



# Nasjonal og global tilgang på fôrråvarer til akvakultur

Startkonferanse 6 oktober 2020

Trygve Berg Lea, Sustainability Manager



Our mission  
*feeding  
the future*



30  
PRODUCTION  
PLANTS IN 18  
COUNTRIES



>2.3M  
TONNES OF  
FEED



>3,500  
EMPLOYEES



11  
RESEARCH  
& VALIDATION  
STATIONS IN 9  
COUNTRIES



€15M  
ANNUAL  
INVESTMENT  
IN R&D

**SKRETTING**  
a Nutreco company



Our mission

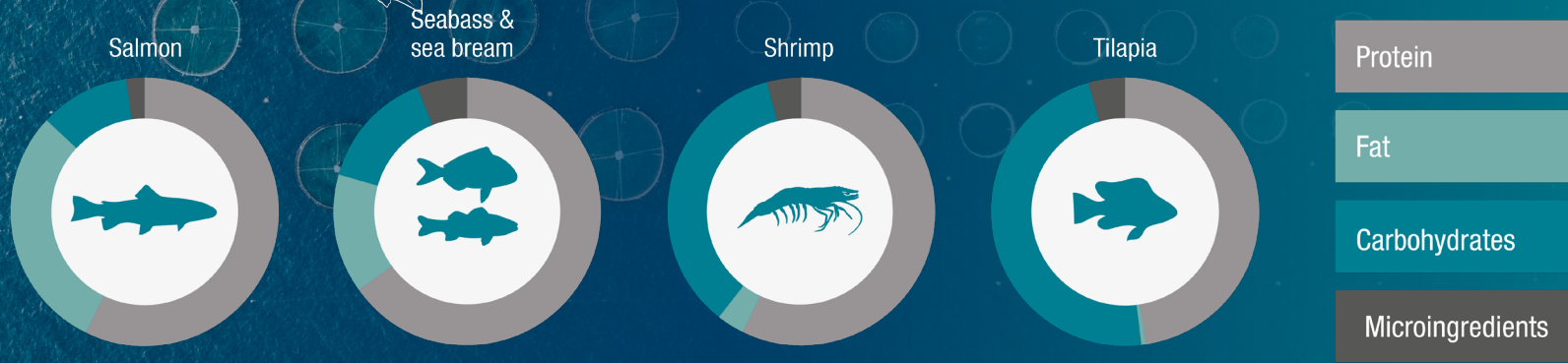
feeding  
the future



In 2019,  
Skretting produced  
feed to support

21.5  
million

seafood meals  
every day globally



# What ingredients are in fish and shrimp feed?





Fish meal

Fish oil

Wheat

30 years ago

INCREASE IN  
AQUACULTURE PRODUCTION FROM  
2018 - 2030

+ 26 million tonnes



+ 40 million tonnes

INGREDIENTS

These must be sourced responsibly,  
contributing to fulfilling the UN  
sustainable development goals

