

SCIENTIFIC RESEARCH ACTION PLAN FOR THE
FINNISH FOOD SAFETY AUTHORITY EVIRA
2015 - 2019

1. THE PROFILE AND STRATEGIC GOAL OF EVIRA'S SCIENTIFIC RESEARCH

Basic activities of the Finnish Food Safety Authority Evira include control of, and research into, the safety and quality of food products and agricultural production inputs, the health and welfare of animals, and plant health. Evira aims to conduct high-quality scientific research related to the safety, composition and quality of food, the health of animals and plants and the welfare of animals, in sectors corresponding to the authority's strategic goals. Changes in the operating environment are managed through anticipation and reform. In so doing, particular attention is paid to the current changes, affecting the whole of central government, in sectoral research.

Goal-setting in scientific research must anticipate future requirements, respecting both research and developments in the related methodology. Evira's research progresses in line with developments in its control and risk assessment needs, while supporting the authority's activities on behalf of reference laboratories. It also underpins associated advances in methodology.

Variations in consumer behaviour, structural changes in the operating environment, and economic, technological and environmental changes affect both the contents of research conducted at Evira, and the research methodology applied. In a changing world, decision-makers in society, trade and industry, as well as consumers, need an increasing amount of reliable and up-to-date information. Evira's research must continuously act in response. Evira strives to conduct high-quality research at a national and international level that benefits and supports decision-making both at a national level and at the EU level. Evira conducts scientific research in cooperation with universities, international research institutions and national sector research institutions,

Scientific research at Evira is integral to its duties and influence within society. Users of Evira's research data include both national actors and the international scientific community. Some research projects constitute so-called reactive research, i.e. they are conducted to solve a specific problem within a short time-span. However, most research must be long-term and predictive. To achieve this, sound, deep knowledge of the field of activity is required, alongside productive dialogue with partners and customers. In addition, research areas are identified through the knowledge gained in Evira's expert activities and diagnostic research activity.

Evira is a member authority of the Research Consortium for Natural Resources and the Environment (LYNET). As of 1 January 2015, LYNET consists of state sectoral research institutions conducting research and performing expert duties. These institutions include the Centre for Natural Resources (LUKE), the Finnish Food Safety Authority (Evira), the GIS Centre of the National Land Survey of Finland, the Finnish Environment Institute (SYKE), the Finnish Meteorological Institute (IL), the Geological Survey of Finland (GTK) and the Multi-technological Research and Development Centre (VTT).

LYNET works in close cooperation with other national and international actors e.g. other research institutions and universities.

Strategic objective: Evira conducts advanced, high-quality scientific research, It is correctly targeted and networked and supports decision-making at both a national and international level.

PRIORITIES FOR THE DEVELOPMENT OF SCIENTIFIC RESEARCH AT EVIRA:

- Scientific research operations are aligned with Evira's strategy
- Research competencies are high level
- Data produced by Evira is suitable for research and monitoring purposes and promotes them
- Research employs up-to-date methods, equipment and methodologies
- Research is nationally and internationally networked
- Communication on research is effective
- The results of the research can be used widely for example in national and international decision-making and practical operations.

2. FOCUS AREAS AND MEASURES FOR THE DEVELOPMENT OF EVIRA'S SCIENTIFIC RESEARCH

2.1. SCIENTIFIC RESEARCH AT EVIRA IS CORRECTLY TARGETED

2.1.1. Food safety and quality research

Food safety and quality research is directed at the entire food chain, and focuses on microbiological and chemical research. Microbiological research is particularly targeted at foodborne pathogens and antimicrobial resistance. Chemical research is targeted at harmful substances found in foodstuffs, and the composition of foodstuffs. The research utilises reports and results of follow-up and monitoring programmes associated with zoonoses and their causes, antimicrobial resistance and foreign substances.

The need to focus efforts on the safety of foodstuffs offered for sale in Finland is set to increase further, as our living environment changes and the trade in foodstuffs internationalises further. New technologies in food production, longer foodstuff chains and expanding supply chains are testing our systems controlling food safety. In addition, the use of chemicals, the threat of animal and plant diseases, and advancing biotechnology pose new challenges to food safety and quality. Due to climate change and the mobility of people and goods, even food economy problems are becoming more complex.

