



# Status Q4- Report

## December 2018

# Key figures Q4



**18,5 MNOK**  
**49 seafood participants**  
**20 women in**  
**Innovation network**



**12,2 MNOK**  
**3 events**  
**10 projects**



**6 start-ups**  
**2 new partnership**

# Highlights Q4



## Knowledge:

- 1,5 MNOK funding for development of new education and business programs on RAS/closed/semi-closed systems
- 17 MNOK to enhance regional innovation support capacity to increase long-term innovation levels and support smart specialization strategies in the ocean industries
- 29 Seafood trainees from 16 companies, 3rd program started
- 20 Seafood MBA, second group, 2nd program started
- 20 young females in new innovation network



## Innovation:

- 1,2 MNOK funding in Ocean Technology & Knowledge together with GCE Subsea
- 11mNOK in Havpilot, Innovation Norway with Grieg Seafood/AquaCloud
- Participation with Cluster start-ups Aquaculture Innovation Summit i London
- Developing 2 EU project total value of 18 million Euro
- Watson Discovery, using AI for new insights in 1000 reseach publication on sea lice.



## Entrepreneurship/Supplier development:

- 6 international start-uHATCH accelerator program in Ireland
- New partnership with Katapult Ocean, new tech accelerator in Oslo
- New partnership with Norcelab, Norway's leding Tech-powerhouse

# PARTNERMEETING: New Cluster Strategy to be launched



**REGISTRATION:**  
[post@seafoodinnovation.no](mailto:post@seafoodinnovation.no)

**When:** Tuesday 22. January 2019  
**Time:** 14:00 – 18:00  
**Venue:** Lanternen, Thormøhlensgate 51B

Exclusive tour at the new venue!  
Lerøy and Cargill open up their new offices for us.

Save the date!



# Young Female Innovation Network

## «Vest ut og fram»



Knowledge

- «Vest ut og fram» has received funding NOK 800.00,- from NFR to create a women network to strengthen more female R & D managers in the seafood industry.
- In the project the target is to assemble at least 20 young and aspiring women in the seafood industry, that would like a career within research, development and innovation. The program will focus on the cooperation between academia and industry.
- The impact of the women network will be increased innovation projects led by women in our region. This will increase the competitiveness and sustainable growth to our partners, and increase the share of women in leading positions.
- The program will last for one year and will contain professional presentations, company presentations, a study trip abroad and networking. The program is free of charge for the participants.



Photo: Workgroup, from left: Annette Stephansen (NORCE), Katinka Bratland (BTO), Mona Leirgulen (BTO) og Marit Eggen (HVL).

### Partners:



# Funding of 1,5 MNOK achieved for establishment of new education programs in RAS/closed/semi-closed systems



Knowledge

- The Cluster has contributed to the Policy plan Hordaland County's [«Regional plan for kompetanse og arbeidskraft»](#)
- Based on an interview with Cluster members, there was a need to re-design the educational programs in vocational technical colleges.
- Together with Cluster projects «KABIS», OINC (Ocean Innovation Norwegian Catapult), Western Counties and Vocational schools, we have set an ambition to develop new and more updated educational programs for the industry, including Continuing Education and Professional Development within new production methods.
- Achievement of 1,5 MNOK funding from Hordaland County, Sogn og Fjordane County, Rogaland County, Møre og Romsdal County.



## 29 Seafood Trainees started in the 3rd Program



Knowledge

- The Seafood Trainee program increases the reputation of the seafood industry, and becomes more attractive for the best candidates. The industry is constantly becoming more knowledge-intensive, and will need new skills to increase innovation, growth and sustainability. The program establishes itself as a career portal for companies.
- In total 54 Seafood Trainee has graduated from the Cluster's Seafood Trainee program since the start in 2016.
- September 2018 was start-up of Seafood Trainee, group #3
- 29 candidates from 16 different companies met for the first time in Bergen in September.
- A new web-page has been launched, and a road-trip to Universities has been planned to attract the best students to the program.



