



Innovating for successful CAS production

BEAF 2024, Abu Dhabi, Sissel Susort, Global marketing manager, CAS

We are pioneers!



Established 1899



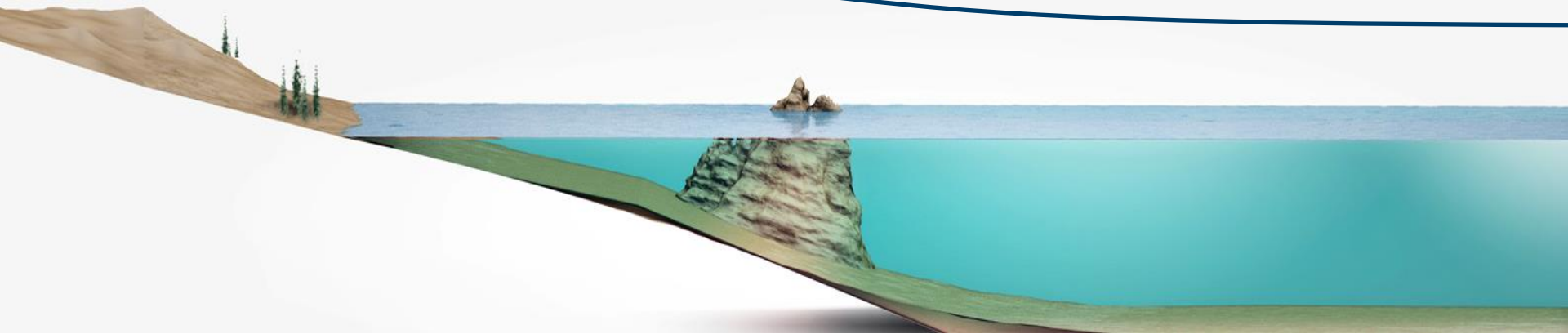
1960: First Trout trial



We are innovators!



Conflicting interest in
the coastal zone



First Water, Iceland



Andfjord Salmon, Norway



Fish Globe, Norway



CAS / RAS

Gigante Seafood, Norway



Hima Seafood, Norway



Nordiq Aqua, China



Proximar, Japan



Atlantic Sapphire, USA



The Kingfish company, Netherlands



Why RAS? (Recirculating Aquaculture Systems)

Feeding a
growing
population

Stagnated
growth in
traditional
(salmon)
farming

Saving freight →
cost competitive
+
CO2 reduction

Can be done
“anywhere”

1

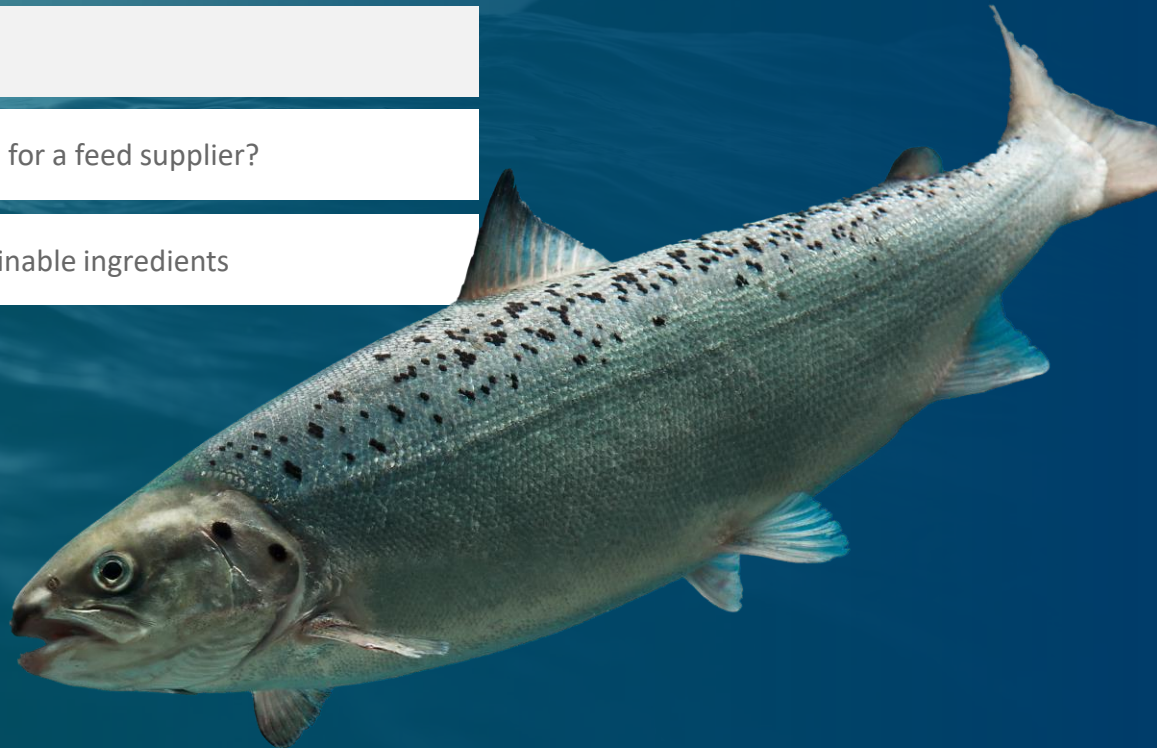
What is the main challenge in CAS farming?

