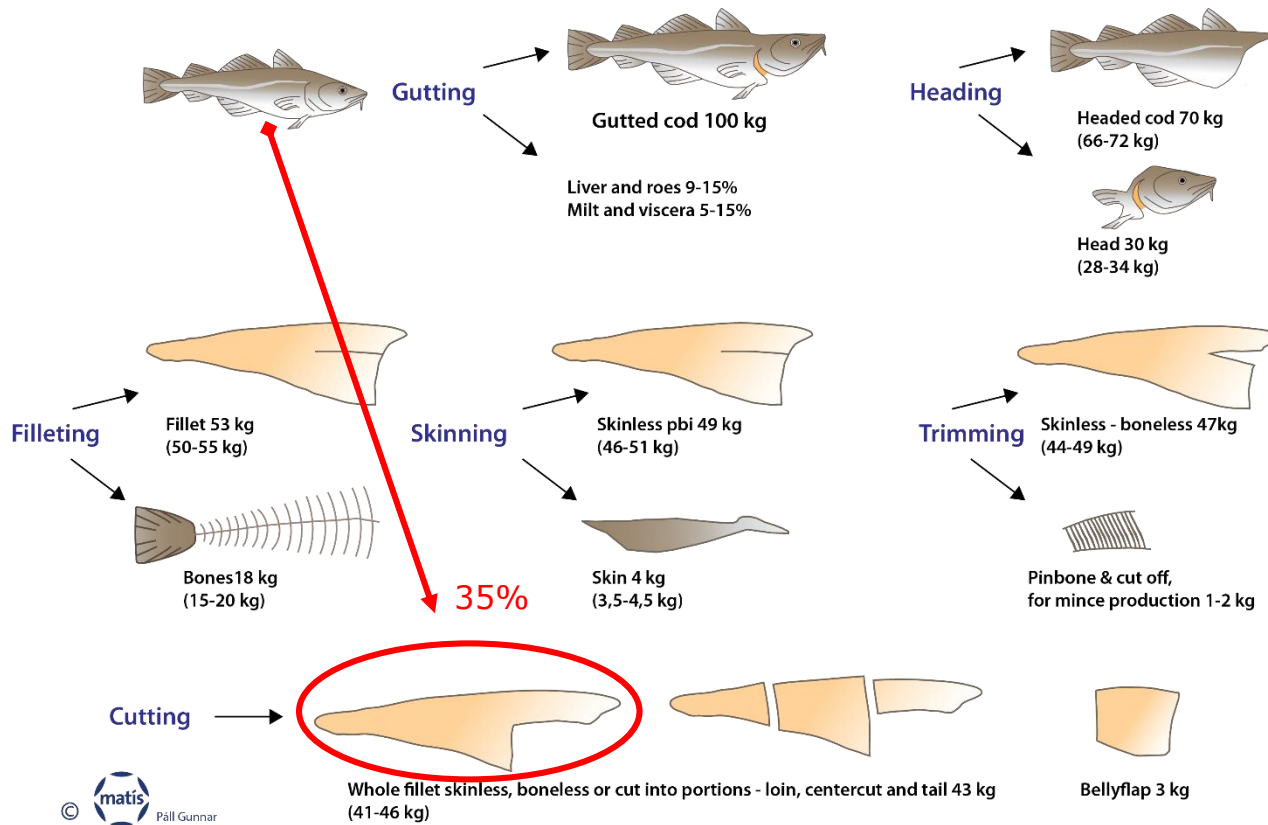
### ***Biomass wasted in retail & distribution 7%***

