



SCIENCE AND
EDUCATION **FOR
SUSTAINABLE
LIFE**

Fish farming in Sweden: current status and future prospects

Markus Langeland

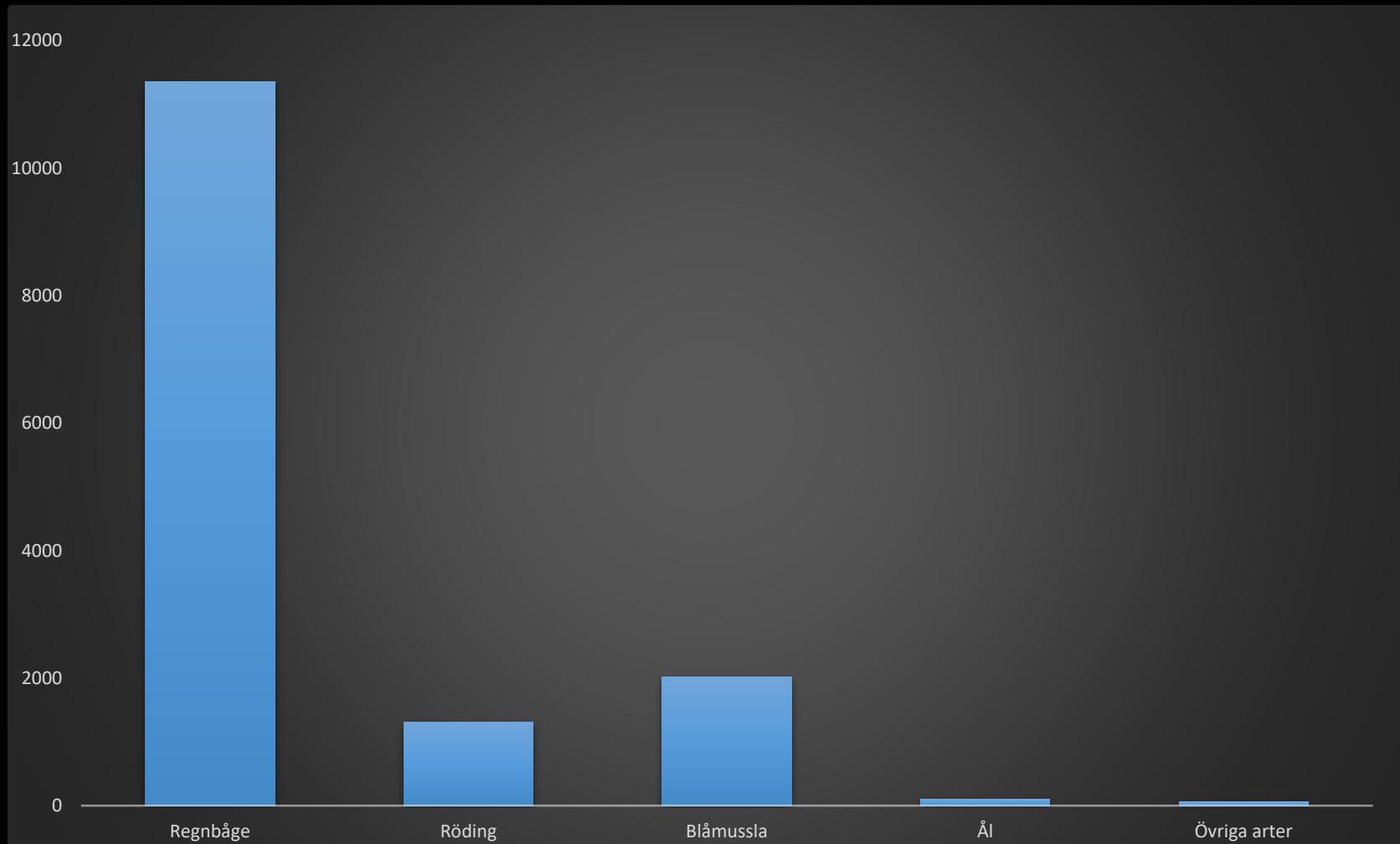
Dep. Animal Nutrition and Management, SLU & Swemarc, Gothenburg University





