



The Norwegian Food Safety
Authority

2017

ANNUAL REPORT



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THE DIRECTOR GENERAL'S REPORT

The Norwegian Food Safety Authority fulfilled its social mission in a positive manner in 2017. Our efforts had a decisive impact on ensuring that food and drinking water remain safe and that the vast majority of animals enjoy good welfare. Contributing to these goals while also developing to respond to the challenges of tomorrow means we have to make important decisions.

Norway is in a unique situation. Few people fall ill due to food and drinking water. Animal and plant health are both good. This provides confidence in daily life that is invaluable. Even when we do discover matters that need to be addressed, there are rarely serious threats in each unique situation.

Activity levels are high. We are in the field extensively and during the course of the year we carried out more than 70,000 inspections. Meanwhile, we also provided more guidance to make it easier to follow the rules. We carried out 76 monitoring and control programmes that we used in risk assessments, the development of regulations, communications and inspections. We simplified regulations and used plain language to make regulations and guidance more understandable. Internationally, we prioritised areas in which we can make an impact and that are important to Norwegian consumers and operators. Amongst other things, we helped to restore salmon exports to China.

We cooperate well with those who we supervise, other bodies, the police and other knowledge-based institutions. Cooperation is crucial if we are to carry out our social mission. Nevertheless, there remain some serious issues that require more input from us and other operators.

Even though practically the entire population enjoys good quality drinking water, the risk of contamination is high. The distribution network requires extensive upgrading. Is society willing to undertake the necessary investments?

Aquaculture is Norway's biggest livestock production segment, and is one of the most important industries in the country. Too many farmed salmon fall sick, are injured or die during production. This cannot continue.

The deadly chronic wasting disease (CWD) has been detected in wild reindeer in the North Mountains. This disease may spread to other wild deer. The battle is controversial and demanding, but we hope to eradicate it in partnership with other agencies.

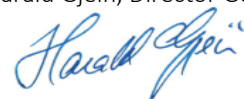
We are being increasingly exposed to the rest of the world. This provides more things and opportunities. At the same time, it also poses a risk in the form of new plant and animal illnesses, as well as food fraud that can hit the consumer.

Our mission demands a lot of us on a daily basis and makes it challenging to dedicate sufficient energy to the further development of the organisation and its working methods. Since our establishment, we have become more efficient with a lower operating budget, fewer managers and employees. Changing the organisation is still not enough to better fulfil our social mission.

New technology, the exploitation of data from other sources and more risk-based activity must be introduced in order to improve efficiency. The frequency of our inspections could become even more risk-based. We must assess where it is right to have offices, which services we are to perform and whether others are capable of carrying any of them out. Overall, this can help to make our initiatives more preventative in nature and targeted at the major hazards in our areas.

I would like to thank my colleagues for their efforts - they are doing an excellent job. The positive status in most of our areas, as well as our second place in the reputational survey of 88 public bodies, goes some way to confirming this. We are proud and humble, and this will inspire us to continue our efforts to fulfil our mission as we serve the best interests of society.

Harald Gjein, Director General



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ACTIVITIES AND RESULTS

OVERALL ASSESSMENT OF RESULTS, GOAL ACHIEVEMENT AND USE OF RESOURCES

We fulfilled our social mission in a positive manner and achieved good results. We handled many diseases and incidents, developed and simplified regulations, offered guidance in multiple channels and had a high level of supervisory activity. These had an important impact on ensuring that food and drinking water remain safe and that the vast majority of animals enjoy good welfare. Building on knowledge and collaborations with others are both prerequisites for success in this regard.

Few people fall ill due to food and drinking water in Norway. Animal and plant health are also both good. There still remain challenges that must be resolved. Even though practically the entire population enjoys good quality drinking water, the risk of contamination is high. The distribution network requires extensive upgrading. This involves significant investment by society.

The aquaculture industry faces major illness and welfare-related challenges. That the use of delousing agents continues to decrease remains a positive development. At the same time, many fish are injured by mechanical treatment methods. Making operators improve the health and welfare situation for fish is high on our list of priorities. Although new technology can solve some of these issues, we believe it is necessary for aquaculture operators to take better account of the needs of fish in their hunt for efficient solutions.

The loss of animals while rough grazing remains one of the biggest animal welfare challenges. Attacks by wild animals receive the most attention, but accidents, injuries and illness cause the majority of losses. 2017 also saw animal tragedies, with each instance being one too many. Animal welfare still requires significant initiatives by us. Closer collaboration with the police is helping to ensure that more cases that are reported end in successful conviction.

Norway is being increasingly exposed to the rest of the world through imports and higher levels of travel activity. More of the food that we eat is imported from countries with different risk situations to our own. Food fraud has become internationally widespread. Increases in imports increase the risk of crime of this kind also having an impact on the Norwegian consumer.

Chronic wasting disease (CWD) was discovered in 2016. It has previously only been detected in the USA and in American deer imported to Asia. The struggle against this deadly and infectious animal disease has been one of our most demanding tasks during the past year, but we hope to achieve our goal of eradicating it from the Norwegian landscape. This particularly thanks to strong collaboration with the Norwegian Veterinary Institute, the Norwegian Nature Inspectorate, the Norwegian Institute for Nature Research, municipalities, voluntary organisations and landowners.

Ensuring food safety, animal welfare and the health of plants and animals is based on strict regulatory requirements. We supervise and monitor the health of the land and water. We carried out a total of 70,902 inspections in 2017. Multiple resource-intensive cases - especially in aquaculture and animal welfare - as well as more guidance meant that the number of inspections was somewhat lower than during the previous year. Smiley inspections contributed to continued increased productivity. We uncovered regulatory breaches in 50 per cent of businesses where we conducted inspections. This is two per cent higher than during the previous year.

We handled 800 instances of illness and incidents as part of our regular line organisation. We started using the incident management tool MatCIM. Experiences from incidents and training exercises mean that our levels of

preparedness are good. We are now preparing for the NATO exercise Trident Juncture, in which we will face a war-like situation.

We had good rates of goal achievement in terms of implementing EU regulations in Norwegian law. 60 per cent of EEA regulations were adopted prior to their deadlines. This is a marginal decline. Together with the ministries, we are working to further develop, harmonise and streamline our EEA work.

Getting exports into new markets or new products into familiar markets involves demanding, lengthy negotiations. In 2017, we particularly prioritised the Chinese and Brazilian markets. Our efforts contribute to re-opening the Chinese market to salmon exports.

The population has high levels of trust in us. In order to preserve this trust, we are prioritising the development of better digital services and the use of plain language in all written information. Our communications efforts in relation to the battle against chronic wasting disease made it easier to form an understanding of the plan.

Time spent on administration and management decreased once again during 2017. More resources were used on core activities and development. Development work is crucial in order to streamline operations. We are working to develop new working methods to enable us to fulfil our social mission even better.

Furthermore, this chapter also discusses the goal achievement in different fields, how we fulfil our social mission and how our resources are used.

Effect goal	Goal achievement	Assessments
Food	Satisfactory	The food is safe. Low levels of infective agents in Norwegian-produced foods means that few people fall ill due to food.
Drinking water	Satisfactory	The quality of drinking water is generally good, and more than 90 per cent of people are connected to water distribution networks that supply safe drinking water.
Animal health	Satisfactory	Animals are generally healthy and there are few serious animal illnesses.
Plant health	Satisfactory	Plant health is good. There are few plant illnesses in Norway (15 out of 160). Eleven are being fought, while four are worth fighting with public funds.
Fish health and fish welfare	Unsatisfactory	The levels of lice in salmon have been reduced. There remain high mortality rates and major illness and welfare issues
Animal welfare	Satisfactory	The vast majority of animals enjoy good welfare. However, too many animals die while grazing.
Health, quality and consumer considerations	Not fully satisfactory	Food and cosmetics are not always adequately labelled. Proper labelling is especially important for allergy sufferers. Food fraud is an increasing problem.
Environmentally-friendly production	Not fully satisfactory	Reduced use of delousing agents. There remains a high occurrence of lice in wild salmon. The use of pesticides and medicines for animals is low. There still remain gains to be taken from the correct exploitation of waste and by-products.

FOOD AND DRINKING WATER

Norway is one of the countries with the safest food and drinking water. More than 90 per cent of the population is connected to a water distribution network supplying safe water. Good animal health and low occurrences of infective agents in Norwegian livestock and Norwegian-produced foods are important reasons for the good status.

Brief description of current situation

The Norwegian Food Safety Authority's tasks are to ensure that food and drinking water are safe. Norwegian food and drinking water are amongst the safest in Europe. There are few serious outbreaks of illness that are due to food and drinking water in our country, but this good status is constantly under threat from increasing imports, new foods and ingredients being used, new forms of sales and rising travel activity. Information and conflicting views about food are found in many different channels. This makes it increasingly more difficult for the consumer to make informed choices. With regard to raw products and ingredients in the global market, it is also becoming more demanding for industry to ensure adequate traceability and prevent food fraud.

All food contains various chemical substances, but we need to know more about them to uncover hazards that may pose a risk to health. Knowledge about food safety in new marine species is also inadequate.

Effect indicators and overall assessment of goal achievement

Appendix 2 contains figures for all the effect indicators.

Effect indicator	Goal achievement	Assessments
Number and proportion of examined samples that contained illegal levels of contaminants (such as pesticide residues, dioxins, PCBs and pharmaceutical residues)	Satisfactory	Controls of food show few instances in which limits are exceeded.
Number of reported shipments that have caused food allergies/intolerance due to reactions to undeclared allergens	Satisfactory	The National Register of Severe Allergic Reactions to Food received 92 reports from doctors about severe allergic reactions compared with 135 reports in 2016. One food sample was analysed, and undeclared allergens were detected.
Number of notifications sent of health hazards detected in food and feed on the Norwegian market (RASFF).	Satisfactory	37 Norwegian notifications 51 foreign notifications followed up on in Norway.
Number of registered cases of illness following infection with Salmonella, Campylobacter, Yersinia, Shigella, Listeria, EHEC (Norwegian Surveillance System for Communicable Diseases)	Satisfactory	More people were infected with Campylobacter, Yersinia and E. coli EHEC. This level remains low in a European context (Norwegian Institute of Public Health)
Percentage of the Norwegian population connected to waterworks with satisfactory analysis results for drinking water quality (E. coli, colour, turbidity and pH level)	Satisfactory	More than 90 per cent of people are connected to water supply systems that produce at least 10 m ³ of drinking water per day. These supply water of a high microbiological quality. We don't have much information about the smallest waterworks.

Goal achievement is good, and this is due to a low occurrence of infective agents in Norwegian livestock and food produced in Norway due to preventative work. However, the overall picture is more complex than the indicators imply.

Even though more than 90 per cent of the population gets water from water distribution networks offering safe drinking water, there remains significant work to be done to ensure there are sufficient volumes of safe spare water. Many old distribution networks must also be improved.

Rising imports of foods from an increasing number of countries leads to further complexity in the food chain and a higher risk of infective agents or foreign substances. The way in which food is sold is changing rapidly, and an increasing amount of food is sold online, via social media and through the private sharing economy.

Together with changes in what food is eaten and how, food safety and the development of regulations and supervision are being challenged.

Sustainable sales and consumption to reduce food waste, an understanding of sustainability labelling and food banks are also posing similar supervisory and regulatory challenges.

All food contains different chemical substances and some of them can pose a risk to health. We already know a lot, but we need even more knowledge. We also need more knowledge about whether it is safe to eat new marine species such as seaweed. Neither we nor operators know much about this at present, and there are no regulations or supervisory initiatives in this area.

Online sales of dietary supplements are on the rise, marketing is becoming increasingly offensive and levels of creativity are high. Many dietary supplements may also be illegal and harmful to health since they contain medicines.

Simple information about food and health is becoming more difficult to find amongst the plethora of blogs and other food information. Consumers have less of an opportunity to assess quality, integrity and make informed choices.

Strategic measures and priorities

In order ensure continued safe drinking water, we are checking that water network owners ensure that security of supply, that they have sufficient spare water supplies and that they undertake maintenance of the distribution network.

In order to prevent bacteria that cause disease, infective agents and foreign substances from entering the food chain, such inspections should become even more risk-based.

We will also develop inspections and enhance our expertise in order to follow up on new sales methods and increasing online commerce. In order to prevent food fraud, we will assess where the risk is greatest and target our efforts accordingly.

We will continue to work on obtaining more knowledge about the occurrence of chemical substances in food. We will share this knowledge and provide further guidance to businesses in relation to these substances. We will publish guidance about controls of chemical substances in 2018.

The development of regulations and supervision for new marine species continues, with seaweed and Pacific oysters being priorities.

Infective Agents in Food

Food in Norway continues to contain few hazardous bacteria. The risk of food-borne infections and poisoning is therefore minor compared with other countries, although incidences are increasing slightly.

Goals

- People shall not be food poisoned or exposed to infection through food.

Results

In order to prevent people from falling ill due to food, we conduct more than 25,000 inspections on an annual basis to ensure that producers and businesses serving food are fulfilling the requirements relating to hygiene, preparation and storage.

Even if the situation is good, infective agents can be spread through food. Every year, 5000-7000 instance of food and water-based infections are recorded ([Norwegian Institute of Public Health](#)). The actual figure is probably much higher since many people do not visit the doctor when they fall ill due to food. Even though we lack accurate figures, they are low and a large proportion of the recorded cases are infected abroad.

Bacteria and parasites cause trouble

Campylobacter is one of the most common food-borne bacteria that causes Norwegians to fall ill. Last year, more people fell ill as a result of *campylobacter* than in previous years (see Appendix 2). Around half of Norwegian who are infected and fall ill are infected while travelling abroad. Long-term preventative work, including work to prevent *campylobacter* in poultry stock, is an example of a successful initiative to keep occurrences at a relatively low level.

Salmonella causes the greatest number of cases of illness both here and in the rest of Europe. 990 people were proven to have been infected by this bacteria, of which 251 were infected in Norway. This is an increase compared to the previous year.

Some food poisoning is due to people eating imported fruit, berries and vegetables raw. We have therefore established a three-year monitoring programme for infective agents in salads and herbs.

We have found *E. coli* as an indicator of contamination in almost ten per cent of samples. Nevertheless, there were only a few containing levels that could mean the product would pose a hazard to health necessitating its withdrawal from the market.

The Smiley Scheme is Working

Smiley faces in cafes and restaurants were introduced in 2016. We have evaluated the scheme, and our conclusion is that it works. More businesses serving food are following the rules better and are receiving a smiley face on their first inspection. Operators confirmed in a survey that they had become more aware of how to follow the rules following the introduction of the scheme.

Consumers believe the smiley face provides them with better information about the eatery and how safe the food there is. People are familiar with the scheme, notice the smiley face sticker and understand to a large extent what the symbols mean. 70 per cent of those asked are more confident about eating in eateries since the introduction of the smiley scheme.

The evaluation uncovered areas in which we must improve. We must provide more guidance and treat almost identical situations in an approximately equal manner. This is why we make changes on an ongoing basis.

The Commercialisation of Pacific Oysters and Many Mussels Alerts

The quantity of Pacific oysters along the Norwegian coast is increasing. This is a foreign species that is unwanted in the Norwegian fauna while also being an attractive food resource. There are some health risks connected to eating Pacific oysters since they are often eaten raw without any heat treatment and may contain viruses that cause diarrhoea. We lack knowledge about how it absorbs algae poisons.

The commercialisation of Pacific oysters is on the increase, and the Norwegian Food Safety Authority approved three purification and dispatch centres for the receipt of Pacific oysters. In addition, we classified several production areas that are required prior to harvest and sales being permitted.

The number of algae poison samples taken from mussels increased after the paralytic poison PSP was found. 384 algae poison samples were analysed, compared with 248 in 2016.

We issued 382 warnings against eating self-picked mussels. 233 of these were due to the hazards posed by algae poisons, and 149 were due to the hazard posed by contaminations caused by faeces in the water. On the Trøndelag coast and in the Trondheim Fjord, we issued a number of warnings against eating scallops and crabs due to the hazards posed by PSP.

The public use our mussel warnings and we recorded more than 200,000 hits on Matportalen and almost 60,000 hits on the mussel app.

Formalised Freezing Exemptions for Farmed Fish

Wild fish that is eaten raw can be unsafe to eat because it eats other species that may contain parasites. It must therefore be frozen prior to being eaten raw. Farmed fish that have only been fed dry feed do not pose this risk. We have therefore had in place a Norwegian practice that exempts farmed Atlantic salmon fed using dry feed from the freezing requirement.

Outbreak of salmonella

In September 2017, 21 people from different parts of the country fell ill in a national outbreak of *Salmonella*.

All of them had visited the same outlet at Oslo Airport Gardermoen prior to falling ill.

The source of the infection was not uncovered.

We formalised the practice and expanded it to also apply to rainbow trout following studies conducted by NIFES (now the Institute of Marine Research) that show it is safe. The freezing exemption applies until 2021, and is issued based on certain conditions in the hygiene regulations.

Producers of Ready-to-eat food Have Better Oversight

For many years, we have prioritised inspections with producers of ready-to-eat food, particularly in relation to their handling of *Listeria*. Ready-to-eat food is food that does not need heating or treating in any other way prior to being eaten, e.g. cold cuts or certain types of cheese.

Inspections showed that many have better oversight than we have seen in past years thanks to sampling schedules, hazard analysis and control over critical points in the process. Nevertheless, there remains a need for increasing producers' knowledge of what may represent a hazard to health and how this can be prevented.

Institutional Kitchens Have Varying Oversight

We examined kitchens in institutions and hospitals, as well as production kitchens that supply food to such kitchens. These inspections showed that those responsible for operations can demonstrate to varying degrees that they have adequate systems in place for ensuring food is safe.

These systems are often created by external operators, and employees are not sufficiently trained in their use. Many employees also lacked knowledge about what may be potentially hazardous to health in different ingredients. The sampling schedules in certain locations were also not targeted at the actual hazards in the kitchen in question. We therefore offered a lot of guidance, and more people responsible for operations took greater steps to respond to the challenges we uncovered.

Challenges and Plans

In terms of infective agents, we are largely carrying out inspections with different types of businesses and to a lesser extent with specific product types. In order to make better use of our resources, we need a more systematic overview of the risk connected to products. We will therefore create a plan for sampling over the next five years with an overview of product categories and which substances we are analysing for.

We have also chosen some types of businesses that will be subject to additional monitoring during 2018. Amongst others, this will include small dairy businesses and eateries that sell hamburgers. We see that there are challenges in these areas related to hygiene.

There remain problems in parts of the whitefish industry in relation to hygiene. For several years, we have prioritised inspections of whitefish operators. During the winter of last year, we saw that many fishing vessels had improved their cleaning routines, but that routines for chilling and storing fish on board still needed improving. We continue to prioritise those whitefish operators with the greatest hygiene challenges, and will connect initiatives to the internal oversight system to ensure lasting improvement.

Chemical Substances in Food

Monitoring of chemical substances in food showed few findings of high levels of unwanted substances. There are always 'new' substances and types to assess, and there remains much to be done before we have a total overview of the risks posed by chemical substances in food.

Goals

- Food shall not contain chemical substances in quantities hazardous to health.
- Good documentation of the situation and development of unwanted substances in food.

Results

Food contains many different chemical substances. Some are naturally present (nutrients, plantains). Others are added to provide a desired effect for humans (minerals, amino acids or other substances with a physiological impact) or a technological effect in the food (additives). In addition, substances from the environment, production or packaging are also found in food (heavy metals, pesticides, drug residues). The quantity determines what impact the substance has on the body.

Chemical Substances: Help or Hindrance?

At different stages of food production, it can be necessary to use substances that counteract plant illnesses, drugs in the treatment of animals or substances that have a technological effect on food. This is discussed in further detail in Chapter 3 Environmentally-friendly Production.

In the case of imported products, the proportion of samples that exceeded the limit for residual pesticides was two per cent, the same as in previous years. This proportion was higher in 2016, but we do not know whether this was coincidental.

We have not found any illegal use of veterinary medicines in land animals. Steroids were found in some samples, but this was due to naturally occurring hormones in male animals and pregnant animals.

There are very few drug residues in farmed fish. No findings were in excess of the maximum limit. Some instances of residual illegal colouring agents were found in tuna in the case of imported seafood from countries outside the EU/EEA. This has been followed up on.

Additives

Additives are strictly regulated based on whether they pose any risk to health as well as their technical function.

In the case of medicines and pesticides, there are limits for the residual quantity that is permitted in food.

If a business does not have good oversight of the use of additives or the residual pesticide or medicine content, this can - in the worst case - lead to food not being safe in health terms.

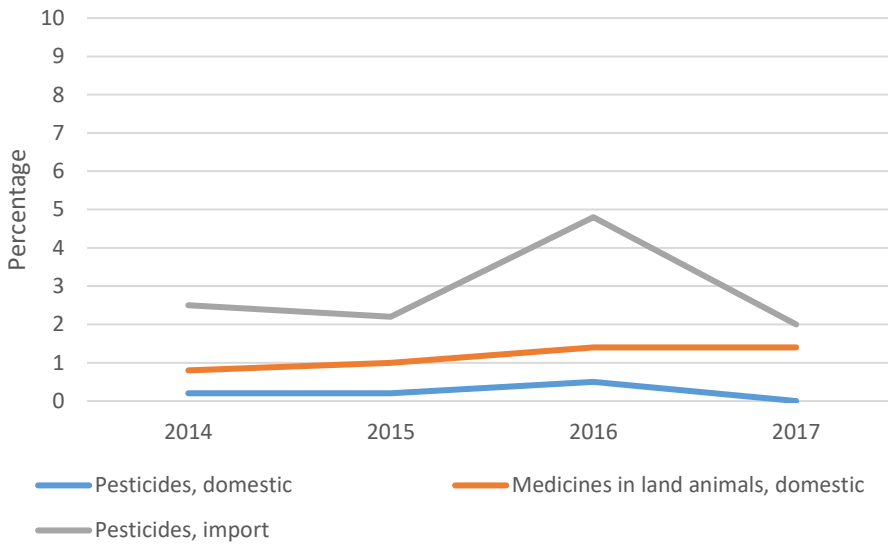


Figure 1: The proportion of findings exceeding the maximum limits for pesticides and medicines. Source: Norwegian Food Safety Authority

In order to increase knowledge about the use of antimicrobial agents, we conducted an additional monitoring programme on agents of this kind in slaughtered cattle, pigs and sheep. We analysed 892 samples, and in 8 excess amounts of dihydrostreptomycin (DHS) were detected in the kidneys, but not muscles. Normally, we would not find any excess amounts if the retention time for the use of medicines was adhered to. These instances were therefore followed up on. There was no hazard to health connected to the findings. Kidneys are rarely eaten in Norway.

Contaminated substances that occur in food

We conduct many analyses on an annual basis of contaminants in land animals and fish. In land animals, we find - amongst other things - elevated levels of cadmium in the livers of wilderness animals (game and sheep). This is not surprising since they both live longer and graze more in the wilderness than production animals. Heavy metals are found in nature, accumulated in the food chain and stored in - amongst other places - the livers of animals. We have asked the Norwegian Institute of Public Health to assess whether it is necessary to issue warnings to those who eat lots of livers from game.

Norwegian fish and seafood contains very little in the way of unwanted substances with the exception of certain species in certain harbours and fjords that are contaminated. We have created warnings for anglers to ensure that they fish for safe seafood.

Summary of the results from the monitoring of fish and seafood:

- *Farmed Fish:* 13,415 farmed fish were analysed for unwanted substances. There were no findings of unwanted substances in excess of the maximum limits. There were no findings of residual antibiotics or other drugs.
- *Angling:* 10 major environmental studies were assessed in addition to 15 areas based on environmental studies imposed on the biggest polluters at sea. Warnings were created or updated where it was necessary.
- *Imported seafood from countries outside of the EU/EEA:* 130 samples were taken in 2016. Only one contained environmental pollutants above the maximum limit.
- *Marine oils for human consumption:* The most common marine oils from known operators are safe. Some cold-pressed oils made from less traditional raw materials than pure fish oil often contain higher concentrations of foreign substances. Products with concentrations above the maximum limit have been stopped and the operators in question followed up with.

