



Veterinærinstituttet
Norwegian Veterinary Institute

Facts & Figures Norwegian Veterinary Institute 2019





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Who we are

- The Norwegian Veterinary Institute is a research institute in the areas of animal health and welfare, fish health and welfare as well as food safety.
- A governmental institution since 1891, owned by the Ministry of Agriculture and Food. We also perform tasks for the Ministry of Trade, Industry and Fisheries.
- Our basic financial support comes from these ministries and the Research Council of Norway. Additionally, approx. 50 percent of our revenue comes from externally funded research projects and contracts.
- In 2020, the Institute's headquarters will move to Ås, 32 km southeast of Oslo.



Our values, vision and main objectives

- The Norwegian Veterinary Institute shall be scientifically ambitious, forward-looking and cooperative.
- Work for and contribute towards a sustainable agriculture and bio-economy using a ONE HEALTH approach with healthy food, animals, humans and environment.

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Our mission

- The primary function is supply of independent research-based knowledge support to the authorities.
- To identify and prevent threats to animal- and human health - One Health.



Key work in 2018

- The extensive efforts made to prevent MRSA being introduced to Norwegian pig herds have an effect. In 2018 no positive herds were detected in the surveillance program for MRSA in pigs.
- In 2018, there was an outbreak of salmonella infection in horses. The Norwegian Veterinary Institute analysed over 3000 samples from more than 100 different stables and clinics, and advised the Norwegian Food Safety Authority regarding how to handle the outbreak.
- More than 70 000 cervids have been tested for Chronic Wasting Disease (CWD) in the last 3 years. The Norwegian Veterinary Institute was designated as an OIE international reference laboratory for CWD in 2018.
- In 2018, a new system to regulate future growth in Norwegian salmon and trout industry, the so-called "Traffic Light System", was initiated. The Norwegian Veterinary Institute contributed with scientific experts and in the steering group.
- In 2018, the Norwegian Veterinary Institute took international initiatives to establish contact and increase cooperation with countries such as China, Mongolia, Ghana, Columbia, Myanmar and organisations such as FAO and OIE. The aim is to strengthen these contacts through specific activities in 2019.
- In 2018, the Norwegian Veterinary Institute co-authored more than 110 scientific publications within animal and fish health, welfare and food safety.

Key figures 2018

- 329 employees
- 122 employees with PhD
- 110 scientific articles
- 6 locations in Norway
- 40 nationalities among employees
- 194 000 analysed samples
- 405 MNOK in total income

Services

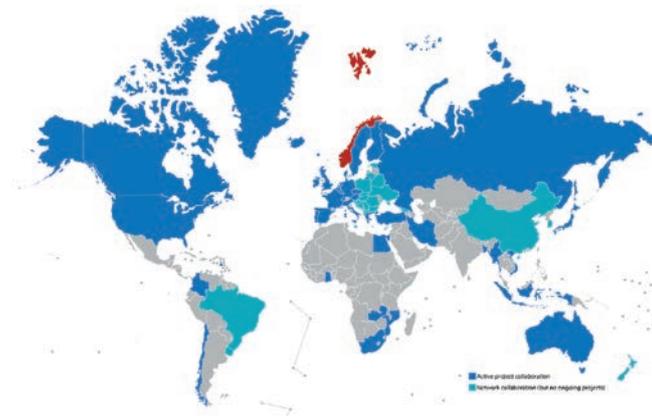
- Research, analyses and diagnostics
- Knowledge production and development
- 44 national surveillance programmes
- National reference laboratory for more than 30 diseases of terrestrial and aquatic animals
- OIE International reference laboratory for 4 diseases
 - Infection with infectious salmon anaemia virus
 - Infection with Gyrodactylus salaris
 - Infection with salmonid alphavirus
 - Chronic Wasting Disease
- OIE Collaborating Center for Epidemiology and Risk Assessment for Aquatic Animal Diseases.