Research on the composition and nutritional content of foodstuffs is needed so as to support the promotion of healthy nutrition and the prevention of lifestyle diseases in Finland. Over half of Finnish adults are overweight or obese, which has huge effects on public health and national economy. Information on composition is also needed in the investigation of food frauds (counterfeit foodstuffs), assessment of the correctness of packaging labels and nutritional intake values. Information on the composition and nutritional information must be continuously updated due to the increasing diversity of foodstuffs, changes in people's eating habits and the adoption of new

manufacturing methods and novel foods. Further challenges to this research are the consumers' interest in healthy nutrition and emerging dietary trends.

The dependency of food product safety on multiple, changing factors, is only adding to the pressure for research:

- Internationalisation might increase the occurrence of foodborne pathogenic microbes, foreign substances and other contaminants, such as multi-drug resistant bacteria and antibiotic resistance factors.
- Climate change can affect both crops and the occurrence of pests, microbes and parasites
- Changes in the manufacturing and retail chain of foodstuffs might cause new problems; for example *Yersinia* bacteria epidemics transmitted via vegetables and epidemics transmitted via raw milk
- Structural changes in the production chain and changes in the conditions in which animals are raised contribute to the increasing need for research
- New hazards identified in the foodstuff chain, such as acrylamide
- The introduction of new technology, e.g. nanoparticles, requires research capacity
- Changes in consumer behaviour and procedures
- Structural changes in animal production increase the amount of antimicrobial drugs used on production animals
- Criminal activity in the trade in foodstuffs is increasing

Themes of foods safety and quality research

I. Foodborne pathogens and antimicrobial resistance

Foodborne pathogens pose a significant threat to public health. They are an increasing risk also in Finland, and are sensitive to changes in production, distribution and use. Some current actualised examples are the microbial risks of raw milk. The most significant foodborne pathogens are campylobacterium, salmonella, *Yersinia enterocolitica*, *Yersinia pseudotuberculosis*, *Listeria monocytogenes*, VTEC, parasites and norovirus. Scientific research is used to determine the epidemiology of pathogens in animals and foodstuffs and to develop further measures that predict and minimise risks. Sources of infection the prevalence of pathogens are investigated by scientific research carried out jointly with expert institutions in the field of health care and with universities and international research institutions. In support of research, laboratory analytics is being developed for use in both official control, and in-house control by food industry operators. Such research must take account of the challenges posed by a changing operating environment; and must focus on the analytics of microbes transmitted via food products but not yet present in Finland. Such microbes may pose a threat in the future. Other food safety risks might be created by the increasing demand for locally grown or organically produced food and rapidly changing food trends.

Research on antimicrobial resistance produces information on the occurrence of resistant bacteria and resistance factors in animals and foodstuffs, on multiple resistant bacteria's means of spreading and the effect of antimicrobial drugs on the acquisition of resistance. Particular emphasis is based on MRSA bacteria and multi-drug resistant bacteria that produce extended-spectrum beta-lactamase.

II. Impacts of climate change on the safety of food products and animal feed

Climate change is a key factor threatening the safety of food products and animal feed in the future. It may lead to the appearance of animal and plant diseases never before encountered in Finland, or previously uncommon here. In the north, rising temperatures and increasing precipitation are having an effect on pests, zoonotic parasites, microbes and the related toxins, including the quantity and quality of mycotoxins in grain. Increase in temperature and humidity might also affect the storage conditions of foodstuffs and fodder as well as consumer behaviour. For example, it is possible that more attention has to be paid to the packaging of foodstuffs in the future.

III. Challenges posed by global food production to food product safety

Food products traded internationally are affected by problems related to microbes, contaminants and other harmful factors, e.g. resistance to antibiotics. Obligations under World Trade Organisation membership require that counteractive measures be based on international standards. If this is not the case they must be scientifically justified.