In addition, we carry out several minor programmes related to nutrients. In 2017, we analysed for mycotoxins in corn, radioactivity in local food, heavy metals, acrylamide and mycotoxins in selected foods and PAH in traditionally smoked products. Some individual findings were made that have been followed up on, but overall there were few findings of contaminated substances in the food we analysed.

The harmful substance acrylamide can be formed in the production of certain foods. The EU has now established new regulations that are being incorporated into Norwegian regulations. We believe that this will contribute to reducing the level. We will follow up on the new regulations with inspections and guidance.

Several years of supervision relating to food contact materials has led to businesses now following the rules more, but operators still need to improve their knowledge about the hazards posed by different materials. We analysed selected materials made from cardboard and paper for fluorinated substances. These substances are used due to their fat and water repellent properties. Although there are no established maximum limits, we would like to know more about their use since the substances progress up the food chain. The report will be completed in 2018.

Lack Knowledge About Food Safety Relating to Seaweed

There are major investments in and great expectations of the use of new marine products such as seaweed for use as food and feed. This is a challenge since we still know far too little about its food safety. Although all producers who start using new ingredients are responsible for documenting whether products are safe, we are seeing that this happens to a lesser extent than would be preferable in terms of new marine species.

We participated in the EU's development of a survey of metals and iodine in macroalgae, and have engaged in extensive dialogue about food safety with industry and R&D institutions about the use of macroalgae and microalgae.

'The Egg Scandal'

In August, the so-called 'Egg Scandal' hit several countries in Europe after fipronil was discovered in eggs.

Fipronil is an insecticide that gets rid of fleas, lice and ticks in animals, and its use on animals for consumption is forbidden.

The World Health Organization (WHO) classifies the agent as a moderate hazard to health. The symptoms of fipronil can include irritation to the eyes and skin, nausea and vomiting. If the agent is consumed over a long period of time, the liver, kidneys and thyroid gland can be affected.

The use of fipronil is not permitted on animals for consumption or as a pesticide in Norway. Although fipronil was not found in eggs in Norway, we found traces in imported egg yolk powder. The business in question voluntarily withdrew the product.

Many illegal dietary supplements

There is widespread demand for dietary supplements. Many of those who produce and sell such products operate in a grey area in proximity to the pharmaceutical industry, and their marketing is often offensive and goes beyond what is permitted. Investigations turned up several serious findings of products that were hazardous to health or that contained substances other than those declared. Although the Norwegian Food Safety Authority catches and is aware of some of the hazards of dietary supplements, the consumer must also exercise caution.

The trade in these products is opaque and much of it takes place on Norwegian and foreign websites, in gyms and through various alternative therapists. This makes it more difficult to maintain an overview and follow up on the area. Operators often have little knowledge about the hazards posed and the applicable regulations. Since sales take place across national borders, international cooperation is crucial.

As part of the EU's E-commerce project, we discovered dietary supplements containing illegal new food compounds. Online stores were followed up with and cases were reported through the international reporting systems. Additionally, we submitted international alerts for 17 dietary supplements from Norway.

We received seven serious adverse reaction reports from RELIS (Regional Medicines Information Centre). The dietary supplement contained ingredients that can pose a hazard to health, and in most instances it was taken together with other supplements and medicines.

One of our tasks is to ensure that dietary supplements are safe is to establish maximum limits for vitamin and mineral content. We established new maximum limits for five vitamins and minerals for four different age categories. The maximum limits for 26 vitamins and minerals were temporarily suspended due to a lack of updated knowledge. The Norwegian Scientific Committee for Food Safety (VKM) will assess the consumption of and risk posed by these vitamins and minerals so that we can once again establish new maximum limits.

Adding Vitamins, Minerals and Amino Acids - Situation More Complex

Businesses must apply to the Norwegian Food Safety Authority for permission to add amino acids, vitamins and minerals to foods and beverages and amino acids to dietary supplements. Multiple sports products, meal replacement products for weight control and gluten free products became subject to the need for an application following the amendment to the regulation for foods for specific groups being changed in 2016.

We processed 115 applications covering 321 products. 310 were granted permission (196 more than in 2016). Products that had not previously been subject to the need for an application represented more than 25 per cent of applications.

Not all businesses submit applications. In 25 out of 32 inspections, we found that one or more products were being sold without the necessary permission.

In order to make it easier for operators and the supervision, we are creating a national regulation for the addition of vitamins and minerals to foods, and for certain other substances to both dietary supplements and other foods. This will maintain a high level of protection for the consumer, and provide a far simpler application process than the existing one. The draft will be completed in 2018.

Challenges and Plans

In order to obtain better knowledge about the most important chemical substances that can occur in food, we have ordered an overview from VKM of what we should monitor so that we can ensure food is safe. Given the increasing number of exports, it is especially important to analyse foods of this kind of unwanted substances. Since many businesses lack knowledge about the risks posed by chemical substances in food, we are creating guidance and will offer more advice.

The boundaries between traditional dietary supplements, sports products, meal replacement products and other products that were previously covered by separate regulations are being blurred. The rise in online sales

STUDY OF DIETARY SUPPLEMENTS

171 dietary supplements examined in the categories:

- Potency aids
- Slimming products
- Inflammatory calming products
- Painkillers
- Energising products

Seven products were banned from sale, and six others were followed up on in more detail.

70 suspicious products imported for private use were stopped by customs and sent for analysis. 24 contained drugs that are prohibited in dietary

of dietary supplements means that we have to think innovatively when carrying out inspections of e-commerce firms. We are planning to develop new systems and provide training to inspection personnel.

Food allergies are increasingly a health issue. Thanks to the National Register of Severe Allergic Reactions to Food, we have uncovered contamination of products, inadequate labelling and we have obtained knowledge about new allergens. The Norwegian Institute of Public Health discontinued the National Register of Severe Allergic Reactions to Food in 2018. Food allergies are increasingly a social health issue, and new allergens as a result of new food trends / increasing international trade represent a challenge. The Norwegian Food Safety Authority is cooperating with the Norwegian Institute of Public Health to find an alternative solution for recording serious allergic reactions to food.

We have initiated a national supervision project for the use of additives. Its purpose is to uncover any illegal use of additives and increase the knowledge in this area amongst both businesses and our inspectors. In 2018, we are looking at the use of additives in certain foods by food producers.

The selection of products for infants and young children in this market is undergoing substantial change. We are following and supporting the revision of the regulation on food for infants and young children in the EU.

In order to find solutions to how we should handle so-called 'grey area products', we are working together with the Norwegian Medicines Agency and the Norwegian Directorate of Health on adverse reaction reports.

We are continuing our work to gather knowledge and develop our supervisory efforts to ensure the safe sale of mussels, Pacific oysters and seaweed.

We will review the warnings on Matportalen and assess whether they are in line with updated knowledge.

In 2017, [VKM](#) published a risk assessment that showed that there was a low risk to health posed by radioactivity in food and drink. We will use this assessment and propose amendments to the current procedures.

We are mapping foreign substances in plaice, monkfish and pollock along the Norwegian coast. This report will be completed in 2019. We initiated two smaller projects on foreign substances in deepwater redfish and mesopelagic fish (i.e. fish that live at depths of 200 - 1000 metres). The results of these will be available in 2018.

Drinking Water

The quality of drinking water is good and very few people fall ill due to water that has come out of the tap. Old distribution networks, leaks and inadequate security of supply are all issues.

Goals

Everyone should have access to sufficient volumes of safe drinking water.

Results

More than 90 per cent of people are connected to a water distribution system that supplies safe drinking water. However, some are connected to small water supply systems that produce less than 10 m³ of drinking water per day. Since these are not obliged to report to us, we know little about the drinking water they supply.

Improvements to municipal drinking water delivery networks are progressing too slowly. Although it is a goal nationally to speed up the replacement of the distribution network, only one per cent is renewed annually. This means that the network is in gradual decline. We have focused on the distribution network through inspecting waterworks, and have issued orders to several waterworks owners to implement improvements.

Many waterworks lack a reserve water supply

Several important water supply systems do not have the ability to supply water if there are serious failures such as comprehensive breakages to pipes, fires in waterworks, errors in computer control systems, drought, floods, landslides, etc.

We therefore carry out specific inspections relating to security of supply in order to make waterworks owners fulfil their obligation to supply sufficient volumes of water at any given time.

We have mapped alternative supplies in relation to the update to the *Action Plan for Security of Supply*. This mapping shows that many only have access to reserve water supplies for brief periods of time and that they are able to supply all customers during this period. The information for several water distribution network is incomplete. This is being followed up on.

Instructed the City of Oslo to establish a satisfactory reserve water solution

In 2017, the City of Oslo was instructed to strengthen its security of supply by establishing a satisfactory reserve water supply solution prior to 1 January 2028.

This is to ensure that the city is able to supply adequate volumes of drinking water in normal circumstances, during crises and disasters in peace time and during war.

Satisfactory refers to it being impossible for failures to important elements in the water distribution network to stop the supply of water to large parts of Oslo.

The reserve water situation varies. Figure 2 is based on the figures from 31/12/17 in which the condition for being GOOD is that the water supply system has a solution for reserve water supply than can supply water to 70 per cent of residents for at least 300 days.

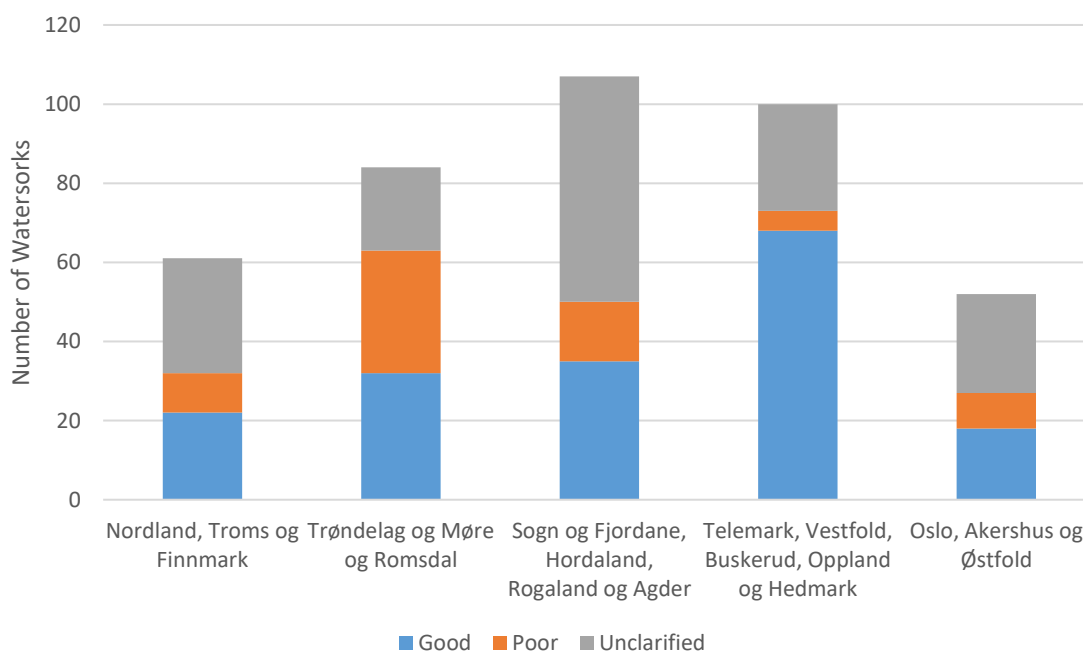


Figure 2: Security of supply, categorised as good, poor and incomplete for waterworks that supply drinking water to more than one thousand permanent residential customers.

Source: Norwegian Food Safety Authority.

Informed About the New Drinking Water Regulation

Over the full year, we have been active in many arenas to make the contents of the new drinking water regulation known to as many people as possible. We have created guidance, and we have given presentations at major water and sewage conferences, as well as smaller events hosted by both small and large water distribution systems, trade organisations, operating assistants, municipalities and laboratories. Many people have provided input for the guidance, and we have revised it accordingly.

We have created an informational brochure specifically targeted at owners of the very smallest water supply systems in order to get them to carry out the most necessary tasks to ensure that production of safe drinking water is secured.

Active with Municipal Waterworks Owners

The drinking water regulation now requires all water sources for more than one home or holiday home to be registered with the Norwegian Food Safety Authority. This overview provides municipalities with a better basis for their planning so that they can establish protection zones around raw water sources to protect them from any unwanted impact.

This overview is also required by the Norwegian Armed Forces in connection with exercises, the Norwegian Coastal Administration in connection with serious contamination, NVE in connection with wind power plants and by county councils in connections with preparedness work. We are working to make these overviews more easily accessible.

As the sectoral authority in the area of drinking water, we have an important role to play as a consultation body, and we make assessments on whether a planned initiative may have a negative impact on the water supply. This helps to ensure that municipalities continue to maintain their interest in drinking water.

Challenges and Plans

Microplastics and small plastic particles which can only be broken down to a small extent and that can end up in drinking water. It is unclear whether this may have negative consequences. Together with the Norwegian Environment Agency and Norsk Vann, we are mapping the quantities of microplastics in water sources and drinking water. This project will report prior to April 2018.

We lack a comprehensive overview of the situation in all water supply systems. During the course of 2018, we will review all water supply systems that supply drinking water to more than 1000 permanent residential customers to examine whether these have adequate security of supply.

Ensuring better security of supply is a long-term goal. We are still following up with waterworks owners. We will create thematic guidance to accompany the Planning and Building Act in relation to drinking water that describes how municipalities and other authorities should take drinking water into account in their planning work.

We will prepare a simple form for geographic registration of small waterworks. This information will help municipalities to take drinking water issues into account when planning and issuing permits.

PLANTS, FISH AND ANIMALS

The aquaculture industry is suffering from growth pains, which goes beyond the welfare and health status of fish. Good health in Norwegian plants and animals is threatened when introductions of new species and imports increase.

Brief description of current situation

Aquaculture remains characterised by infectious diseases, salmon lice and welfare issues. This is contributing to limiting further growth.

The health of plants and animals in Norway is good. Very few pesticides and medicines are used compared with other countries.

Imported dogs and imports of vegetable-based foods and plant material have led to a range of new diseases being caused by animals and plants. Few production animals are imported, and we have not seen any new diseases in this area.

Sanitation measures against chronic wasting disease (CWD) in wild reindeer in the North Mountains remain on track, and the major survey this year has failed to uncover the disease in other areas.

Effect indicators and overall assessment of goal achievement

Appendix 2 contains figures for all the effect indicators.

Effect indicator	Goal achievement	Assessments
Number of pests on EPPO's A2 list deemed to be present in Norway.	Satisfactory	More serious new pests have arrived in imported plant matter for cultivation and in fruit and vegetables for consumption in the last year. However, our situation remains better than in most other countries.
Number of outbreaks and cases of serious infectious diseases in farmed and wild fish.	Unsatisfactory	The number of outbreaks of infectious fish diseases in farmed fish remains high. Salmon lice remains an issue for wild salmon along parts of the coast. Lice treatment methods have also resulted in welfare issues for farmed fish. The mortality rate remains high.
Number of outbreaks and cases of serious infectious diseases in domesticated and wild land animals.	Satisfactory	There were few outbreaks of infectious diseases in 2017. Norway's general animal health status is good compared with that of other countries. Many new exotic agents and parasites have been observed in imported dogs. Chronic wasting disease (CWD) in wild reindeer represents a particular challenge.

Goal achievement is considered to be satisfactory in all areas with the exception of fish disease. Pancreas disease (PD) remains one of the most serious diseases affecting the aquaculture industry. There has been a significant increase in the number of outbreaks in 2017 and the disease has spread northward. We have observed outbreaks of ISA from Rogaland to Finnmark - effectively in all areas where farmed fish are found. The lice situation has been somewhat better, but this is at the expense of welfare.

Open borders and a desire to trade mean it is a constant challenge to maintain our good animal and plant health. Generally low use of medicines and pesticides correlates directly with the absence of infectious diseases and pests that are widespread in other countries. The KOORIMP initiative has been organised in the livestock industries and must take much of the credit for keeping livestock import levels so low, resulting in little risk of new diseases entering the country. We have the 'world's best' animal genes, and we are competitive thanks to major exports of breeding products such as frozen sperm and breeding animals, particularly as we are able to document the absence of disease.

The prion disease chronic wasting disease (CWD) in wild reindeer represents a particular challenge. Measures against this are well underway, and the results of approximately 25,600 samples taken in 2017 show that the extent of the disease is as expected. However, much about this disease remains unknown and more research is required.

Strategic measures and priorities

New loss-making diseases emerge and require vigilance on our part. The increase in capacity in the aquaculture industry is based on salmon lice as an indicator. Although lice levels are within the levels set as acceptable by politicians, more salmon in farming facilities will increase the likelihood of lice infections and other diseases spreading. If the anticipated growth is to be sustainable, it requires better measures to prevent infection. We should help by using our tools to ensure that operators coordinate their operations through following of areas and by reducing movements of fish at sea.

Within the framework of open borders, monitoring and a high level of awareness amongst producers and the public can help to prevent infective agents, pests and parasites entering from other countries. Actions by industry organisations are crucial, in addition to what each individual business can do.

The EU is getting a new framework for both animal and plant health in which a greater emphasis will be placed on the knowledge of businesses and preventative measures. We will help to ensure that this becomes a good tool in Norwegian conditions.

The Norwegian Food Safety Authority's monitoring programmes for the entire value chain are crucial for discovering diseases and pest, and to initiate measures that combat and prevent these. These programmes are updated on an annual basis. Our strict regime for checking seed and seed potatoes means that we have far fewer plant diseases than many other European countries.

Fish Health and Fish Welfare

Breeders managed to reduce the levels of salmon lice in their facilities, but the mortality rate remains high and there are major disease and welfare issues. Salmon lice treatment is the most important cause of these problems.

Since fish welfare and fish health are closely connected, both issues are discussed in this chapter.

Goals

Good health and welfare for farmed fish and cleaner fish.

- Reduction in the handling of farmed fish and ensure the responsible use of medicines.
- Reduce mortality rate for salmon between transfer to sea cages and slaughter.
- Reduce the number of outbreaks of listed diseases.
- All facilities should comply with lice limits.
- Eradicate *Gyrodactylus salaris* from infected waters.

Results

Norway remains the world's biggest producer of Atlantic salmon, producing in excess of 1.2 million tonnes. Production during the most recent years was virtually unchanged. The main reasons for this are a high mortality rate due to infectious diseases and the treatment of salmon lice.

Breeders are responsible for finding solutions to health and welfare issues, and running operations that ensure good fish health and welfare. The industry has done a lot and has succeeded in improving the lice situation, although much work remains to be done.

Most of the goals in the area of fish health and welfare have not been met. We have engaged in extensive work in order to deal with the battle against disease and salmon lice. This has enabled us to slow down this negative trend. Additionally, we have handled many appeals. This work has been prioritised and is important for ensuring that similar cases are treated equally. It also contributes to the development of regulations. Cases involving disease and appeals are both demanding and meant we were unable to carry out several planned initiatives and important developmental and regulatory work.

Norway is one step closer to its goal of eradicating *Gyrodactylus salaris* following the clean bill of health for the Lærdalselvi River and the Vefsn region.

Lower Levels of Salmon Lice and Many Treatments

Overall, the levels of lice were lower than in the years 2012-2016. Levels in spring were around the same as in 2016, but breeders managed to maintain better control over levels during the autumn. There were no serious episodes in which breeders lost control and farmed salmon were harmed by salmon lice.

Even though the number of treatments for salmon lice decreased, there was still a high level of treatment for salmon lice. Aquaculture operators had more success with cleaner fish and initiatives that prevent the emergence of lice. However, this resulted in increased transfers of fish in sea cages, which also increases the risk of disease spreading.

Table 1: Overview of treatments for salmon lice in the last three years.

	2015	2016	2017
Pharmaceutical treatments	2,531	2,145	747
Mechanical treatments	216	1,197	1,715
Total	2,747	3,342	2,462

For the first time ever, more treatments for lice were mechanical than pharmaceutical. This change is due to salmon lice being resistant to chemical treatments.

The use of cleaner fish is an important and effective measure for limiting salmon lice, and is being used by an increasing number of breeders. The problem is that the health and welfare of cleaner fish is not good. We lack data for losses and mortality, but we know that a large proportion of cleaner fish die or are lost in other ways during the course of a typical production cycle. A situation in which the majority of cleaner fish put into sea cages die is in contravention with the intentions and provisions of the Animal Welfare Act and cannot continue.

Mechanical Treatments Result in Poor Welfare

Mechanical delousing methods such as pressing, pumping, flushing and brushing have been shown to result in poorer welfare for salmon. Although breeders have gained more experience of mechanical methods and the methods have improved, there are too many instances in which salmon are injured or die. We received 963 reports of welfare incidents in 2017. 625 of these were connected to treatments for salmon lice, and the majority of these related to mechanical treatment. This cannot continue.

Ill salmon have lower tolerance levels. There have been many instances in which salmon with different diseases have not been able to deal with mechanical treatments and many salmon have died. There are grounds to ask whether repeated handling makes the fish vulnerable and more susceptible to disease.

The Norwegian Food Safety Authority has repeatedly emphasised the responsibilities of breeders when using mechanical methods and that they must involve fish health personnel prior to such treatments. This was confirmed by a fine issued for infractions where ill fish were treated and many died during delousing. Fish health personnel should provide a thorough assessment of the health status of fish prior to any treatment. Not all operators have this procedure in place at present.

All new methods must be documented and justifiable in welfare terms before they are used. We have followed up on the documentation requirements, but there remain challenges in terms of mechanical delousing. The Norwegian Food Safety Authority does not approve equipment and methods, but is reliant on documentation revealing what impact the use of equipment has on fish welfare. If the methods results in excessive welfare issues, it may be necessary to prohibit their use.

Following incidents with increased mortality, we expect breeders to map the causes and implement measures to avoid similar incidents occurring again. We have observed that many breeders lack deviation management procedures of this kind. This is why we have tightened up in this area and will continue to do so. We are monitoring this through supervision of breeders' internal audit systems, and we will issue fines where insufficient attention is paid to fish welfare.

There are also many breeders who have good procedures in place, and who are achieving good results. This demonstrates that significant improvements can be achieved through good internal audits. We have created guidance to accompany the internal audit regulation that we used to improve breeders' internal audit procedures.

More Cases of ISA and PD

There were 14 outbreaks of ISA, two more than the year before. Previously, the highest number of cases was recorded in Nordland. The outbreaks in 2017 spanned from Rogaland to Finnmark. Two cases occurred in land-based young fish / broodstock facilities. It is unclear whether the infection originated in water that was insufficiently disinfected, or from fish in sea cages that were transferred onshore. This demonstrates that transferring fish from sea cages to the land does not guarantee the avoidance of ISA outbreaks even if the fish are tested and the water is disinfected.

We are using significant resources to monitor the outbreaks and are conducting regular inspections of all facilities included in the control areas. Coordinated following is an important and effective measure for limiting further spread. In some cases, the rapid removal of fish leads to losses for operators in the form of reductions in slaughter weight. However, if infected fish remain in facilities for a long time prior to slaughter, the risk of infection remains high and forms the basis for local epidemics.