# RIGHT skills for the RIGHT future

-supporting Blue Innovation and Education in Europe



Knowledge

- 17 MNOK to enhance regional innovation support capacity to increase long-term innovation levels and support smart specialization strategies in the ocean industries
- The aim of the project is to maintain the competitiveness of business by developing skills for the future labor market in the blue industries and the energy industry
- The project is a part of EU's INTERREG Nordsjøprogram.
- The Hordaland County is projectleder and 14 partnerorganisations from 7 countries are participating
- 21. November, the project was kicked-off i Bergen and will last for 3 years
- The Seafood Innovation Cluster's role in the project is to define and develop education programs and skills to be developed in this program



Photo: HFK, Kick-off



# 20 MBA students in 2nd program Executive MBA in Seafood Management

- 20 participants is attending the 2<sup>nd</sup> program of the Executive MBA in Seafood Management, initiated and established by the Cluster.
- This year's participants are from USA, Panama, Chile, Island, UK, Belgium and Italy.
- The Executive MBA students in seafood management had their first meeting in Bergen in November. The module had the seafood industry in a global context as subject. The participants had case assignments and worked on their MBA theses in addition to different lectures among others Professor Frank Asche and Rector NHH, Professor Øystein Thøgersen. They traveled to Austevoll, and visit a salmon farm. Finally the group had a nice dinner at Bekkjarvik Gjestgiveri with award-winning chefs Ørjan and Arnt Johannessen.
- Next module will be at business school HEC Montreal in May and cover Strategic analysis and sustainable business models.



Knowledge

NHH



Norwegian Centres of Expertise  
**NCE Seafood**  
Innovation Cluster

# Cluster student intern graduated with highest quality



Knowledge

- This autumn, our intern has been Shazma Viktoria Juriks (23). She is currently completing the final year of her bachelor degree in Marketing Management at BI Norwegian Business School, in Bergen. This semester Shazma has worked with Benedicte Skogen developing a new Seafood Trainee website together with a marketing- and communications strategy for the program.
- *“I have been given important and real insight into the industry's current, and future opportunities and underlying challenges. One of the most important factors for growth in the industry is knowledge and expertise and students and graduates are an important recourse for the industry. Therefore it s essential that they are informed early on, about their career opportunities and benefits of being a part of such a future-oriented industry, ”*, says Shazma Juriks.
- We congratulate Shazma with her excellent results



# Using AI for new insights from over 1000 science articles on SeaLice



Innovation

- In connection with AquaCloud platform, The Seafood Innovation Cluster together with IBM the Veterinary Institute and the Sea Lice Research Centre are developing an AI project for more than 1000 scientific literature articles on Sea lice aiming to catch faster the existing insights, to find a new or deeper insights not extracted today.
- PhD intern, Patricia Apablaza from The Seafood Innovation Cluster is leading the IBM – Watson Discovery Sea lice project. Patricia is veterinarian and has PhD in fish health at the University of Bergen. Patricia has been also working in connection with aquaculture in Norway in positions at Nofima, MSD and Cermaq.
- Watson Discovery may also be applied to research publications in other relevant fish pathogens impacting fish farming, as salmonid alpha virus, yersinia and flavobacterium. Extensive research is ongoing worldwide on these pathogens resulting in large amounts of papers available.



Photo: PhD intern, Patricia Apablaza

# Camera based SeaLice monitoring



Innovation

- The Seafood Innovation Cluster has initiated a project with new Innovative Tech companies working on camera-based monitoring and counting of sea lice.
- The project will include mapping of analytical technology, AI or other types of technology, as well as the camera systems itself.
- The Goal of the project is to map the TRL (technology readiness level) of different solutions together with a road-map on speeding up innovation on automatic sea lice counting.
- Project Activities:
  - Dialogue meeting/workshop
  - Competence brokerage and mapping of technology
  - Technology Readiness Level (TRL) report



Photo: From workshop



# Exploring new business opportunities in the BioEconomy

- Increased interaction between the blue and green sector is crucial to reach the ambition of a multiplied increase of value creation within bioeconomy in Norway. This is the reason why the four national industry clusters in green and blue food Clusters invited to the workshop “Land møter hav”.
- The aim of the workshop was to increase interaction across blue/green value chains necessary to trigger the growth potential for sustainable value creation that lies in the Norwegian bioeconomy.
- “Land møter hav” will be arranged annually and was organized for the first time 7 November 2018 in Hamar Kulturhus. The conference will take place in Hamar, Bergen, Ålesund and Tromsø, based on the headquarters of the four industrial clusters; Blue Legasea, Heidner BioCluster, Biotech North and NCE Seafood Innovation Cluster.
- Digitalization and sustainable resource utilization was key topics at the first conference. The event included presentations, workshops, discussion boards and panel debates.