The focus areas of the research on food safety include the contamination sources of foodborne pathogens and multiple resistant bacteria, factors related to their occurrence and foodstuff contaminants, mould toxins in particular.

IV Composition of foodstuffs

Research on the composition of foodstuffs is required, for example, in the investigation of food frauds (counterfeits), assessment of the correctness of packaging labels and nutritional intake values. Diseases associated with an unhealthy lifestyle or eating habits are major public health problems in Finland. Over half of Finnish adults are overweight or obese. The increase in obesity among children and teenagers is also a cause for concern. The increase in obesity among the population has been so great during the past decades that it has serious effects on public health and the national economy. Certain groups, such as immigrants, people following an unbalanced diet, the elderly and pregnant mothers might be at a risk of getting too many or too few vitamins and other nutrients. A customer can only assume responsibility for his/her balanced nutrition, if the packaging labels correspond to the contents of the package. Research on the composition and nutritional content of foodstuffs is needed in the creation of nutritional recommendations and in the investigation of the nutrition of the Finnish population.

In Finland, information on the composition of foodstuffs is collected in the Fineli database maintained by the National Institute for Health and Welfare (THL). The database also includes data produced by Evira. The co-operation associated with this database will be developed and made more extensive.

IV. Risk assessment and the effects on the food chain

Evira produces scientific expert information and conducts risk assessments of foodstuffs that meet scientific criteria in order to support information-based management both nationally and internationally. The results can be used to target the operations related to food safety as effectively as possible. Risk assessment is aimed at part or all of the production chains of the nationally most

important animal and plant-based foodstuffs and/or the most significant microbiological and chemical hazards therein. A microbiological or chemical hazard (e.g. salmonella, vitamins and environmental toxins) in the food chain is identified and described, the exposure is estimated and the risk is described. The same method can be used to assess the cumulative risk that is created as a result of exposure to several substances that have the same mechanism of action. The study of various interactions within the food chain and of risk management methods plays a major role in research. So too does the development of methodologies and that of scientific peer-evaluated risk assessment and modelling. Risk assessment seeks new scientific research data on food safety risks. In support of risk assessment, in order to promote food product safety research is being carried out on the occurrence and spread of biological, chemical and physical hazards in production chains. The factors influencing these hazards are also being studied. Research on production systems focuses on food safety risks in both imported and domestic products; this includes both latent and imminent import risks.

National and systematic cooperation is required, in order to assess economic research related to, and the societal impacts of, food safety.

Priorities for the field of food safety and quality research

1. Microbiological food safety

- Foodborne pathogens
- Food safety risks in new technologies
- Antimicrobial resistance

2. Chemical food safety and nutrition

- Contaminants in food
- Genetic engineering and nanomaterials
- Nutritional content and composition of foodstuffs
- Food improvers

2.1.2. Research on animal health and welfare

In Finland, research on animal health and welfare concentrates on significant diseases among production and wild animals. Focus areas include contagious diseases of nationwide importance, the prevention of zoonoses and the impact of conditions on animal health. Scientific research is particularly oriented towards epidemiology, diagnostics and more efficient methods of fighting diseases, improving animal welfare and scientific risk assessment. In modern society, companion animals are increasingly important to the well-being of humans. Thus, Evira's operations also cover the well-being and health of pets.

The spread of animal diseases through Finland's production structure can only be researched in Finland. Information is required on diseases already present and those which have not yet arrived but which we must prepare for. Combating animal diseases and maintaining a favourable situation in the days to come is vital to profitable domestic animal production. Thanks to a favourable animal disease situation, unlike its equivalents in many other EU countries, production animal husbandry in Finland needs no heavy, high-cost vaccination schemes to control infections. Correspondingly, the use of animal medication has remained well under control, as part of high-standard consumer protection.

Domestic animal production faces continuous challenges: the increasing size of production units, and more specialised production in swine and bovine rearing, is increasing the number of animals

transferred between units. Climate warming is bringing new, vector-borne diseases further north within Europe. In such a changing environment, the control of zoonoses and other contagious diseases, and of diseases due to production and conditions, requires heavy research investments. This will lead to knowledge-based procedures for disease management. Consumers are increasingly aware of, and pay attention to, animal welfare and the conditions in which animals are reared.