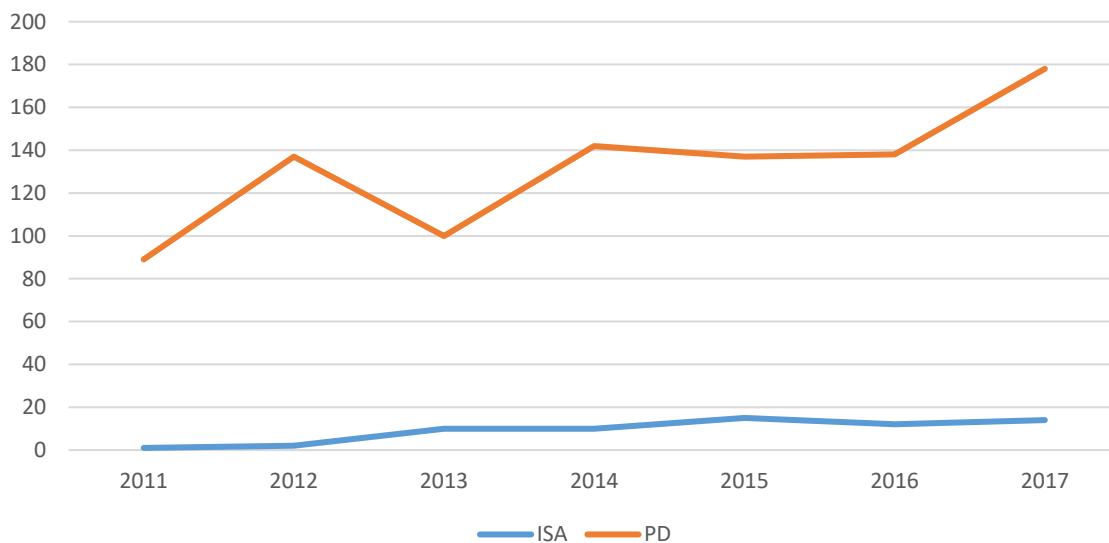


Figure 3: The number of outbreaks of the diseases ISA and PD over the course of the year.

Pancreas disease (PD) remains one of the most serious diseases affecting the aquaculture industry. PD results in suffering for the fish and major economic losses for individual breeders and industry as a whole. There were 178 outbreaks, which represents a significant increase from 2016.

During the course of the spring and summer, PD was detected in several facilities in northern Trøndelag and the south of Nordland county. The spread of the disease has therefore shifted northward. A new PD regulation was established, in addition to a regulation concerning control areas in the north of Trøndelag / Bindal. This initiative aims to prevent the further spread of the disease northward, and to reduce occurrences of it in the control area. We are preparing a plan to combat PD and we have proposed improvements to the new PD regulation.

Preventing the spread of the disease and its establishment in new areas is challenging for both breeders and the Norwegian Food Safety Authority. The current strategy means that individual breeders must sometimes pay a high price for maintaining an infection-free status that others benefit from. Initiatives in the event of outbreaks of disease are radical. Our decisions must therefore be reasonable and proportionate to the risk involved. PD cases are often complicated and in some cases our decisions are appealed against. We are focused on ensuring our management of cases is justified, but the consequence is that significant amounts of time can elapse between initial suspicions of disease until fish are removed. This means that disease spreads while the appeal is ongoing.

The PD and ISA situation can also be an obstacle to the export of salmon. Fish health requirements, with reference OIE standards, are increasingly being used by other countries to limit market access. For example, salmon with PD or ISA cannot be exported to China, Australia or New Zealand.

Mortality Rates Remain High

Shrinkage in aquaculture has remained stable in recent years at around 20 per cent. Shrinkage refers to fish that are lost in production between the point when they are put in sea cages and when they are slaughtered, divided into broaching, cast offs, dead fish and other. Dead fish refers to fish that die from disease, injuries, etc.

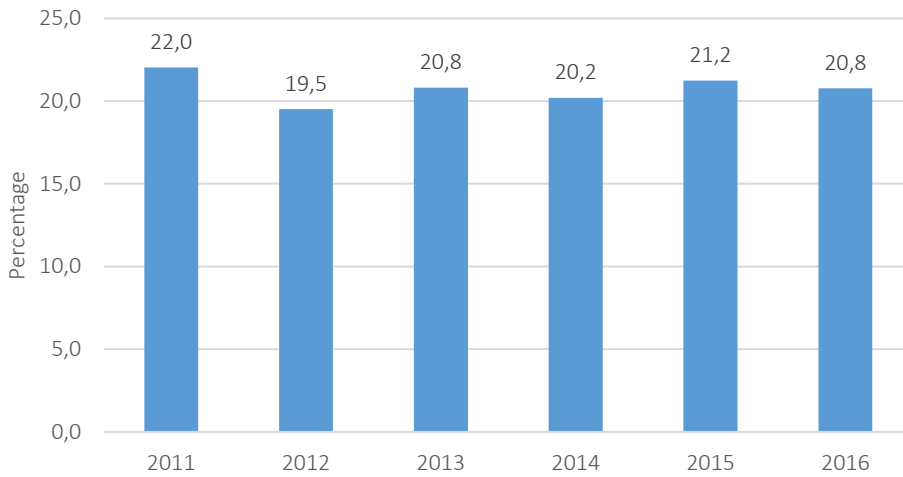


Figure 4: Shrinkage as a percentage of the number of fish put into sea cages in the period 2011-2016. Source: Kontali Analyse AS

Mortality during the first months at sea has been reduced, but disease and treatments for salmon lice have also resulted in increased mortality and reductions in welfare for large salmon. In total, the same number of farmed fish die - they are just bigger when they die (Kontali Analyser 2018, Norwegian Institute of Marine Research risk report (2018)).

Both the Norwegian Institute of Marine Research's risk report (2018) and the Norwegian Veterinary Institute's fish health report (2018) show that there are large differences related to shrinkage in salmon farming. In Hordaland, shrinkage is reported as 22.5 per cent, while Nordland and Troms are lowest with rates of 6 and 6.6 per cent respectively. Finnmark has a rate of 13 per cent, but this is due to a one-off incident. The other three western counties are also high, while Trøndelag is a little lower (12.2 per cent). It is tempting to assume that PD is one of the causes of high shrinkage in Hordaland since the PD virus is widespread in the area.

Some of the mortality is due to circumstances beyond the control of breeders. A review conducted by the Norwegian Institute of Marine Research demonstrates that some companies have generally lower mortality rates than others. It is reasonable to assume that culture, attitudes, competence and good operating procedures are significant factors in reducing mortality. The breeders' most important task is to take preventative measures.

Towards a Norway free from *Gyrodactylus*

Norway is obliged under international environmental agreements to eradicate the salmon parasite *Gyrodactylus salaris*. Since the 1980s, Norwegian environmental and veterinary authorities have been actively battling the parasite through treating infected waters.

In 2017, the Lærdalselvi River and rivers in the Vefsn region received clean bills of health. The latter includes the Fusta River and surrounding waters, which were treated in 2012. We must await this recovery programme until stocks of Arctic char are big enough to be monitored. This is likely to occur in 2022.

There remain seven waters awaiting treatment in the infected regions of Driva and Drammen.

In Driva, fish barriers have been put in place in anticipation of treatment, while a committee is examining the options for treating the Drammenselven River.

Gyrodactylus salaris

Gyrodactylus salaris is a small parasite that attaches to the skin of salmon spawn.

It lives and propagates in freshwater and brackish water, but dies quickly in ordinary saltwater.

The parasite can lead to entire populations of wild salmon in infected rivers being lost.

Challenges and Plans

The challenges in the aquaculture industry are complex and challenging. The expected increase in capacity and the establishment of development permits will result in more fish in the sea in most areas. Preventing the spread of disease and reducing the handling of ill and weakened fish will be more important than ever. If growth is to be sustainable, important preventative measures must be taken.

We are intensifying our work to prevent and combat infectious diseases. Specifically, we will limit breeders' transfers of fish through approval of operational plans and by requiring coordinated fallowing in limited areas. The use of service vessels may pose a risk, and we will examine the opportunities to regulate these more strictly. Furthermore, we will finalise a plan of action to deal with PD in addition to making changes to the PD regulation.

In connection with the positioning aquaculture facilities in production areas, the Norwegian Food Safety Authority has an important task in the shape of monitoring facilities that exceed the lice limits. We are therefore revising the salmon lice regulation in light of the new regime for the production regulations. The new regulation should simplify and clarify breeders' responsibilities, ensure that we can take action against those who do not comply with the lice limits, ensure good quality lice data and that fish welfare is better taken into account. The aim is for the regulation to enter into force no later than 1 January 2019.

We have planned a supervision campaign relating to cleaner fish that we will conduct in 2018. We will examine the use of cleaner fish in facilities producing fish for consumption, those producing young fish and the fishing and intermediary storage of cleaner fish. The goal is to obtain more knowledge about the challenges caused by the use of cleaner fish so that we can carry out more systematic and targeted supervisory activities.

New methods and technologies present challenges. Operators must therefore ensure they carry out adequate risk assessments, have the necessary expertise and use appropriate routines prior to starting to use new technology. The Norwegian Food Safety Authority places an emphasis on information and guidance, and will follow up in this regard through inspections of internal audit systems.

We are continuing to follow up on ensuring that the use of medicines is responsible. We are also continuing to follow up on facilities with high mortality rates. We will place an emphasis on ensuring that breeders have procedures in place that ensure that ill and weak fish are not subject to treatment and handling that the fish are not robust enough to cope with. We will examine whether there are grounds to introduce an indicator for illness and assess whether suitable indicators can be used to develop predictable criteria for when we can approve increased production in specific sites and areas.

Even though Norway has come a long way in the battle against *Gyrodactylus salaris*, we remain concerned by the risk of infection from Russia. Together with the Norwegian Veterinary Institute, the Norwegian Environment Agency and Finnmark County Council, we are seeking to extend our partnership with the veterinary authorities in Murmansk. We would like to cooperate on issues relating to diagnostics, monitoring and further studies on the Russian side of the border in order to determine which species are in the River Pak in proximity to Murmansk. Furthermore, we would like to see initiatives in place that freeze the situation in Russia so that the parasite is unable to spread.

Animal Health

Despite open borders being in place, animal health still remains better than in other countries. This means that preventative work and measures intended to protect us are working.

Goals

- Prevent the establishment of new animal diseases.
- Eliminate the infectious and deadly chronic wasting disease (CWD).

Results

We monitor and map a range of infectious diseases in animals on an ongoing basis. Some of them can also infect humans (zoonoses).

The livestock industry is working systematically on preventing infection and disseminating information, and very few live production animals are imported. However, a range of exotic infective agents and parasites have been detected in dogs from abroad.

An overview of infectious diseases detected in animals during 2017 is included in Appendix 2 relating to effect indicators.

Import of Animals

An increasing number of pets are being imported to Norway. We are using significant resources on providing guidance to the public about the risk of infection to people and animals via a separate Facebook page and phone service for pets.

The regulations for the import of dogs and cats from countries with poor animal health situations are managed as strictly as possible based on the opportunities set out in the regulations. Together with the Norwegian Customs Service, we have carried out several joint operations at border crossings on roads and at ferry ports around the country.

After it became permitted to hold 19 different types of reptiles, there have been significant imports of these. Unfortunately, we have noted that many people lack the necessary documentation in relation to species and origin for these.

The Battle Against Chronic Wasting Disease

Norway manages the largest remaining herd of European wild reindeer. In 2016, chronic wasting disease was detected in the herd in the North Mountains. The aim is to eliminate the infectious and deadly disease. Based on [reports from VKM](#), a plan has been established for the full sanitation of the infected herd and a separate [plan for the re-establishment](#) of healthy animals has also been set out.

A total of 25,600 samples were taken nationwide during 2017. Since the first detected case, 11 infected animals have been found in the North Mountains, and the disease has not been detected in other areas. Additionally, similar findings have been made in an elk in Lierne and a red deer in Gjemnes - this is probably less infectious variant similar to the prion disease NOR 98 found in sheep.

Sanitation is going according to plan thanks to a positive collaboration between the Norwegian Environment Agency, the Norwegian Nature Inspectorate, the Norwegian Veterinary Institute and the Norwegian Institute for Nature Research. Of the herd of approximately 2000 animals in the North Mountains, around 600 animals were shot during normal hunting and 530 through a state cull prior to the end of the year.

This withdrawal will be complete by 1 May 2018. The area will then be left fallow for at least five years prior to the wild reindeer herd being re-established with healthy animals from another nearby wild reindeer area.

The EU Commission is closely following the Norwegian measures against chronic wasting disease, and will initiate a monitoring programme for wild red deer in the Nordic and Baltic countries from 2018.

Inspection of Veterinary Practices

We are receiving an increasing number of reports expressing concern about vets' activities, and we issued two warnings related to incorrect use of medicines and inadequate record keeping.

We are revising the Act on Animal Health Personnel for a number of reasons, including the fact that many vets now work in larger clinical companies and chains, which means that the distribution of responsibilities has changed somewhat.

Infections in Imported Dogs

Over the last two years, the Norwegian Veterinary Institute has detected a range of new infective agents and parasites in imported dogs:

- Leishmania infantum
- Heartworm (Dirofilaria immitis)
- Brown dog tick (Rhipicephalus sanguineus)
- Tongue worm (Linguatula serrata).

These can cause serious illness in animals, and some of them can also cause harm to humans. New evidence gives cause for concern.

Prion Diseases

Prion diseases are fatal brain diseases caused by prions, which are misfolded proteins.

The disease can be hereditary, infectious or occur spontaneously.

Classic scrapie in sheep is infectious and has not been seen in Norway since 2009, while the variant NOR98 which we detect several cases of every year is considered to be hereditary.

BSE, which originated in the UK, is the only known prion disease that can be transmitted to humans.

Challenges and Plans

It is difficult to limit the import of street dogs, including those with known diseases. We have been tasked with tightening our management practices, but it is challenging under the applicable EU regulations. We are continuing to manage this area as strictly as possible.

The continuous monitoring of the presence of absence of different infective agents must be continued at approximately the same levels as at present. Documentation of good animal health is important for areas such as the export of breeding materials.

Furthermore, the work on dealing with chronic wasting disease requires better diagnostic methods for the examination of live animals. A large number of samples must be taken to identify uninfected herds that can be used in the reintroduction of wild reindeer in the North Mountains following the end of the fallow period. Cooperation with local authorities and organisations is crucial if this is to succeed. Mapping will continue as before during 2018.

We are well underway with our preparations for the new EU regulations contained in the Animal Health Law. This law will enter force in the EU in 2021.

Plant Health

Plant health is good in Norway compared with other countries. Increasing trade volumes increase the risk of new, serious plant pests being introduced. This poses a threat to Norwegian plant health. Several new pests were introduced over the course of the year through imports.

Goals

- Prevent the establishment of new plant pests.
- Prevent the spread of established plant pests.

Results

15 of the approximate 160 serious pests on EPPO's list are found in Norway. 11 are being fought, while four are so widespread that they are not worth fighting with public funds.

We monitor and map prioritised plant pests on an annual basis, see appendix 2 for an overview of the findings.

Pear decline (*Candidatus phytoplasma pyri*) was detected for the first time in 2015. We have been mapping the disease systematically over the past two years. Infections have been detected in several cloning archives, variety collections, in fruit production and with one plant producer.

Two serious plant viruses, Strawberry crinkle virus and Strawberry mild yellow edge virus were detected for the first time in Norway. These finds were all in strawberry production. We suspect the infection was introduced through strawberry plants imported from the Netherlands, and are not ruling out that the infection may be more widespread than we have uncovered so far. The programme to map new pests in strawberries is being continued in new parts of the country.

Woolly apple aphids (*Eriosoma lanigerum*) were detected in apple trees in both 2016 and 2017. In 2016, the discovery was made in a closed greenhouse trial using plants from the Netherlands. Checks with recipients of plants from the same consignment did not uncover further findings. In 2017, woolly apple aphids were detected with both a fruit grower and in a private garden. We have not succeeded in tracing the source of the infection.

South American tomato moths (*Tuta absoluta*) are a serious pest in tomato production in many parts of the world and were detected in this country for the first time in 2017. The moths were detected in several large horticultural farms in Jæren. After assessing different strategies for managing the outbreak, we conclude that a public eradication initiative would be too costly. [VKM conducted a risk assessment](#) which made clear that the tomato moth can cause great harm to the Norwegian tomato industry. It is therefore important that industry takes precautions and implements measures to prevent their spread. No new findings were reported, but it

European and Mediterranean Plant Protection organization (EPPO)

EPPO has 51 member states in Europe and the Middle East.

EPPO's goal is to protect plant health in the region, develop international standards to prevent the introduction and spread of plant pests, and to promote safe and effective control measures.

EPPO's A2 list is a list of serious plant pests that EPPO recommends member state regulate and combat against. The list is revised on an annual basis.

remains to be seen during the spring of 2018 whether the measures put into place by the horticultural farms have been sufficient to stop the infection.

Changes to Plant Health Regulations

We are prioritising work on new pests that may threaten forests and green environments. New provisions to prevent the introduction of four new species of beetle were introduced. These beetles can have a major impact on society if they become established. Import regulations have now set out new requirements for the import of items such as plants and timber from countries where these beetles are found.

Responsibility for checks on domestic plant production were transferred to individual businesses when the regulations changed in 2016. Inspections have shown that the industry has largely understood its responsibilities and has good levels of expertise in relation to the new requirements. Nevertheless, it remains necessary to guide and monitor the industry, and particularly businesses that are not affiliated with an industry organisation or advice service.

The obligation to carry out receipt checks was clarified in the change to regulations in 2016. In a national supervision project, we found that a significant proportion of importers continue to lack knowledge about relevant regulations and about plant pests and plants that may not be imported. Following the project, many of the importers have taken courses offered by NIBIO to enhance their knowledge. We contribute guidance about regulations to these courses.

Several serious forest pests can be introduced through wood packaging in all types of import shipments. Wood packaging that does not fulfil the requirements for processing and labelling therefore represents a major hazard. The extent of such non-notifiable imports is substantial, and carrying out inspections of them is resource-intensive.

Information Campaign Directed at Construction Industry Successful

Major building projects are under way in many places. Construction work can spread soil-borne pests and weeds. We regularly receive inquiries from contractors and developers. This demonstrates that the information and supervisory campaigns we carried out in 2016 aimed at the construction industry contributed to raising awareness of the risks associated with construction work and moving soil.

Major Efforts Continue Against Fire Blight

The disease was detected in four new municipalities in Møre og Romsdal. A new infection was detected on the island of Finnøy in Rogaland after many years without detection. Notwithstanding these instances, the situation remains characterised by being a fight against the disease.

We are still working to establish a buffer zone against further spread along the coast towards Eastern Norway by removing the most receptive host plants in the municipality of Grimstad.

Challenges and Plans

The import of plants provides consumers and professional cultivators access to a wide range of products, but increasing internationalisation in trade is threatening the good health enjoyed by Norwegian plants and making supervision more demanding. There are regular reports of new pests in the country that we are dealing with. There are many risk factors related to importing plants:

- Increasing imports from non-European countries.
- More serious plant pests introduced to southern areas of Europe that spread northward to countries that Norway imports a lot of plants from.
- The total volume of plant imports is on the rise, and there is a lot of pressure for goods to quickly reach their point of sale.
- Increasing e-commerce levels involving private individuals without the skills to carry out good receipt checks.

It is difficult to discover hidden infections during the import phase. Combined with a lack of expertise and little time during receipt checks, the need for further control initiatives in Norwegian production is on the rise in order to prevent the introduction and spread of serious pests.

We are continuing to monitor possible new pests that may be imported in small plants for strawberry production, in soil with plants for parks and we are examining for Asian long-horned beetles (*Anoplophora* species). The monitoring programme for pine wilt nematodes in forests continues.

The current initiative for the prevention and combating of fire blight is resource intensive. We are reviewing the regulations and will propose a simplified strategy to combat the issue. We also believe that the entire plant health regulation ought to be modernised and simplified. The EU has also carried out major changes to their regulations and it would be relevant for us evaluate these for use ourselves.

Seeds and Propagating Material

Poor weather conditions reduced the quality of Norwegian seed products. Sales of certified seed potatoes increased more than ever. This results in less disease, less use of pesticides and better economic conditions for the producer.

Goals

- Seeds and seed potatoes should have good levels of health and quality, and should contribute to conservation and sustainable use of genetic plant resources.
- Seeds and seed potatoes should be suited to Norwegian cultivation conditions.

Results

It was a more difficult year for Norwegian seed corn production due to varying weather conditions throughout the growing season and a lot of rain during the harvest period. In order to ensure adequate access to corn suitable for Norwegian cultivation conditions, we dispensed with the requirement for germination of 85 per cent for a quantity that will represent around 10 per cent of the market in 2018.

For grain, grass and clover seed, public certification is mandatory. With requirements relating to germination, maximum weed content and zero tolerance for common wild oats, the use of certified seed products is one way to ensure quality and reduce the risk of undesirable species spreading.

In the case of seed potatoes, public certification is also mandatory. In view of the risk of spreading hazardous plant pests, the import of seed potatoes is not permitted. We are particularly concerned about potato cyst nematodes, ring rot and leafroll virus. The presence of commonly occurring diseases (viruses, bacteria and fungi) should be as low as possible, and must be within defined values. Certification also provides assurance that the seed potatoes' variety is guaranteed and that there is no interference from other varieties. While the area of seed potatoes has remained relatively stable at approximately 2,250 acres, sales of certified seed potatoes have increased and during the last two years have been higher than ever before.

The Norwegian Food Safety Authority approved 8 new varieties of plant: one variety of cabbage, two varieties of strawberry, four varieties of barley and one variety of wheat. When a variety is approved, it is considered to be better than other varieties in terms of at least one characteristic such as resistance to disease, mycotoxin content (corn), crop or quality. The Norwegian Food Safety Authority also acts as the secretariat for the Plant Variety Board. A total of 14 plant varieties were protected by law in 2017.

We carried out a monitoring and control programme to identify unwanted species such as common wild oats, cockspur grass, hemp and ambrosia in imported feed and seed products. The species were detected in several groups of products.

Challenges and Plans

Undesirable species such as common wild oats, cockspur grass, hemp and ambrosia accompany imported goods and can cause issues as a result of increasing the use of pesticides, reducing crops, illegal cultivation (hemp), as well as posing a risk to public health (ambrosia).

Many new, smaller operators with varying levels of expertise and new sales methods make it more difficult to carry out supervisory activities. The regulations governing these areas are also not suited to this level of diversity.

The Norwegian Food Safety Authority is continuing its monitoring and control programmes for undesirable species in imported goods. We have created brochures, posters and have provided a lot of guidance and

Certified seed products and seed potatoes 2016-2017

Barley, oats, wheat	53,783 tonnes
Seed potatoes	10,076 tonnes
Meadow plants (grass, clover)	1,927 tonnes
Feed herbs	67 tonnes

information to prevent imports of this kind. We will continue to do so, in addition to evaluating adjustments to the regulations and management to respond to the challenges of unwanted species and the diversity of operators.

Feed for Animals and Farmed Fish

Feed constitutes the beginning of the food chain. Issues with the feed will accompany the product throughout the value chain. Inspections have shown that feed activities are generally well managed and controlled.

Goals

- Feed should be safe and contribute to safe food and healthy animals.
- Feed should cover the nutritional requirements of animals and fish and therefore ensure good welfare is maintained.

Results

Inspections have shown that feed activities are generally well managed and controlled. Inspections have remained at the same level as in previous years, and we did not demonstrate any significant deviations.

In particular, we have examined cleaning procedures during transportation. Cleaning should ensure good hygiene and that different layers of feed are not mixed. Routines are largely followed by drivers and they are in charge of transporting the correct products to the right place.

Monitoring Programmes Confirm Good Status

Analyses of feed for land-based animals and fish show that businesses have good oversight of the contents of feed in terms of additives and foreign substances. We have not uncovered any new challenges relating to infective agents or foreign substances. However, there was one instance uncovered of overdosing of premix in horse feed. Incorrect doses did not pose any risk to the health of the horses.

We focused on analyses of unwanted substances in our monitoring and control programmes (the OK programme) for fish feed. No challenges were uncovered. Perfluorinated compounds (PFOS/PFAS) are pollutants that we examined for the first time, and we only found traces of these. Detectable levels of the pesticides chlorpyrifos-methyl, pirimifos-methyl and glyphosate, as well as some mycotoxins (Don, Fum, Zea and Enniatins) were found in feed mixtures for fish. None of these findings were above the maximum limits permitted.

Development of Feed Regulation

Feed for farmed fish and the associated regulation are of great significance to Norway. In 2017, the European Food Safety Authority (EFSA) delivered a positive assessment of increasing the maximum amount of vitamin D permitted to be added to fish feed following input from Norway.

We disseminated a scientific assessment from the Norwegian Veterinary Institute concerning reduced amounts of copper in feed for land animals to prevent the development of antibiotic-resistant bacteria in animals and the environment.