2

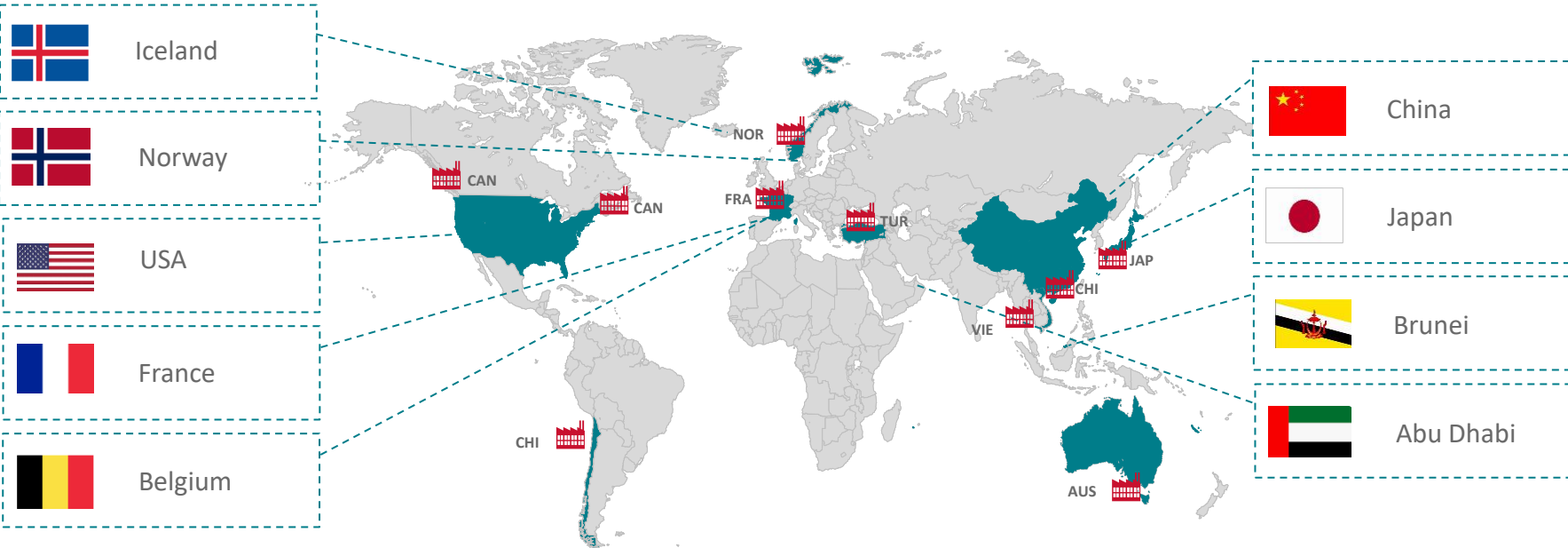
How does CAS production change the focus for a feed supplier?