Themes for research on animal health and welfare:

I. Contagious animal diseases, including zoonoses, that are important and of economic significance to Finland

Finland is free of many serious contagious animal diseases that are costly to combat and which cause major production losses. Finland has managed to decrease, or completely eliminate, several contagious diseases. This would not have been possible without scientific research into their transmission mechanisms, methods of combating them and diagnostics. Combating diseases and keeping Finland free of certain diseases remain essential to animal production in the future. This requires active monitoring of the disease status, alongside preparedness to take action on the basis of research data, should epidemics break out. Some animal diseases, such as zoonoses, are important in terms of public health.

Finland is threatened by a number of contagious animal diseases. Evira is producing new scientific information together with universities and international research institutions, for the purpose of disease control. For instance, such diseases can relate to climate change (e.g. the bluetongue disease of ruminants transmitted via midges and other culicoids, the equine West Nile virus) or the migration of wild animals and their diseases (e.g. the avian influenza, Newcastle disease and rabies). Changes in production structures and the mobility of animal stock involve the threat of many diseases, such as PRRS in swine and new coronaviruses, classical swine fever, African swine fever, contagious diseases caused by multiple resistant bacteria, bovine *Mycoplasma bovis*, equine infectious anemia) or diseases transmitted from humans to animals (the pandemic influenza virus). Bee diseases and hive deaths are an emerging research field, due to the globally increasing worry over the health of pollinating insects.

Research topics concerning contagious animal diseases, which are important and of economic significance to Finland, include the identification of contagious diseases, the epidemiology of diseases and the issue of how best to combat them. In this respect, Evira has high competences and excellent contacts with international and national research institutions and universities. Evira is also the only research institution in Finland engaged in the research of serious viral and bacterial diseases affecting animals (e.g. avian influenza, African swine fever, foot-and-mouth disease, rabies, anthrax).

II. Health care and animal welfare

Animal health care aims at enhancing the welfare of animals, the safety and quality of animal-based foodstuffs and the productivity of animal production. Further objectives include reducing the need for medication, and alleviating residue and antibiotic resistance problems caused by medicines.

Animal rearing methods are changing as production units become larger and farms specialise in various stages of production (e.g. the three-stage system of rearing calves, and sow pools). This is increasing the transport of animals between farms. These new rearing methods and forms of business affect animal welfare and health, as well as the transmission of zoonotic microbes and

parasites. New rearing methods, and animal stock yielding higher standards through selective breeding, may also increase the pathogenic significance of existing microbes and diseases with multiple causes. Likewise, the increasing import, even controlled import, of animals from abroad, always involves a risk of spreading diseases not deemed significant on an international scale. On the other hand, the absence of such diseases from Finland enables production without massive vaccination campaigns or preventive medication. The identification and prevention of these diseases is only possible by means of research. Active research is required in order to eliminate health and welfare risks related to the rearing of new animal species. It would also prevent such risks from affecting other forms of domestic animal production.

Controlled medication of animals is a key objective for animal production in Finland. It also provides an incomparable competitive edge over many other nations. This is only possible if the occurrence of contagious diseases and antibiotic resistance is low and health care efficient. Research facilitates the identification of production methods that eliminate the need for medication.

Alongside information gained from the entire health care system on animal production conditions, illnesses, and medications, animal disease research at Evira is the cornerstone of research on the welfare of animals. Since animal health is a key factor in animal welfare, joint research between experts on animal diseases and animal protection is required in various lines of production. Close networking and diagnostic research material supports research into the health and welfare of animals.

III. Fish and wild animal health

Sufficient and healthy fish stocks form the basis for a sustainable fishing industry and fish farming. Predicting and preventing the spread of pathogens, and factors predisposing to contagious fish diseases, is vital. The high density of fish in fish farms facilitates the rapid transmission of pathogens inside the plant, and from the polluted plant to the immediate vicinity. It is assumed that the contagious Viral Hemorrhagic Septicaemia (VHS) in fish was introduced to fish farms by wild fish. The spread of infectious pancreatic necrosis (IPN) into fish farms in Finnish inland waters is a new threat to fish farming. Detailed typification of pathogens plays a key role in analysing the origins of infections of this kind.