Challenges and Plans

New feeds can result in new challenges. Scarcity of protein feeds mean that new feeds are introduced, particularly for animals for consumption. Insects can be an important source of raw ingredients for feed. In 2017, the production of insects for feed became permitted, and it was also permitted to use processed insect protein in feed for aquaculture. There is widespread interest amongst different businesses relating to this issue. Other types of feed that may become relevant include products from the food and biofuel industry, new plant types, algae and new species from the sea. Sources of fat and protein are particularly relevant. We will safeguard Norwegian concerns in relation to regulatory development in the EU. The area of fish feed is particularly important.

We are continuing our mapping and monitoring of feed. We will prioritise providing information to businesses and ensuring that inspectors have sufficient expertise, particularly in relation to the requirements concerning the production and use of new feed materials.

In order to ensure the import of safe feeds that are in accordance with our regulations, we will particularly direct our efforts at imports of feed during 2018.

Genetically Modified Food, Feed and Seed Products

Occurrences of illegal genetically modified products in Norway remains at a stable, low level. Nevertheless, many importers must improve their procedures for checking goods upon receipt in order to prevent the import of illegal genetically modified products.

Goals

- There should be no occurrences of genetically modified food, feed or seed products that have not been approved.
- Importers of products where there is a risk of occurrences of genetically modified materials must have knowledge and internal checks in place that ensure compliance with regulations.

Results

We took samples from food and feed products containing corn, soy, rapeseed, rice and papaya for analysis. Our monitoring found few instances of illegal contents, but many trace contaminants, see Appendix 3.

Just 5 out of 158 samples contained illegal GMOs, and all consignments were withdrawn from the market. 65 of the samples (41 per cent), primarily from feeds, contained low-level contamination of EU-approved genetically modified material that was not considered illegal. This is at around the same level as the results for the past five years.

No GMOs were detected in any of the analysed consignments of rapeseed and maize seed.

In order to obtain more knowledge about the occurrence of illegal ingredients in pet food and to help improve knowledge in the industry, 68 of the analysed samples were taken from pet and wild bird feed. Illegal genetically modified material was detected in one product, and there were permitted trace contaminations of genetically modified material or that were not quantifiable in 57 per cent of samples. Document checks uncovered that many importers have insufficient procedures in place for checking products. We followed up with importers with these shortcomings with instructions for rectification.

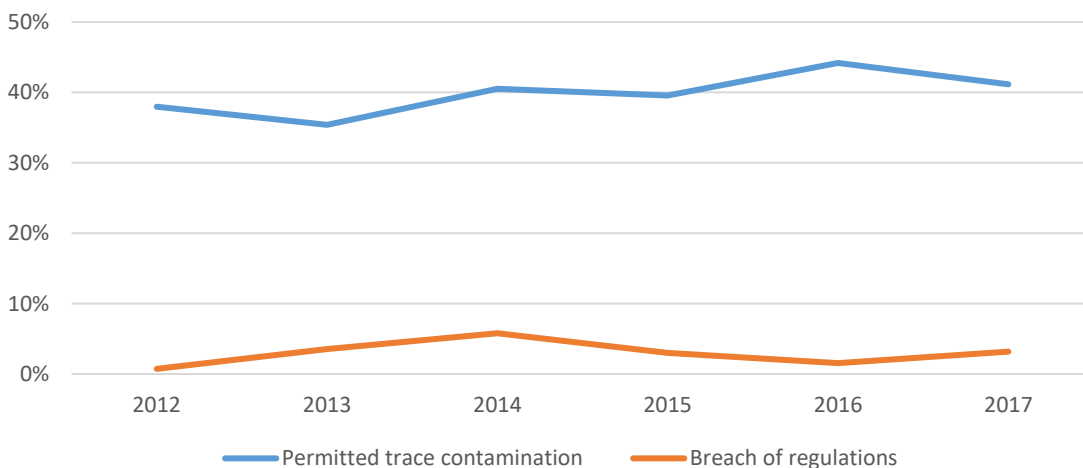


Figure 5: The proportion of samples with permitted trace contamination or GMO contents that breaches regulations in food, feed or seeds.

Challenges and Plans

A constant stream of new genetically modified variants of different plant species are being approved both in the EU and outside the EEA. This makes it challenging for the authorities and commercial players to keep up with analysis and documentation. It is difficult to ensure GMO-free transport lines in the global market, and

importers currently have inadequate procedures in place for actively reducing the occurrence of trace contamination.

New genetic engineering techniques, including gene editing, are a challenge in both Norway and internationally in terms of regulatory development and checks.

We are prioritising monitoring of the market by analysing risky products for GMO contents and by carrying out supervisory activities to ensure that importers have adequate procedures in place that ensure compliance with regulations. We will maintain a high level of protection in line with political guidelines and international regulations. In addition, we should inform and advise industry with regard to the need for internal checks in this area.

In 2018, we will focus on sampling in the food area where the most regulatory breaches are found. We will conduct supervisory activities using internal audit procedures through document checks for food, feed and seeds.

ANIMAL WELFARE AND RESPECT FOR ANIMALS

Animal welfare overall is good, even if this does not apply wholly to all forms of production or all forms of animal husbandry.

The following sets out the animal welfare status of land-based animals. Fish welfare is discussed in the chapter on fish health, since fish health and welfare are closely linked. We also make reference to the [Norwegian Food Safety Authority's work on animal welfare - annual report 2017](#) which provides more detailed overview of animal welfare and our animal welfare work.

Brief description of current situation

We prioritise supervisory activities where the risk is greatest that animals may have poor welfare. In 40 per cent of cases, we uncover minor and major breaches of the Animal Welfare Act, but this does not necessarily mean that animals have poor welfare. We also carry out random inspections to establish what conditions Norwegian livestock live in.

The number of animal holdings with serious violations of the law is low when compared with the number of inspections, and there are minor variations in the figures from year to year. This suggests that most animals in Norway benefit from good welfare.

More livestock owners than before have had to discontinue operations due to serious breaches of the Animal Welfare Act. Our use of our tools has become stricter. The number of reports of concerns about animals that are suffering continues to rise. Most of these relate to pets.

Conditions in the pig production sector concern us as we have uncovered many unacceptable circumstances. Rough grazing helps to ensure good welfare, although it also means there is a risk of injuries, illness, parasite attacks or attacks by predators. Losses remain high.

Effect indicators and overall assessment of goal achievement

Appendix 2 contains figures for all the effect indicators.

Effect indicator	Goal achievement	Assessments
The number and percentage of animals that die during transportation and stabling at the slaughterhouse, especially poultry	Satisfactory	Few animals die during transportation, and there have been no major incidents.
Number of animals used in experiments (total and for fish)	Not fully satisfactory	The number is far higher than the year before and is primarily due to two large trials involving 10.6 million fish being subject to testing of salmon delousing treatments.
Number and proportion of animals lost while at pasture	Unsatisfactory	Losses remain high, and there is still a major animal welfare issue in several places around the country.

Strategic measures and priorities

We will continue our partnership with the livestock industry and the environmental authorities to reduce losses of animals at pasture.

We will uncover poor animal welfare through partnerships with other public bodies and industrial operators, and by using reports of concerns.

Our supervisory activities should be risk-based, while we should also conduct some screening inspections. We will contribute to knowledge about animals herds, influence attitudes towards animal welfare and continue to disseminate results from our supervisory activities.

Animal Welfare Land Animals

Norwegian land animals generally enjoy good welfare, but there are also some challenges. There are too many animals that die while rough grazing, and particular challenges have been uncovered amongst pigs kept for slaughter.

Goals

- All animals in Norway should enjoy good welfare.
- Livestock operations that are subject to poor supervision and care over the long term should improve quickly or be rapidly discontinued.
- The mortality rate in reindeer and sheep that are rough grazing should be reduced to an acceptable level.

Results

Our supervisory activities are risk-based, and the results do not therefore show the overall situation of Norwegian livestock. However, we do also conduct random sample inspections.

We conducted a total of 9,777 inspections on livestock. This is a decline of 7 per cent from the year before, but at around the same level as in 2015. 88.5 per cent of inspections related to animal welfare. The proportion of unannounced inspections varies from animal type to animal type, but is somewhat higher than it has been before. This is a desired development.

The number of animal holdings with serious violations of the law is low when compared with the number of inspections, and there are minor variations in the figures from year to year. This suggests that most animals in Norway benefit from good welfare.

Cases of serious neglect where animals die or must be put down involve great suffering for both animals and people, and each case is one too many. We are therefore continuing to work on avoiding and discovering such tragedies as soon as possible, working in dialogue with other authorities, agricultural organisations and industry.

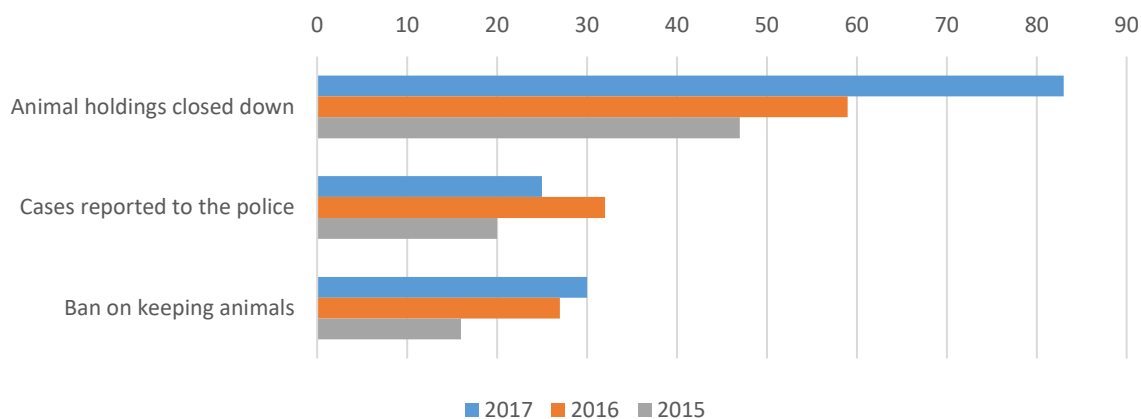


Figure 6: The number of livestock operators subject to the strictest measures that can be implemented by the Norwegian Food Safety Authority over the last three years.

Concerning Findings in Pigs for Slaughter

Based on animal welfare concerns relating to pigs for slaughter in Rogaland, we initiated a campaign of inspections in the county. Approx. 20 per cent of the 649 herds of pigs for slaughter were visited during 2017.

We uncovered multiple serious conditions such as ill and injured animals being provided with inadequate care and treatment, too little litter and no rooting material, animal density that was too high, mixing of animals of different sizes and poor levels of cleanliness. This campaign will continue until April 2018, and the results will be published in a separate report.

Industry has taken the findings seriously and has set in motion measures to improve conditions. We have good dialogue in place with industry about the work to come to boost animal welfare for pigs for slaughter to an acceptable level.

Loss of Animals Grazing Remains High

The loss of animals while rough grazing remains one of the biggest challenges. A total of 81,000 sheep and lambs were lost. Even though attacks by predators receive the most attention, accidents, injuries and illness are the most common causes of loss.

Happily, attacks by predators have declined. The number of applications for and payments relating to losses of sheep to predators continues to fall, according to figures from [the Norwegian Environment Agency](#). Compared with a strong fall in the number of confirmed injuries caused by predators, the figures indicate that preventative measures are having an effect.

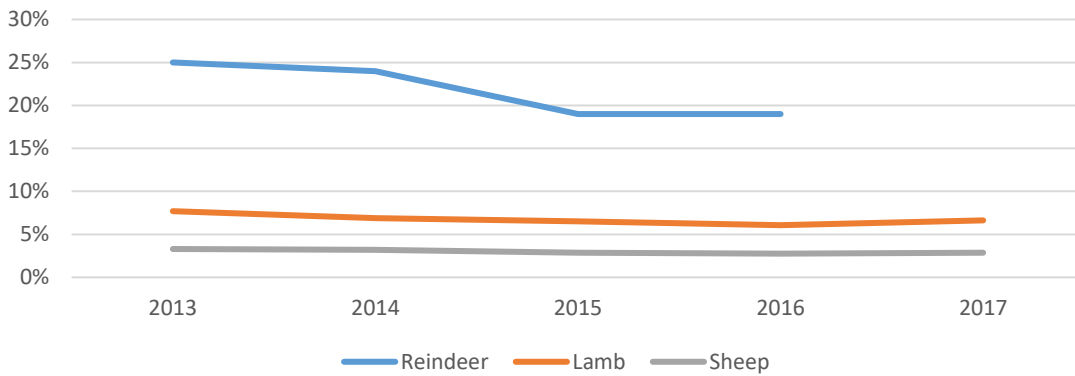


Figure 7: Proportion of animals lost while at pasture.

Tame reindeer and elk being hit by trains on the Nordlandsbanen railway has been a major animal welfare issue for many years. In 2017, 514 tame reindeer were killed by the train, including 80 reindeer killed in one day in December. We are in dialogue with industry, Bane Nor, transport providers and the county governor to reach a solution that will reduce the risk of train strikes and provide a more efficient way of putting down injured animals. Bane Nor is now expediting the construction of a new fence to keep reindeer off the line. This will probably help.

The Number of Reports of Concerns Continues To Rise

We received 10,426 reports of concerns about poor animal welfare compared with 9,381 in 2016. The majority of these reported concerns related to pets, but we also receive many reports about horses and some about livestock. Reports of concerns form an important basis for knowledge about which livestock operations need inspecting.

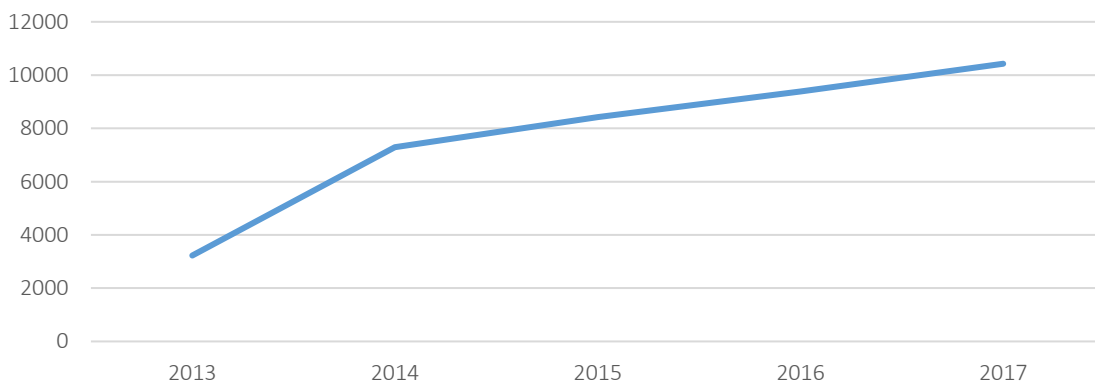


Figure 8: Number of reports of concerns.

All reports are processed, and 35 per cent lead to an inspection. It is difficult to determine in which instances

animal welfare is truly at risk. This is why we are working to update the text on the report button on our website and we have created clearer criteria for the prioritisation of reports.

Inspection Results for Fur-bearing Animals Remain Good

The number of livestock operations with fur-bearing animals is falling - this is particularly the case for foxes. We have carried out fewer inspections of fur-bearing animal operations and found fewer deviations in recent years (see appendix 3). The proportion of fur-bearing animal operations that are inspected still remains far higher than is the case for other types of livestock operation.

The fur farming regulation was to be tightened in 2018, but since the government wishes to introduce legislation abolishing fur farming prior to 2025, the proposed amendments to the regulations were withdrawn.

Formal Cooperation with the Police Extended

In order to ensure that more serious criminal cases involving animals are investigated and dealt with in court, it is important that we have a strong partnership with the police. The goal is not necessarily more convictions, but to prevent offences and ensure the right judgements are handed down in the right cases.

There is a formal partnership between the police and the Norwegian Food Safety Authority in three of our regions: Trøndelag police district in Central Norway, the Southwest police district in Southern and Western Norway and the Eastern police district in Greater Oslo. The government has decided to extend this initiative to further police districts. We have observed positive developments in interaction and development of expertise in those places where partnerships have been established. Centrally, the Norwegian Food Safety Authority also has good partnerships and close dialogue with the National Police Directorate and the National Authority for Investigation and Prosecution of Economic and Environmental Crime, as well as with the Attorney General in matters where animal welfare comes before the courts.

Reptiles Permitted

A 40-year ban on reptiles was overturned and it was permitted to import and keep 19 different species of snakes, lizards and turtles (reptiles) in Norway. These species have been picked based on considerations relating to animal welfare, natural diversity and the safety of people and other animals.

It is easier to reach out with information and provide proper veterinary assistance to the owners of legally kept animals. We have put a lot of effort into informing the public about the changes to the regulations and into developing course and guidance materials.

Transportation of Animals to Slaughter

Animals that are not fit for transportation should not be sent for slaughter. The proportion of animals that die during transportation and stabling at slaughterhouses is very low.

Nevertheless, it is still worth noting that the proportion of hens that die is 3.5 times greater than it is for poussin. The interest in slaughtering cast off laying hens for consumption has increased. The figures indicate that these animals are less robust and have a lower tolerance for transportation than other poultry. No serious incidents relating to animal transportation have been recorded.

Many Farmed Salmon Used in Tests

11.6 million animals were used in tests in 2016. The figures from last year are not yet finalised. This is significantly more than in previous years. This includes 10.6 million salmon that were used in two tests to develop methods to combat salmon lice.

This increase is also due to improvements in reporting from animal testing organisations, feed trials for hens to enable the discontinuation of the use of narasin, and the breeding and use of new strains of genetically modified mice.

It remains a goal that as few animals as possible should be used in testing. The increase in the number of animals used in testing is due to the need to develop new methods for keeping and handling farmed salmon, particularly in the case of gentle methods for combating salmon lice. It is important that new methods are documented as being justifiable in welfare terms before they are used on a large scale.

Challenges and Plans

The Norwegian Food Safety Authority has few available measures that can help to reduce losses of animals while grazing. We will challenge grazing operations to define goals and implement initiatives that can reduce losses.

It is challenging to prevent the serious neglect of animals, but if operators in the livestock industry have good procedures in place for how they deal with animal welfare concerns and notify us in good time, we can work together to ensure that it does not develop into an animal-related tragedy. We are therefore continuing to work together with other bodies, trade organisations and other stakeholders to prevent and detect such incidents.

We will work to further develop our partnership with the police in more places around the country, and we will develop a procedure for the national coordination and management of this together with the National Police Directorate and the National Authority for Investigation and Prosecution of Economic and Environmental Crime.

QUALITY AND HONESTY

It is important that the consumer is familiar with the quality and other characteristics of the products and can make well-informed choices.

Brief description of current situation

Food and cosmetics are not always adequately labelled. Proper labelling is especially important for allergy sufferers. Few people report side effects from the use of cosmetics.

The sale of food by means other than the traditional channels is on the increase, which presents challenges in terms of supervision and makes it more difficult to track. The same applies to dietary supplements being sold at events such as home parties, online and through direct sales. Supervisory activities relating to online stores and non-traditional points of sale require a different approach.

Food fraud is an increasing problem and can be expected to further increase in the years to come. There is still a lot of fish being sold that is not of a good enough quality.

Effect indicators and overall assessment of goal achievement

Appendix 2 contains figures for all the effect indicators.

Effect indicator	Goal achievement	Assessments
The number and proportion of samples in which salmonella was detected and where the limits for unwanted substances were exceeded in relation to the total number of samples	Satisfactory	There were no instances of salmonella detected in feed last year.
The number and proportion of decisions based on the food information regulation in relation to the total number of decisions relating to food.	Not fully satisfactory	1,821 decisions were made pursuant to the food information regulation. This represents 20 per cent of the decisions relating to food generally. Allergens are a control point in the smiley scheme and our assessment is that the status for this indicator remains at the same level as the year before.

We consider the overall goal achievement to be less satisfactory for the labelling regulations and the regulations concerning nutrition and health claims are not being complied with to a satisfactory standard. The salmonella status is satisfactory.

There is still room for improvement in terms of the quality of resources that are taken out of the sea. Fish that could have been used as food are used for alternative purposes due to poor handling.

Strategic measures and priorities

Experiences based on supervisory activities show that there is a need for more guidance about the various labelling requirements. The regulations are perceived to be complicated and difficult to follow. We should provide good guidance in the form of information on our website, in guidance material and through personal guidance provided by our inspectors. This will help to ensure that more operators follow the requirements set out in the regulations.

The annual label check of foods in the Norwegian market should continue in order to improve businesses' knowledge in relation to accurate and clear labelling of foods.

Knowledge relating to and inspections of tracking systems will be further developed. This is important in order for products to be traced in the food chain.

We will continue to participate in international projects to uncover food fraud and to develop further knowledge within our own organisation. Industry must have a conscious approach towards this and work to prevent fraud.

It is the responsibility of businesses to ensure that cosmetics for sale are safe. The Norwegian Food Safety Authority will follow up to ensure that businesses are able to document this.

We will continue our partnership with Norges Råfisklag in relation to the quality of seafood and will simplify and clarify individual provisions in the fish quality regulation.

Labelling, Traceability and Quality

Businesses are still not good enough at complying with the requirements for labelling, particularly in relation to allergens. Unlawful medical statements are used on some dietary supplements. Cosmetics shall not contain chemical substances in quantities hazardous to health. The consumer should not be misled by incorrect claims on products. The quality of whitefish is still not as good as it should be.

Goals

Information about foods should enable the consumer to make a well-informed choice relating to quality, composition and diet.

Businesses should have documented procedures for tracking, and where applicable, withdrawing goods.

The provisions of the fish quality regulation should be followed to ensure that fish on sale are of the quality expected by the consumer.

Results

Label checks encompass milk and dairy products. We found deviations in labelling both in relation to the food information regulations and/or the regulation concerning the use of nutrition and health statements on half of products. Most of these deviations were of lesser significance, but businesses still have some way to go in their compliance with labelling requirements.

Supervisory activities relating to the use of nutrition and health statements confirmed that the regulation is not be adhered to as expected. Particularly in the case of dietary supplements, there are many businesses that use unlawful medical statements.

Supervisory activities relating to general labelling requirements showed deviations from the requirements for labelling to be in Norwegian, for there to be an accurate declaration of allergens and for the quantities of ingredients to be indicated. We are also seeing that companies that are involved in e-commerce are not fulfilling the requirements relating to provision of information to the consumer. The requirement for written information to be provided to the consumer concerning allergens has been included in the smiley scheme inspection. We handed down 1,698 decisions due to a lack of information about allergens.

Supervisory activities conducted together with the Nøkkelhullet labelling schemes showed that those who use the label largely do so correctly.

The Norwegian Food Safety Authority participated in the EU's pilot project on e-commerce and dietary supplements. We checked more than 50 Norwegian-language websites. Among other things, we found 11 sites that were marketing dietary supplements with medical statements, images and figures claiming to prevent, treat and cure ailments/illnesses. This is not permitted, and was followed up on.

We started work on improving our knowledge and procedures for inspecting traceability and tracking systems.

As part of the EU's monitoring programme 'Marketing of Honey', we took 63 samples, of which 18 were of Norwegian origin. One quarter of the samples were incorrectly labelled. We also found incorrect botanical or geographic origins, fakes, and products of too poor quality to be sold as honey.

Challenges and Plans

E-commerce and marketing through social media such as Facebook and other websites are examples of new sales channels for food. Some of the new operators lack knowledge of the regulations and fail to register their business with the Norwegian Food Safety Authority. They also provide inadequate information to the consumer.

Affiliate marketing is also on the rise. This refers to websites that only market products and link to online stores, but which do not sell products themselves. These operators use many illegal statements and carrying out supervisory activities in relation to them is a challenge.

It is difficult for us to reach out to the consumer and new businesses with balanced information about food and regulations for the sale of food, but we are preparing guidance relating to individual new sales methods.

The labelling check in 2018 will encompass bread and bread products, and will also check the use of the Nøkkelhullet labelling scheme and nutrition and health statements. In 2018, we will publish new guidance for the industry about 'good informational practices'. This will contribute to improving knowledge of and compliance with labelling requirements.