Photo: Daniel Wikberg, Matfiskodlarna

Produktion av matfisk och blåmussla, 2017 (SCB, 2019)



73%

of the Swedish consumers wants to buy Seafood of Swedish origin
Only 31% does

~85%

of the Swedish Rainbow Trout production is exported

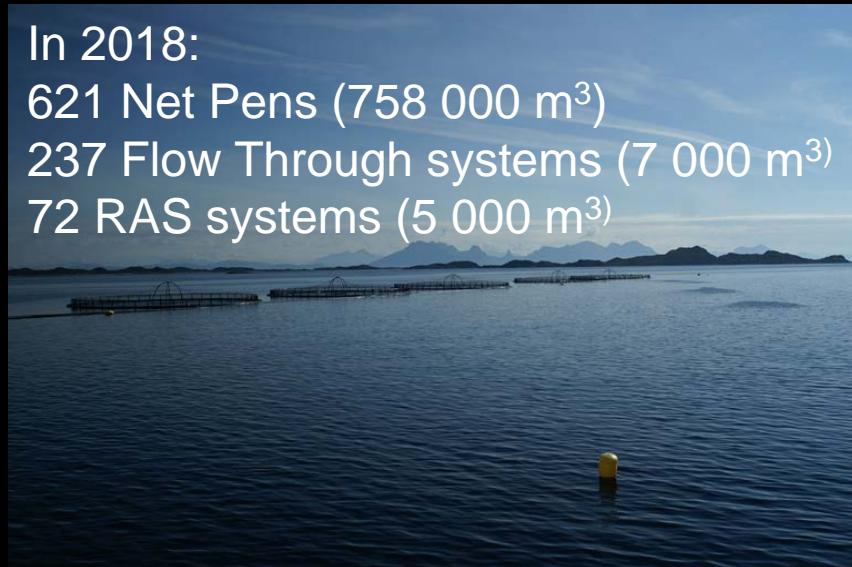
Production systems

In 2018:

621 Net Pens ($758\ 000\ m^3$)

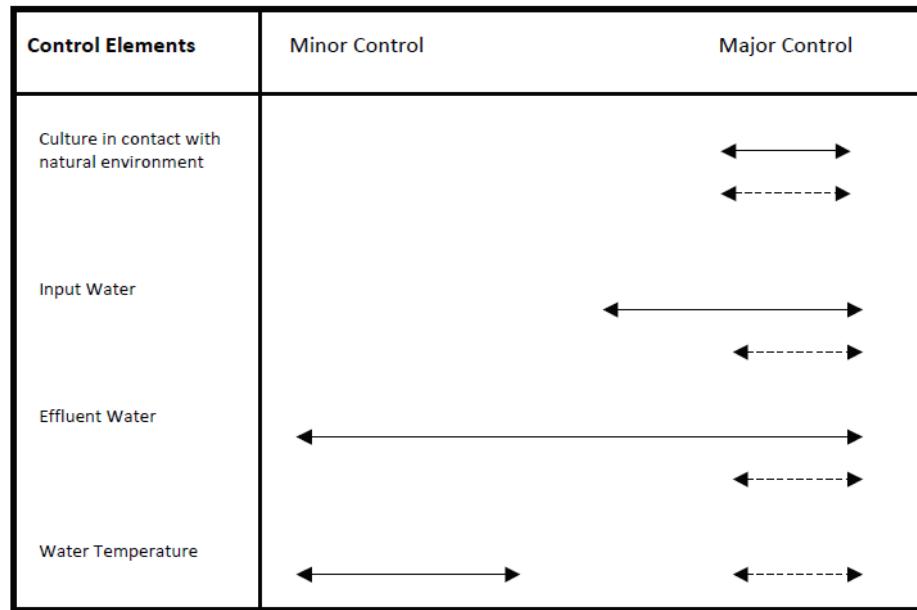
237 Flow Through systems ($7\ 000\ m^3$)