### ***Biomass wasted at consumer level 28%***

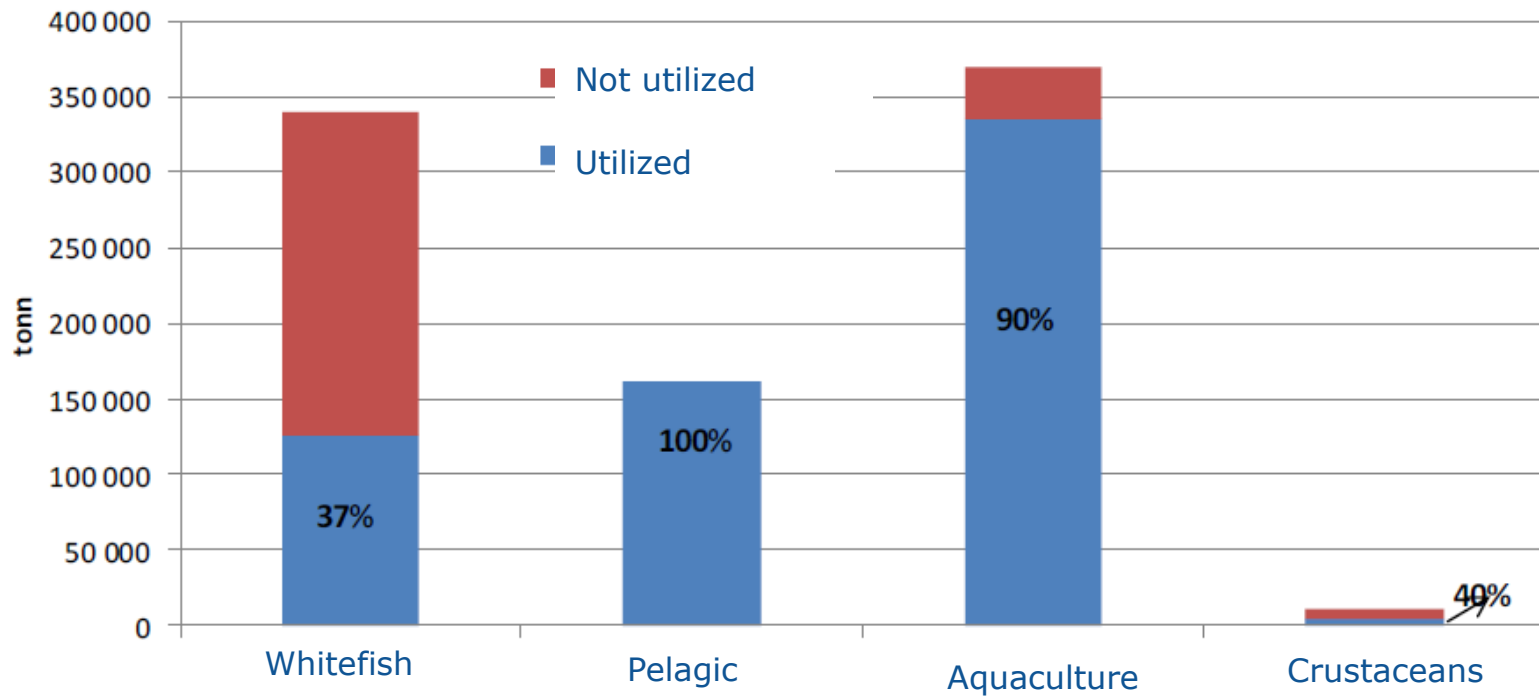
21%



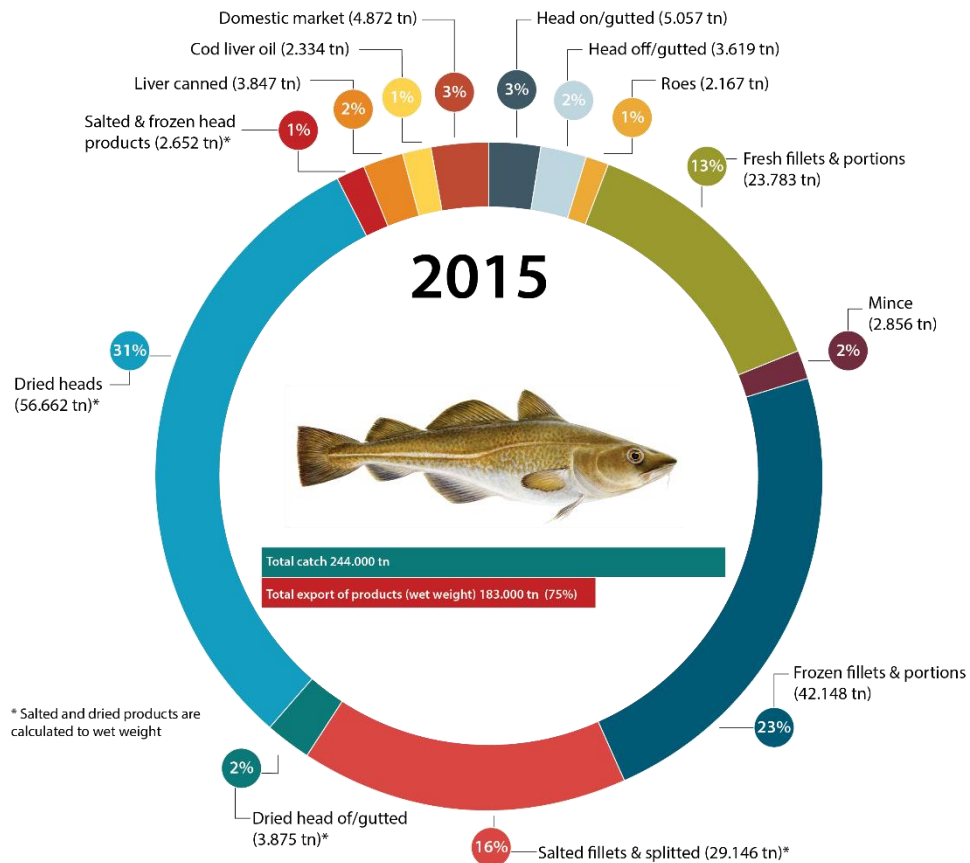
# Main products and by-products