International cooperation within animal health, animal welfare and food safety in 2018



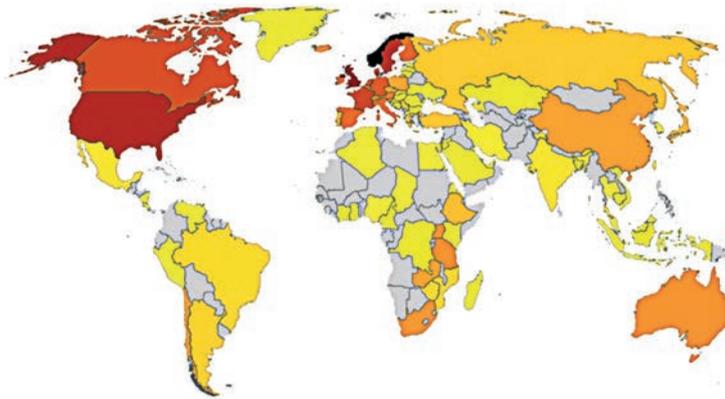
International cooperation within fish health and fish welfare in 2018



Research activities

The Institute has around 120 current research projects, funded by grants in open competition from national and international research funding agencies.

- Among the major scientific outputs from the research projects are 90-120 scientific publications per year in peer-reviewed international scientific journals, and an active participation in PhD education.
- During the last 20 years, researchers at the Institute have co-published in scientific journals with authors from 88 countries.



International co-authorships for the Norwegian Veterinary Institute with 88 countries (1998-2018).

Yellow to red gradient indicates higher number of co-authorship.

Examples of research areas:



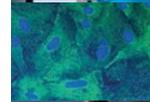
Antimicrobial Resistance Research Group: AMR is recognised as a major global health threat for both humans and animals. NVI is the national reference laboratory for AMR in animals, food and feeding stuffs - all areas where NVI has a long tradition in national and international research.



CWD is a fatal prion disease in cervids like scrapie in sheep or mad cow disease. CWD was first detected in Europe in Norway in 2016, and since then, NVI has been engaged in one of its largest ever surveillance programmes, and in several research projects related to different types of prions, epidemiology, new diagnostic methods and genetic resistance to this disease.



SEQ-TECH is a strategic research initiative that aims to establish new sequencing technology at the Norwegian Veterinary Institute. "Next-generation sequencing" will provide a better basis for advice and risk assessments in fish health, animal health and food safety.



BIO-DIRECT is a strategic research initiative that aims to develop new veterinary diagnostics that can detect disease quickly and more accurately by using new biomarkers and establishing organ-like cell models that can minimize animal experiments.



eDNA monitoring: Detection of environmental DNA (eDNA) from pathogens of aquatic animals, carriers and susceptible species in nature and aquaculture. Aims to develop non-invasive monitoring of presence/absence and spread without sacrificing live animals.



Mycobacteria: This project aims to further develop the institute's competence on mycobacterial infections. Part of the project is to develop a peptide vaccine against *Mycobacterium avium* subsp. *paratuberculosis* - a disease that compromises the health and welfare of ruminants.



Animal welfare: Animal welfare is a strategic research area for both fish and terrestrial animals in i.e. developing objective welfare indicators to promote good health and assist animal and health authorities, livestock owners and industry.



Salmon lice - epidemiological approach: Aims to develop both tools and knowledge about the occurrence of lice and resistance development, and knowledge about the effects of new measures to combat lice infections.



Biosecurity in aquaculture: Aims to improve methods and strategies for controlling the spread of important infectious diseases in farmed fish, applying wide-ranging hygienic principles and monitoring systems.

A worldwide perspective

- **Close collaboration** with research institutions, universities and industry worldwide.
- Participation in **international scientific networks** through collaboration in research projects.
- **H2020**: Participation in several H2020 projects such as EJP One Health or CIRCLES.
- **FAO and NORAD**: NVI has a long-standing tradition in international developments projects. In 2018, the Institute has continued this work in cooperation with among others the Food and Agriculture Organization (FAO) (via Fish for development) and the Norwegian Agency for Development Cooperation (NORAD) (via the Kunnskapsbanken - Knowledge bank).
- **OIE**: OIE Collaborating Centres are centres of expertise in a specific designated sphere of competence relating to the management of general questions on animal health issues, where they provide their expertise internationally. NVI together with the University of Prince Edward Island in Canada has been for several years a collaborative centre for Epidemiology and Risk Assessment of Aquatic Animal Diseases, engaging in projects across all continents.
- **Strong cooperation** within research and innovation, diagnostics and biosecurity/emergency preparedness with: European partners; Norway's priority countries outside the EU such as Brazil, Canada, China, India, Japan, South Africa and USA; and other countries with strong focus on aquaculture and One Health such as Australia, Chile, Colombia, Ghana, Iran, Mongolia, New Zealand, South Korea, Thailand and Vietnam.
- **EFSA**: Monitoring and collection of data on the occurrence of zoonoses, antimicrobial resistance and food-borne outbreaks.
- **COST Actions**: Participation in COST Actions to build the basis for future international collaborations and strengthen the institution's contingency planning and diagnostic capability. Projects on African Swine Fever, One Health, Poultry Red Mite, Dairy Care.
- **European Aquaculture Technology and Innovation Platform (EATip)**: Developing and supporting aquaculture in Europe to establish a strong relationship between aquaculture and the consumer.