Innovation



# Ocean Innovation Catapult (OINC) - new national test, simulation and visualization center



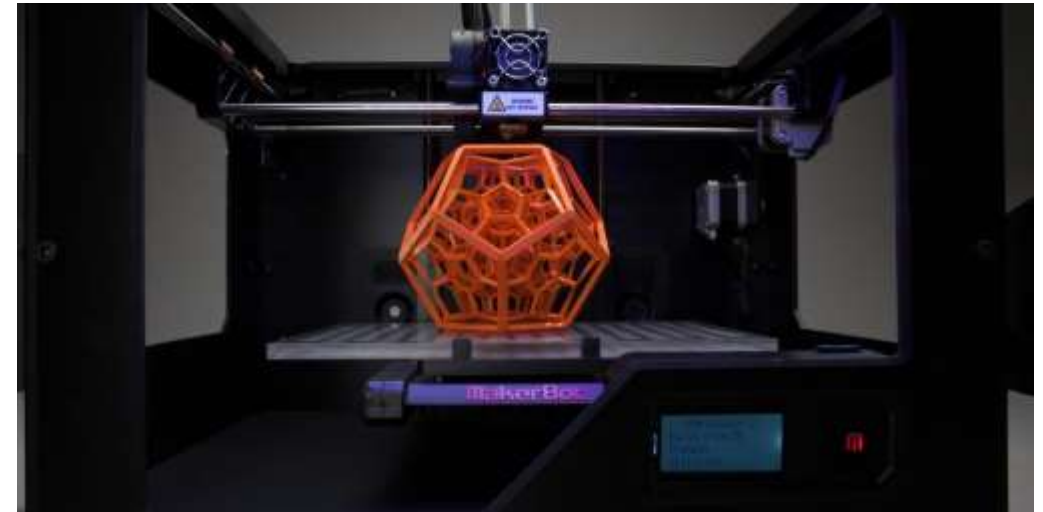
Innovation

- The Seafood Innovation Cluster is today an owner of a state of the art test center for innovation.
- Ocean Innovation Catapult has received 40mNOK in funding from SIVA.
- Ocean Innovation Norwegian Catapult Center will build and offer world-leading expertise and infrastructure to accelerate growth and sustainable development in the ocean industries.

Key membership services:

- Both in 3-D additive production and RAS technology, courses and competence programs will be developed for new educational pathways, new and post-graduate training of operators, skilled workers, and engineers, in order to exploit the new potential technologies.

Read more: <https://oinc.no/english/>



# Ocean Technology & Knowledge

-Tech-collaboration with GCE Subsea



Innovation

- Subsea meets Aquaculture recently received 1,2 MNOK in funding for Phase 3 Project from Hordaland County.
- The project will strengthen the knowledge transfer and cross-industry opportunities between companies in these industries.
- Phase 3 of Subsea Meets Aquaculture will host innovation challenges as a main feature to realise the ambition, which will unlock collaborative potential. Innovation Challenges bring together groups of companies from both industries and subject matter experts, whom would otherwise not interact with the aim to transfer knowledge and technologies to create the next-generation seafood solutions.
- Selected challenges from the seafood industry will be presented to cluster members, and we are really looking forward to take part in the energy, state of the art knowledge, and fun that lie in solving real-world challenges and creating new business opportunities.
- The project is a joint effort between NCE Seafood Innovation Cluster and GCE Subsea and will start in November 2018. Deloitte will continue to facilitate the project.
- [Read more](#)



Photo: GCE Subsea



# Sustainable Seafood at the top of the European Innovation Agenda



Innovation

The Seafood Innovation Cluster is recognised as a trusted leader for sustainable aquaculture in Europe and together with our partners from the [Blue Tech Cluster Alliance](#), we have brought together Europe's top ocean innovation and science leaders to discuss how we can work together to deliver on the potential of the emerging ocean industries better using science.