In international comparisons, the fish disease situation in Finland is good. However, there is a threat of exotic diseases, previously unknown in Finland, spreading via imported animals to wild host animals and/or fish farms. Research will enhance our preparedness, preventing new situations from taking us unawares. Research conducted in Finland is the only source of information on the behaviour of various pathogens in Finnish conditions. Fish disease research is seeking reliable data in support of domestic and international decision-making and legislation. Research topics concerning fish and crayfish diseases include the identification and epidemiology of contagious diseases, the spread of pathogens from nature to production animals and vice versa, the potential spread of pathogens across species barriers and the identification of risk factors and significance of diseases with respect to the sustainable development of wild salmon in the Baltic Sea (e.g. the M74 syndrome and *Gyrodactylus salaris*) and the conservation of noble crayfish (crayfish plague).

Alongside reindeer husbandry, nature and wild animals are a key recreational factor and source of livelihood. They are also an integral part of the North's traditional culture. The health of the natural ecosystem is a prerequisite for these. Climate change can significantly contribute to factors such as the transmission of contagious diseases via insects and parasites to Finland. Diseases and parasites (e.g. Echinococcus, Trichinella, the deer fly *Lipoptena cervi*) are key regulators of population density in the lives of wild animals and reindeer. Wild animal diseases are researched

as indicators of changes in the ecosystem and as factors affecting the safety of game as food. Other such factors include hazardous substances accumulating in animals through the food chain, such as heavy metals and persistent organic pollutants. Wild animals can also act as significant reserves of contagious diseases that infect humans and domestic animals.

With respect to diseases affecting wild animals, research topics include diseases transmitted through small carnivores, the fox and raccoon dog in particular. Rabies (incl. bat rabies) and Echinococcus and Trichinella infections, all major zoonoses, are examples of such diseases. The welfare of reindeer is a key topic when researching the health care of this semi-wild production animal.

IV. Risk assessment and economic impacts

Scientific risk assessment concentrates on research into animal diseases of national and international significance, alternative methods for combating them, and the biological safety of production systems. Risk assessment aims at producing new research data as a basis for decision-making in society, against a background of changing production conditions. It also forms part of research conducted in cooperation with various research establishments and expert organisations, in the promotion of risk management.

As regards to easily spreading animal diseases, research assesses potential channels of entry into the country, the estimated scale and duration of an epidemic in different conditions, the impacts of measures and restrictions on the duration of such an epidemic and the costs of the disease. Moreover, the effects of climate change on vector-borne animal diseases will be taken into account. This information is vital to assessing the resources required for preparedness systems at different levels.

Animal rearing methods are changing as production units become larger and farms specialise in various stages of production. This in turn increases animal transports between farms, which increases the risk of animal diseases. Production structures and the way changes in the production structures affect the risk of animal diseases is a significant research target. Active risk assessment concerning the entry of animal diseases into Finland is also needed in order to identify and eliminate the risks related to new animal diseases. This requires the development and management of rapid, almost real-time risk assessment methods, but also the development of in-depth risk assessment methods related to the entry of animal diseases of into Finland. Utilising the good situation on animal diseases requires that the results of monitoring are used to estimate the upper limit of the occurrence of diseases. This in turn can serve as a criterion when determining the extent of monitoring programmes at the EU level. Assessment of the animal disease monitoring programmes and changes in the animal disease situation are also key research areas in scientific risk assessment.

Priorities for the field of animal health and welfare

1. Contagious animal diseases
2. Animal health care and welfare

2.1.3. Research and risk assessment on the prerequisites of plant production and plant health

In the field of research on **plant production and plant health**, Evira cooperates actively with domestic and international research organisations as well as authorities and associations to align the research to research projects considered important in terms of Evira's focus areas.