Many dietary supplements are marketed using unlawful health and medical statements to convince consumers that the product works. The regulations concerning the use of nutrition and health statements are difficult to understand and follow. In order to rectify this, the Norwegian Food Safety Authority will published revised guidance for the use of nutrition and health statements during 2018.

The Norwegian Food Safety Authority will improve its work in terms of supervisory activities and guidance relating to traceability. Traceability should be a theme in a greater proportion of inspections.

Work on the revision of the fish quality regulation was initiated in the autumn of 2017. This work is seen in conjunction with the testing scheme for quality assurance conducted by Norges Råfisklag and the results from NOFIMA relating to the effect of the inspection.

Food Fraud

Consumers trust that the food they buy is what it claims to be. Through supervisory activities, our inspectors have uncovered that this not always the case.

Goals

Industry should have a conscious approach to fraud that may affect their production and should implement initiatives to prevent them being subject to fraud of this kind.

Results

The Norwegian Food Safety Authority has been working together with other public bodies including the police, the Norwegian Customs Service, NAV, the Norwegian Labour Inspection Authority and various municipal departments throughout the year. More than 100 locations have been checked and in a large proportion of businesses, either the Norwegian Food Safety Authority or other bodies have provided an official reaction. Cooperation is important both in preventative terms and to stop operators who are not serious from causing disruption to those who are.

For the third time, the Norwegian Food Safety Authority and Norwegian Customs Service participated in the Europol-Interpol joint operation against food fraud. Deviations were found in 6 out of 14 Extra Virgin olive oils that were analysed in terms of quality and labelling. Three of these were Virgin olive oils (not Extra Virgin), while three were Lampante. These are not suitable for consumption.

A survey carried out together with the Norwegian Customs Service showed cases of fraud in practically all of the Norwegian Food Safety Authority's management areas. The most common findings are in relation to the sale of meat, fraudulent approvals and health certificates, and fraudulent labelling and use by dates.

We are in dialogue with partners in the EU/EEA concerning best practice to combat food fraud. We have started using a new reporting system in the EU for cooperation on investigations into food fraud cases (the AAC system).

Food Fraud

Food fraud refers to deliberate breaches of regulations to achieve economic gain.

Increasing internationalisation in food production has resulted in increasingly complex sales flows. It is important that both industry and the Norwegian Food Safety Authority have the appropriate expertise to uncover fraud.

Challenges and Plans

Food fraud is a major issue in Europe and globally, and is expected to increase in the coming years. Increasing complexity around the production and transportation of ingredients and foods means that it is more difficult for businesses and the supervisory authorities to uncover food fraud. This poses a threat to food safety and increases the risk of consumers being subject to fraud. There is an increasing number of operators in the market who want to earn money from food fraud. It is difficult to discover because they constantly change their activities and approaches to carrying out fraud. Internet sales are particularly vulnerable.

We will continue to work on defining more specifically what we define as cases of food fraud, and how we should work to better uncover and obtain significant information relating to these cases prior to filing charges.

We will cooperate with the Norwegian Customs Service and police to ensure that serious cases result in a police investigation and trial. We will lead a Nordic-funded project to develop a joint Nordic threat assessment and will participate in the OPSON VIII operation in 2018.

Cosmetics

Norwegians buy more cosmetics than any other European country. A survey showed that many consumers suffer from side effects when using cosmetics - ranging from mild skin irritation to more serious allergic reactions on skin. Side effects and misleading information are the main challenges, together with a lack of knowledge about the substances in cosmetics that can have a serious impact on health.

Goals

- Cosmetics shall not contain chemical substances in quantities hazardous to health.
- Claims on products should not mislead the consumer.

Results

167 reports of side effects were received. Even though it has become easier to report side effect, the true figures are likely to be far greater. The most commonly reported products are moisturisers (cream, gel, serum, oil), skin cleaners, makeup, soap and suncare products. The most commonly reported side effects are skin-related issues such as redness, itchiness, swelling/edema and burning.

We additionally received 89 international Rapex notifications concerning products that might pose a hazard to health - a small decrease compared with the previous year. We reported 20 tattoo products that might pose a hazard to health due to their contents including illegal aromatic amines and higher levels of heavy metals than is recommended.

We prioritised supervisory activities relating to businesses' documentation that should demonstrate that products are safe and in compliance with the ban on the testing of cosmetics on animals. Most Norwegian producers and importers had satisfactory documentation.

As part of the OK Programme for cosmetics, we examined 50 hair colouring products in the Norwegian market. Unlawful levels of the substance O-Aminophenol in one product were followed up on with the distributor, with an instruction that sales cease immediately. Industry still has work to do to ensure accurate labelling of hair colouring products.

'The Pangea Operation 2017' was a joint supervisory campaign (the Norwegian Food Safety Authority, the Norwegian Medicines Agency, the Norwegian Directorate of Health and the Norwegian Customs Service) that focused on illegal cosmetics containing pharmaceutical substances. Sales bans were issued for the three products that were found to have salicylic acid beyond the maximum limits, and for two products containing illegal quantities of trichloroacetic acid (TCA).

Cosmetics

The area of cosmetics includes:

- Cosmetics
- Bodycare products
- Tattoo products
- Permanent makeup
- Some injection products

Rapex is the EU's rapid alert system for cosmetics and bodycare products, and ensures that dangerous products that are discovered in one country are not sold in another country within the system.

There are more than 2,000 businesses that sell or produce cosmetics in Norway. We carried out inspections on 85 of them and found that most deviations were connected to inadequate documents, terms of use, labelling and reporting obligations relating to the EU's notification portal for cosmetic products. Many operators run their businesses without registering with the Norwegian Food Safety Authority. We have made multiple seizures of cosmetics that are illegal and pose a hazard to health, and have issued bans on the sale of products in approximately 60 per cent of cases involving deviations.

Challenges and Plans

The rules relating to cosmetics are largely determined at an international level. We are continuing our work to contribute to the safe use of substances of concern in cosmetics via international fora.

Given that we know that many people experience side effects, it remains a mystery why so few people report them. We will improve our guidance and information aimed at industry and consumers. We will follow up with businesses that have sold products for which side effects are reported.

There are high levels of innovation in the cosmetics industry. An increasing amount of trade takes place via the Internet. There is a trend that small businesses are amongst the fastest growing and most profitable operators in the cosmetics industry.

In 2018, we will analyse sunscreen to assess whether such products fulfil EU and Norwegian recommendations. Similarly, we will continue to follow up on businesses' documentation showing that the products they sell are safe and satisfy requirements relating to the ban on testing cosmetics on animals.

ENVIRONMENTALLY-FRIENDLY PRODUCTION

The production and sale of plants, fish and animals has a number of different impacts on the environment. We must be aware of and acknowledge the ecological footprint of this and limit the damage where possible. The optimal utilisation of waste and by-products is also important. The UN's 17 sustainability goals apply to society as a whole, and many of them are connected to our social mission.

In particular, the inspection of organic farming, the use of pesticides and medicines in animals and farmed fish, antibiotic resistance, salmon lice in wild salmon stock, fertilisers and bi-products.

Brief description of current situation

Good plant health means that the use of pesticides remains low. Good health in land-based animals means that the use of medicines is low. As part of the international collaboration against antibiotic resistance, Norwegian conditions are being studied to see whether other countries can learn from our practices.

The use of medicines in farmed fish has been reduced as a result of developing resistance. The quantity of salmon lice remains a challenge for wild salmon along parts of the coast.

Supervisory activities relating to treatment facilities for waste water sludge showed that there remain challenges connected to waste-based fertiliser. Ambitions for increased utilisation of resources through a circular economy may have a positive energy and environmental effect, but also pose challenges in terms of the foreign substances and infective agents that can end up included as part of the cycle.

The number of eco-producers increased somewhat.

The ESA revised the by-product audit and concluded that it was largely satisfactory.

Effect indicators and overall assessment of goal achievement

Appendix 2 contains figures for all the effect indicators.

Effect indicator	Goal achievement	Assessments
Sales of pesticides (tonnes of active substances)	Satisfactory	The sales figures for pesticides show that the quantity of pesticides sold, stated as active substances, fell slightly from 2016 to 2017. There are small changes to the risks posed to health and the environment.

Environmentally-friendly production consists of many areas that are not necessarily easy to summarise in overall terms. The effect indicator shows that the use of pesticides is low, but that such use is not always correct. The use of medicines in animals is low. There are benefits to be taken from the correct utilisation of waste and by-products. The use of salmon delousing agents has been reduced, but there remains a high occurrence of lice in wild salmon. This means that we consider the overall goal achievement for environmentally-friendly production to be not fully satisfactory.

Strategic measures and priorities

We believe that Norway should still have aspirations to be a pioneer country in terms of good health in plants, fish and animals, and to have low levels of pesticide and medicine use.

Through our work, we should contribute to ensuring that salmon lice from farmed fish do not have an unacceptable impact on conditions for wild salmon.

We will ensure that good information is available relating to the detailed regulations pertaining to ecology.

There are by-products in most food production value chains. Through supervisory activities and regulations, we will contribute to greater awareness of the fact that the by-product regulation is the gateway to safe use of animal-based materials in the food chain for feed and fertiliser.

We will continue to conduct supervisory activities on different types of waste-based fertilisers and to assess and propose new fertiliser regulations in partnership with the Norwegian Environment Agency and the Norwegian Agriculture Agency.

Organic Production

Sales of organic food are increasing. Much of this is imported since Norwegian production is not able to meet demand. The regulations for organic production are similar to the EU's, although the natural conditions vary greatly.

Goals

Products that are sold as organic in the Norwegian market should satisfy the requirements for organic production.

Results

The Norwegian Food Safety Authority has delegated authority to conduct supervisory activities relating to organic businesses to Debio. Debio conducts annual inspections on all businesses that are included in its control scheme. The results show that most businesses have good quality assurance systems and procedures for documentation in place, but that there are also some that face challenges to ensure they have sufficient documentation in place.

We conducted an audit of Debio which showed that the body has good procedures in place and a solid system for quality assurance. Nevertheless, some defects were noted in relation to following up on defects with businesses. Debio has implemented various long-term measures to improve its management of deviations.

In 2017, the EU's organic production regulation was added to the EEA agreement. This was important in order to ensure predictable regulations for organic businesses in Norway, in addition to ensuring equal terms of competition alongside businesses in the EU. Equal terms of competition are particularly important in relation to the trade of Norwegian organic salmon.

A new system was introduced for electronic import certificates throughout the EEA for the import of organic products from countries outside the EU. The new scheme prevents counterfeit certificates for organic products.

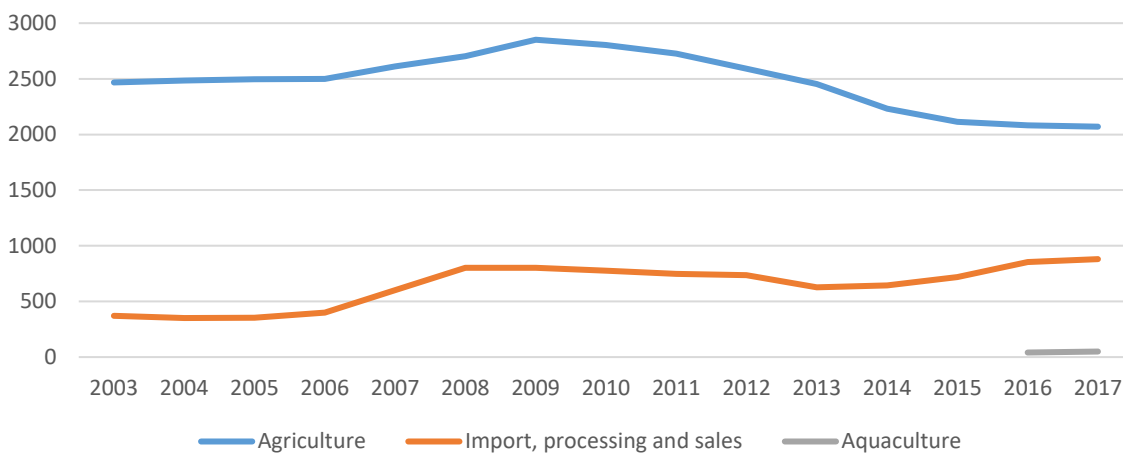


Figure 1: Development of approved organic businesses during the period 2003 - 2017.

There remains slight growth in the number of businesses with organic approval in the areas of import, processing and sales. The number of businesses in agriculture has stabilised. The consumption of organic products continues to grow, which also means that imports are increasing.

Challenges and Plans

The organic regulation has been prepared in detail to cover the full production chain. It is comprehensive and in many cases difficult for businesses to follow. We will place an emphasis on providing good information and guidance relating to the regulations. In order to improve accessibility for users, we will revise our guidance during the course of 2018 in terms of using plain language.

Increasing imports of organic products is making it more important to have a good system in place for the control of imports. It is still necessary to get all businesses to use the new electronic system, and to make the processing of certificates within the Norwegian Food Safety Authority more efficient.

We are continuing to work on establishing a well-functioning electronic system to check imports of organic products, and to provide guidance on the use of this system.

Impact of Salmon Lice from Farmed Salmon on Wild Salmon

Despite there being low levels of salmon lice in facilities, the risk of infection to migratory salmon smolt was significant in large areas of Western and Central Norway, but was lower in Northern Norway.

Goals

Reduce the risk of infection by lice from farmed fish to wild salmon and increase knowledge about the risk of infection.

Results

In 2017, the government established traffic lights in 13 different production areas for the farming of salmon, trout and rainbow trout. It is the risk of mortality to wild salmon due to salmon lice in each of the areas that underlies the traffic light system. The Norwegian Food Safety Authority has been involved in the funding of the monitoring of lice in wild salmon.

Salmon lice in farmed salmon can have a negative impact on wild salmon. The Norwegian Institute of Marine Research's monitoring showed that last year there was a high risk of infection to migratory salmon smolt in large areas of Western and Central Norway, but that this was lower in Northern Norway. The salmon lice levels during the summer continue to have a negative impact on sea trout and freshwater fish.

Although there are low levels of lice in farm facilities, this can still pose a high level of risk of infection since the number of farmed salmon provides many hosts for salmon lice.

Challenges and Plans

The risk of lice infections in wild salmon caused by farmed salmon remains too high at some points and certain locations around the country. Our role in monitoring each individual facility is becoming even more important going forward since salmon lice are an indicator for the adjustment of the traffic lights in production areas.

The monitoring programme for lice in wild salmon will be continued and developed.

We will take on a more important role in this work by conducting supervisory activities to ensure that lice limits are complied with in order to reduce the risk of infections from facilities that do not comply with the limits. We will also process applications for expansions of facilities with particularly good lice statuses across all production areas.

Medicines for Farmed Salmon

The use of medicines has been high, but has reduced in recent years. The medicines campaign has contributed to more responsible use.

Goals

The use of medicines should be justifiable in terms of the development of resistance, food safety and the environment.

Results

Norwegian breeders use very few antibiotics. The quantity of antibacterial agents sold in recent years corresponds to 0.5-1 per cent of fish being treated using antibacterial agents. An increase was noted in 2017, and some of this increase is due to treatment of yersiniosis and other bacterial infections in facilities breeding

fish for consumption. The situation last year provides an indication that the positive situation can quickly change for the worse as a result of outbreaks of bacterial infections against which there are no effective vaccines. We are following these developments carefully.

The use of salmon delousing agents has been high since 2009, but has decreased in recent years. Resistance issues mean that the agents now have a minimal impact.

Since 2015, we have engaged in a supervisory campaign aimed at aquaculture's use of pharmaceuticals. The aim has been to ensure responsible use of medicines and to make operators aware of their responsibilities in this regard. We have carried out audits with fish health personnel, breeders and slaughterhouses. This work is now being finalised.

Challenges and Plans

In 2018, we will finalise the report from the pharmaceutical campaign and evaluate how the results should be followed up on. The campaign found that fish in multiple facilities were treated using combinations of pharmaceuticals and with higher doses than stated without there being scientific documentation in place relating to food safety, health and the environment.

We are part of a working group together with the Norwegian Environment Agency and the Directorate of Fisheries examining the environmental consequences of pharmaceuticals in the aquaculture industry.

Antibiotic Resistance and MRSA Monitoring

Antibiotic resistance is known as 'the climate challenge of medicine'. The development of resistance internationally is raising fears that more people will die from infections than cancer if no countermeasures are taken.

Goals

The use of medicines in animals should continue to be reduced through increasingly accurate use of antibiotics, good anti-infective hygiene and other preventative measures.

Results

The government's action plan against antibiotic resistance until 2020 is being followed up on continuously. We consider it more important to prevent infection of animals that requires treatment than reducing use when infections occur.

In 2017, the livestock industry implemented a systematic survey of respiratory and intestinal infections that could further reduce use of medicines, as well as ensuring better health and welfare. In sporting animals and pets, we have noted a turning point towards less use of broad spectrum antibiotics. We have created an e-learning course for vets on the correct use of antibiotics, which is particularly useful for those with qualifications from countries with differing antibiotic practices.

The Struggle Against MRSA Continues

The goal remains for Norwegian pig herds to be free from resistant respiratory bacteria that have taken hold of production environments in many other countries. Around 800 herds that produce piglets for food production were examined for MRSA, and the specific swine variant CC398 was not detected in any. Pig farmers' preventative measures have had a very good impact, and there are grounds to assume that the Norwegian health service and patients have been spared from infections that are untreatable. Nevertheless, four other types of MRSA were detected in a total of six herds, including through contact traces from infected people. In three of these cases, sanitation was initiated because the infection was expected to remain in the herd. Since the infection was expected to burn out in the three other herds, they have been quarantined and are subject to regular testing.

MRSA bacterial infections can be passed in both directions between pigs and humans. Testing people who come into contact with pigs is well worthwhile, but their status can change quickly. A regulation has been developed that establishes requirements relating to MRSA testing for tenders to pig herds. *The notification*

regulation is currently being revised in order to introduce a duty to report any detected resistance to individual bacteria, particularly in cases of animal-related MRSA.

Challenges and Plans

The basis for initiatives is knowledge obtained through the NORM and NORM-VET monitoring programmes. These will continue. In 2018, the EU's coordinated testing schedules for live animals, feed and food will be followed. Additionally, samples will be taken from salads/herbs and dairy products.

The veterinary pharmaceutical register should provide vets with prescription profile and contribute to the correct use of antibiotics. We have procured a new reporting tool to aid this. Ensuring that the technical aspects are in place has taken time, and we will develop the reports during 2018. Initiatives to improve the quality of data and remove errors are ongoing. Amongst other things, we have discovered an error in the system used by pharmacies that results in reports to us being incorrect.

We are planning to examine vets' reporting of medicine use, and expect this to be carried out during 2019. As part of this work, we will examine - amongst other things - whether therapeutic recommendations are followed.

Pesticides

Experiences from supervisory activities demonstrate that there remain shortcomings in the correct use of pesticides. The number of reports of concerns from members of the public is on the rise.

Goals

- Pesticides should help to ensure good crops while reducing harm to health and the environment.
- Users should have a conscious relationship with pesticides and use alternatives where possible.

Results

Norway has a separate environment tax for pesticides where the tax is differentiated on the basis of the risks posed to health and the environment by the product. The aim is to reduce the use of products that pose the highest risk to health and the environment. We observe the development of risk over time by examining the sales figures for products in the different tax brackets - see figure 10 below.

The average figures for 1996 and 1997 form the basis of 100 per cent. Sales have varied substantially since this time, which is largely due to periodic hoarding due to increased taxes and variations in prices in the global market. This means it is difficult to say anything about risk development in the short term with any certainty.

The sales figures for pesticides show that the quantity of pesticides sold, stated as active substances, fell slightly from 2016 to 2017. There are small changes to the risks posed to health and the environment.

Integrated Plant Protection

Integrated plant protection is an overall strategy combining known methods and techniques for controlling pests.

For example, these initiatives may be a combination of crop rotation, fresh plant material, regular observations and choices of mechanical or biological control rather than chemical.

Chemical control has an important part to play in integrated plant protection, but should not be the first choice.

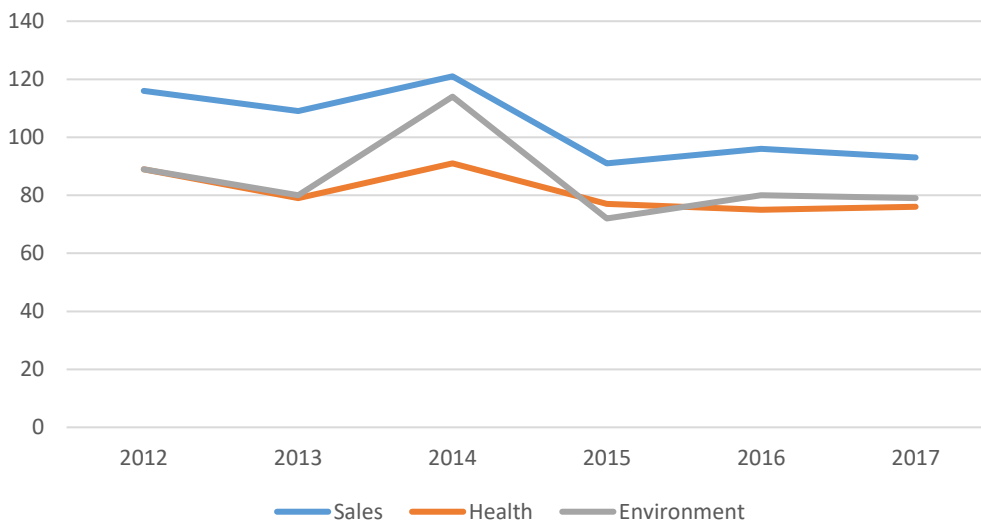


Figure 10: Risk development based on sales figures with separate risk indicators for health and the environment. The average figures for 1996 and 1997 form the basis of 100 per cent.

Supervisory activities relating to the use of pesticides in primary production uncovered that the requirements relating to record-keeping are not adequately complied with. We also discovered illegal use of pesticides in Norwegian production environments as a result of inspections, the monitoring programme and when checking spraying records. Furthermore, audits of primary producers established violations of the rules in terms of pesticides being sprayed closer to water than is permitted. This represents a risk to the environment.

The supervisory campaign relating to the use of pesticides in public areas demonstrated that many municipalities are focused on limiting the use of pesticides as much as possible. Alternative methods are being used in multiple locations. In municipalities that use pesticides, it has been established that there is a need for more knowledge about which areas it is permitted to spray in. Furthermore, it emerged that there is insufficient knowledge and function testing for spraying equipment, and that there is a requirement that those using professional products must be authorised.

Approval of Pesticides

The area of plant protection distinguishes itself from our other areas in that we prepare risk assessments even prior to a decision about the approval of a pesticide. In addition to approving products nationally, we were responsible during 2017 for the preparation of an evaluation of the active substance Benfluralin, which is currently subject to public consultation in the EU. Renewed approval of glyphosate and the determination of criteria for hormone-disrupting substances were other major cases handled in 2017.

Challenges and Plans

Individual farmers and trade organisations would both like permission to spray pesticides closer to water than the current regulations permit since they use adapted spraying equipment.

There is an increasing awareness of the negative aspects of using pesticides. This particularly applies to members of the public. We are receiving an increasing number of reports of concerns relating to suspicions about illegal use of pesticides. It is a challenge to combine the farmers' need for pesticides with the consumers' desire for limited use of pesticides.

We are planning an audit campaign and monitoring programmes in this area. Drift into water varies depending on wind conditions during spraying, and which spraying equipment is used. We will examine the consequences of permitting the use of pesticides closer to water in certain circumstances.

Fertiliser

The circular economy is stimulating the utilisation of waste containing important resources as fertiliser and soil improvers. When waste is used as a raw material in fertiliser products, it is necessary to have good oversight of heavy metals, pollutants and contaminants.

Goals

We should facilitate the use of waste and by-products as raw materials in fertiliser products while safeguarding health and environmental considerations.

Results

Fertiliser products for the garden market are in particularly close contact with people. During the year, we checked for infective agents in several products. The results were largely positive. There were no findings of bacteria what were resistant against key antibiotics. There was a small finding of Salmonella in one imported product. The product did not pose a risk to users, but the finding still demonstrates that infective agents can occur and that everyone who uses organic fertilisers should follow straightforward hygiene guidelines.

