

# **BLUE BIOECONOMY**

**VALUE CHAIN INNOVATION: INCREASED  
VALUE BUILT ON KNOWLEDGE**

**Sigrún Elsa Smáradóttir**

Head of Industry Solutions and Consulting, Matis R&D



# BRIDGE BETWEEN INDUSTRY AND ACADEMIA



**KERACIS**

UNA



**PEPSICO**



MARINOX

*ChemoBacter*



UNIVERSITY OF ICELAND



**Nestlé**

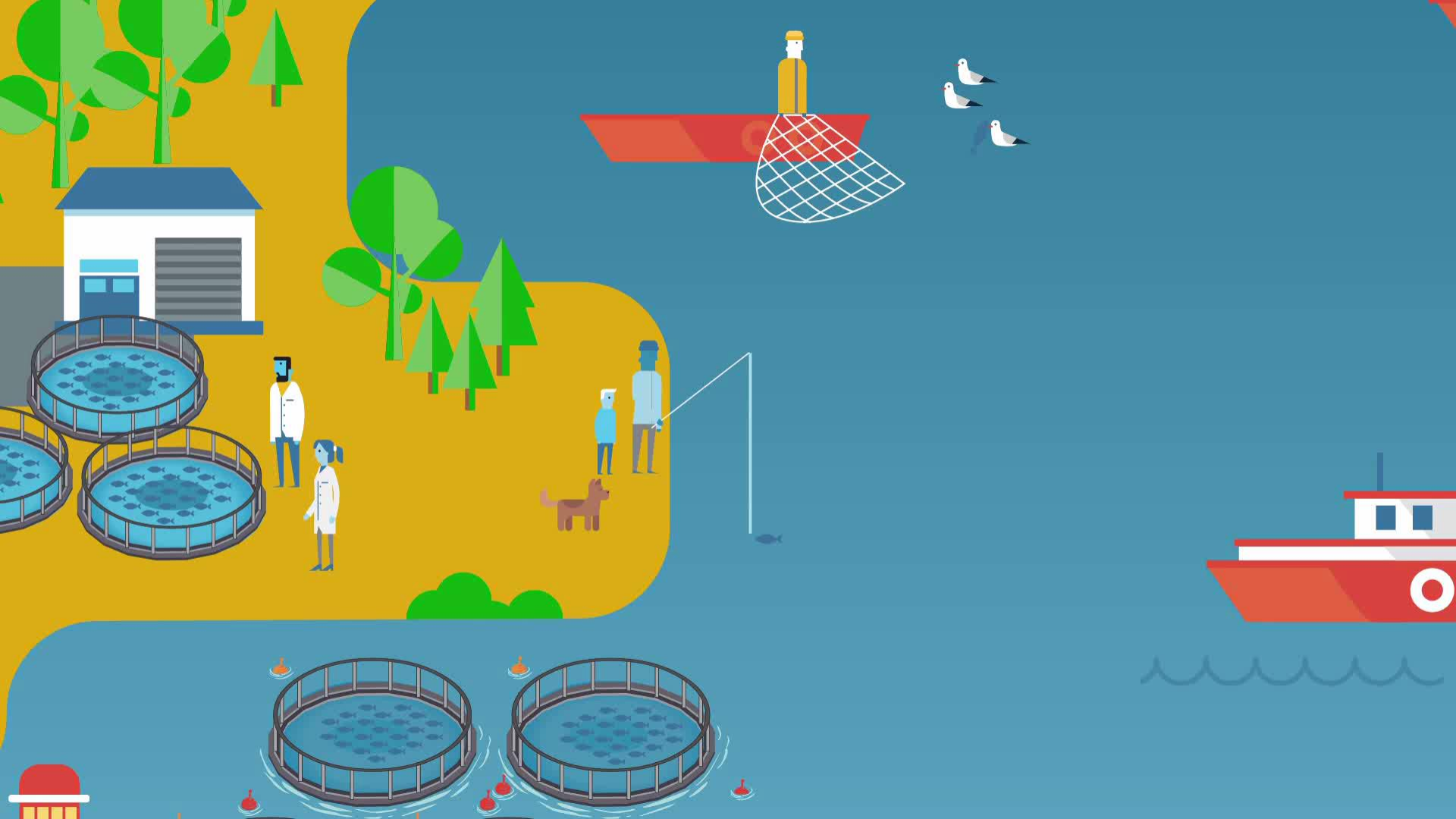


**ROQUETTE**

*Offering the best of nature™*

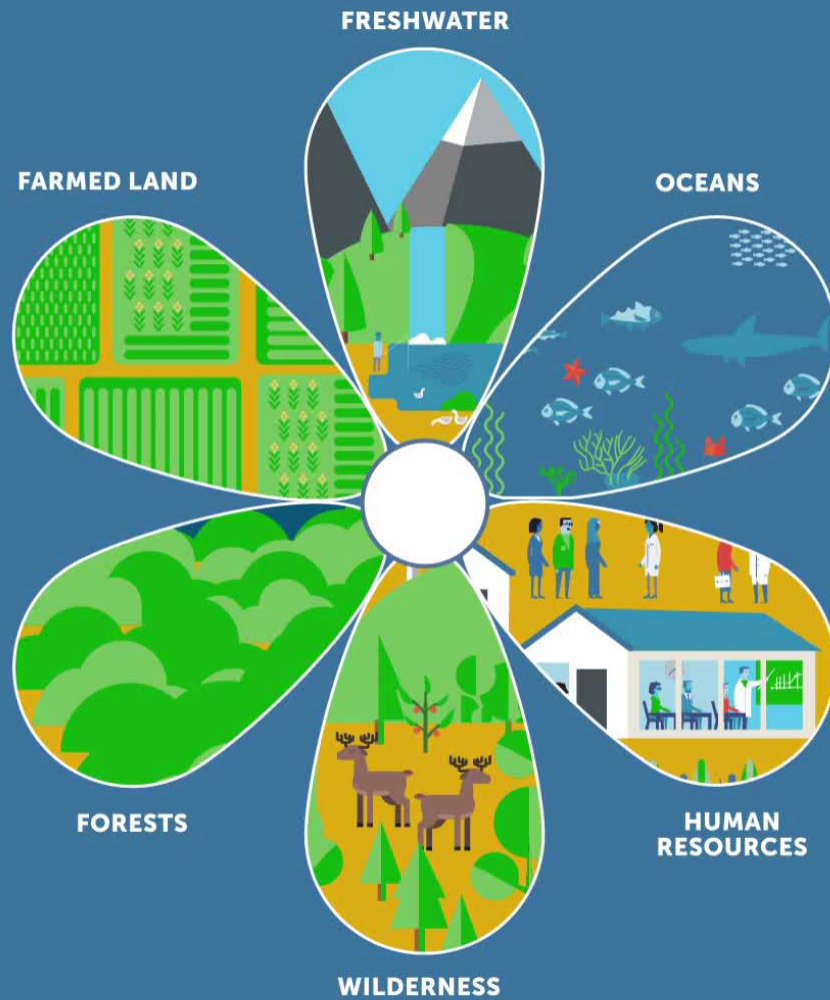