Pests

The situation on plant health in Finland is good. The majority of plant diseases classified as dangerous in the Finnish legislation have not been able to establish a permanent foothold in Finland, even though 12 new pest species have been found in the plant material imported into Finland in recent years. Thanks to a close co-operation between monitoring and research, the occurrence of existing plant diseases has been successfully reduced. A good example of this is potato ring rot. However, the risk of pest spreading keeps increasing as international trade increases. At the same time, a warming climate in the North increases the success of wintering of many pests, and thus the risk of permanent settlement grows. In particular, research information is needed on the biology, routes of transmission, and factors affecting the settlement of pests. Diagnostic and analysis methods must also be developed in order to identify new pests.

Scientific plant health risk assessment focuses on the pests which are the most important and economically significant in Finland. The plant health risk assessments carried out by the Finnish Food Safety Authority Evira may deal with the pests regulated under the plant health legislation or other pests that pose a threat to agriculture, horticulture or forestry not yet established in Finland. Risk assessment aims at producing new research data as a basis for decision-making in society. It also forms part of research conducted in cooperation with various research establishments and expert organisations, in the promotion of risk management.

Priorities for the field of plant health

1. Dangerous pests

Strategic policy definitions and proposed priority measures

Measure 1. Scientific research focus areas will be reviewed regularly, paying attention to changes in the operating environment.

Schedule: 2015 - 2019

Measure 2. National and international partners will be sought in support of Evira's research activity, through strategic partnerships.

Schedule: 2015 - 2019

2.2. NETWORKED RESEARCH EMPLOYS SUFFICIENT EXPERTISE AND METHODS

2.2.1. Research competencies are high level

Competence in scientific research is developed systematically as part of personnel competence development. Researchers are supported to increase their competence in all phases of their research career. The relative number of trained researchers at Evira will be increased. The

development of competence will seek to benefit from the opportunities to obtain a doctoral degree on the Viikki Campus and other locations.

Evira supports research by offering a high-standard environment for research work (research material, support from experts, supervision of research work) and various opportunities for study leave and work arrangements.

An increasing number of internal research groups will be established at Evira around research topics that are important to Evira. The groups can contain members from different units and departments.

Technical employees' skills are under development. In addition, effective joint use is made of equipment and other technical resources in Viikki and other localities, alongside universities and other research institutions. Benefits are gained from close cooperation with such universities and institutions.

Evira's staff are competent, motivated, committed and open to development. Evira's research culture makes it an attractive employer in the field of scientific research.

Human resources are allocated in line with the research strategy's focus areas. To exploit resources as effectively as possible, scientific research must be combined with other forms of expertise. By increasing external financing, both from national and international sources, effective networking can be ensured and human resources made available.

The aim of recruitment and training is to have one half of staff engaged in research work leading to a doctoral degree. In addition, the competence of all researchers is being strengthened.

Strategic policy definitions and proposed priority measures

Measure 3. Steering practices of scientific research will be developed and the creation of research groups will be encouraged

Schedule: 2015 - 2019

Measure 4. Organise in such a way as to identify potential unethical procedures and resolve any research disputes which emerge. Ensure the performance of scientific research at Evira, by establishing procedures for resolving disputes.

Schedule: 2015 - 2019

2.2.2. Data produced by Evira is suitable for research purposes and promotes research, monitoring and decision-making

Existing and otherwise produced materials are used in the production of scientific information.

Researchers are also familiar with and can affect other materials created by other means than scientific research in a way that allows them to use these materials for scientific research.

Strategic policy definitions and proposed priority measures

Measure 5. Evira gathers information produced in surveillance and follow-up programmes and other surveillance activities, and saves them in a format which promotes the usability of this information for scientific research purposes.

Schedule: 2015 - 2019

2.2.3. Research employs up-to-date methods, equipment and methodologies

The development of research methods creates the preconditions for high-level scientific research.

Those engaged in scientific research master modern research methods.

Through different partnership contracts, Evira is able to utilise the services of core facility service clusters created in the industry/campus area and can offer such services.

Research funding administration and application procedures are efficiently organised.