There is a long tradition of using compost and sewage sludge as a soil improver. The results of this year's supervisory activities relating to treatment facilities for waste water sludge showed that there remain challenges connected to waste-based fertiliser. Amongst other things, we have noted challenges in small and older composting facilities and sludge hills.

Mineral fertiliser now adds three times more cadmium to soil than it did 10-15 years ago. Nevertheless, cadmium levels in products are generally far below the maximum limit for acceptable supply. All new mineral fertiliser products sold in Norway must be checked to establish their cadmium content. One product was banned from sale.

Challenges and Plans

The interest in using different types of waste and by-products in fertilisers is on the rise. The regulations are old and not well-suited to these challenges.

Our soil must be taken care of from a long-term perspective, but a lack of knowledge means that it is difficult to establish limits for what levels of heavy metals and pollutants are acceptable.

We will continue to carry out supervisory activities on different types of waste-based fertilisers and to obtain new knowledge in this area through VKM orders and knowledge support assignments. We will investigate and propose new fertiliser regulations in partnership with the Norwegian Environment Agency and the Norwegian Agriculture Agency.

Animal-based By-products

Animal-based by-products are found at many points in the value chain. An increased awareness of animal-based by-products and the correct use of these can help to increase resources for feed, fertiliser, energy and other technical purposes.

Goals

- Animal-based by-products should be known, safe and contribute to the development of the Norwegian bio-economy.
- Feed and fertiliser based on animal-based materials should not spread infections into the food chain.
- The by-product regulation should be easy to follow and conduct supervisory activities around.

Results

Animal-based by-products are used for feed, fertiliser, energy and other technical purposes. The by-product regulation affects primary production, feed production, fertiliser production, food service, ports, airports, etc. Thirteen different types of operators and facilities were approved or registered in accordance with the by-

product regulation. The regulation also applies in businesses that are approved for food production in which animal-based by-products occur and are collected.

The ESA revised the by-product audit and concluded that it was largely satisfactory. Three of ESA's eight deviations have been dealt with so far, including a lack of checks on the import of by-products from the EEA in the TRACES reporting system. We have introduced guidelines for supervisory activities and published corresponding guidance at mattilsynet.no. The rate of audits relating to imports in TRACES has increased from no checks in the fourth quarter of 2016 to 57 per cent in the fourth quarter of 2017.

Challenges and Plans

The ESA found deviations in our validation of processing facilities and their validation of processing methods. These deviations will be dealt with through the supervisory campaign scheduled for the spring of 2018.

There are by-products in most food production value chains. We will contribute to a greater awareness of the fact that the by-product regulation is the gateway to safe use of animal-based materials in the food chain for feed and fertiliser. We will continue to improve guidance and industry contacts in the area of by-products.

We will conduct supervisory activities on processing facilities for animal-based by-products, facilities for intermediary activities, warehouses storing animal-based by-products and those facilities producing by-products from milk.

CONTIGENCY

We have a culture of being vigilant and ready to handle incidents collectively. We handle more than 1000 incidents - big and small - on an annual basis. We are now preparing for the major NATO exercise Trident Juncture in 2018, in which we will face a war-like situation.

Goals

We should have a robust level of preparedness that responds to a changing world. Work relating to safety and preparedness should be an integrated part of our activities.

Results

The Norwegian Food Safety Authority handled around 800 different reports of infectious diseases and other incidents through its regular line organisation. We reinforced our line for handling chronic wasting disease (CWD) in reindeer and the accumulation of ISA outbreaks in fish in Northern Norway. There were no incidents during the course of the year that required staff. Incidents of these kind mean we continue to test our levels of preparedness on an ongoing basis. The Norwegian Food Safety Authority has an on-duty emergency response case handler working around the clock, who received approximately 600 inquiries outside of ordinary working hours during 2017.

We began using the new incident management tool MatCIM across all our areas of preparedness. We carried out approximately 600 exercises - big and small - to train ourselves on the use of the tool. It was phased in to enable it to be used in the Nordic/Baltic Pegasus exercise. Later on, we used it when dealing with daily incidents and exercises. It had been used in 60 incidents at the end of the year.

Our nationwide exercise, Pegasus, was based on the serious animal disease African horse sickness. All levels and areas of the supervisory body engaged in staff work and collaboration with horse organisations. Additionally, our departments had exercises relating to tracking products, anthrax, bird flu, sabotage to drinking water and the detection of various animal and plant diseases.

We entered into an agreement with the Norwegian Directorate for Civil Protection about a partnership with the Norwegian Civil Defence.

Challenges and Plans

The Norwegian Food Safety Authority is part of the country's overall defences and is therefore involved in the preparations for the major NATO exercise *Trident Juncture* which will be hosted in 2018 by Norway. As part of this notified event, biological border controls will be a key item on the agenda. Together with the army's vets, we are examining the requirements we set out for foreign troops to ensure that they do not import infections with them. We are prepared to carry out our tasks and train in handling incidents that can occur in the aftermath of military manoeuvres. The exercise will provide us with strengthened core preparedness in collaboration with the other civil bodies.

The use of the emergency network and coordination of map solutions will strengthen our own operational capacity and ability to interact with others.

WORKING METHODS

We achieve a social impact through activities that influence the behaviour of users and consumers. Which activities we choose to place an emphasis on depends on the industry, business and risk. We therefore combine several activities to achieve the desired outcome. The goal is to work effectively and purposefully to achieve the greatest possible impact.

Development of Working Methods

New requirements and challenges mean that we must continue developing our working methods on an ongoing basis. Digitisation will help to improve the way in which we fulfil our social mission. We have initiated several important development projects.

We have started a project to ensure better use of our own data from meat inspections, as well as from the livestock industry and slaughterhouses. New computer terminals have been trialled on the slaughter line in seven abattoirs. These terminals make meat inspection work more efficient, and the data gathered is more reliable.

The aim of the project is to collect food chain information about slaughter animals, and to use it for purposes such as the risk classification of herds. This applies to both animal welfare and health-related findings on slaughter cuts. The solution also provides us with a better opportunity to prioritise samples and meat checks where we believe it will have the best impact. This new solution makes it easier to record observations of animals.

The ongoing work to streamline the issuance of export certificates (the export project) is one of our most important development projects. During the first phase, the area of seafood is being used as a pilot as most certificates that we issue are for seafood. The aim of the project is to develop an efficient certification and audit system that other countries trust and that safeguards key Norwegian export interests.

We have initiated several other measures that will streamline our supervisory activities. Examples of this include audits based on comprehensive risk classification, methods for finalising audits on site and for group and chain audits, as well as more efficient and systematic handling of testing data from different analyses.

Gathering Knowledge and Analysing Status

Priorities and decisions should be based on knowledge we obtain from our own activities and from research and knowledge institutions. There are great opportunities to exploit the increasing volume of data that is available in a better way and to improve the quality of the data we produce ourselves.

Goals

- We should have good knowledge about the status and development of our areas of responsibility.
- Everything we do should be knowledge-based.
- This knowledge should be available to the public.

Results

The knowledge institutions provide us with professional advice and evaluations and are important contributors to our preparedness work. We have a good partnership with VKM and the knowledge institutions. Together with the results of our own monitoring and control programmes, these provide us with an extensive and strong knowledge base.

Risk Assessments

VKM and the knowledge institutions' risk assessments are important elements forming the basis of our decisions and priorities. VKM is in a special position as it gathers expertise from different teams who are able to assess broad and complex issues. We use VKM's assessments when developing regulations and designing other types of initiatives.

VKM published just under 30 risk assessments within our areas of responsibility. The most important ones related to:

- The risk of infection from chronic wasting disease (CWD)

- The development of antimicrobial resistance
- The health risks from radioactivity in food and drink
- Animal welfare when using electric necklaces on animals
- Welfare for sled dogs and dogs that live outdoors
- Cleaner fish and the risk of transmitting infections to farmed salmon
- Heavy metals in soil and fertiliser

Monitoring Programmes

Our monitoring programmes show the status and development of foreign substances, disease status, infective agents or toxins that are found in food, drink or live animals. We carried out 76 different programmes. Many of them safeguard the EU's requirements relating to the documentation of the absence of infective agents, which is important in relation to human, plant and animal health, as well as for exports. Other programmes form the basis for necessary regulations and practical protective measures, such as against Salmonella in food and animals. Some programmes provide us with new information, for instance that many dogs imported from abroad do not have satisfactory levels of antibodies against rabies, even though they can document that vaccination has taken place.

We have continued the mapping of antibiotic-resistant bacteria in livestock production, including MRSA. Analysis activity for documentation of seafood and shellfish has been further strengthened. We have maintained our efforts in mapping new, serious infectious fish diseases and monitoring the area of fish health. We have strengthened our efforts to prevent the important of serious plant pests and established more programmes to uncover instances of food fraud. Work to check various dietary supplements has continued.

These programmes are adjusted annually based on the risk situation. We are prioritising the programmes in consultation with the knowledge institutions and industry. The figure below shows the analysis costs for the period 2015-2017. Total analysis costs for the OK programmes were approximately NOK 100 million. The column for land animal health reflects the increased costs of analysis for chronic wasting disease (CWD), but does not show the total costs for work relating to this disease.

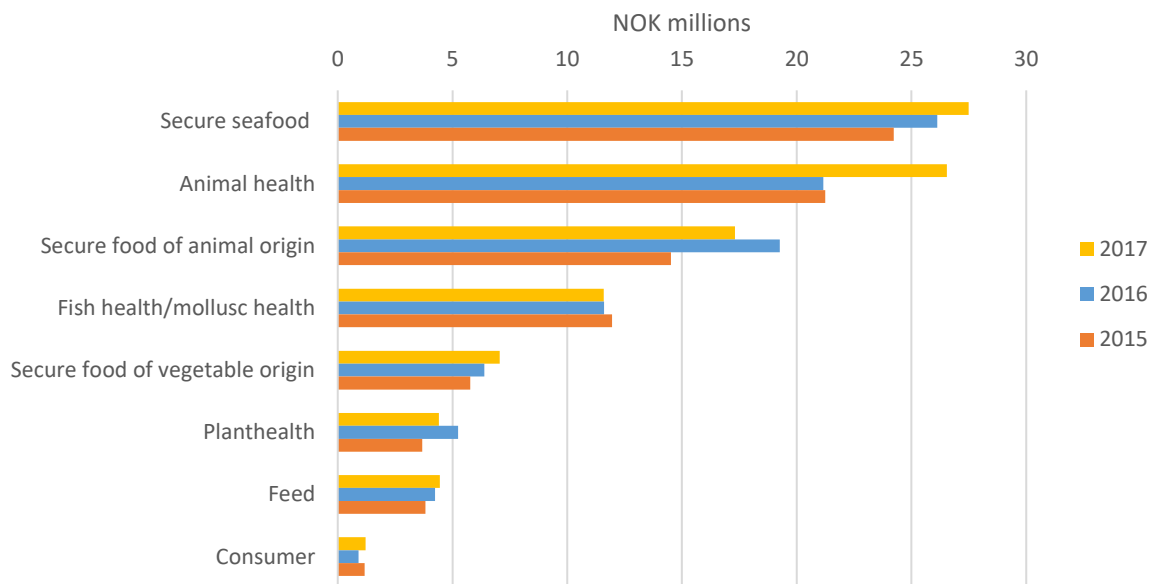


Figure 11: The analysis costs of the OK programme over the last three years broken down by area.

We work together with the Research Council of Norway to improve the understanding of our work. The Research Council of Norway held two rounds of applications for funds in consultation with the Norwegian Food Safety Authority during 2016. Funds were granted to the *Effects of the Regulatory Framework on Fish Welfare and Health* and *Plantvalue Valuation of the Norwegian plant health regime from an environmental, economic and social perspective*. The Research Council of Norway has previously granted funds to the project *ANIWEL Realization of animal welfare goals in Norway's food sector*.

Challenges and Plans

Norway's good status when it comes to plant and animal health is of a national value that cannot be measured in monetary terms alone. There is a need to better describe the social benefits through new analyses in which we include expertise beyond the established knowledge support.

Our challenge going forward is to exploit the opportunities that more accessible data offers us. This will enhance our insight into the situation in different areas, and put us in a better position to make the right decisions. The use of more data can mean that more of our work can be automated and standardised. This requires us to develop our expertise to analyse, structure and use data.

We can use the expertise of knowledge institutions even better than we do now. Furthermore, there is a need to strengthen the work on data we obtain and our interaction with industry and knowledge support in order to obtain relevant data. There is also a need to strengthen work on exchanging data with the EU/EFSA.

Development of Regulations and International Collaboration

We fulfil our obligations under the EEA agreement and we are well-coordinated in various international fora. The goal achieve for Norwegian exports is considered to be good and we helped to re-open the Chinese market to salmon exports. We are also well under way in streamlining and improving the ways in which we work.

The Norwegian Food Safety Authority's management area is strongly governed by regulations negotiated through the EEA agreement (approx. 85 per cent of regulations). Furthermore, Norway is bound to the WTO Agreement, and in terms of food this is tied to the international standards in the Codex Alimentarius Commission, the World Organisation for Animal Health (OIE) and the International Plant Convention (IPPC). These regulations and international agreements form the basis for trust in the markets, allowing us to sell safe food, healthy plants and animals nationally, within the EU/EEA and granting Norwegian goods access to the whole world.

In this chapter, we describe our work relating to regulatory development and international partnerships in general terms. Discussion of activities relating to specific management areas is set out in the respective chapters relating to those issues. Work on market access for Norwegian goods is described here in more detail. Supervisory and control systems are describes in other chapters.

Regulatory Development

The regulations we develop concern all aspects of the food chain. Regulations should contribute to ensuring that food, cosmetics and drinking water are safe, that animals and plants have good health and that animals enjoy good welfare. Additionally, regulations should be easy to follow and conduct supervisory activities in accordance with them. Good international standards should contribute to better, harmonised regulations globally and thus increased equal treatment in international trade.

Goals

- We should actively contribute to the development of regulations so that they have a positive effect on the goals that the regulations aim to fulfil. Regulations should be easy to understand and easy to enforce.
- We have good procedures in place for ensuring that Norway fulfils its obligations under the EEA agreement in relation to the implementation of regulations.
- We contribute to the development of international standards and safeguard Norwegian interests in a prepared and coordinated manner.

Results

In 2017, 60 per cent of EEA regulations were adopted prior to their deadlines. This is a fall from previous years. We have started using new indicators for the development of regulations that may have affected the result since the figures are not wholly comparable. The alternative regulation has now been adopted. In total, we implemented out 291 EU legislative acts and we participated in 184 meetings in Brussels. Examples of major regulations that were implemented include the Organic package and the new food regulation.

We have started work on implementing elements of our EEA coordination with the aim of releasing resources for actual regulatory work. We will become more effective, while also improving the quality of our implementation of the EEA regulatory process. This particularly applies to evaluations and proposals for new regulations. This work is ongoing in close and positive dialogue with the ministries.

For the first time ever, the Norwegian Food Safety Authority organised gatherings for, respectively, the EU's Working Party of Chief Veterinary Officers (CVO) and the HoA group. This is an important strategic network that Norway collaborates with.

We are responsible for the Codex point of contact in Norway and coordinate work on Norwegian positions, participate in ongoing work between meetings and carry out preparation for meetings. The Norwegian Food Safety Authority has represented Norway on behalf of Europe in the Codex Executive Committee since 2015. We are participating in the working being conducted by the committees for hygiene, additives, pesticides, contaminants, pesticide residues, residues of veterinary pharmaceuticals, nutrition, labelling and import and export systems. Key issues that were adopted in 2017 include the fish oil standard, which Norway has been focused on, a standard for whey permeate, a standard for how to reduce ergot toxicity in corn and new work on antibiotic resistance. Norway exercised its reserve, together with the EU, on a range of pesticides and recommendations for control measures to prevent histamine poisoning being finalised in the hygiene committee.

The work on antibiotic resistance (AMC) has led to the creation of a separate task force working to revise the standard to reduce antibiotic resistance and develop a new standard for mapping and monitoring. We are a driving force behind this work.

We had led a task force together with Japan within the Codex drugs committee. The task force formed a basis for discussion about whether it is appropriate to set maximum limits for groups of fish species. This work is important in ensuring that drugs for fish are evaluated thoroughly.

We have had reduced capacity for following up standard-setting work for plant health as part of IPPC during 2017. Through our cooperation as part of the European and Mediterranean Plant Protection (EPPO), we have provided input to several plant health standards that have been under development, including a standard for the monitoring of plant pests and a standard for temperature-related treatments of goods. We have undertaken to organise a meeting on behalf of the EPPO in Norway during 2018.

Together with the Norwegian Veterinary Institute, we are funding one employee as an expert for a three-year commitment at OIE's head office in Paris. The expert is working on aquaculture and Norway is contributing in this way to OIE's work in the field. Industry is invited to regular meetings with the expert.

We have established a partnership with NORAD aimed specifically at OIE, in which we are working to ensure that NORAD includes the use of OIE's PVS Pathway (Performance of Veterinary Services) in relation to the main partnership countries in aquaculture. This currently applies to Columbia, Ghana and Myanmar.

Norway is working to ensure that Nordic work focuses on strategic themes and has the greatest possible utility value. We have been working over the longer term to achieve better meetings of the Nordic Committee of Senior Officials for Fisheries and Aquaculture, Agriculture, Food and Forestry (EK-FJLS). Norway held the presidency in 2017. We organised the Nordic conference for lawyers and planned the Nordic supervision conference that was held in February 2018. We additionally organised a Nordic seminar on risk-based supervision in connection with the autumn meeting of the committee in Oslo.

Challenges and Plans

The regulations we manage are comprehensive and complex. When we change and develop new regulations, we should take into account professional, legal and strategic perspectives. This is a demanding task given the wide span we have in the food area.

In order to meet these challenges, we need a better overview of the regulations so that we have an overall understanding of the portfolio and how different elements are connected. This will make it easier to understand resource requirements and connections across the board. In order to ensure that we prioritise correctly, we will also develop an overall, rolling overview of EEA work in different fields. During 2018, work on new animal health legislation and new control schemes with underlying regulations will be prioritised.

International arenas

We contribute to the development of international standards and safeguard Norwegian interests in the following arenas:

CODEX: The UN's food standards programme

OIE: World Organisation for Animal Health

IPPC: International Plant Protection Convention

EPPO: European and Mediterranean Plant Protection

HoA: Heads of European Food Safety Agencies

We will also work on simplifying and improving consultations and the early involvement of affected parties.

It is crucial if we are to achieve good results internationally that we express ourselves in a coordinated fashion in international fora. This is something we are working on continuously to achieve, and we have also received positive feedback from international partners. We will continue to improve and streamline this coordination across the board.

Our current work on the development of regulations and standards is being carried out at the same level as in previous years. Our work to highlight Norwegian data and knowledge will be further developed. By placing a greater emphasis on coordination between colleagues working internationally, there are opportunities for improving the quality of work and streamlining it.

Market Access for Norwegian Goods

Norwegian goods have access to markets throughout large parts of the world. Through bilateral negotiations, we help to open markets to Norwegian goods. We helped to re-open the Chinese market to salmon exports. We are also well under way in streamlining and improving the ways in which we work.

As part of our work on market access, we should contribute to:

- Ensuring that Norwegian goods have access to markets throughout the world.
- Ensuring that markets trust Norwegian food management.
- Ensuring that we have agreements in place with other countries that secure the export of Norwegian goods.
- Ensuring that the system for issuing certificates ensures safe and simple flows of goods.

Results

Norwegian exports are substantial and comprise many different products, but primarily seafood. The vast majority of exports occur without any complications. We consider the goal achieved to be good.

We issue many certificates for countries outside the EEA - the figure for 2017 was 64,611, of which 58,831 were for seafood and 5,780 were for land-based products. The number of export certificates issued increased in 2017.

Getting exports into new markets or new products into familiar markets often involves demanding, lengthy negotiations. There are two markets in particular that we have prioritised: China and Brazil. These are important markets for both seafood exports and the export of land-based products.

We helped to re-open the Chinese market to farmed salmon and breeding products from cattle. Significant resources have been put into the work with China following the normalisation of relations between the two countries in December 2016. Dialogue with the Chinese authorities was re-opened, and a memorandum for the export of Norwegian salmon was signed.

Brazil is an important market for conventional seafood products. Industry has faced challenges in exporting due to the Brazilian import systems. Over the years, we have been in close dialogue with the Brazilian authorities, and this work continues in 2018.

Additionally, Russia and South Africa required attention. The agricultural industry wanted us to start working on facilitating exports to South Africa, in addition to the requirements from the Russian authorities for information about Norwegian businesses in terms of both seafood and agricultural products. The initiatives towards South Africa and Russia have not yet contributed to increased exports.

We received a visiting authority delegation from Japan who wanted to learn about the Norwegian HACCP system. We received a ministerial visit from China, and held a meeting with the Chinese authorities concerning electronic certification. A delegation from Belarus came on a study visit to learn about seafood and genetics.

Challenges and Plans

A increasing number of special requirements from individual countries means there is a lot of extra work for exporters and for us. Additionally, this often results in uncertainty or stoppages to exports.

Norway is the world's second largest seafood exporter, exporting to 143 countries.

EU is the biggest market for Norwegian seafood.

The EEA agreement allows seafood to be exported without obstruction and without any need for certificates.

Norway is a major seafood exporter, but a small player in international politics. We must therefore adapt to the requirements of other countries. These requirements are becoming increasingly comprehensive. In addition, more countries are beginning to use their own list management systems. Norway is also vulnerable to political conflicts between countries that contributes to uncertainty and stoppages in individual markets. It is therefore important that we continuously follow up on our international obligations to the WTO, Codex, FAO and OIE.

Seafood exports are developing rapidly. We are encountering expectations relating to high service levels and high levels of availability. Export activities are often contingent on time-critical logistics and much of the activity takes place outside of normal office hours, which makes these expectations difficult to meet.

The export project is discussed in the chapter on working methods. Alongside operational tasks and visits from other country's authorities, we are prioritising work on the export project.

The Brazilian and Chinese markets will continue to be prioritised. Argentina has also been invited to Norway for an inspection during the autumn.

The prioritisation of individual markets and markets means that some other markets and products will fall behind. It is also a challenge that markets require resources without work delivering the desired result. We are therefore working to ensure clearer prioritisation of which markets are the most important and which ones we should use the most resources on. We must make these prioritisation decisions together with industry and ministries.

Supervision

We are working to develop new working methods based on risk, classification, conclusion of supervisory activities on-site, group and chain supervision and more efficient and systematic use of our own and others' data.

Goals

Supervisory work should be conducted in accordance with the principles of good governance, and should be carried out efficiently and consistently, while being risk-based to the greatest extent possible.

- When we carry out supervisory activities, we should exhibit good expertise both in professional and managerial terms.
- When selecting supervisory methods, we should do so using risk assessments and on the basis of the type of business to be checked.
- We should largely use simplified and standardised supervisory activities and reports, and should conclude our case management while still on-site.
- We should use appropriate tools and make use of stricter measures when it is necessary.
- We should treat all businesses equally, and all similar cases in a consistent manner.

Results

We carried out a total of 70,902 supervisory actions. This is a decline of approx. 3 per cent from 2016. The reason for the slightly lower total figure was several major cases in the areas of aquaculture and animal welfare. We consider the goal achievement to be satisfactory.

We discovered minor and major regulatory breaches in 50 per cent of businesses that we carried out supervisory actions on. This is a minor increase from the previous year, and must be seen in light of the fact that most supervision work is risk-based. The number of businesses committing regulatory breaches has fallen in the last year in the areas of drinking water and fish health, and remained at the same level as last year in the area of animal welfare. In around 94 per cent of businesses where regulatory breaches were uncovered, instructions were issued or other measures implemented. The correct use of tools is important, and we have run courses and experience-sharing gatherings for approx. 700 employees on this matter.