3

CAS growth will increase the need for sustainable ingredients



Global projects build global experience



The five biggest challenges of RAS production

2021

(n=46, 20 in production)

Early maturation

Water temperature/water ozonation

Technical stability of the RAS

equipment

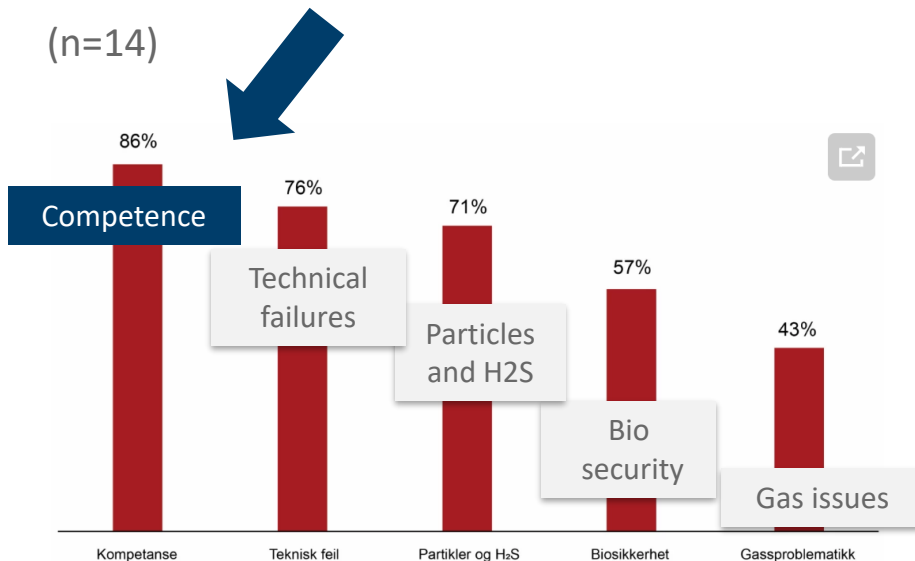
System management

Scaling of biofilters

The five biggest challenges of RAS production (fishfarmingexpert.com) 15.
April 2021

2023

(n=14)



Figur 2: De fem viktigste risikofaktorene i landbaserte oppdrettsanlegg (n=14).

[Fem store risikoer i landbasert oppdrett \(landbasedaq.no\)](https://landbasedaq.no) LandbasedAQ nr 4, 2023 - risiko i landbasert oppdrett

Sustainable aquaculture - criteria for success

Technology

Capital

Regulatory framework

Management

Market

KNOWHOW



Knowhow/
Experience!

Some lessons learned:

Good capacity for feed addition and gentle feed handling!

Do not choose equipment and solutions that destroy the feed!

Provide space around the facility for trucks

- both for feed in and fish out

Extended sustainability/quality goals that limit operations can be expensive

Calculate with buffer in the production plan

There will be delays and high densities are not good for fish welfare

Monitor fish quality and welfare and take measures quickly if needed

Think gentle slaughter and fast processing!

3 years of production can easily be destroyed.

It can be tempting to save cost during the construction phase, but bad ones can cause extra cost, bad reputation for a long time and can be very expensive to fix!

1

What is the main challenge in CAS farming?

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Skretting is a fish feed
company..!

But..

A large, circular graphic composed of a dense field of small, brown, spherical fish feed pellets, set against a white background. A dark blue circle is overlaid on the right side of the pellets.

Knowhow/
Experience!