- **AquaMare**, the Norwegian aquaculture and Blue Biotech cluster network met in Oslo to discuss how to position aquaculture at the top of the European Innovation agenda and increase return to the Norwegian industry partners. [Read more](#)
- **JPI Oceans. The Cluster is a part of the National Reference Group, appointed by the Norwegian Government.** The Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans) is an intergovernmental platform for marine and maritime research and technology development in Europe. [Read more](#)
- **Oceans on the EU Innovation Agenda.** GCE Subsea and NCE Seafood led a strategic Ocean Rountable discussion in Brussels to place the oceans at the top of the European innovation agenda. [Read more](#)





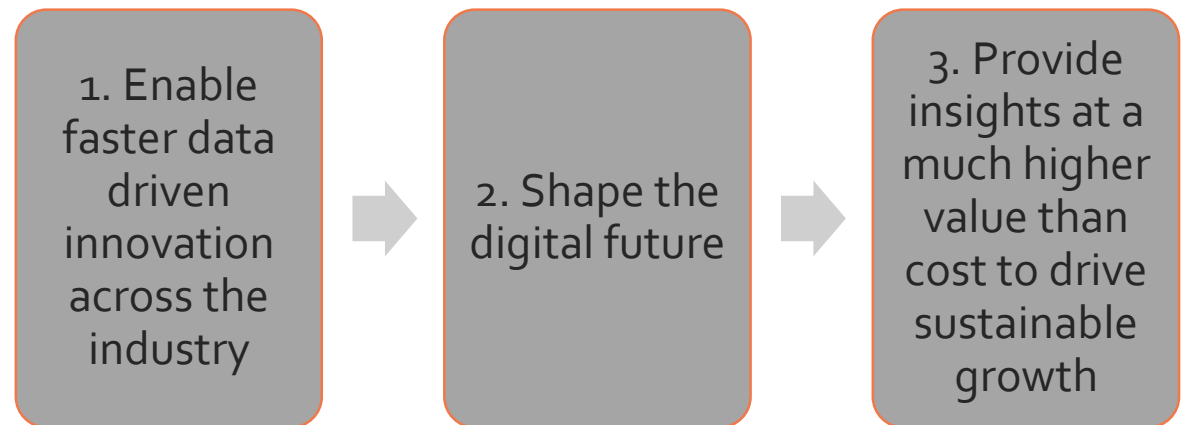
# From a cluster project to the leading data driven aquaculture innovation platform



Innovation

- Deloitte has presented a view on how AquaCloud can be transformed into to an independent innovation platform.
- The work started October 2018 initiated by the Board of Directors and administration in TSIC and has been supported by Cluster Partners Deloitte AS (strategic evaluations) and Advokatfirmaet Thommessen AS (legal input).
- Key resources from the Cluster community have been interviewed, and taken part in shaping this report.
- The TSIC's board of directors will decide on the future of AquaCloud in their board meeting December 14th 2018.

AquaCloud



# Partnership with Tech Powerhouse



Entrepreneurship

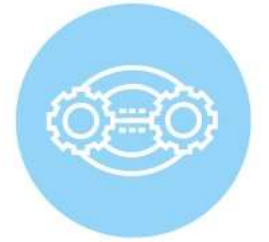
- The Seafood Innovation Cluster has partnered up with Norselab, Norway's leading co-founder for meaningful technology startups.
- Norselab has Aksel Lund Svindal as one of the lead investors. [Read more in DN Gründer](#)
- Norselab has since 2000, grown to become a powerhouse for disruptive tech ideas, creating several companies with clear purpose and real-life impact. [Read more](#)
- The Cluster will be partnering with industry challenges, and challenge Norselab start-ups on solutions that create value to our business partners.



Norselab-mangement team, investor and Board member Aksel Lund Svindal (t.v.), Adm. Dir Kjetil Olsen, founders Christian Lundvang and Yngve Tvedt (t.h.). Foto: Fredrik Bjercknes (Foto: Dagens Næringsliv)