Supervision encompasses:

- Inspections
- Audits
- Sampling
- Import/export document checks
- Managing incidents

We organised more of our supervisory work in teams. This is efficient in areas with special requirements for expertise or where there are challenges relating to consistency. The calibration of supervision and exercise of discretion occur through regional and inter-regional professional fora.

Appeals and Management of These

Head office acts as the body of appeal for all decisions taken in the regions. The management of appeals is an important part of the Norwegian management, is important for the clarification of matters of principle and in order to ensure that similar cases are handled in the same way. This provides us experience in the use of regulations that can be useful when change and develop regulations and guidance material.

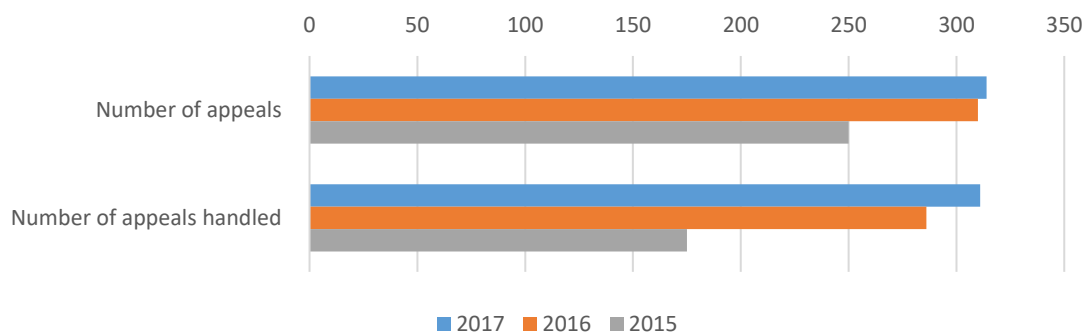


Figure 12: The number of appeals handled by the Norwegian Food Safety Authority over the last three years.

Head office received 314 appeals that needed handling. This is the same level as during 2016. 311 cases were resolved. 115 cases were finalised within a case processing period of three months.

There are large variations in the number of appeals across different areas. Some areas have a scope and extent that makes it possible to handle appeals on an ongoing basis. This is particularly the case in the areas of animal welfare and aquaculture, where appeals are extensive.

Police Reports and Prosecutions

We reported a total of 69 cases to the police. 32 reports related to criminal violations of the Food Act, which was a decline on the figure for last year. 29 reported cases related to violations of the Animal Welfare Act. Eight cases related to threats/harassment towards inspection personnel.

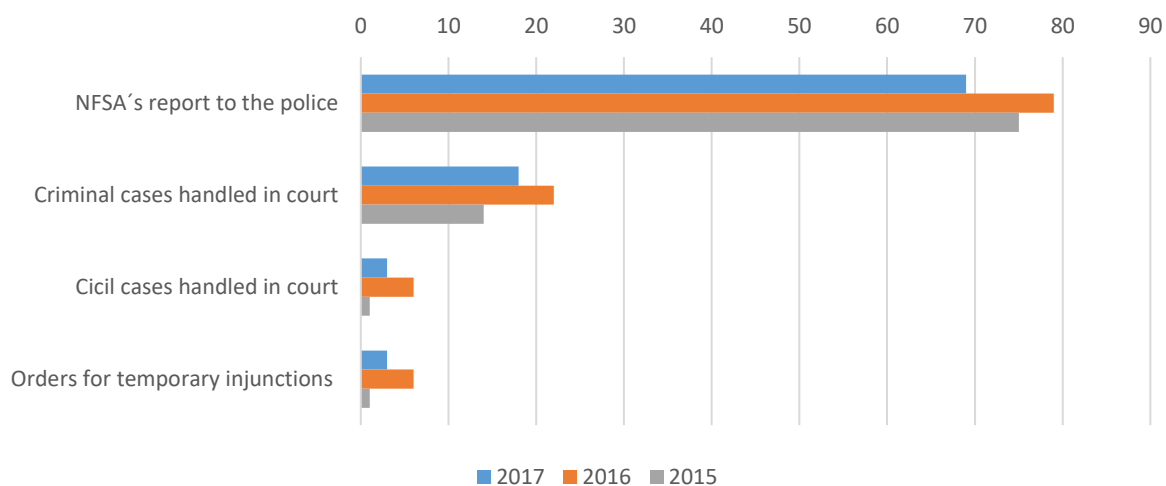


Figure 13: The number of police reports and prosecutions during the last three years.

Of the cases reported in 2017, 54 cases are still under investigation. Four cases have been dropped. One case concluded with a conditional waiver of prosecution. Four cases resulted in fines. Four cases were sent for a decision on whether to prosecute. Two cases were resolved in court and resulted in convictions.

Filing reports with the police is demanding. When cases are extensive and complicated, they are often in the hands of the police for a long time. The cases often require heavy use of resources, and few cases end with a successful conviction. Especially in terms of the Food Act, cases are often terminated due to a lack of capacity with the police. A centralised collaboration agreement in this area would therefore be desirable. The introduction of specialist animal police should lead to better interaction between the police and the Norwegian Food Safety Authority.

18 criminal cases were processed by the courts. The district court handled 17 cases relating to animal welfare, of which two also involved breaches of the Food Act, and one case also related to threatening behaviour. One case related solely to harassment of a civil servant. Prison sentences were handed down during sentencing in six cases, bans on activity were issued in six cases, fines were handed down in three cases, community service was required for one case, and confiscation of profits was ordered in one case. Two cases ended in acquittal. Additionally, we had one case appear before the Courts of Appeal in the area of the Food Act. The case related to the traceability of fish and concluded in a prison sentence for the defendant. We also had one case appear before the Supreme Court where the accused was sentenced to imprisonment for the unlawful use of electronic necklaces.

With regard to the number of civil cases handled by the courts, three orders for temporary injunctions were handed down. These injunctions were intended to prevent the Norwegian Food Safety Authority from implementing decisions. All three cases related to the winding up of animal husbandry businesses. The state succeeded in two of the cases. Additionally, two cases of temporary injunction were withdrawn prior to being heard in court. As a result of these writs against the Norwegian Food Safety Authority, a total of six judgements have been handed down at district court level. The state won in five of these cases. All six cases related to the Animal Welfare Act, and one of them also related to the Food Act. Two of the cases related to enforcement on the basis of the Norwegian Food Safety Authority's decisions.

Development of Supervisory Solutions

Supervisory solutions are the inspector's most important aid in their supervisory work. Two new agreements for maintenance and further development of our supervisory solutions were entered into, and we carried out two reception projects in order to enable the new suppliers to further develop their solutions. We have also changed the organisation in order to manage the new suppliers and respond to any future developmental requirements.

Challenges and Plans

The society of tomorrow requires new working practices. The EU's new control regulation provides opportunities and sets the framework for supervision.

- We have started working to ensure that we process analysis results and data from our own supervision activities in a more efficient and appropriate manner.
- We are developing a system for a more comprehensive way of basing supervision on risk, where the risk classification of businesses is the most important element.
- We will standardise more of our supervisory activities so that case management can be concluded on site, but this requires investment in computer tools.
- In 2018, we will test a model for supervising chains and groups. In this instance, we will carry out supervisions with the link in the chain or a group that is responsible for ensuring that different regulatory elements are complied with.
- We have also noted the need for a method for supervising e-commerce, a form of trade that is increasing in size in many areas that we currently supervise.
- We continuing to work on guidelines, development of expertise and internal interaction relating to the quality of reports, use of tools and consistency.

Communication and Guidance

We provide more guidance than previously, and are more successful in communicating in a way that is understandable and targeted at our users.

Goals

Our communication should contribute to achieving the Norwegian Food Safety Authority's effect goals.

- We should inform, guide and seek dialogue with businesses, industries and stakeholders who are affected by our work.
- We should help to put the population in a position to make informed choices.
- Digital contact should be the first choice and our users should resolve their tasks using our digital services.
- Our communications work should live up to the state principles concerning transparency, comprehensive communication, reaching all users and participation.

Results

Communication and guidance are amongst our most important initiatives for making it easier for businesses to follow the regulations. Inspections, online services, mass media, social media and various other arenas are our most important channels. In order to enable the population to make informed choices, we disseminate reports about situations, warnings and the management of risk. This occurs through mattilsynet.no, matportalen.no, the media and through using social media.

We have strengthened our guidance work. We now offer more guidance in relation to inspections, we have created more guidance documents and improved guidance information on our website.

We have established multiple Q&A services manned by inspectors who used mattilsynet.no in their guidance work. This means we are able to provide the public and businesses with answers to general questions about food and animals quickly and consistently. At the same time, we gather information about what is of most interest so that we can improve our web services.

We have been active in a number of arenas in communicating directly with affected parties. Our communication work relating to chronic wasting disease (CWD) has contributed greatly to acceptance of the plan for tackling the disease. Transparency and an invitation to dialogue open to all have been important elements in ensuring that the battle so far has been successful. Over the full year, we have also been active in many arenas to make the new drinking water regulation known to as many people as possible. In terms of fish health, we organised the fish welfare debate at the House of Literature, and participated in many different meetings and conferences in the area of aquaculture. This enabled us to contribute to important dialogue about the challenges being faced by aquaculture.

We are working systematically to develop plain language so that our users can find the information they need, understand the contents, and use it to do what they need to do. We now receive fewer inquiries due to unclear or complicated language than we used to prior to the plain language initiative commencing in 2015, according to our internal figures.

The media an important element in informing the public about the situation in our various areas of interest, as well as enabling us to participate in society's big debates. We distributed 96 press releases - more than ever. These were disseminated to approximately 450 different media, and therefore reached large swathes of the population. The Norwegian Food Safety Authority was mentioned in the media approximately 16,500 times in total during 2017, which is roughly the same as the year before.

As a supervisory authority, visibility and clarity are important elements that ensure trust is built with the population. For the second year in a row, the Norwegian Food Safety Authority came second in Ipsos' reputation survey relating to public bodies. 74 per cent of respondents had a good impression of the Norwegian Food Safety Authority.

Improvement to Digital Services

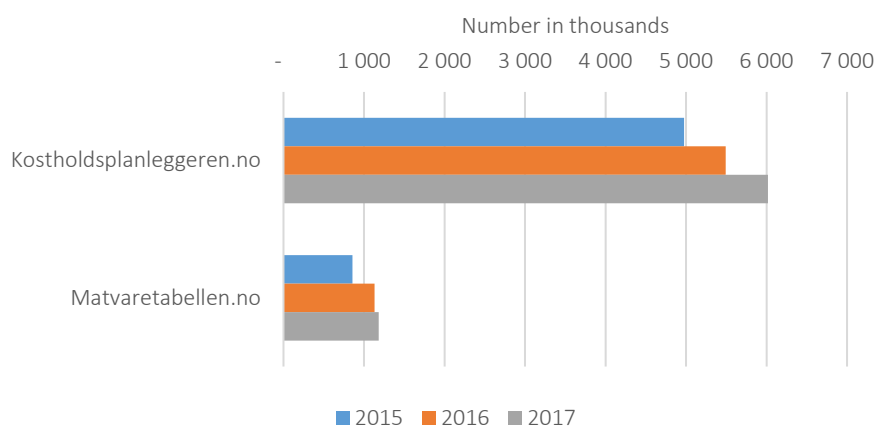
The Norwegian Food Safety Authority's website is our most important channel for reaching users. Last year, there were 1,526,092 visits to mattilsynet.no recorded, a slight decline on the year before. We are improving our website on an ongoing basis, and prioritise tools and information that are most sought after. The more

people find a solution straight away, the more time users save. Additionally, it helps to ensure fewer inquiries by telephone and email so that we can use our resources for other initiatives.

This improvement work takes time. There was no significant change from 2016 to 2017. Half of our users say they achieve the task they visit mattilsynet.no to complete¹. The rate of implementation for the most used services is significantly higher - approx. 70 per cent.

Matportalen.no helps to ensure that sought after consumer information is easily accessible. Pages on the site are also now suitable for viewing on mobiles and tablets. There were 1,133,699 visits to matportalen.no recorded in 2017, a slight decline on the year before. We now use Facebook to disseminate [Matportalen](http://Matportalen.no) content. This provides an efficient mode of dissemination and ensures that more people use [Matportalen](http://Matportalen.no). Approx. 58 per cent of visitors to the site came via Facebook.

The Norwegian Food Safety Authority is involved in the operator of [Matvaretabellen](http://Matvaretabellen.no) and [Kostholdsplanleggeren](http://Kostholdsplanleggeren.no), which are both services used extensively by consumers, teaching institutions and industry. The food industry, in particular, uses [Matvaretabellen](http://Matvaretabellen.no) a lot as part of its work on nutritional declarations. [Matvaretabellen](http://Matvaretabellen.no) was updated with 68 new and 121 revised foods, and the search engine was improved. [Matvaretabellen](http://Matvaretabellen.no) was extended to include eggs, chicken, breakfast cereal, bread and crackerbread.



Matvaretabellen provides an overall view of the energy and nutritional contents of the most common foods that we currently eat in Norway.

Data from [Matvaretabellen](http://Matvaretabellen.no) is included in national dietary surveys and in the dietary calculation system KBS, which is administered by the University of Oslo.

Kostholdplanleggeren is a diet tool provided by the Norwegian Directorate of Health and the Norwegian Food Safety Authority. It is based on data from [Matvaretabellen](http://Matvaretabellen.no), Norwegian dietary and physical health recommendations, and data concerning the weights and measures for foods.

Figure 14: Number of page views for [Matvaretabellen](http://Matvaretabellen.no) and [Kostholdsplanleggeren](http://Kostholdsplanleggeren.no).

Together with the Norwegian Coastal Administration, we have developed the online service [Fiskehelse](http://Fiskehelse.no) on Barentswatch. By using data from the Norwegian Food Safety Authority, the Norwegian Directorate of Fisheries, and others, we have created an interactive map that shows indicators for the status of fish health in the aquaculture industry. This makes it possible to track developments relating to salmon lice, PD and ISA overall, as well as with each individual breeder. The online service has become an important tool for management in the sector, aquaculture businesses, the media and other stakeholders. During the course of the year, the service was further developed to include production areas, national PD zones and wellboat tracking.

Challenges and Plans

The population's communication habits are changing in line with technological developments. This means there are new requirements of us in terms of transparency and our ability to engage in dialogue: we must make our data more accessible. Our users must be able to resolve more issues online. We are continuing to enhance the guidance that we offer to our users. Plain language and improvements to online services remain important initiatives moving forward.

Our communication work should become even more targeted as we continue to use the widest possible spectrum of channels in order to reach all relevant target audiences.

¹ The measurement method has changed from user surveys for individual services to measuring all pages. This means that the rate of implementation is now an average for the entire mattilsynet.no site, which also means that the figure is significantly lower than the result for the most used services.

New foods are being launched every year while ingredients and production methods are also changing. Additionally, methods and quality requirements related to food analyses are improving. Updating data in Matvaretabellen is therefore increasingly more challenging, which makes it difficult to supply data of a high enough quality to dietary surveys and risk assessments. Matvaretabellen will be expanded to include further foods and new nutritional values for iodine. The user friendliness of both Matvaretabellen and Kostholdsplanleggeren will be improved.

RESOURCE USE, PRODUCTIVITY AND EFFICIENCY

We are continuing to reduce the use of resources for administration and management. The introduction of the smiley face scheme has led to a significant increase in inspection productivity.

Goals

We will develop a simpler and more efficient organisation, and have the following long-term goals for resource use: More efficient operations where a greater proportion of resources are used on core activities and development.

Results

In order to realise the Norwegian Food Safety Authority's strategy, we will increase the use of resources for core activities² and development.

Table 2: Resource use (available man-years) for the years 2015 - 2017.

	2015	2016	2017
Development of Regulations and International Collaboration	3.9 %	3.4 %	3.2 %
Supervision ³	52.6 %	52.9 %	52.8 %
Communication and Guidance	6.2 %	6.5 %	6.9 %
Gathering Knowledge and Analysing Status	4.3 %	4.2 %	4.2 %
Development activities	7.3 %	8.3 %	8.9 %
Administration and management ⁴	25.7 %	24.7 %	24.0 %
Total	100.0 %	100.0 %	100.0 %

The time spent on administration and management decreased once again during 2017, and more resources were used on core activities and development. A high rate of development is necessary in order to ensure we can streamline our operations in the long term.

In recent years, we have prioritised guidance, information and communication aimed at industry and individual businesses, and there has been a steady increase in the use of resources in this area since 2015.

We have still not reached the goal for increasing resource use in the blue sector in accordance with the increased allocations. We are actively working to appoint new personnel and redeploy staff internally. There is strong competition for relevant expertise, and it is challenging to recruit, retain and develop this expertise.

We have used 94 per cent of our budget. We consider the utilisation rate to be satisfactory when taking into account that there was a major saving on item 22 Regulation premium to municipal and county municipal pension funds.

The annual accounts show that we have an increase in operating costs of approx. 9 per cent compared with 2016. This increase is primarily due to the premium to the Norwegian Public Service Pension Fund from 2017 onwards being recorded as an integrated part of our salary costs. The salary proportion of operating costs and salary cost per man-year also increased for the same reason. The key financial figures are shown in the table below.

Table 3: Financial key figures.

	2015	2016	2017
Utilisation rate items 01-29	94 %	95 %	94 %
Operating costs	1,182,955,962	1,221,179,149	1,332,840,909
Salary proportion of operating costs	65 %	65 %	67 %
Salary cost per man-year	612,205	632,384	732,475

² Core activities refer to regulatory development, international collaboration, inspections, communication, guidance, knowledge gathering and situation analyses.

³ This category includes resources used for professional calibration of supervision

⁴ Administration and management refers to operational tasks in the areas of ICT, security, documentation/archives, switchboard, office operations, HSE, HR, procurement, finance, governance and management

Appendix 3 includes statistics about resource use, including matters that we are asked to report on, but which are not used in the management of the organisation.

The smiley face scheme has led to increased productivity in terms of inspections.

We introduced a standardised method for measuring productivity in terms of inspections in 2015. Initially, we measured productivity for inspections in the area 'retail, eateries, transport and warehousing'. This choice was made because the smiley face inspections are suited to productivity measurements, and we wanted to know whether the introduction of the smiley scheme had an impact on productivity. The table below shows the development in terms of number of inspections per working week in the area 'retail, eateries, transport and warehousing'.

Table 4: Number of inspections per working week in the area retail, eateries, transport and warehousing over the last three years.

	2015	2016	2017
Area of Retail, eateries, transport and warehousing	4.1	5.5	6.3

The figures show that productivity in the area has increased by more than 50 per cent during the period. This increase is largely due to the introduction of the smiley scheme, but productivity for other inspections in areas other than those covered by the smiley scheme has also increased.

Challenges and Plans

The main challenges are to increase the rate of development and ensure the flexible use of resources across all areas so that we are putting in the effort where it generates the best return.

Resources must be prioritised based on an overall assessment of developmental trends and challenges in our management area. The long-term goal is to provide more resources for core activities and development. This requires us to constantly be developing and making use of more efficient working practices, methods and tools. We have initiated several measures to streamline and improve inspections, cf. discussion the chapter 'Supervision', and we will assess further areas where productivity measurements can be used.

We are continuing to introduce group-based solutions for all our offices, and in connection with this will also assess adjustment to office structures. We want to draw up a broad perspective on how we see the Norwegian Food Safety Authority developing in future. We are therefore conducting analyses of our costs and resource use as the basis for assessing further initiatives for administrative savings.

3

MANAGEMENT AND CONTROL

Our management and control plan provides us with a sufficient basis to prioritise correctly and assess whether we achieve established goals and performance requirements, whether we use our resources efficiently and whether we are compliant with laws and regulations. Internal and external control activities have not uncovered any significant management failings, but have provided us with new knowledge to further develop our management.

Goals

- We manage in order to ensure that we fulfil our social mission efficiently.
- We should have good systems in place for management and control that take care of our management needs based on individuality, risk and significance.

Results

Our efforts are aimed at businesses and companies in such a way that we fulfil our social mission as efficiently as possible. We assess the risk connected to the effect goals which forms the basis of determining what our main priorities are, and the regions use risk assessments in their annual planning of inspections and other activities.

A valuation and overall ROS analysis has been carried out based on ISO-27001, as well as various ICT-related analyses in order to assess the security situation. We adhere to the National Security Authority's four proposed effective initiatives against cyber attacks. The areas of object security and personnel security are assessed as being fully satisfactory. The processing of graded information is assessed as satisfactory, while the processing of confidential data could be improved. We have further developed the control system for information security and the create goals and strategies.

We are carrying out a risk assessment in the fees area, where we examine activities throughout the value chain from regulations to monitoring and control. This report will be complete in the first third of 2018, and will provide us with the basis to improve regulations and procedures for establishing and collecting fees.

We regularly evaluate the organisation in different areas in order to obtain knowledge about its efficiency, goal achievement and results. We have carried out internal evaluations of parts of organisational changes in order to obtain the basis for adjustments and further development. This methodical approach can be used in more areas.

Internal Audits

We have prepared a new guideline that describes at an overall level how structured, consistent and comprehensive internal audits should be carried out in our organisation.

Our quality assurance system documents how we carry out our social mission. We also document HSE incidents, audit findings and proposals for improvement in order to enable systematic follow up. The management team's review of the quality issues is well-established and forms an important basis for internal management.

We have reviewed all governing documents related to security and ICT, conducted a security audit using an external supplier and followed up on the security audit by MATS.

The Ministry of Defence has carried out a security audit in connection with our access to the National Limited Network. No deviations were uncovered.

An external company has carried out a security test to uncover any vulnerabilities in the Norwegian Food Safety Authority's exposure to the Internet. No critical or serious weaknesses were uncovered.

Two potential critical security incidents were recorded in 2017. These were reported to the National Security Authority and the Ministry of Agriculture and Food, and in the police were involved in both matters. The management team's review of security is well-established and we have improved the security culture through exercises or training.

The Office of the Auditor General of Norway had no significant remarks on the accounts and budget allocation for 2016. However, they did uncover some weaknesses in the compliance audit of our audit of reporting in the livestock register, which - amongst other things - can lead to a lack of traceability in the outbreak of disease. We have therefore updated the guidelines and instructions for inspections and changed our reporting to the EU. Based on the Office of the Auditor General of Norway's audit of our accounts for 2016, we strengthened our internal audits in the fees areas.

The ESA carried out a visit to Norway in collaboration with the EU Commission to improve their knowledge of our work on antibiotic resistance. The ESA also revised our inspection in the areas of animal by-products and imports, as well as our system for internal auditing. Significant deviations were found in the area of animal by-products. We have corrected our inspection as a result of this audit.

The internal audit conducted two audits. The main findings from the audit of the area *seafood* were connected to our inspection of businesses internal audit systems and our own internal audits for ensuring consistency during inspections, etc. The main findings from the area *retail, eateries, transport and warehousing* were connected to how we organise our work.

In connection with the Nordic collaboration on the implementation of independent reviews of the authority's internal audits, Nordic auditors from Finland and Sweden examined our system. The results were largely satisfactory. We received recommendations to improve how we systematise and document risk-based planning work and in relation to evaluations of the audit system.

Challenges and Plans

The ability to change is becoming increasingly important. It requires us to have control over the factors that can promote and prevent changes. Changes challenge established routines for internal audits and the risk of failures and errors increases. We will better integrate risk, security and quality into management of the organisation, and use risk management in a more systematic manner. We will establish a model that describes our risk management more thoroughly and that discusses risk both in terms of effect goals and goals for the development of the Norwegian Food Safety Authority. An important part of our work with risk management is working on risk classification of objects of inspections as the basis for prioritising inspection work.

We will further develop our systematic and documented internal audits. Internal audits should be an integrated part of our routines for ensuring good quality on important deliverables. The goal is to achieve more consistent and comprehensive internal audits. We would like to assess results from different audits in context to a greater extent than we do at present, including ensuring that initiatives we are carrying out have the desired effect.

The new personal data regulations requires ROS analyses for all systems and ICT tools that process personal data. We will update the current privacy policy.

In terms of security, we will carry out a detailed valuation. We lack clarity about responsibilities for inspections of exempt objects in accordance with the Security Act. Information security requirements must be integrated more closely into the development process.