Strategic policy definitions and proposed priority measures:

Measure 6. Research methods are up-to-date and meet the requirements of a changing operating environment. Equipment in use is modern and fit for purpose.

Schedule: 2015 - 2019

Measure 7. An application and financing service will be organised for research projects. In the future, Evira will participate in the research services of LYNET and will also make more extensive use of national support services.

Schedule: 2015 - 2015

2.2.4. Research is nationally and internationally networked

Research activity and the search for external funding is in line with the development of international scientific research. Both in sectoral research institutions and universities, research teams and researchers maintain active direct contacts with both domestic and international research groups. Evira develops new operating methods and forms that promote internationalisation in the digital world and do not require physical transportation. Such contacts form the basis for establishing research projects and exchanges of researchers. Evira will contribute actively to the development of researcher schools. Researchers will work as thesis supervisors, opponents, expert and peer reviewers, examiners and members of various scientific advisory committees. Scientific research will be published in peer-reviewed publications that are best suited to the topic and the situation. In addition to speed, Evira's research strives for as a high peer review status as possible.

Evira will contribute to the change occurring in sectoral research activity. Such change is aimed at allocating resources to the appropriate targets and enhancing the use of resources by eliminating overlaps. Networking is making resources available from outside research institutions, for instance from trade and industry. Cooperation networks must be established actively. To do so, partnerships must be sought e.g. by participating in EU-level meetings and international congresses. The number of visits to international research institutions and universities will be increased. If we wish to seek contacts, including through the European Union's working groups, we must secure the related skills.

Research will be evaluated as part of Evira's external evaluation. Any development proposals received will be utilised.

Strategic policy definitions and proposed priority measures:

Measure 8. Active participation in international research consortiums and ensuring that researchers have sufficient opportunities to participate in international meetings, seminars and visits.

Schedule: 2015 - 2019

Measure 9. We participate in the Research Consortium for Natural Resources and the Environment (LYNET), the Consortium for Social and Health Care Expert Organisations (SOTERKO) and other sector research co-operation and co-operation with universities.
Schedule: 2015 - 2019

Measure 10. Scientific publishing will be regular. The aim is 30 publications per year.
Schedule: 2015 - 2019

Measure 11. External funding for research projects is applied for in cooperation with partners. The aim is to increase the proportion of systematic external funding and achieve cost correlation.
Schedule: 2015 - 2019

2.3. RESEARCH RESULTS CAN BE WIDELY APPLIED

2.1.3. Communication on research is effective

Evira is also recognised as a research institute, both in industry and more extensively in society (e.g. through the media).

In addition to the scientific community, the research results are communicated in professional channels and other non-scientific channels.

Strategic policy definitions and proposed priority measures

Measure 12 Communication on scientific research projects will be enhanced by ensuring that the website contains up-to-date, clear descriptions of scientific research projects, in Finnish, Swedish and English. In addition, communications, the production of articles and media communications will be enhanced. In terms of non-scientific publications, the objective is to achieve 50 publications per year.

Schedule: 2015 - 2019

Measure 13. Research seminars will be arranged on a regular basis. Invitations will be extended to representatives of cooperating organisations and the media. More effective use will be made of research seminars in communications, for instance by posting a press release on each seminar topic on Evira's website. An Evira Science Day is held annually.

Schedule: 2015 - 2019

2.3.2 Research results can be widely applied

Research results are utilised in the targeting of controls, legislative drafting and the development of international standards and instructions, in risk assessments and in various lines of business, including agriculture, the food industry and improving animal welfare.

Monitoring studies and surveys are reported on in suitable publications.

Results of scientific work are reported at international conferences and congresses, as well as international publication series of a high standard.

Strategic policy definitions and proposed priority measures:

Measure 14. Research results are communicated rapidly to legislators and stakeholders at seminars, on Evira's website and in the form of popular articles. Research planning takes account of the suitability of results for practical purposes, and their utilisation.

Schedule: 2015 - 2019

Measure 15. We seek to shorten the time required for writing up research, while ensuring the communication of new research data within Evira.

Schedule: 2015 - 2019