## NORSELAB

# New innovation partnership with Katapult Ocean - to promote tech start-ups in Aquaculture



Entrepreneurship

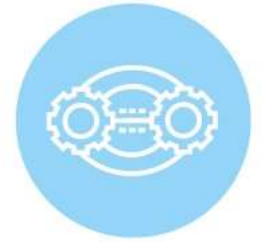
- We are excited to announce a new innovation partnership with Katapult Ocean on innovative solutions from start-ups to a fast growing aquaculture sector.
- For NCE Seafood Innovation Cluster, Katapult Ocean will strengthen our efforts in supporting young professionals and drive innovation to increase sustainable seafood production.
- Katapult Ocean will invest and gain access to further capital for future investments in the fast growing sector of aquaculture.
- In January, 12 start-ups from around the world will gather in Oslo for an intense 3-month program focusing on growth and positive impact. The start-ups will cover various ocean industry segments, including aquaculture, transport and subsea technology. Katapult Ocean is privately funded.
- Read more: <https://katapultocean.com/>



Katapult Ocean -management team, Maren Hjort (left) CEO and co-founder, Rikke Jørgensen, Ross Brooks, Jakub Pawlak and Ingrid Kylstad.

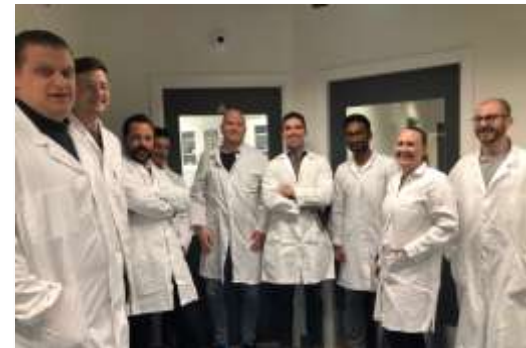
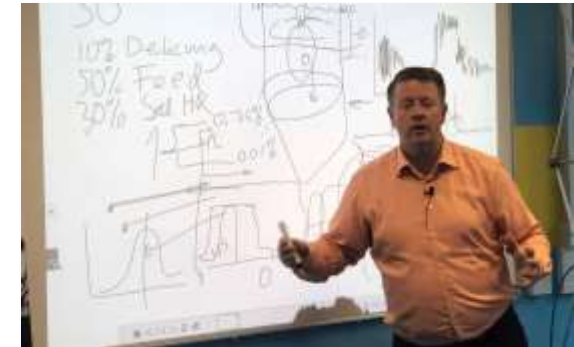


# HATCH, 6 new AquaTech start-ups in 2nd cohort



Entrepreneurship

- HATCH is a global Aquaculture Accelerator program. It is like an MBA for entrepreneurs and lasts for 3 months.
- Six of the world's highest-potential aquaculture start-ups was selected by HATCH to join the #2<sup>nd</sup> Accelerator program in Ireland autumn 2018.
- The tech-start-ups attending HATCH have a wide focus on feed, health, production and biology for new solutions for the global aquaculture industry. Attending from India, USA, Indonesia, Canada, UK and Chile.
- For two weeks HATCH was back in Bergen to meet and learn from our innovative business and R & D partners. The group got great presentations and 1:1 meetings with Thommesen, Grieg, Lerøy, Cargill, Pharmaq, Salmobreed, IBM, IMR and Nofima.



# Creating awareness of a sustainable seafood and aquaculture business

- Input-meeting with the Norwegian labour party. Focus on technology and innovation to support growth in the seafood industry.
- Sharing our collaborative efforts on innovation and digitalisation with the Maritime Sector at Digital Shipping.
- Podcast with Tekfisk.no, focus on digitalization and cooperation to achieve a sustainable growth with Cluster business partners Grieg Seafood and Lingalaks.
- Meetings with Europe's top ocean innovation and science leaders to set food from the oceans at the top of the European Innovation Agenda.
- Meeting with Norway's EU Ambassador on Sustainable Seafood.
- Meeting with Ministry of Trade, Industry and Fisheries – input for Norway's priorities for research and technology in the European Research & Strategy program, [JPI Oceans](#)



Photo: Meeting with EU ambassador Thierry Bèchet, together with Rector UiB and GCE Subsea



Digitalisation in Salmon Farming with Telenor, Havbrukskollektivet, Grieg Seafood & The Seafood Innovation Cluster Photo: Tekfisk.no



# New partners and members of the Cluster, Q4

## PARTNERS:

- [Deloitte](#)

**Deloitte.** **NORSELAB**

## MEMBERS:

- [Katapult Ocean](#)
- BioVivo Technologies
- [BioMar](#)
- [JET Seafood](#)



## PARTNERSHIPS:

- [Norselab](#)
- [Ocean Katapult](#)