CORRELATIONS BETWEEN THE NORWEGIAN FOOD SAFETY AUTHORITY'S FEES AND INCOME FROM FEES IN FOOD MANAGEMENT

Table 5: Fee income in relation to the Norwegian Food Safety Authority's operating costs

Key figures ⁵	2015	2016	2017
Fee income as a percentage of total costs (%)	10.8	11.3	12.8
Fee income as a percentage of calculated full cost (%)	51.1	52.3	45.5

Fee income as a percentage of total costs was higher in 2017 than in 2016. This is due to increased fees for meat inspections and border checks, the introduction of a new fees for aquaculture inspections and changes to accounts for fees and costs of checks in the organic area. Income from fees collected by Debio are set out in the government accounts.

The proportion of fees income as a percentage of calculated full cost was lower in 2017 than in 2016. This is because the percentage of calculated full cost is lower in the areas of aquaculture and organic production, which were added in 2017, than in other areas. This reduces the average.

Fee income and calculated operating costs per fee in 2016

Costs are calculated based on reported net expenses and recorded time spent, with the exception of fees for further public inspections where the time used is calculated based on the estimation. The resource use for non-field specific activities is distributed proportionately. Calculations have taken into account that slaughterhouses put premises etc. at the disposal of the Norwegian Food Safety Authority's personnel during meat inspections. In the organic area, income transferred from Debio to the Norwegian Food Safety Authority has been collated with the operating grant provided to Debio by the Norwegian Food Safety Authority. Indirect costs to the Norwegian Food Safety Authority have not been calculated as part of this fee.

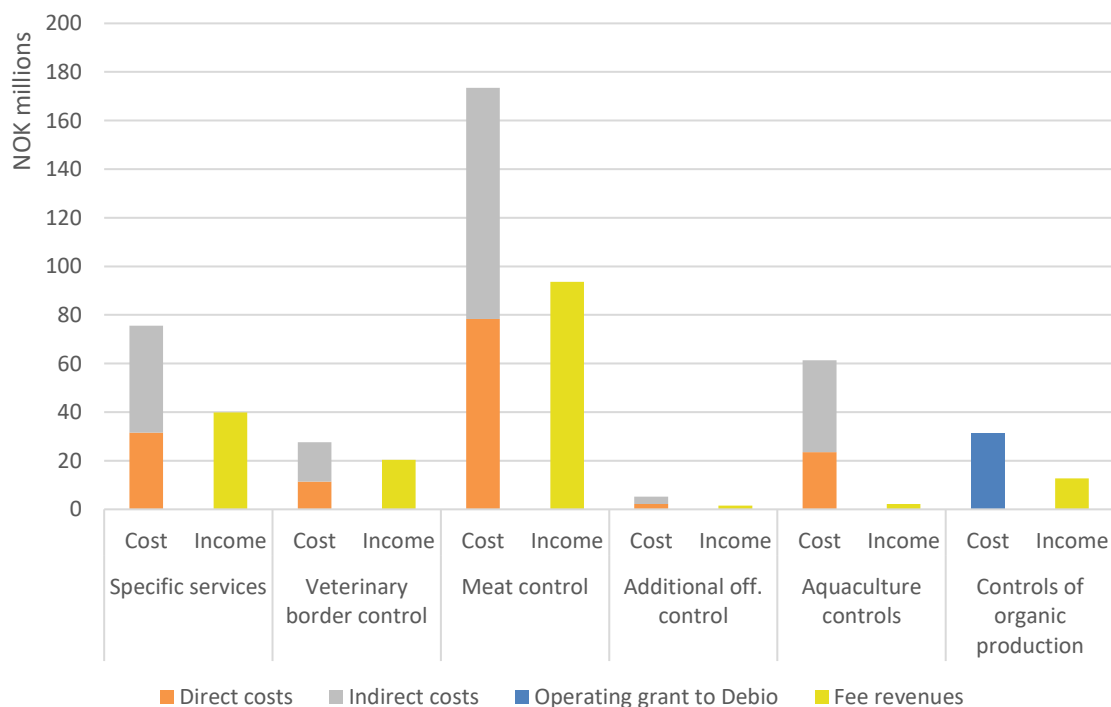


Figure 15: Correlation between costs and income in different schemes.

⁵ These key figures are based on invoiced fees compared with fees previously paid. The figures for 2014 and 2015 therefore deviate from the figures in the 2015 Annual Report.

APPENDIX 1 PRODUCTION INDICATORS

Development of regulations

Appendix 1 – table 1: production indicators development of regulations

Indikator*	2017
Remarked agenda written in template and handed over before deadline	99 %
EEA-paper written and sent to Ministry before deadline	88 %
Form 1 sent Ministry within 2 weeks after meeting in EEA-committee	60 %

*New procedures since 2017

Communication and guidance

Appendix 1 – table 2: production indicator communication and guidance

Indicator	2015	2016	2017
Matportalen.no – number of visits	861 239	1 245 397	1 133 699
Mattilsynet.no – number of visits	1 373 917	1 551 747	1 526 092

Supervision

Appendix 1 – table 3: production indicator supervision

Indicator	2015	2016	2017
Supervision production – total number of supervisory activities			
Total number of supervisory activities	68 113	72 889	70 902
For selected areas:			
Drinking water	1 446	1 430	1 484
Animal welfare	13 402	13 531	12 110
Primary production involving aquatic animals	3 573	3 436	3 345
Productivity: Number of inspections per person-week in the area 'retailers, establishments that serve food, transport and storage'	4.1	5.5	6,3
Emergency preparedness – Number/type of exercises held: See the Contingency chapter for details	19	6	600
Number of risk and vulnerability analyses conducted Security		1	1

Indicator	2015	2016	2017
Failure to comply with regulations			
Percentage of enterprises subjected to inspections or audits where nonconformities were identified	52%	48%	50 %
For selected areas:			
Drinking water	59%	67%	56 %
Animal welfare	38%	40%	41 %
Fish health	44%	53%	46 %
Uniform professional judgement			
Variation between regions in the percentage of enterprises subjected to inspections or audits where nonconformities were identified	49–60%	45–55%	46-56 %
For selected areas:			
Drinking water	50–67%	58–82%	44-76 %
Animal welfare	34–46%	37–43%	35-50 %
Fish health	39–47%	47–55%	35-55 %
Use of measures			
Percentage of enterprises subjected to inspections or audits where nonconformities were identified about which decisions have been made	96%	95%	94 %
For selected areas:			
Drinking water	97%	98%	96 %
Animal welfare	94%	93%	91 %
Fish health	99%	98%	93 %
Uniform use of measures			
Variation between regions in the percentage of enterprises subjected to inspections or audits where nonconformities were identified about which decisions have been made (percentage points)	95–98%	93–96%	92-97 %
For selected areas:			
Drinking water	96–99%	95–100%	93-98 %
Animal welfare	93–96%	90–96%	89-94 %
Fish health	98–100%	95–99%	85-97 %

Support and administrative functions

Appendix 1 – table 4: production indicator support and administrative functions

Indicator	2015	2016	2017
Efficient operations – Proportion of full-time equivalents used for administrative and support activities	42.40%	42.72%	24,00 %
HSE – Percentage sickness absence	5.90%	5.77%	6,3 %
ICT – Uptime for the MATS electronic forms service	99.95%	99.69%	99,97 %

APPENDIX 2 EFFECT INDICATORS

Safe food and drinking water

Appendix 2 – table 1: Number and proportion of examined samples that contained illegal levels of contaminants (such as pesticide residues, dioxins, PCBs and pharmaceutical residues) Source: The Norwegian Food Safety Authority.

	2014	2015	2016	2017
Pesticide residues, domestic				
Number of samples	526	459	423	434
% of samples that exceed the limits	0,2	0,2	0,5	0
Pesticide residues, import				
Number of samples	864	846	905	849
% of samples that exceed the limits	2,5	2,2	4,8	2
Pharmaceutical residues land animals, domestic				
Number of samples	3987	4118	3947	3989
% of samples that exceed the limits	0,8	1	1,4	1,4
Pharmaceutical residues land animals, import				
Number of samples	111	90	93	103
% of samples that exceed the limits	0	0	0	0

*Included exceed the limits of heavy metal in liver.

Appendix 2 – table 2: Number of reported shipments that have caused food allergies/intolerance due to reactions to undeclared allergens Source: National Register of Severe Allergic Reactions to Food, Norwegian Institute of Public Health.

	2015	2016	2017
Number of shipments reported to the National Register of Severe Allergic Reactions to Food	159	135	92

Source: National Register of Severe Allergic Reactions to Food, Norwegian Institute of Public Health.

Appendix 2 – table 3: Number of registered cases of illness following infection with *Salmonella*, *Campylobacter*, *Yersinia*, *Shigella*, *Listeria*, EHEC (Norwegian Surveillance System for Communicable Diseases)

Source: Surveillance System for Communicable Diseases (MSIS), Norwegian Institute of Public Health.

Disease	2013	2014	2015	2016	2017*
Campylobacteriosis	1 147	1 365	882	951	1459
E. coli (EHEC)	79	97	126	160	232
E. coli enteritis except EHEC	42	100	99	78	194
Listeriosis	18	20	12	16	12
Salmonellosis	237	230	184	175	251
Shigellosis	17	12	11	12	21
Yersiniosis	31	177	49	33	66
Total	1 571	2 001	1 363	1 425	2 235

*The figures for 2017 have not been broken down by foreign/domestic infection

Appendix 2 – table 4: Number of notifications sent of health hazards detected in food and feed on the Norwegian market (RASFF) Source: European Rapid Alert System for Food and Feed (RASFF).

	2015	2016	2017
Number of RASFF notifications of findings associated with health hazards sent from Norway	34	68	37*

The following nonconformity has been notified from Norway in 2017: Foreign bodies (3), illegal GMO (1), microbiological pollution/virus (14), pesticides (3), invalid certificate (3), illegal ingredient

Appendix 2 – table 5: Percentage of the Norwegian population connected to waterworks with satisfactory analysis results for drinking water quality (E. coli, colour, turbidity and pH level) Source: The industry's reporting to the NFSA.

	2015	2016	2017*
E.coli	94,9	98,4	99,3
Colour	96,4	94,4	98,7
pH level	85,0	85,5	90,0
Turbidity	96,5	96,0	74,2*

*There are no figures for 2016 as yet.

Good plant, fish and animal health

Appendix 2 – table 6: Serious pests detected in new locations in Norway
Source: The Norwegian Food Safety Authority

Pest	2015	2016	2017
Fruit and berries			
Plum pox potyvirus	0	1	0
Apple proliferation phytoplasma	1	1	0
Pear decline	1	*10	*2
<i>Xanthomonas arboricola</i> pv. <i>pruni</i>	*5	*0	*0
Plum American line pattern ilavirus	0	1	0
Strawberry crinkle virus	0	0	*3
Strawberry mild yellow edge virus	0	0	*1
<i>Eriosoma lanigerum</i>	0	1	2
Park and gardens			
Phytophthora ramorum	21	*40	12
Greenhouses			
Tospovirus	1	1	0
<i>Fusarium foetens</i>	2	0	0
Tomato chlorotic dwarf viroid	0	1	0
South American leafminer	0	0	5
Potatoes			
Yellow potato cyst nematode	*8	*8	3
White potato cyst nematode	*0	*0	0
Potato cyst nematode (species not determined)	6	2	1
Bacterial ring rot	*3	0	0
<i>Dickeya solani</i>	3	0	0
SUM	56	66	29

* Year with monitoring programmes for the pest

Appendix 2 – table 7: Number new cases of serious infectious diseases in domesticated and wildlife land animals. Source: The Norwegian Veterinary Institute

Species	Desease/agent	2015	2016	2017
A				
Cattle	Bluetongue	0	0	0
Poultry, chickens	ILT	0 (9)	0 (10)	0 (13)
	Bird flu, low pathogenic	0	0	0
Cattle	Psoroptes ovis	4	6	4
B				
Cattle	BVD	0	0	0
	Salmonella	3	1(diariz.)	0
	Paratuberculosis	1	0	0
	Ringworm	3	4	9
Pigs	Influenza in pigs*	0	1	0
	Salmonella	0	0	1
	Necrotising enteritis	2	0	0
Sheep	Classical scrapie	0	0	0
	Scrapie Nor98	10	14	12
	<i>Salmonella diarizonae</i>	1	2	6
	Paratuberculosis	0	0	0
	Foot rot	3 (6)**	2	9
	Visna virus	0	0	0
	CAE	0	0	1
	Goats	Paratuberculosis	1	0
Goats	Foot rot	0	0	0
	Scrapie Nor98	0	0	0
	CAE	0	0	0
	Horses	Strangles	2	3
Horses	Salmonella	0	0	0
	Fur animals	Fox mange	0	0
Poultry	IB (non-c)	0 (17)	0 (21)	0 (19)
	Mycoplasma (non-c)	0 (14)	0 (15)	15 (11)
	Salmonella	1	3	1
Turkeys	Chicken cholera	0	0	0
	Salmonella	0	0	0
Geese	Salmonella	0	0	0
Rabbit	Rabbit Haemoragic Disease	0	7	0
Hare	Tularemia	12***	6	17****

* The figures in the columns give the number of samples that tested PCR-positive for influenza A The monitoring programme for specific viral infections in pigs show that pigs in 50% of holdings have antibodies against influenza A(H1N1)pm0

** Three new and three which has been remedied earlier years (complicated epidemiology)

*** One out of 12 had only detection of *F. tularensis* by PCR without pathological changes that correspond to tularemia

**** Four out of 17 detection came from the same farm

Appendix 2 – table 8: Number of outbreaks and cases of serious infectious diseases in farmed and wild fish
Source: The Norwegian Veterinary Institute

Disease	List	2015	2016	2017	
Farmed fish (salmonids)					
ISA		2	15	12	14
VHS		2	0	0	
PD		3	137	138	178
PRVom* (virus Y)		-		9	
Furunculosis		3	0*	0**	0
BKD		3	0	1	1
Farmed fish (marine species)					
Francisellosis		3	0	0	0
VNN/VER		3	0	0	0
Wild salmonids (river systems)					
Gyrodactylus salaris		3	0	0	0
Furunculosis		3	2	1	2
Crustaceans					
Crayfish plague (signal crayfish)		3	2	1	0

* The virus was detected by means of PCR in selected locations as part of the MC programme, but the disease associated with the virus was not found.

** *Aeromonas salmonicida* subsp. *salmonicida* was isolated from sick lumpfish kept together with salmon in four facilities.

Good animal welfare

Appendix 2 – table 9: Number and proportion of animals that die during transport and lairaging in slaughterhouses, particularly poultry Source: The Norwegian Meat and Poultry Research Center Animalia – "Kjøttets tilstand"

	2014		2015		2016	
	Transport	Lairaging	Transport	Lairaging	Transport	Lairaging
Mammals, total	397	466	326	361	343	380
Cattle	4 0.001%	8 0.003%	9 0.003%	8 0.003%	8 0,003 %	5 0,002 %
Sheep and goats	111 0.01%	204 0.018%	97 0.008%	141 0.011%	110 0,01 %	201 0,02 %
Pigs	282 0.018%	254 0.016%	220 0.014%	212 0.013%	225 0,01 %	174 0,01 %
Poultry						
Broiler chickens	83 836 – 0.11%		62 514 – 0.10%		50 848 - 0,08 %	
Turkeys*	828 – 0.06%		795 – 0.06%		599 - 0,05 %	
Chickens	776 – 0.47%		403 – 0.15%		851 - 0,28 %	
Other poultry**	904 – 0.11%		570 – 0.12%		716 - 0,06 %	

There are no figures for 2017 as yet.

* This includes whole Christmas turkeys (hens), processing turkey for cut-outs (toms) and some breeder turkeys.

** Other poultry = broiler chicken breeding stock + ducks.

Appendix 2 – table 10: Loss of animals at pasture, number and proportion

Source: the Norwegian Agriculture Agency, including organised pasture husbandry, and the Norwegian Reindeer Husbandry Administration. This is based on information reported by the industry.

	2013	2014	2015	2016	2017
Number of sheep at pasture	550 497	546 138	557 032	582 725	591 940
Number of sheep lost	18 229	17 311	15 896	16 076	16 853
% sheep	3.30%	3.20%	2.85%	2.76%	2,85 %
Number of lambs at pasture	897 995	908 268	927 664	969 674	971 863
Number of lambs lost	69 508	62 509	60 549	58 840	64 480
% lambs	7.70%	6.90%	6.53%	6.07%	6,63 %
Number of reindeer at pasture*	231 927	211 606	211 666	213 913	-
Number of reindeer lost	98 229	93 323	68 606	68 213	-
% reindeer**	25%	24%	19%	19 %	-
Of which reindeer calves	70 231	65 756	50 428	51 848	-

* The reindeer husbandry year starts on 1 April and ends on 31 March. The figures for reindeer are the figures as of 31 March of the calendar year in which the reindeer husbandry year ends.

** The loss percentage is calculated on the basis of the potential number of animals if there had been no loss and no reindeer had been slaughtered during the preceding reindeer husbandry year.

Appendix 2 – table 11: Number of animals used in experiments (total and for fish)

Source: The Norwegian Animal Research Authority and the Norwegian Food Safety Authority.

	2014	2015	2016
Number of experimental animals – fish	4 823 202	1 140 975	11 331 194
Number of experimental animals – other than fish	65 989	89 857	92 383
Total number of experimental animals	4 889 191	1 230 832	11 423 577
- of which painful experiments	234 395	167	
Applications for field experiments	168	*	
Applications for experiments in experimental animal units	760	*	
Total number of applications	928	996	

*Manual counting from the minutes of the Norwegian Animal Research Authority's meetings in 2014. No data are available for 2015 and 2016.

Health, quality and consumer interests

Appendix 2 – table 12: Number and proportion of decisions pursuant to the national food information for consumers regulations in relation to the total number of decisions regarding foodstuffs.

Source: The Norwegian Food Safety Authority.

	2015	2016	2017
Number of decisions pursuant to the national food information for consumers regulations	1 555	1 800	2 018
Proportion of decisions pursuant to the national food information for consumers regulations	12%	19%	22 %

The explanation for this is that supervision of allergens in non-prepackaged foods, regulated in the food information for consumers regulations, was included in the smiley inspections in 2016. Smiley inspections were also carried out in 2015, but far fewer than in 2016.

Appendix 2 – table 11: Number and proportion of samples that tested positive for Salmonella and samples in which the applicable limit values for undesirable substances were exceeded in relation to the total number of samples.

Source: The Norwegian Food Safety Authority.

	2015	2016	2017
Number of samples that tested positive for Salmonella or undesirable substances	2	1	0
Proportion of samples that tested positive for Salmonella or undesirable substances	0.4%	0.2%	0

Environmentally friendly production

Appendix 2 – table 13: Estimated risk associated with the use of pesticides

Source: The Norwegian Food Safety Authority.

	2013	2014	2015	2016	2017
Sales (tonnes of active agents)	793	883	666	699	677
Sales in % of 1996/1997	109	121	91	96	93
Health risk in % of 1996/1997	79	91	77	75	76
Environmental risk in % of 1996/1997	80	114	72	80	79

APPENDIX 3 STATISTICS

Production

Appendix 3 - table 1: Number of supervisory activities, in total and per supervision area, 2014-2016

Supervisory area	2015	2016	2017
By-products	126	137	190
Intermediate goods	548	644	725
Primary production involving land animals	28 080	27 504	27 070
Of which also pursuant to the Animal Welfare Act	13 402	13 531	12 110
Primary production involving aquatic animals	3 573	3 436	3 345
Primary production involving plants	1 349	1 035	1 051
Foodstuffs	21 302	25 674	25 173
of which slaughtering, butchering and production of meat	5 457	5 332	5 042
of which seafood	1 902	1 676	1 541
of which establishments that serve food and retailers	12 334	16 413	16 791
of which other, foodstuffs	1 609	2 253	1 799
Drinking water	1 446	1 430	1 484
Imports	4 006	4 412	3 989
Border control	7 048	7 089	6 233
Exports	526	1216	1 456
Other supervision	109	312	186
Total	68 113	72 889	70 902

Appendix 3 - table 2: Number of certificates mv

Supervisory area	2015	2016	2017
Number of certificates for the export of fish and seafood	45 080	47 944	58 831
Number of certificates for the export of land-based products	5 376	5 069	5780
The number of products approved under the Protected Designation Scheme (as of 31 December)	26	29	31

Appendix 3 - table 3: Percentage of samples with permitted trace contamination of GMO or breach of regulations.

	2012	2013	2014	2015	2016	2017
Number of samples of food/feed/seeds and propagating material	137	113	121	134	129	158
Number of violations of regulations	1	4	7	4	2	5
Number of samples with permitted trace contamination	52	40	49	53	57	65

Appendix 3 - table 4: Inspections on fur animals

	Mink	Foxes
Number of registered animal holdings	151	152
Number of supervisory visits	81	46
Number of cases with notification of decision	19	11
Number of cases where decisions were made	22	9
Number of cases where decisions were made without prior notification	19	0
Number of cases reported to police	1	0
Percentage of unannounced animal welfare inspections	89%	47%

Resource use

Available full-time equivalents show registered time during the year, not including time registered as holidays, sickness absence and leaves of absence. The number of available full-time equivalents will deviate from the number of full-time equivalents in the staffing statistics because the latter shows the number of positions converted into full-time positions at a certain time.

	2015	2016	2017
The NFSA as a whole	1 103,6	1 122,6	1 102,8
Head office	274,3	270,9	263,4
Regions	829,3	851,7	839,4

Appendix 3 - table 5: Number of available full-time equivalents per county⁶

County	2015	2016	2017
Oslo	191,9	198,8	188,6
Akershus	83,7	94,8	93,7
Østfold	34,4	25,8	25,7
Hedmark	101,8	97,5	100,8
Oppland	27,5	33,4	28,5
Buskerud	37,3	35,5	38,6
Vestfold	29,6	28,5	28,4
Telemark	22,0	23,4	23,6
Aust-Agder	9,0	11,8	10,8
Vest-Agder	15,1	15,6	16,1
Rogaland	110,0	111,8	113,3
Hordaland	79,0	79,8	80,9
Sogn og Fjordane	30,4	35,2	38,3
Møre og Romsdal	49,6	49,2	47,3
Sør-Trøndelag	65,3	65,7	57,2
Nord-Trøndelag	53,8	54,6	54,4
Nordland	87,7	84,7	83,1
Troms	39,5	42,8	42,4
Finmark	36,2	33,9	31,0
Total	1 103,6	1 122,6	1 102,8

Appendix 3 - table 6: Number of full-time equivalents total and process

Process	2015	2016	2017
Total	1 103,6	1 122,6	1 102,8
Development of regulations	42,9	37,9	34,8
Supervision	576,9	589,7	578,6
Communication and guidance	68,0	73,3	76,1
Gathering knowledge and analysing status	47,5	47,5	46,5
Managing the NFSA	145,7	138,5	146,8
Supporting the NFSA	222,6	235,9	220,0

⁶ The figures for 2015 and 2016 are not comparable with figures for previous years due to changes in the structure of measures

Appendix 3 - table 7: Number of full-time equivalents for supervisory visits per area (disciplines/activities)

Supervisory area	2015	2016	2017
Retailers, establishments that serve food, transport and storage	85,8	87,8	79,8
Drinking water	21,6	23,3	20,6
Seafood	35,0	37,2	35,1
Food of animal origin	135,1	135,9	130,7
Other food	28,2	32,8	31,1
Plants	30,9	31,3	30,7
Land animals	117,8	125,8	129,7
Aquatic animals	46,8	48,2	48,2
Feed, by-products, animal health personnel, cosmetics etc.	11,6	12,6	11,9
Contingency planning and dealing with incidents	20,7	16,3	20,4
Other supervision	43,0	38,5	40,6
Sum	576,9	589,7	578,6

Appendix 3 - table 8: Number of available full-time equivalents per discipline

Discipline	2015	2016	2017
Agriculture	331,3	344,1	351,4
Aquaculture and seafood	191,2	201,1	198,4
Foodstuffs	529,7	532,2	511,8
International work and development of regulations	51,3	45,2	41,2
Total	1 103,6	1 122,6	1 102,8