Our history

The Norwegian Veterinary Institute was established in Oslo in 1891 as a diagnostic laboratory for animal diseases. The original principal task of the Norwegian Veterinary Institute was to combat tuberculosis and brucellosis. Today, our activities encompass the entire food chain: animal feed, fish, animals and food for human consumption.

Key dates

- 1891 Established as the first diagnostic laboratory for animal diseases in the Nordic countries
- 1914 Moved to Adamstua in Oslo, where it is currently located
- 1924 The first doctoral degree in fish health in Norway awarded
- 1926 Foot-and-mouth disease diagnosed for the first time in Norway
- 1937 The last major outbreak of anthrax in Norway
- 1952 Contagious veal casting eradicated as a disease in Norway
- 1952 The last observation of foot-and-mouth-disease in Norway
- 1960 Started working on fish diseases and aquatic health
- 1963 Bovine tuberculosis abolished in Norway
- 1991 Regional laboratories established as a part of NVI in Bergen, Harstad, Sandnes, Trondheim and Tromsø
- 1995 Food Safety became a core activity at the institute
- 1998 The TSE disease among sheep - Nor 98 - diagnosed for the first time
- 2003 The first annual Fish Health Report published by NVI
- 2015 Aquatic biosecurity and emerging aquatic diseases became new initiatives
- 2016 CWD detected for the first time in Europe and for the first time ever in wild reindeer
- 2017 NVI contributes to the governmental "Traffic Light System" regulating a more sustainable aquaculture production
- 2018 NVI designated as OIE International Reference Laboratory for Chronic Wasting Disease (CWD) in Europe
- 2020 Headquarters will move to new facilities at Ås, 30 km southeast of Oslo

The new building at Ås by March 2019.

- The new facility at Ås will enhance biological research and enable the use of new technologies and methods for diagnostics, research and education. The new veterinary facilities will provide new and unique opportunities to raise the level of services provided by the Norwegian Veterinary Institute. At Ås, the Norwegian Veterinary Institute will be co-localised with the Norwegian University of Life Sciences.



Building our new facilities

Norwegian Veterinary Institute in Norway

- Oslo
- Bergen
- Trondheim
- Harstad
- Sandnes
- Tromsø



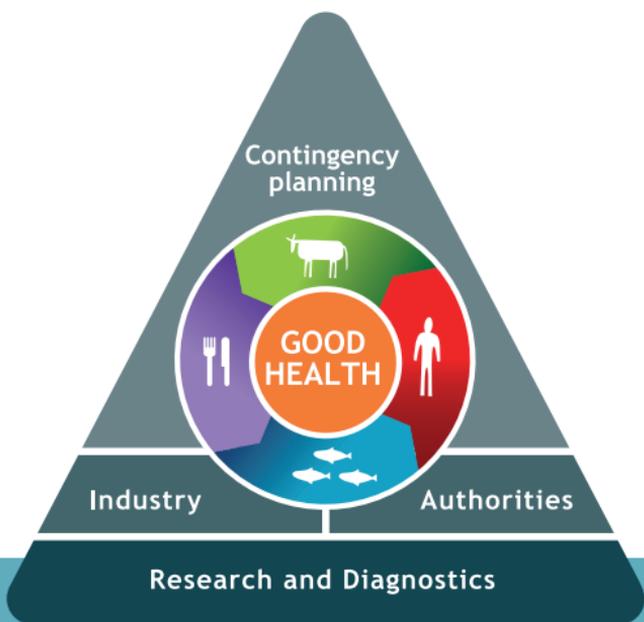
The Norwegian Veterinary Institute will continue to seek stronger cooperation with regional knowledge hubs within research and knowledge-based enterprises.



Moving here in 2020



The Minister of Food and Agriculture, Mrs Olaug V. Bollestad, visiting the building of the new facilities at Ås



The Norwegian Veterinary Institute was established in Oslo in 1891 as a diagnostic laboratory for animal diseases. Today's activities encompass the entire food chain, and the Institute works actively towards a ONE HEALTH sustainable future for healthy animals, humans and environment.

Scientifically ambitious, forward-looking and cooperative – for One Health!



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