CAS – Value proposition



CAS specific feed



Digital solutions



Logistics



Advice & collaboration



Feeding equipment



Fish quality program



Fish health



Investor relations



Sustainability



Sludge handling

Customer driven best practice implementation

RCX











[Click here](#)

Link to the RCX
short video (1
min)



A new standard in RAS feed

	Optimal nutrition 	Higher energy 	Anti fat leakage 	Faecal stability 	Unique quality standards 	Limited formula variation 	Extended quality control procedures 	RCX certified factories 
Non RC feed	✓	✓	✓					
RC feed	✓	✓	✓	✓				
RCX feed	✓	✓ <small>* Under Development</small>	✓	✓	✓	✓	✓	✓

Importance of quality standards



Reduced
dust and fines



Reduced **risk**
of fat leakage



Improved
water stability



CAS – Value proposition



CAS specific feed



Digital solutions



Logistics



Advice & collaboration



Service team



Fish quality program



Fish health



Investor relations



Sustainability



Sludge handling

Customer driven best practice implementation

Skretting - long experience in Fish quality service – expand to CAS



FISH
Quality

1997



2024



Skretting - long experience in Fish quality service – expand to CAS

Pigment
Visual Color

Fat
Fatty acids

Biometrics



Follow up fish quality along
the production

Cost-efficiently to
the right quality

Gather and connect data
globally to get insight

1

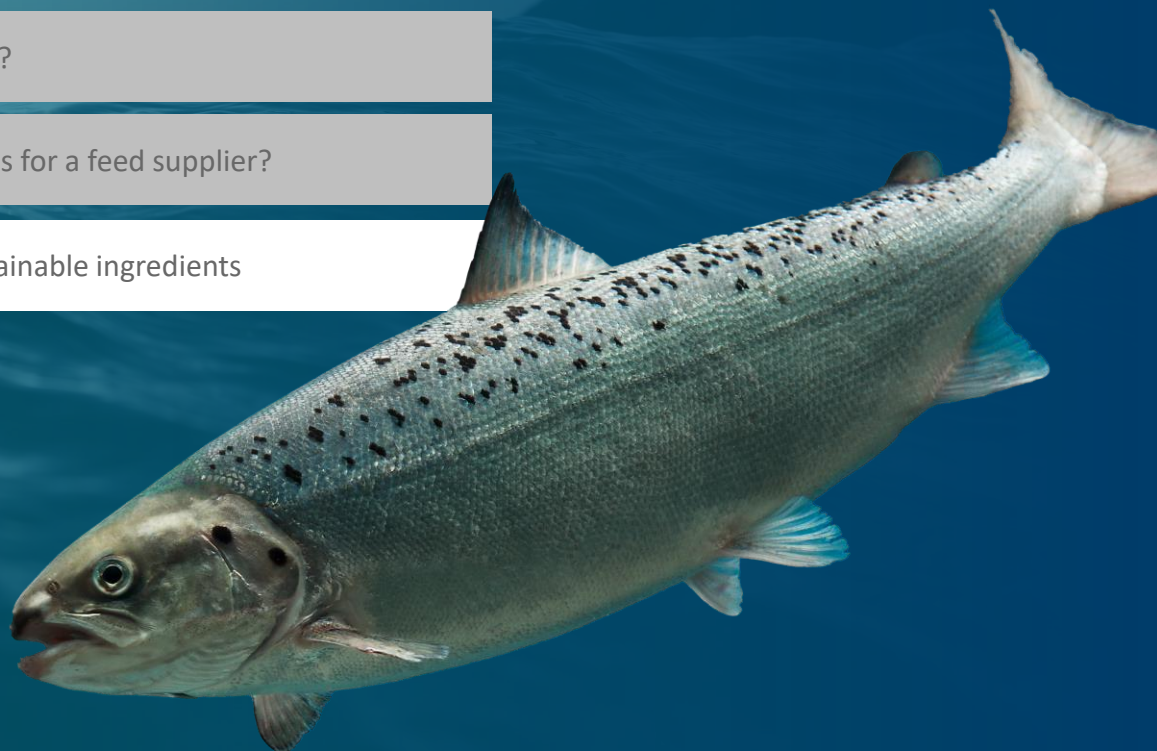
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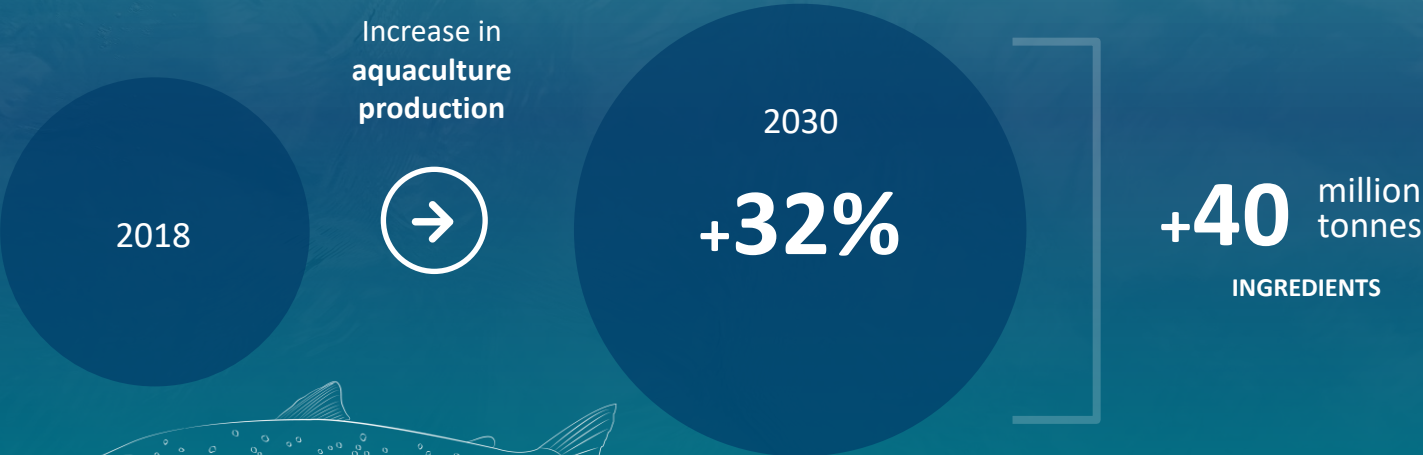
How does CAS production change the focus for a feed supplier?