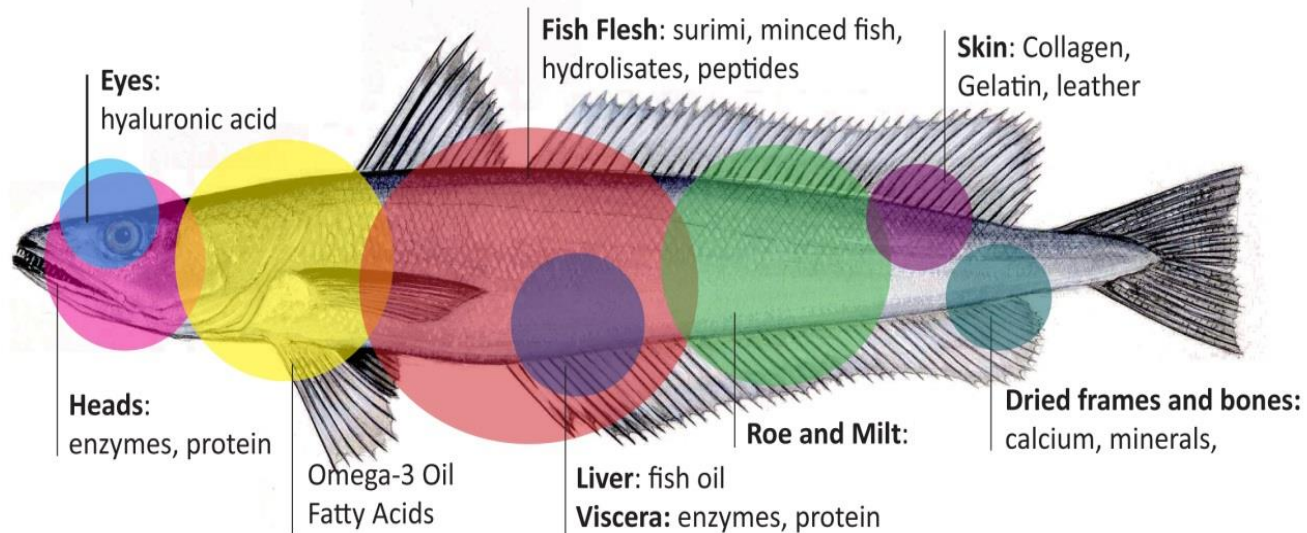
## Utilization of by-products in Norway



# Utilization of cod in Iceland



## “endless” possibilities

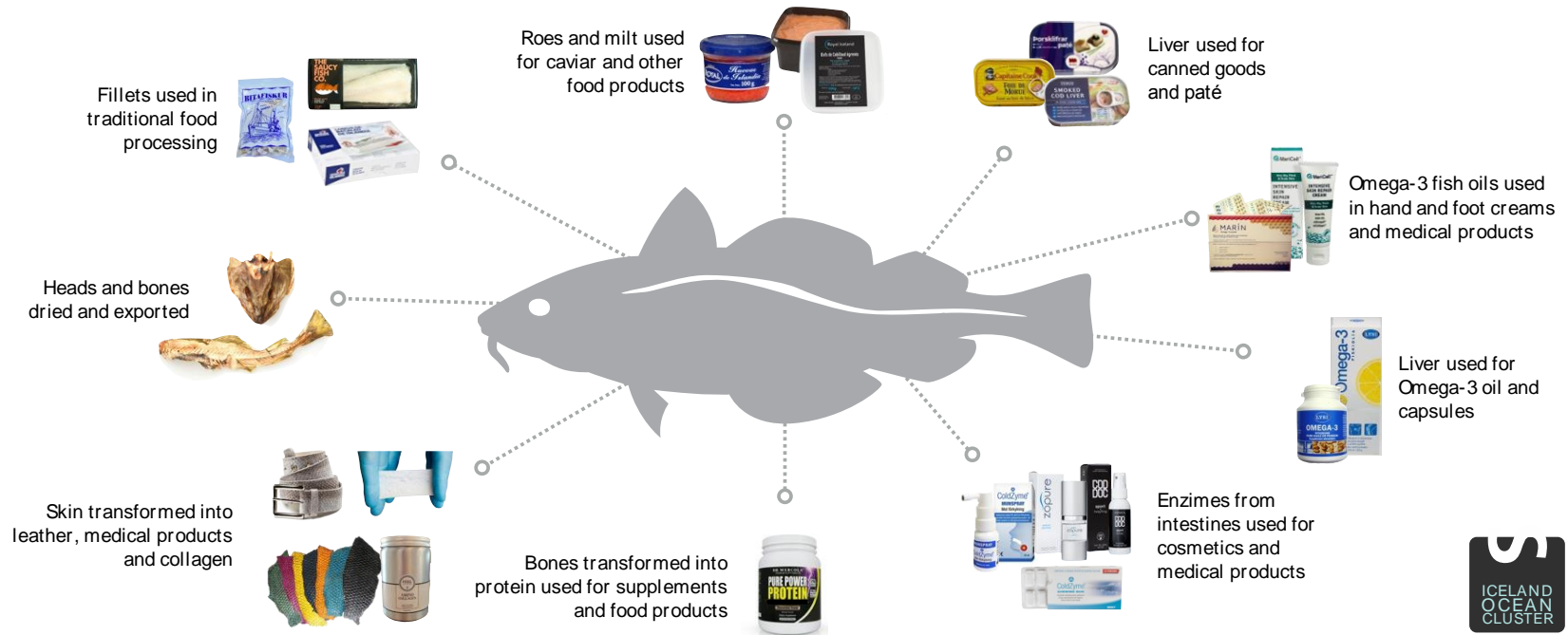


**All Ingredients:** For foods, dietary supplements, animal nutrition, medicine, cosmetic Ingredients, and what cannot be used previously, can go ultimately to bioenergy (biogas)