72 RAS systems ($5\ 000\ m^3$)

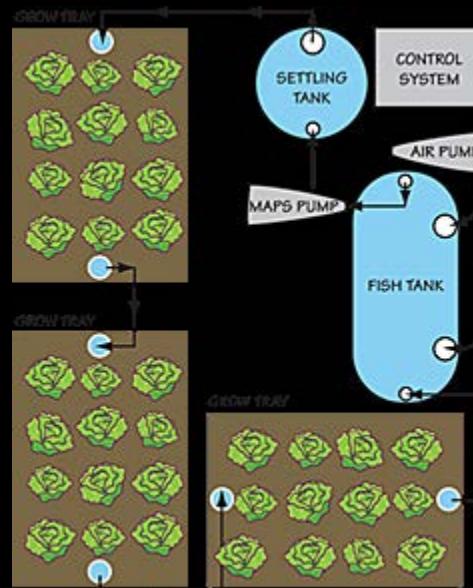


Production systems, RAS (Recirculating Aquaculture Systems)

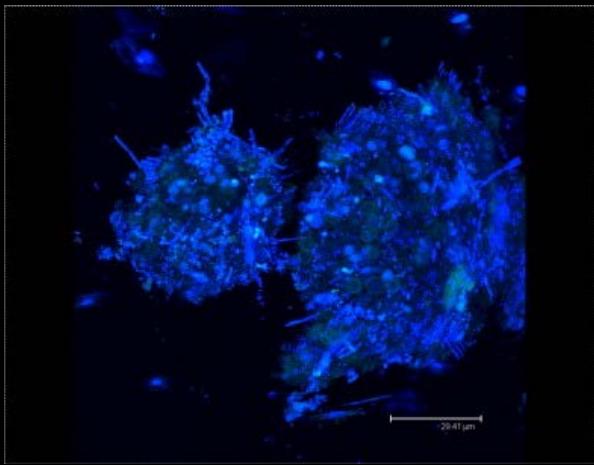
Figure 1: Generalized control elements in flow-through (↔) and Recirculating Aquaculture Systems (↔↔)