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CAS growth will increase the need for sustainable ingredients



We need to find more ingredients to support the expected growth



Source: FAO SOFIA Report 2020



Disclosing absolute
volumes of fishmeal
and fish oil



Increasing
the use of
by-products



Certified
ingredients

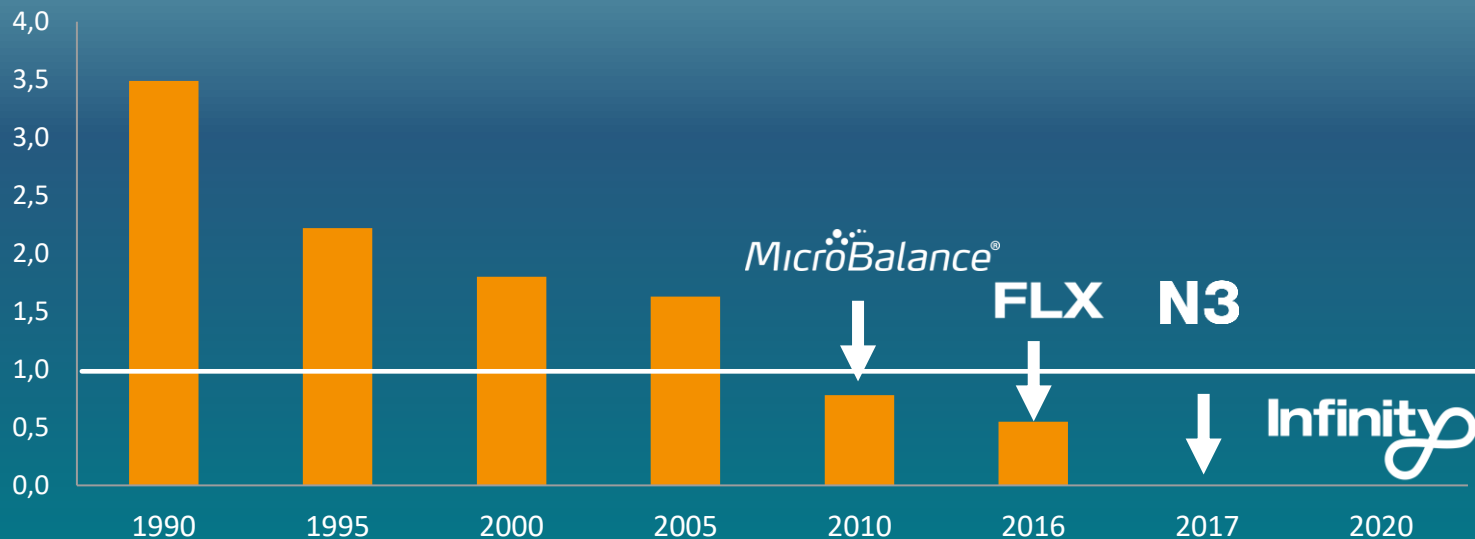


Last 30 years

Goal 14:
Conserve and
sustainably use the
oceans, seas and
marine resources



Dependence on marine ingredients (salmonids)

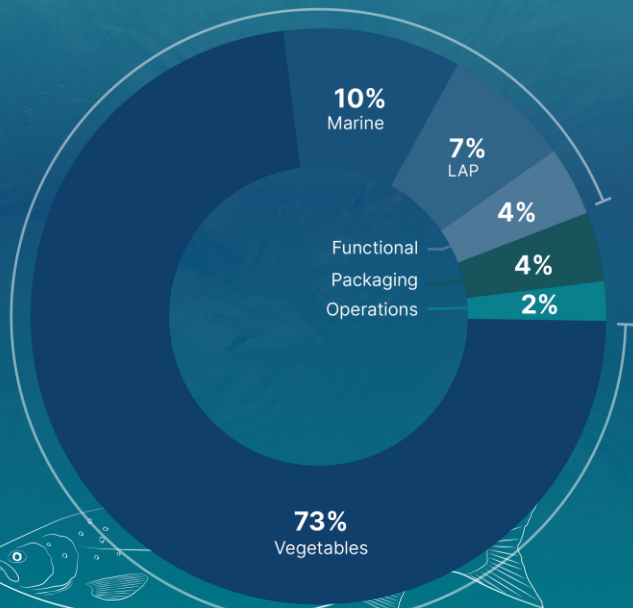


94% of our carbon footprint comes from the ingredients (Scope 3)

Skretting only data

**Total
carbon
footprint**

94%
of total



Supplier engagement



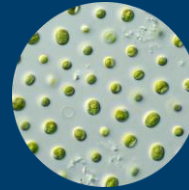
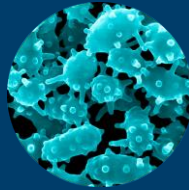
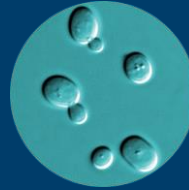
Change to lower carbon ingredients