**Roche**

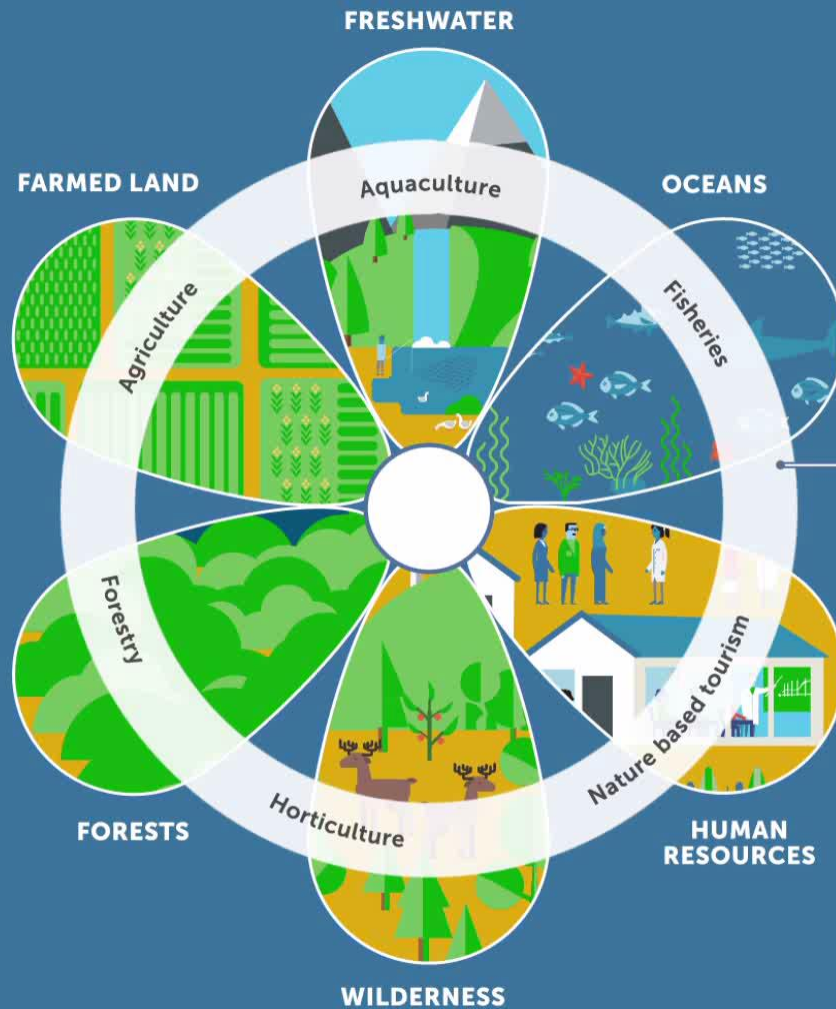
# THE BIOECONOMY



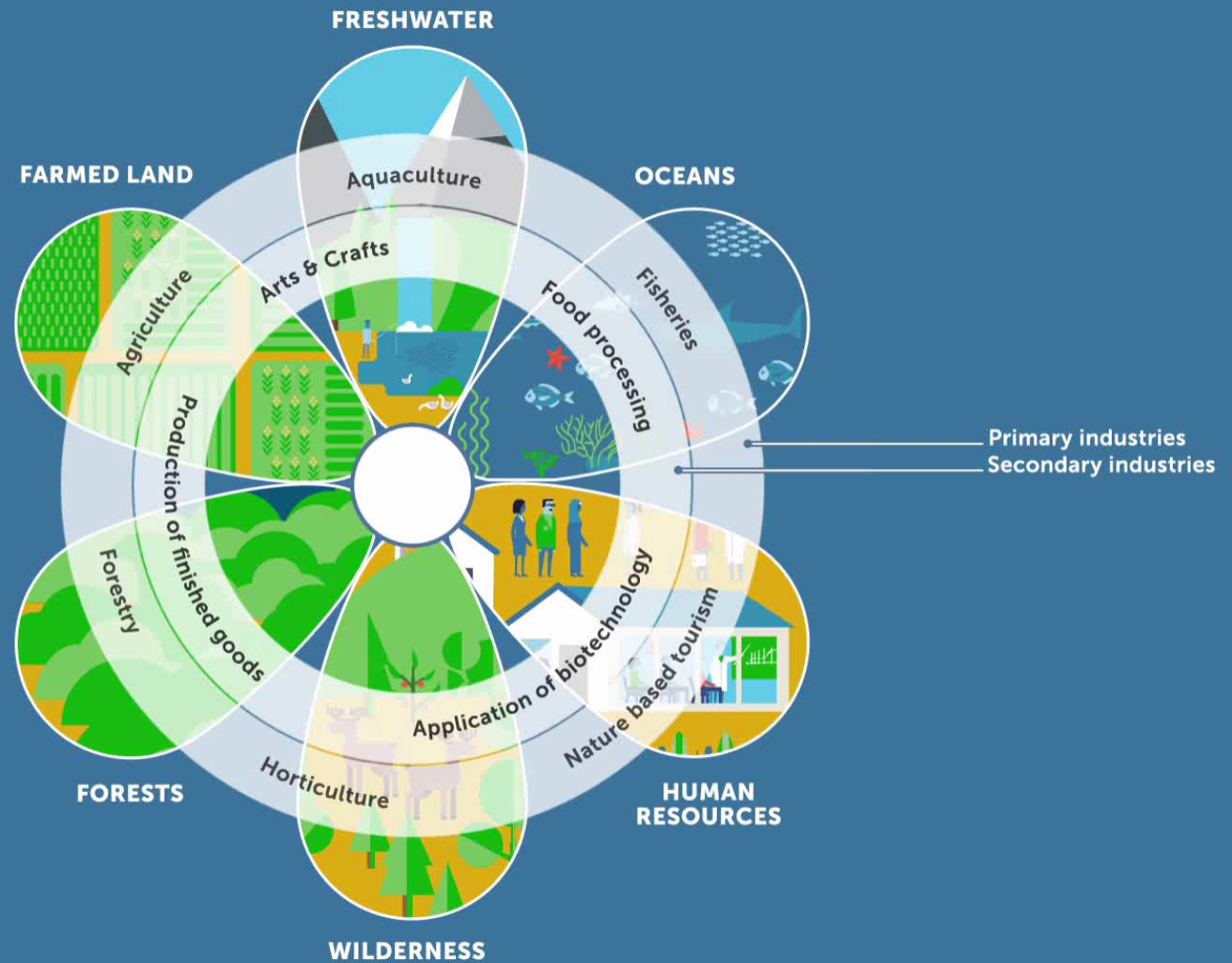


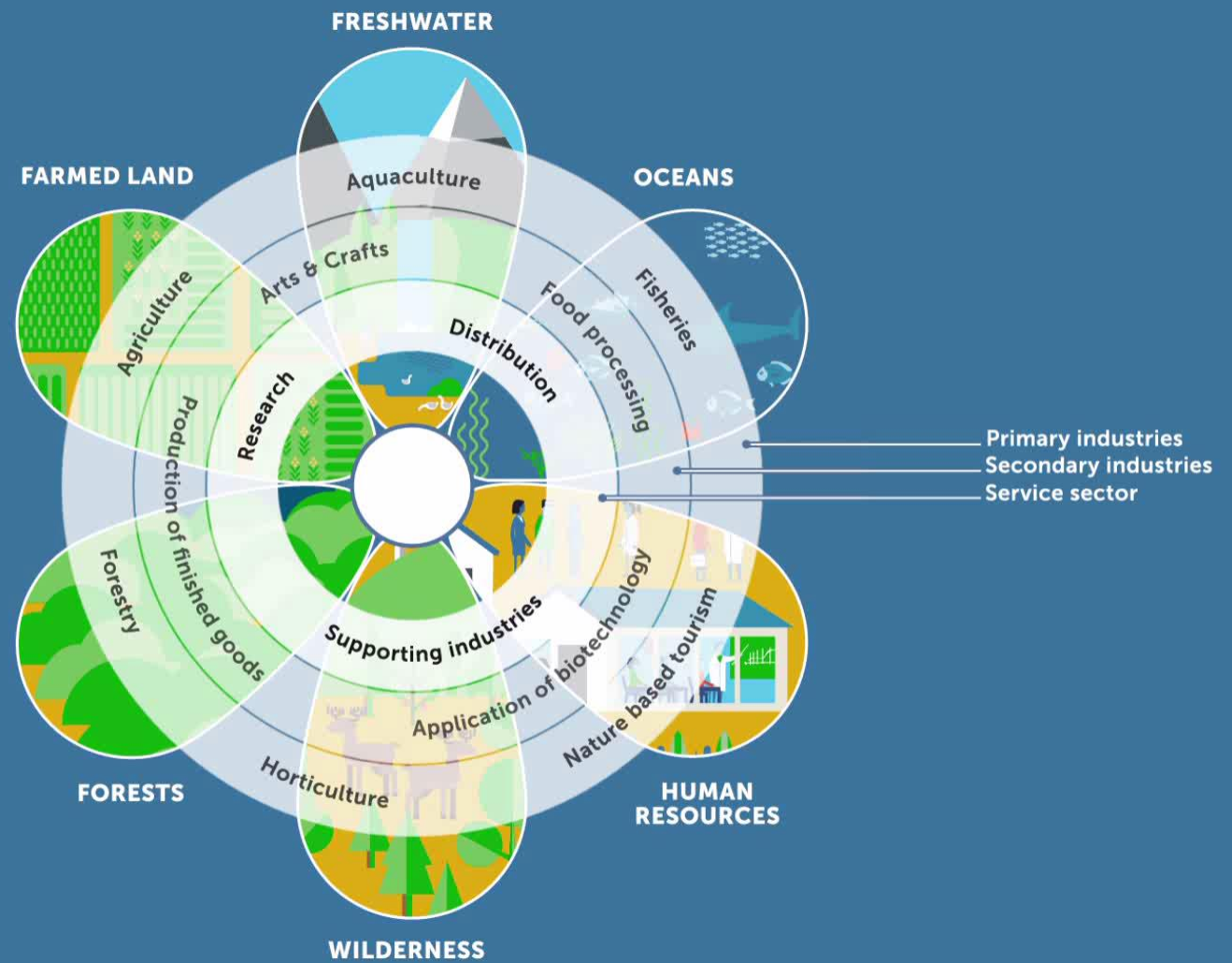


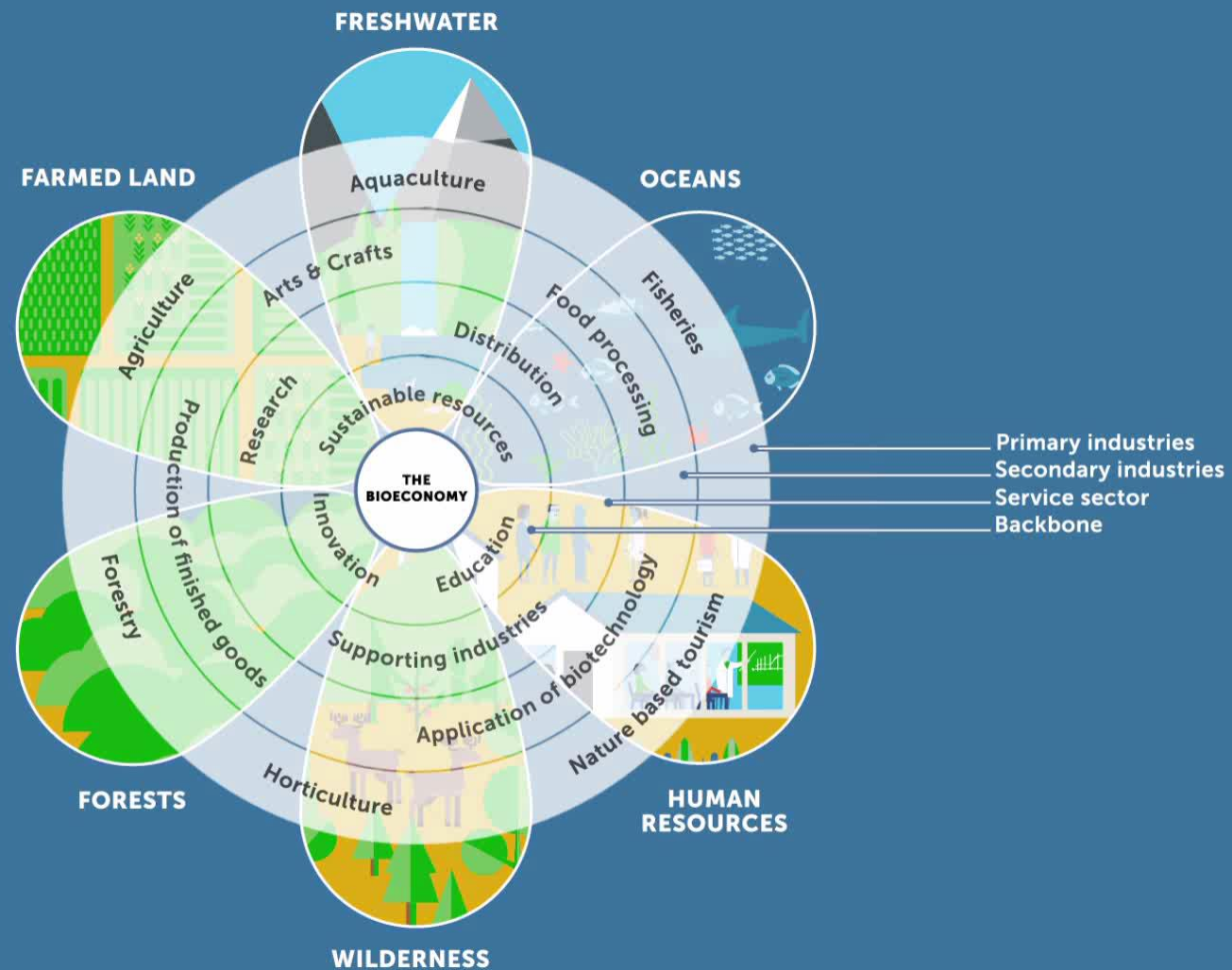








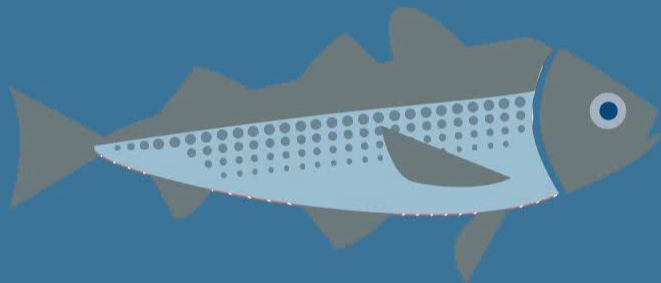