# Food first!

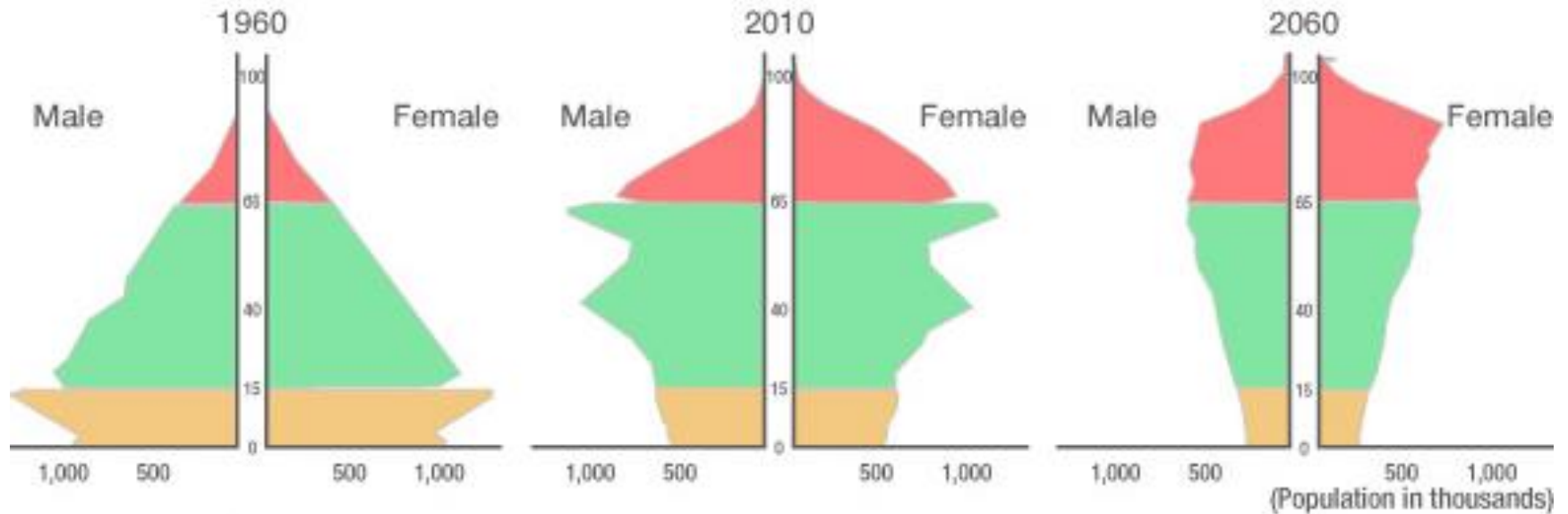
*But then we can utilize the rest into different products*



