

FOOD 2.0 Call

Application schedule

Call is opened in the haeavustuksia.fi application system on Friday 14 March 2025.

Call will close on Monday 12 May 2025 at 16:15 o'clock (EET)

The applications will be evaluated during May and June, and the aim is to report the results by the end of June. Funding decisions will be made in September 2025 and projects can start on the 1st of October 2025 at the earliest. Amount of funding: approximately EUR 5 million for the entire programme period (2025-2029). The volume of funding depends on the central government's estimated revenue and expenditure. Duration and funding period of the projects: the maximum duration of the projects applied for is 4 years. The research and interaction plan presented in the application must cover the entire duration of the project. The funding will be granted in two instalments (2 + 2 years). Funding for the second funding period must be applied for by the end of October 2026; funded project will be informed of this separately. The projects must be completed by 30 October 2029.

Call background and objectives

The Finnish food system is challenged by major systemic changes. The impacts of climate change on food production, the decline in biodiversity, and crises such as wars eroding the structures of the global food system are challenging us to adapt and change the food system from what it is now. Alongside ecological sustainability, solutions are needed for us to ensure and strengthen the continuity of domestic production from the perspectives of security of supply and self-sufficiency and to achieve this sustainably and profitably. The food system must be reformed.

The Programme of Prime Minister Petteri Orpo's Government, [A strong and committed Finland](#), states the following: 'The potential of clean and safe Finnish food will be harnessed through a new growth programme aiming to increase food exports. Adequate RDI funding will boost innovations and investments in the food sector that will increase the value added and employment in the sector.' Prime Minister Orpo's Government granted annual funding for growth in the bioeconomy sector in the [General Government Fiscal Plan for 2025–2028](#). The purpose of the funding is in particular to increase value added in bioeconomy value chains. Value added in the food chain, particularly in agriculture, can increase when food is produced more sustainably and profitably. Food production, especially livestock farming, has received attention in recent years due to its negative environmental and climate impacts. Producing science-based information and collecting and analysing data are basic conditions for us to be able to further develop ecologically, economically and socially more sustainable agriculture. The science-based information produced will also lay the groundwork for value added that can be generated through a traceable product chain in, for example, exports. In the global food market, enterprises are also calling for more information about the origin and environmental impacts of products.

Business Finland has chosen Valio as a leading company to bring food system actors and research institutes together for work towards a nature-smart food system of the future. In the roadmap of the Valio-led Food 2.0 programme, the food system is a combination of several different forms of food production, some of which already exist and some of which are still in the research stage. For there to be enough food for everyone in the world in the future, we need plant-based food, sustainably produced milk and meat as well as new innovations in cellular agriculture. All these forms of food production need and support each other so that natural resources are used smartly and all side streams, nutrients and energy circulate efficiently in the system.

The Valio-led Food 2.0 project focuses on four main themes. Theme 1 is **future products**, which include both animal- and plant-based products, industrial ingredients and new services. Theme 2, **technology**

transformation, covers emerging process and measuring technologies, cellular agriculture, biomonitoring, gene technologies, artificial intelligence and digitalisation. Theme 3 is **regenerative production**, which emphasises biodiversity, land-use efficiency, restoration, water management, crop rotation and animal welfare. Theme 4 focuses on **circular economy and resource efficiency**, including green ammonia (NH₃) and biogas, nutrient efficiency and circulation, and side stream valorisation. The leading company aims to build broad collaboration as well as research and development projects relating to these four themes. Industry and research institutes work in seamless collaboration in the projects.

Through this Food 2.0 project call for applications, the Ministry of Agriculture and Forestry will finance research and development projects with themes supporting in particular **themes 3 and 4 of the Food 2.0 leading company project** mentioned above. Around EUR 5 million has been reserved to finance the research projects in the 2025–2029 period. The Ministry of Agriculture and Forestry is responsible for the financing and evaluation of the projects and the administration of the call.

The research and development projects aim to produce knowledge in particular on change capability of farms in a changing operating environment, new plant breeding technologies, nutrient recycling, and biodiversity in livestock grazing.

Priorities

1. Risks of farms in a changing operating environment

The operating environment of farms is changing at an accelerating pace due to factors including climate change and the changes it causes in weather conditions. Geopolitical uncertainty has also increased, which affects the markets. Farm sizes are expected to increase further, which brings new challenges to enterprise activities. Changes in the operating environment result in changes in the risks faced by farm enterprises. Some risks grow larger while others grow smaller.