EXAMPLE

---

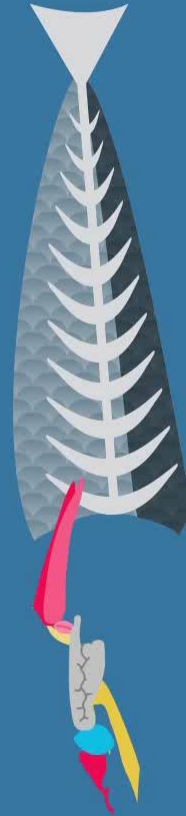
## ATLANTIC COD

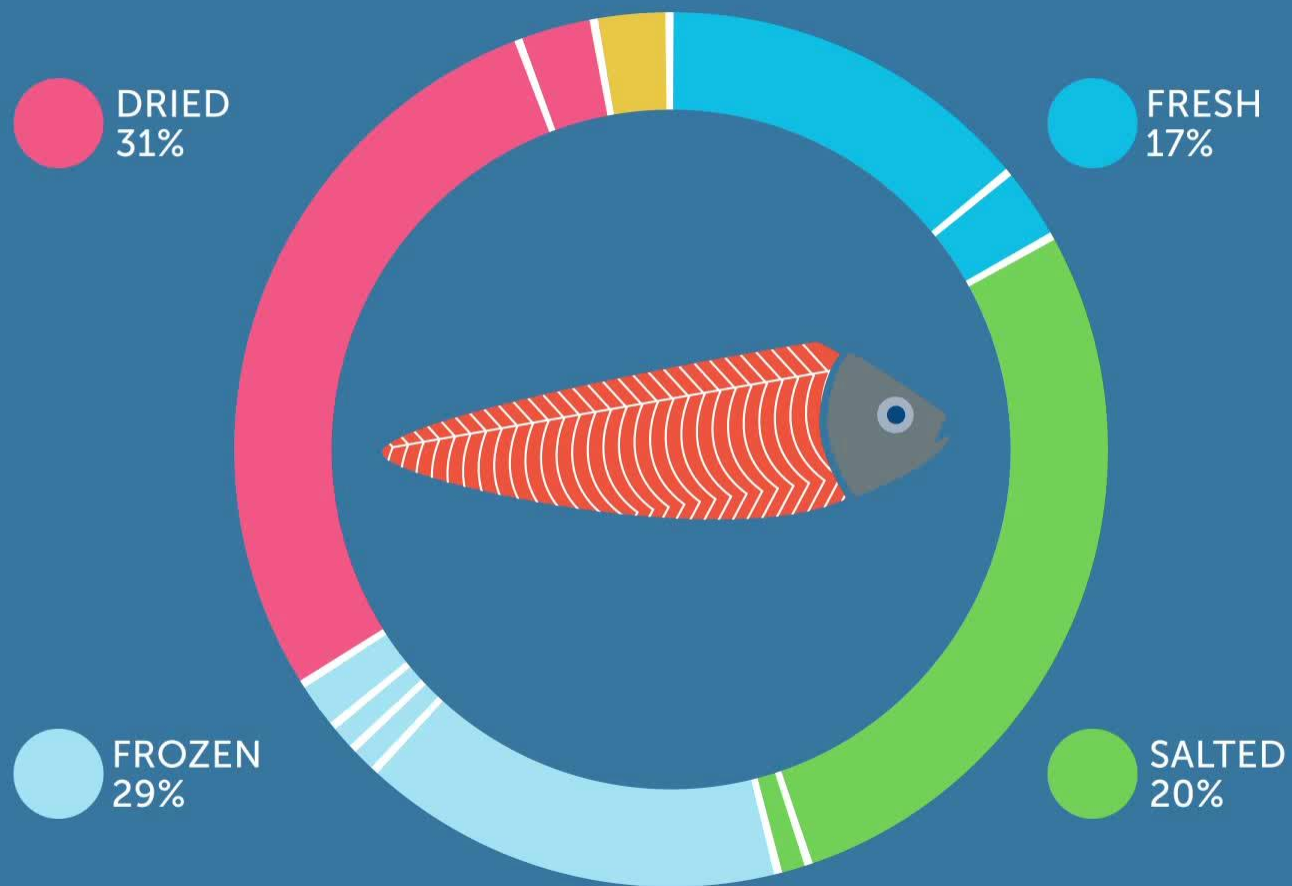


EXAMPLE

---

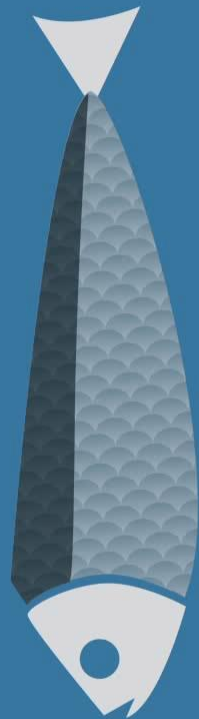
ATLANTIC COD





2015