# Meetings and events, Q4

<b>Oktober</b>	Meeting	AquaMare, national network for marine Clusters
	Meeting	Boardmeeting The Seafood Innovation Cluster
	Meeting	Seafood & UNESCO Gastronomi Global Network
	Presentation	Students Siv Ing program. Innføring i fiskehelse og havbruk
	Presentation	Innovation & Technology presentation to Labour Party
	Meeting	Meeting with French media on sustainable seafood
	Presentation	Responsible Innovation Conference, HVL
	Mentoring	HATCH Cohort, Ireland
	Meeting	Strategy meeting for the Cluster administration
	Event	HAVlunsj
	Meeting	Steering Group Meeting, Ocean Innovation Days
	Meeting	Steering Group Meeting, Ocean Innovation Show Room
	<b>November</b>	Meeting
Podcast		Digitalisation. Tekfisk.no
Event		HAVlunsj
Meeting		Boardmeeting, Storby Marin, network of marine cities in Norway
Meeting		Workshop, SFI iFishency
Meeting		Innovation Norway, Cluster management meeting
Meeting		NFR FORNY, board meeting
Meeting		Innovation Norway, International network
Program		MBA Seafood Management, group #2, first module
Event		Hav møter Land with BioEconomy Clusters in Norway
Presentation		Industry Forum, debate data ownership
Presentation		Lunch meeting - Tekna - Digitalization
Presentation		Digital Ship, sharing ex...
Meeting		NFD, National Reference Group JPI Oceans
Meeting		Steering Group Meeting, Ocean Innovation Days
Meeting	Steering Group Meeting, Ocean Innovation Show Room	
<b>Desember</b>	Meeting	Boardmeeting The Seafood Innovation Cluster
	Meeting	KD, Reseptretten til Fiskehelsestuderenter
	Meeting	Meeting with Norway's EU Ambassadeur



Foto: Hav møter land

# Upcoming events 2019

15  
JAN

## **SJØMATDAGENE PÅ HELL 2019**

15-16 January 2019

Sjømatdagene skal oppleves som den ledende arenaen for å sette den sjømatpolitiske dagsorden, samt at det skal presenteres en faglig nyhet relevant for alle de sentrale bransjeområdene i næringen. Ar...

16  
JAN

## **SEAFOOD TRAINEE MODUL 2**

16-18 January 2019

Den andre samlingen for Seafood Trainee kull #3 finner sted i Trondheim. Tema for samlingen er forskning og innovasjon.

17  
JAN

## **AqKva-KONFERANSEN**

17 January 2019

AqKva-konferansen vart Norges største havbrukskonferanse i 2018

22  
JAN

## **PARTNERMEETING: NEW CLUSTER STRATEGY TO BE LAUNCHED**

22 January 2019

We invite partners and members to Launch Party, Tuesday 22. January from kl. 14:00-18:00 at Marineholmen.

7  
FEB

## **2019 SDG CONFERENCE**

7-8 February 2019

The annual National SDG Conference Bergen was initiated by UiB and planned in dialogue with other Norwegian universities, the Ministry of Education and Research, and the Ministry of Foreign Affairs

5  
MAR

## **NORTH ATLANTIC SEAFOOD FORUM**

5-7 March 2019

Welcome to the 14th North Atlantic Seafood Forum March 5-7 2019 — The world's largest seafood business conference

7  
MAR

## **SEAFOOD INNOVATION DAY @NASF**

7 March 2019

As a part of the programme at NASF, we organize Seafood Innovation Day

3  
APR

## **SJØMAT NORGES ÅRSARRANGEMENT 2019**

3-5 April 2019

Generalforsamling og Årskonferanse 2019 avholdes i Trondheim

7  
MAY

## **SEAFOOD EXPO GLOBAL 2019**

7-9 May 2019

The global seafood marketplace

7  
MAY

## **SEAFOOD TRAINEE MODUL 3**

7-9 May 2019

Den tredje samlingen for Seafood Trainee kull #3 finner sted i Brussel og Paris. Tema for samlingen er markedsføring og salg.

5  
JUN

## **SEAFOOD TRAINEE MODUL 4**

5-7 June 2019

Den fjerde samlingen for Seafood Trainee kull #3 finner sted i Tromsø. Tema for samlingen er nye verdikjeder