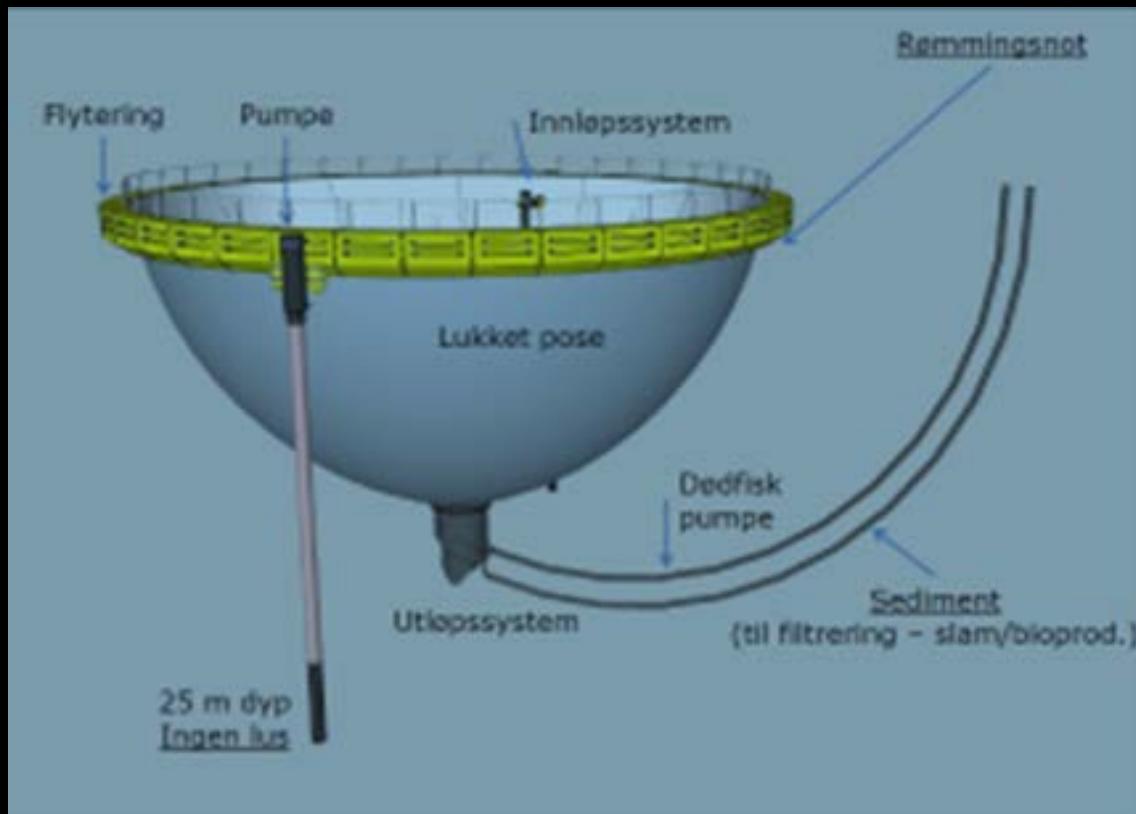
AquaPonics



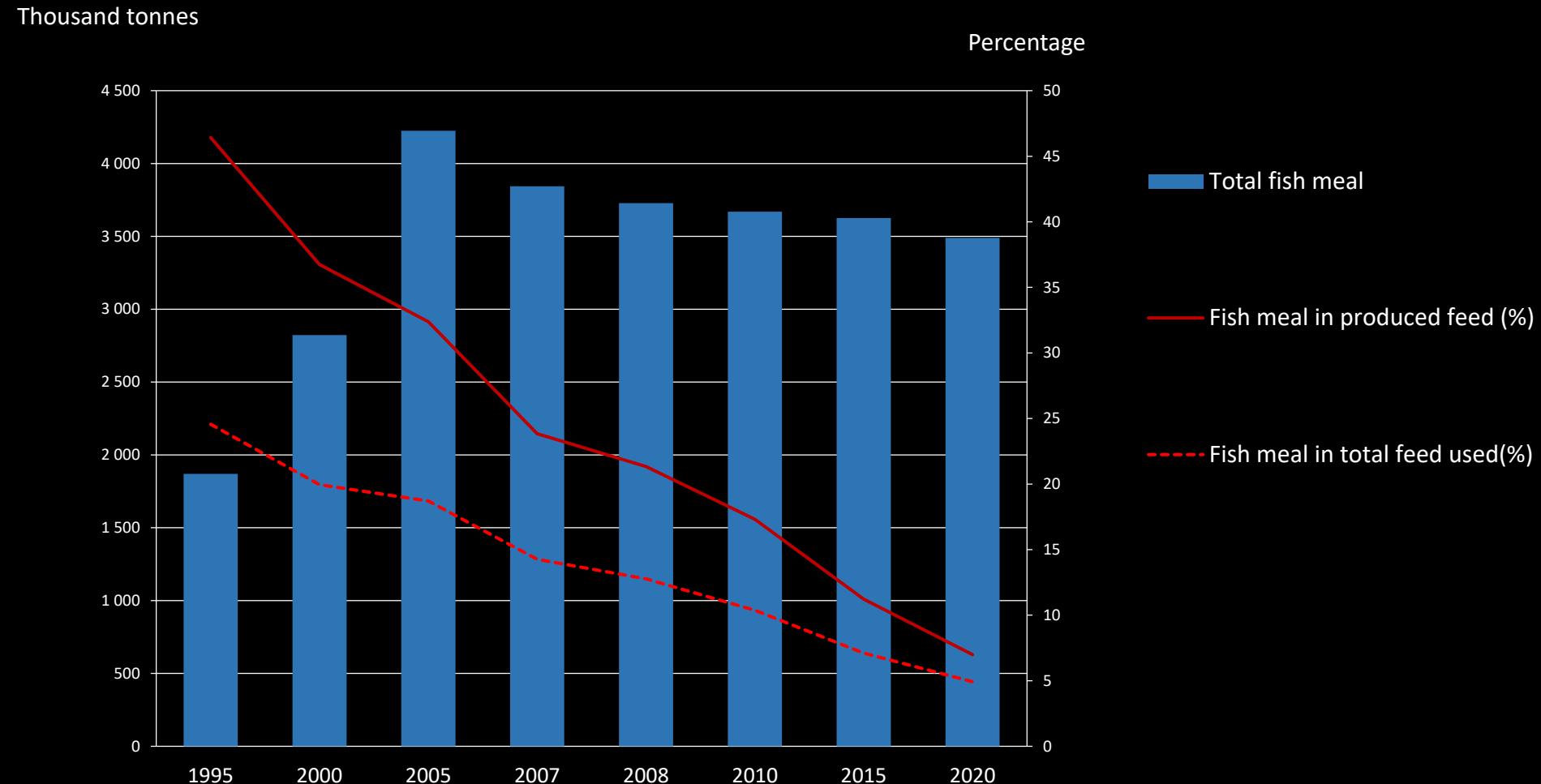
Biofloc – another approach



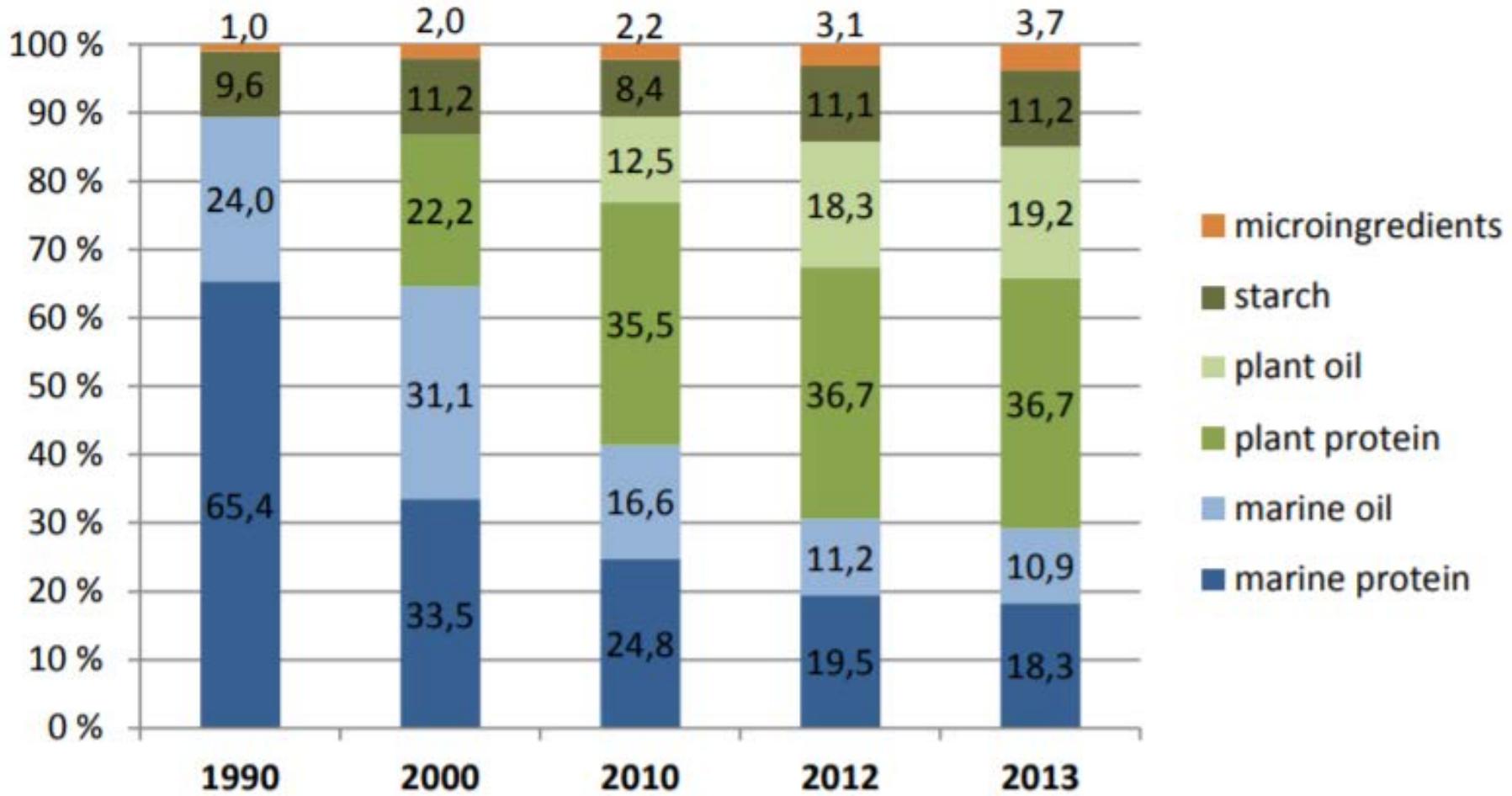
Production systems, Future



Total consumption of fish meal in aquaculture, and in relation to inclusion of fish meal in total feed produced and used



Diet composition (%) 1990-2013



44 Norwegian salmon farmers ditch Brazilian soy



You're all has-beans: 44 Norwegian salmon farmers are removing Brazilian soy from their feed formulation. Photo: Salmon Group.

The 44 Norwegian salmon farmers who make up the Salmon Group buying cooperative have chosen to remove Brazilian soy from their fish feed with immediate effect.

Wood-to-feed producer in Innovation Award final



Tree-mendous potential: Arbiom is a finalist in the GAA's Innovation Award 2019. Photo: Arbiom / GAA.

Alternative feed ingredient producer Arbiom has been named as one of three finalists in contention for the Global Aquaculture Alliance's Innovation Award 2019.