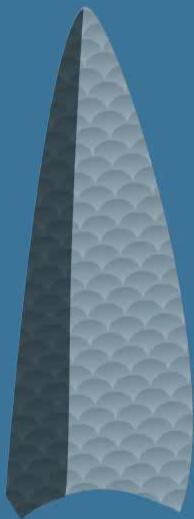




EXAMPLE

---

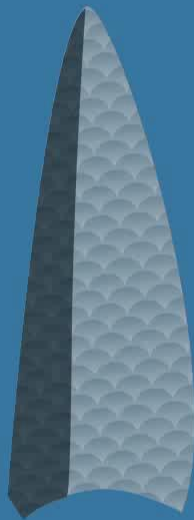
FISH SKIN



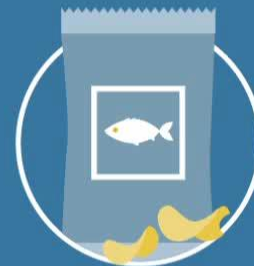
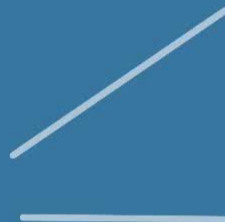
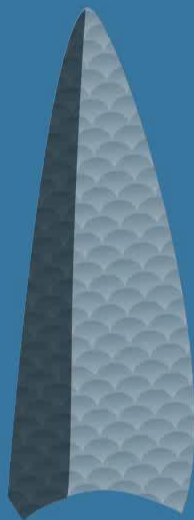
EXAMPLE