12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



13 CLIMATE  
ACTION



14 LIFE  
BELOW WATER



15 LIFE  
ON LAND



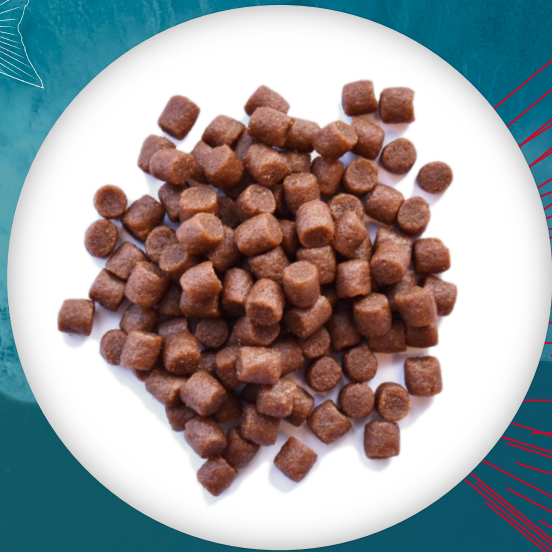
17 PARTNERSHIPS  
FOR THE GOALS



Source: FAO SOFIA Report 2020



Today



Soybean oil

Rice

Up to 50 ingredients  
per feed

Functional ingredients

Potato starch

Distillers grains

Tapioca starch

Linseed oil



Deforestation



Water use



Arable land



Pesticides



Carbon emissions



Fertilisers

NOVEL  
INGREDIENTS  
USAGE

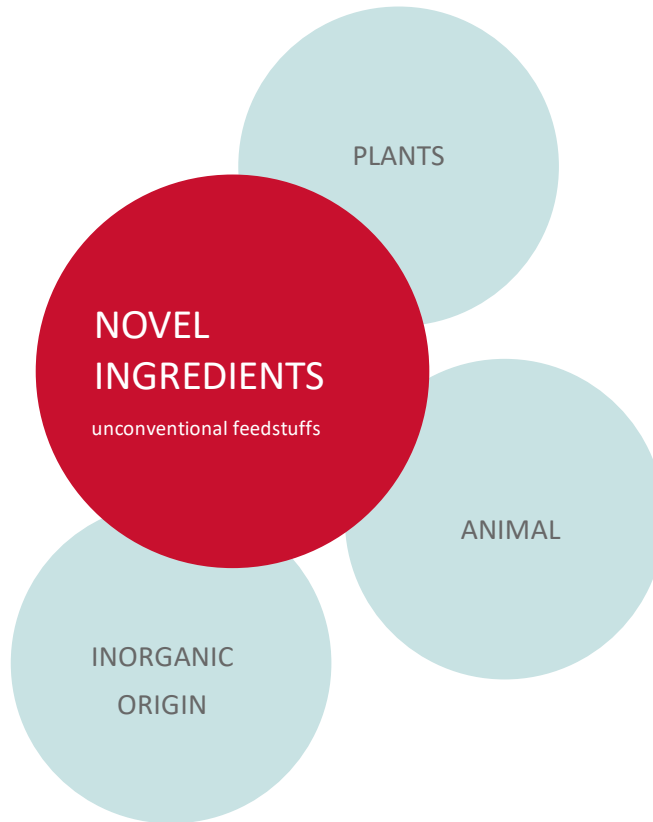


Reduction

ENVIRONMENTAL OR SOCIAL  
FOOTPRINT OF TRADITIONAL  
INGREDIENTS

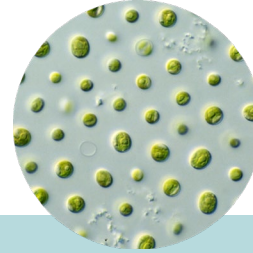
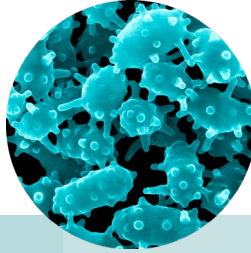
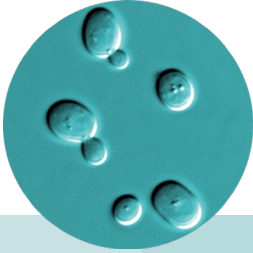


## What do we mean by 'novel' ingredients?



They **provide nutrients** using **less environmental or social footprint** than traditional feed ingredients

## What characterises novel feed ingredients?



**The valorisation of food waste** streams from the human food industry into nutritious ingredients



**Protein, fat and other nutrients produced from single cell** organisms such as; bacteria, yeast, algae, plus also insects



**Plants and single cell organisms that can be modified** to produce valuable nutrients

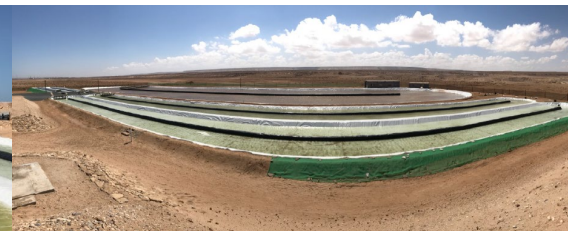


**The feed stock for the production of a novel ingredient can come from a variety of different sources**, such as human food waste streams and by-products from other primary industries





## MICROBIAL PROTEINS



### Skretting testing Unibio's novel SCP, with purchase contract potential prize

By Jane Byrne

07-May-2020 - Last updated on 07-May-2020 at 13:10 GMT



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POST A COMMENT



RELATED TAGS: Single cell protein, shrimp, Saudi arabia, Russia

Danish single cell protein innovator, Unibio, has announced collaborative engagement with leading fish feed producer, Skretting.

Skretting is to begin testing Unibio's novel protein, Uniprotein, as a feed ingredient for fish and shrimp feed.



### FEEDING FISH THROUGH CO<sub>2</sub>

**CO<sub>2</sub> AQUAFEED** is a revolutionary new form of feed that is produced through carbon capture and transformation.

## KIVERDI





Thank you