Alex Obach introduces Skretting's new Infinity feed at Aqua Nor. Photo: Fish Farming Expert.

Skretting serves sustainability on a plate

Skretting has served up a taste of the future to guests at Aqua Nor by presenting salmon raised for the last six months of its life on feed made without any fish meal or fish oil.

Author:  Gareth Moore

The fish, harvested at 25 months, had been fed on Skretting's Infinity feed since February.

The healthy-giving DHA and EPA Omega-3 content that is normally derived from fish ingredients in the feed was instead provided by algae meal and algae oil.

Alex Obach, managing director of Skretting Aquaculture Research Centre, said the feed was the product of research that began in the 1990s.

He said trials of fish grown on three separate diets – fish meal/oil, vegetable protein and algae, and animal proteins and algae – showed no negative effects of what he referred to as "zero-zero" diets (no fish meal or fish oil).

Obach said samples tested by Nofima showed small variations of the attributes of the fish but they were well within the normal range.

Infinity feed is available from Skretting in relatively small quantities now but the company is intending to scale up production as larger quantities of algae products become available from a \$200 million factory being built by Evonik and DSM in Nebraska, USA. That is expected to happen by 2019.

DN Åsikt

DN Åsikt. "Vägra äta giftig norsk industrilax"

UPPDATERAD 2019-09-23 PUBLICERAD 2019-09-19



Norsk industriodlad lax. Foto: Terje Bendiksby/TT

INSÄNDARE. Vägra att äta norsk industrilax. Den innehåller stora mängder gift och laxodlingarna är en katastrof för havsmiljön, skriver Christer Nilsson.

Thank you for your attention

Markus Langeland
Markus.Langeland@slu.se
+46 18 67 21 00
+46 736 26 10 60