---

FISH SKIN



EXAMPLE  
FISH SKIN







PROTEINS



PEPTIDES



FATTY ACIDS



MINERALS



SPECIALTY  
COMPOUNDS





PROTEINS



PEPTIDES



FATTY ACIDS



MINERALS

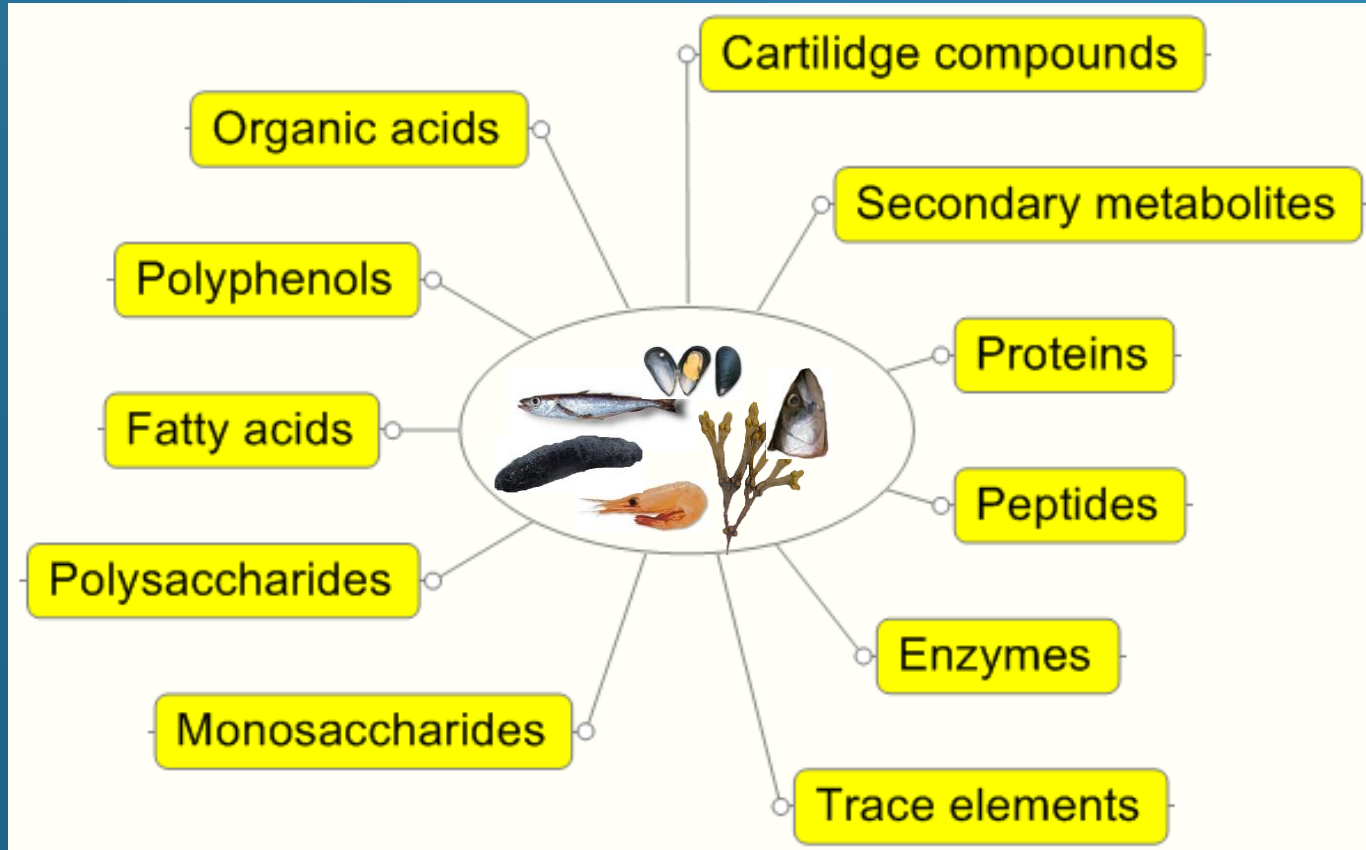


SPECIALTY  
COMPOUNDS





# Very diverse compounds in aquatic foods





**KERACIS**





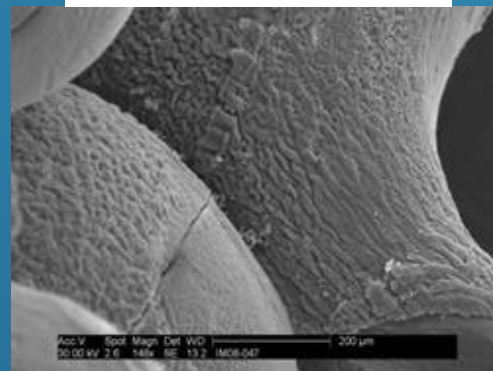
**ZYMETECH**







**BONEREG-INJECT™**



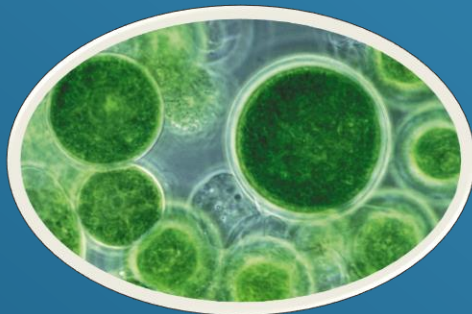


MARINOX





algalif



 **KEY**natura

















# The way forward - international cooperation



(NATIONAL **TO** NORDIC **TO** EUROPEAN)

Matís (R&D)


Marinox  
(Seaweed)

Grímur kokkur  
(Seafood)

The aim is to increase the value of convenience food by adding functional ingredients, produced from underutilised marine based raw materials and by-products from fish processing, with confirmed bioavailability



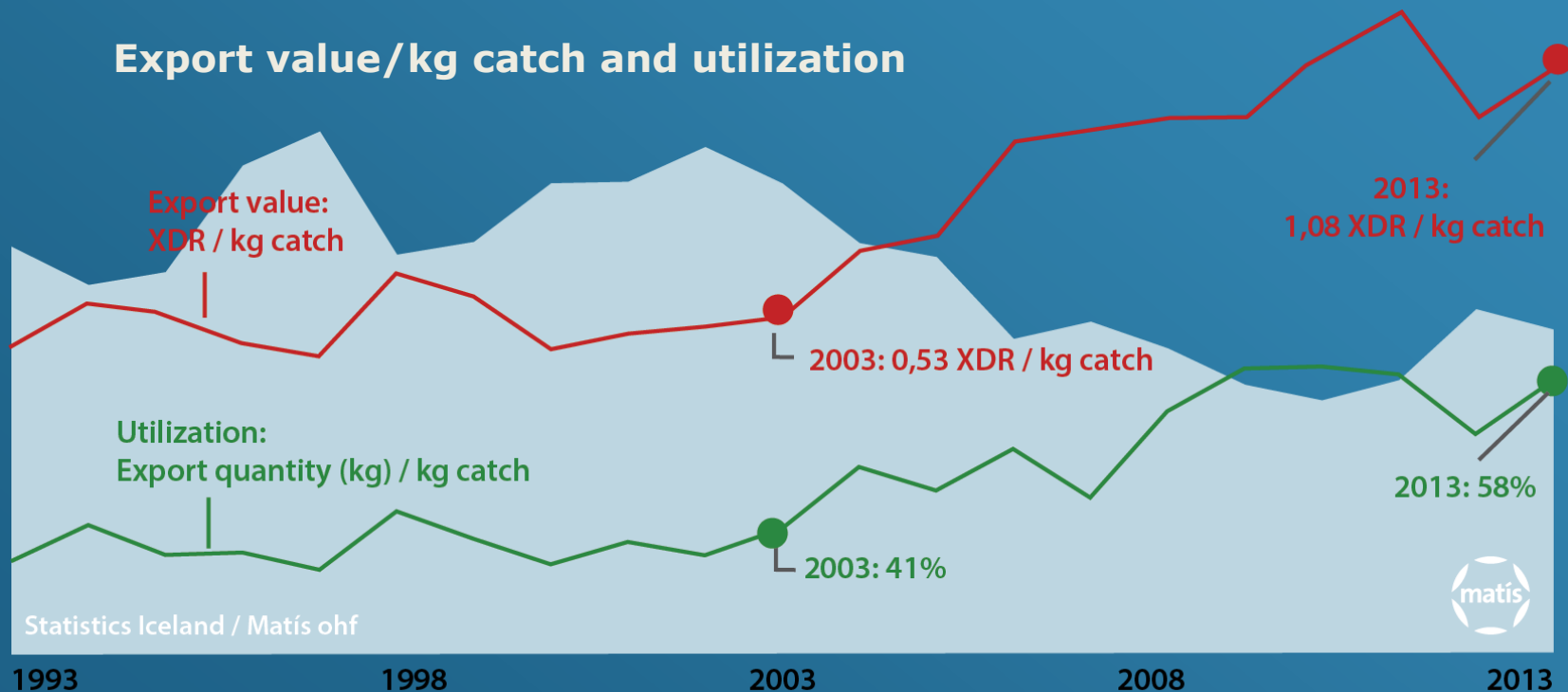
2010  55.000 EUR (AVS)