# Molnes: Example of 100% utilization of finfish All rest raw materials used for FPH

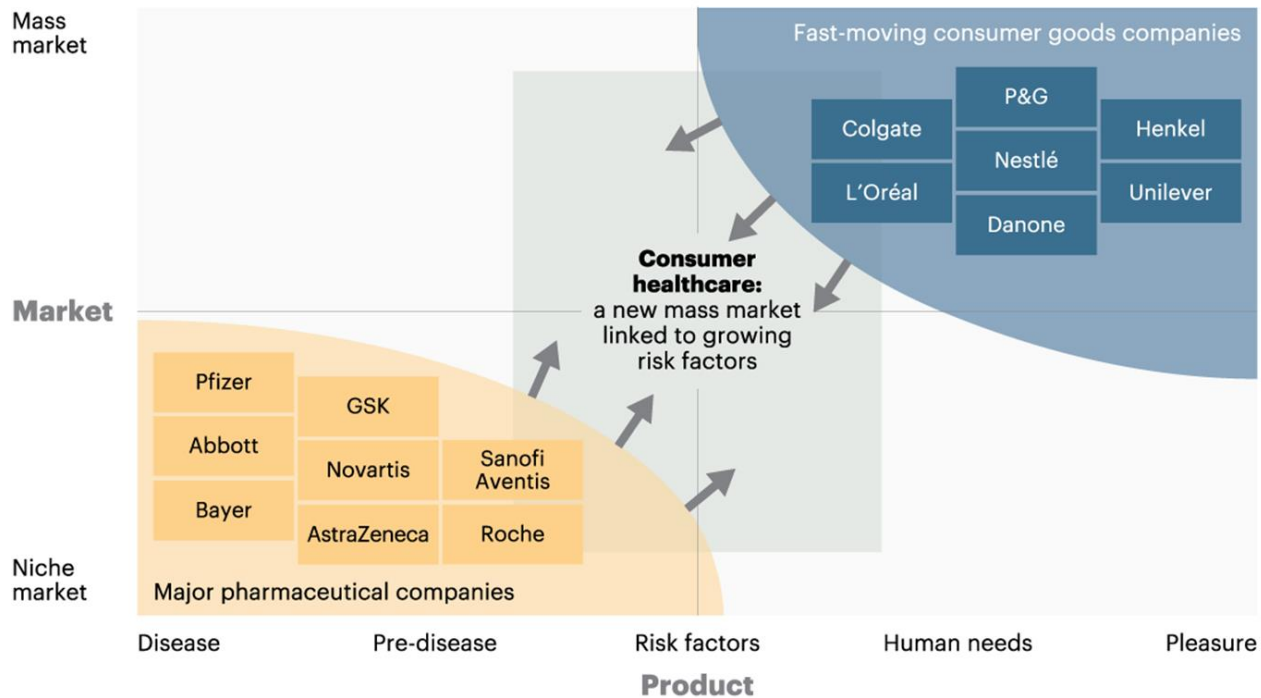


# Changing demographics and future market trends



# Future market trends

**A new, large mass market will develop midway between pharmaceutical and consumer goods companies**



## What are the main non-technical barriers?

***Is it possible to utilize near to 100% for human consumption?***

- Yes, It is theoretically possible
- Food safety and regulatory barriers
  - Regulations – Category 2 materials (digestive trace content) cannot be used for human consumption (Viscera?)
  - Proper handling of low value raw materials
  - Landing obligation
- Markets and economic applicability?
  - Needs to be economically feasible to produce
  - Accepted by the consumers

## What are the main non-technical barriers?

### ***Article 15 - Landing obligation***

*11. For the species subject to the landing obligation as specified in paragraph 1, the use of catches of species below the minimum conservation reference size shall be **restricted to purposes other than direct human consumption**, including fish meal, fish oil, pet food, food additives, pharmaceuticals and cosmetics.*

## Scientific priorities for developing further the sector?

**A: Respect & Pride & Communication through the Value Chain** (every link working together towards a common goal)

- 1. Investment in competences**
- 2. Investment in infrastructure**
- 3. Scanning of chemical, physical and bioactive properties** (what can be used? How?)
- 4. Market and consumer driven research** (market understanding – consumer drivers)
- 5. Emerging technologies** (e.g. food printing)
- 6. Interdisciplinary research**

## Possible actions at short and medium term to help and/or expand the sector

- **Making sure to have the right supply of the right education for the right people**
- **Regulatory changes** (Landing Obligation, category 2 etc.)
- **Long-term reliability** – Policies that facilitate long-term private investments
- **Linking RTD, Industry and markets**
- **Public-private funding of R&I**
- **Biorefineries** – Establishing regional biorefineries
- **Pilot plants**
- **Increasing transparency**





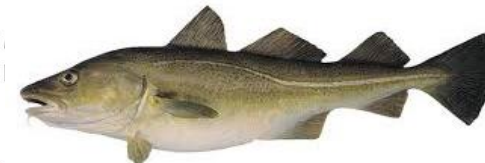


European  
Commission



## Think inside the box ...

Most innovation involves identifying new opportunities from what we already have. Finding a use for what we used to throw away. To make those connections others cannot see. Our role is to facilitate those who can make these connections, package and implement them to benefit us all.



# Thank You



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