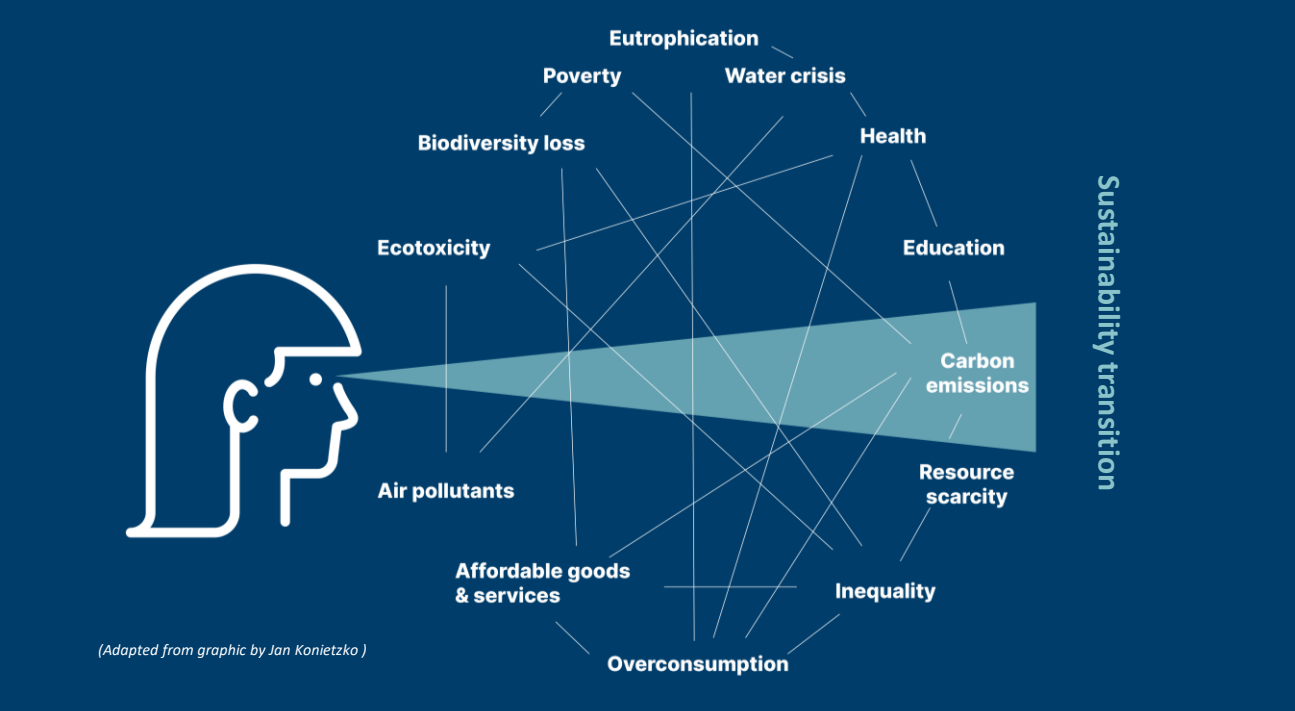
Minimise land use change



Increasing the use of
alternative feed
ingredients

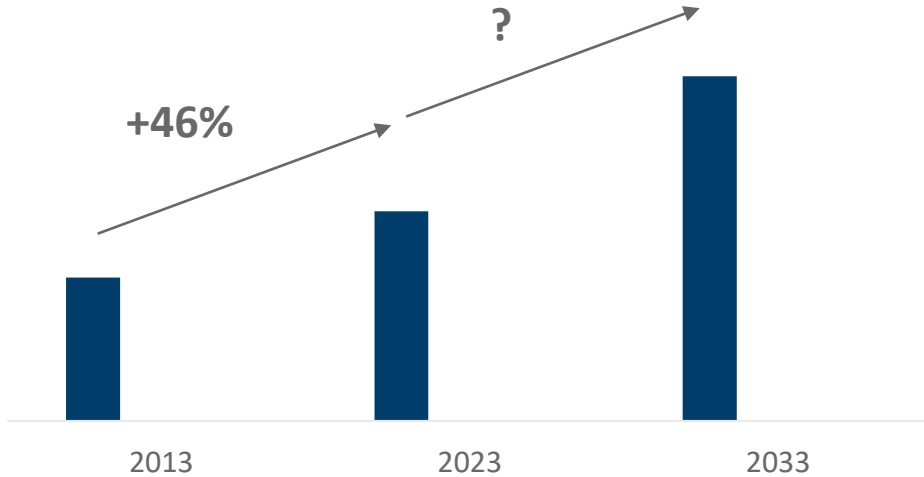


Carbon Tunnel Vision





Industry challenge



Remove self-imposed restrictions

More R&D to increase flexibility in the diets

Circular economy

Novel ingredients

We are part of the solution!



Sharing of
knowledge!