2012  362.000 EUR (Nordic Innovation)

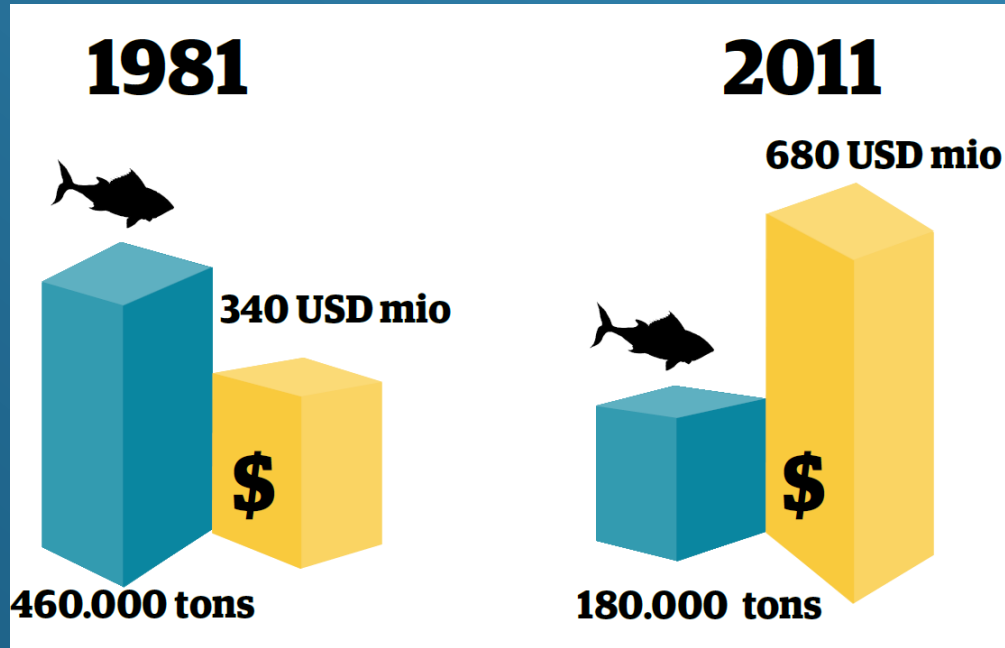
2014  1.500.000 EUR (EU-FP7)

# RESEARCH AND INNOVATION: RETURN ON INVESTMENT

## Export value/kg catch and utilization



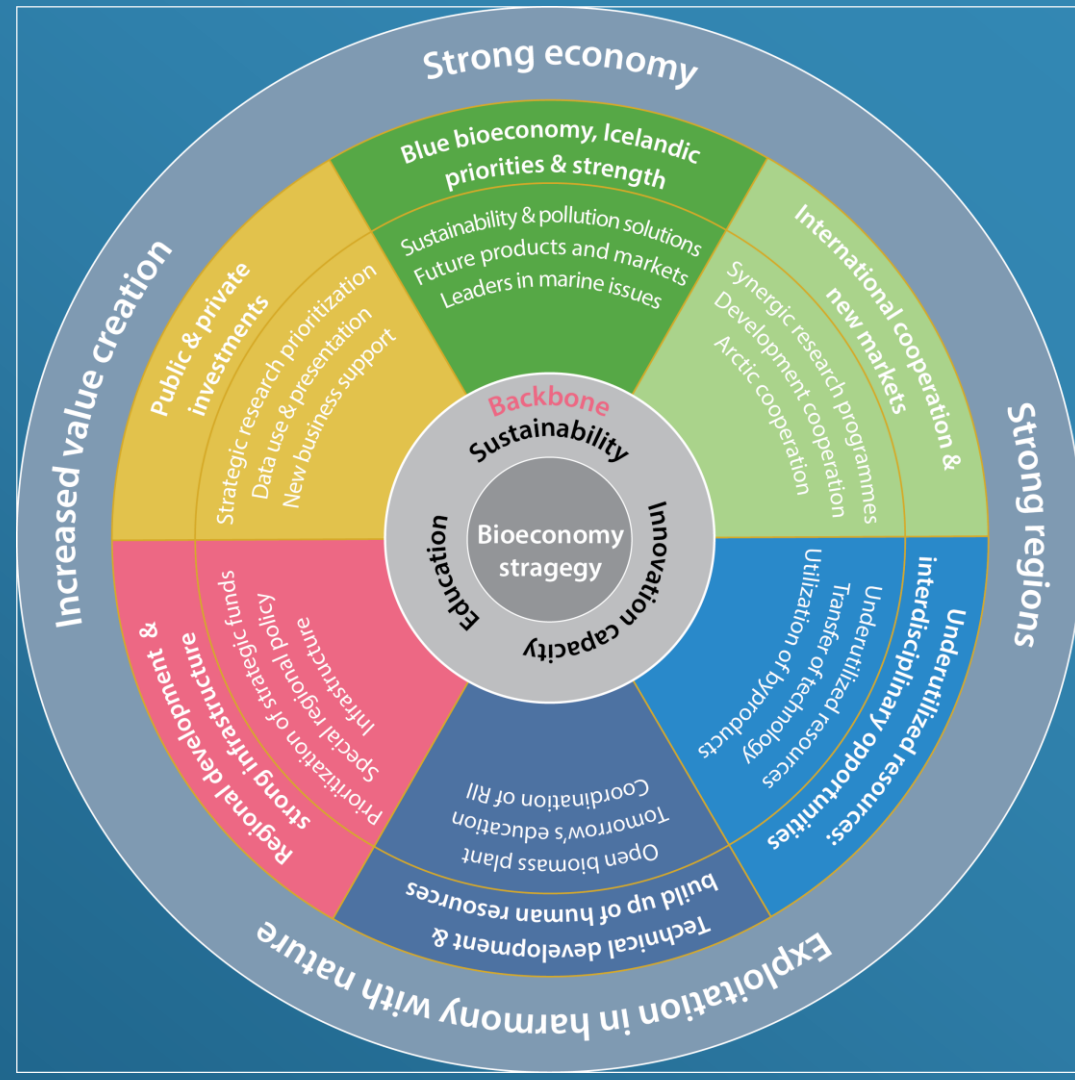
# RESEARCH AND INNOVATION: RETURN ON INVESTMENT





# Icelandic bioeconomy strategy

- International cooperation & new markets
- Underutilized resources: interdisciplinary opportunities
- Technical development & build up of human resources
- Regional development & strong infrastructure
- Public & private investments
- Blue bioeconomy, Icelandic priorities & strength





## WEST NORDIC BIOECONOMY PANEL

[Read More](#)

## 2016 WORKSHOPS WITH STAKEHOLDERS INDUSTRY AND PUBLIC

[Read More](#)

Dr. Christian Patemann



Dr. Christian Patemann



### The Bioeconomy!



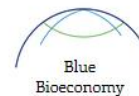
### Grand Challenges!



### West Nordic Studies


[Read More](#)

## West Nordic Strategy Themes - DRAFT



Blue  
Bioeconomy



Underutilized  
resources



Marine bioresources are the most important biological resources of the West Nordic countries, as fisheries contribute extensively to the GDP in all three countries. In order to have a positive impact on value creation in the West Nordic countries, investment in innovation and technology along with strengthening the fish stocks is needed.

[Read More](#)

The West Nordic region has a variety biological resources for sustainable and responsible utilization. The major resources include waste streams, such as those found in the fish industry, wood, grasses and crop residues.

[Read More](#)


Opportunities



There are opportunities within the different sectors in the West Nordic countries. However, when each sector is operating separately in "its own silo", the growth potential might be limited. If interdisciplinary cooperation between different sectors is enhanced, the growth potential of the economy is far greater.

[Read More](#)


Rural  
development



Opportunities within the bioeconomy are likely to have a positive impact on the inhabitants of the area and help to reverse the trend of young educated people, especially women, moving from the rural areas to the larger towns, cities and other countries.

[Read More](#)


Synergies



The initiatives supporting bioeconomy in the



# BIOECONOMY: GRAND CHALLENGES AHEAD

Food security for a growing population

- Nutrients availability and food safety

Alternative Energy solutions

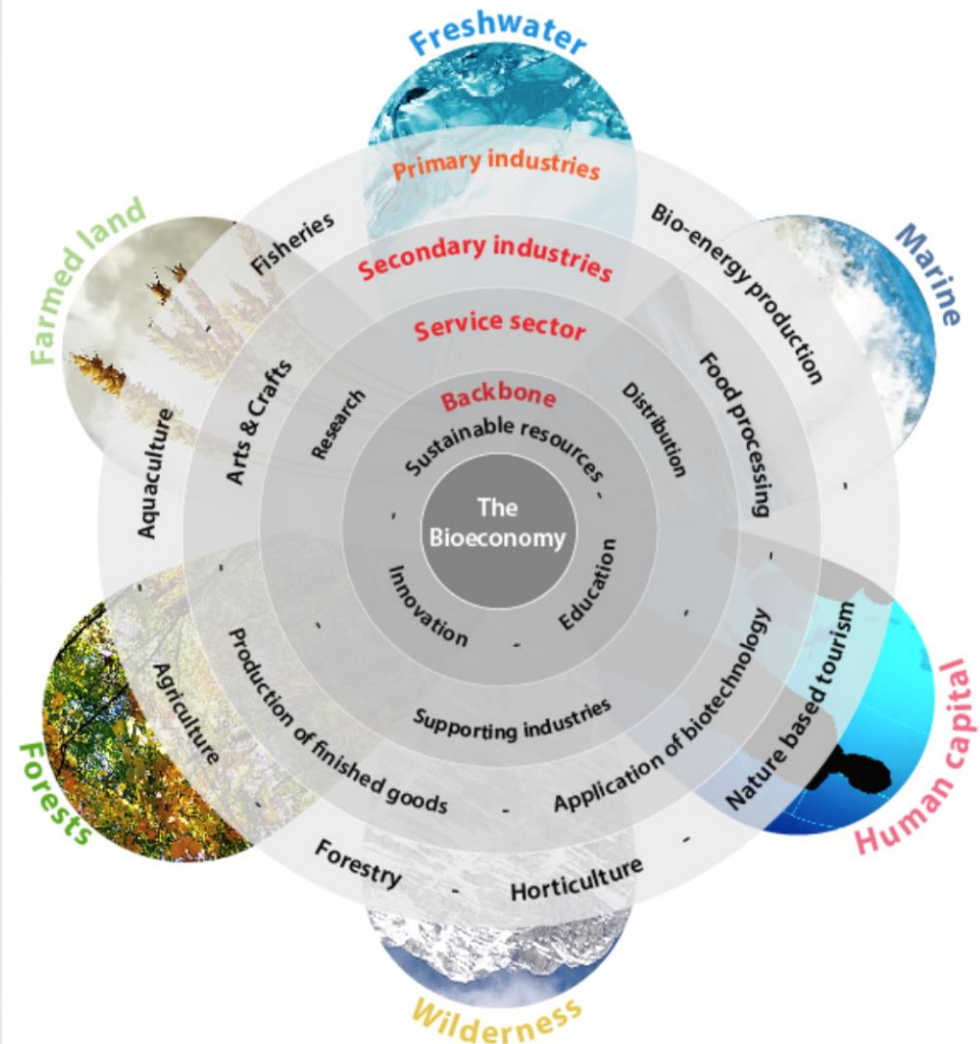
- Change from Fossil fuel based chemicals

Global warming

- Battle global warming
- Adapt to climate change

Changing demographics

- Urbanization
- Gender imbalance





# WORLD SEAFOOD CONGRESS



2017 | REYKJAVIK | ICELAND

Growth in the Blue Bioeconomy