This theme hopes to find answers in particular to the question of what kinds of agricultural policy instruments could help entrepreneurs to manage the future risks. The theme also seeks to identify methods and approaches implemented at farm level to increase farm resilience against external challenges. Extreme weather events have become more common, and the risk of crop damage caused by them has increased. There are also increasing expectations on primary production and the entire food chain with regard to responding to society's environmental and climate challenges. The future will see a growing need to verify the environmental impacts of food production. Peatland fields are the largest individual source of climate emissions in the agricultural sector, and special attention must be paid to them. Environmental and climate targets may also affect the production conditions of farms. An outlook of potential for successful agriculture even in a changing risk environment also makes it easier for new entrepreneurs to start their operations.

The theme may also include research on contract production and its impacts on carrying out operations. Research topics under the theme could also include those relating to availability of finance, potential new financing criteria and amount of borrowed funds. In addition, the theme can take account of the impact of the risk environment on entrepreneurs' coping and competence needs.

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2. Enhancing nutrient circularity at system and farm levels

Efficient recycling of nutrients reinforces food security and food self-sufficiency. Measures can also accelerate green transition solutions promoting a resource-efficient circular economy, reducing greenhouse gas emissions, increasing carbon sequestration and storage and improving the state of soil and water. As an integral part of biogas production, nutrient recycling is also an element of sustainable energy production.

In its Vision for Agriculture and Food (19 February 2025), the European Commission identifies nutrient recycling as one of the solutions to boost EU competitiveness and resilience. From the environmental perspective, attention should be paid to increasing nutrient circularity at farm level and to developing and introducing regional operating models.

In Finland, long-term efforts have been made across government terms to promote nutrient recycling particularly from the perspective of environmental targets. In a changing global operating environment, nutrient recycling is also playing a stronger role in ensuring self-sufficiency in terms of inputs in food production.

Masses of materials containing usable nutrients flow in agriculture and forestry, industry and municipal functions. In Finland, manure is the most significant nutrient-rich side stream of agricultural production and is mainly utilised at livestock farms or farms close to them as organic fertiliser products in arable crop farming. There is still need for further specification of the use of manure and other nutrient-rich masses and fertilisers.

Opportunities of farms to promote nutrient recycling vary by region and production line. At system level, it is of key importance to investigate the obstacles and opportunities of the different regions to promote nutrient recycling and in that way to enable the identification of regional and interregional synergies. Modelling and calculation methods can be used to examine the economic and environmental impacts of activities in regional and interregional value chains. The examination must be based on the actual opportunities of farms to source and utilise recycled nutrients and fertilisers. Examples of profitable value chains and cooperation models based on current and practical data serve as a key driver for the promotion of nutrient recycling.

At farm level, modelling and calculation methods concerning nutrient use could, among others, optimise feed and nutrient use, increase precision in fertilisation, improve nutrient utilisation and reduce gaseous emissions as well as leaching of carbon and other nutrients. To be able to make use of such modelling, easy-to-use tools enabling the estimation of fertilisation need and optimising animal feed planning in terms of nutrient utilisation should also be used at farm level. In addition, planning should take account of data on phosphorus and nitrogen stocks of arable land and on cost-effectiveness of measures.

This priority topic seeks answers to the question of how nutrient recycling will take the next systemic step supporting the future food system in improving competitiveness and resilience. Research at system and farm level may take place in one or multiple projects. Research under the priority may include piloting and case studies.

The research project should study the following:

- Nutrient loss and leakage points for the entire food system. What kinds of methods and practices could be used to manage the leakages? What kinds of impacts in terms of security of supply and costs would the management measures have on society?
- Calculation estimates of the impact of the current nutrient recycling situation on fertiliser self-sufficiency and climate emissions, and estimates of measures to increase efficiency and their climate and cost impacts.
- Surveys of the wishes, opportunities and challenges of various farms for the promotion of nutrient recycling. The examinations should cover different regions and different production lines to enable a breakdown of regional similarities and special characteristics.
- The research should examine nutrient recycling as part of the renewable energy targets (including biogas) and also other measures to increase the efficiency of nutrient recycling (excluding as part of biogas production).
- The examinations should take account of the new methods and safety of the usability of recycled nutrients.
- Regional and interregional value chain examples of the profitability of nutrient recycling, taking account of nutrient sourcing, and production, distribution and use of recycled fertilisers in agriculture.
- Concrete methods and modelling tools for on-farm nutrient management.

- The research may also examine the impacts of recycled nutrient use on the clearing of land for arable use.
- The economic impacts of nutrient recycling on actors such as livestock farms and the potential for producing fertilisers for sale.

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3. Efficient utilisation of new technologies in plant breeding

Climate change will change growing season conditions in Finland, too. Plant breeding plays a very important role in food production being able to adapt to the changing conditions. Plant breeding is also an important part in the improvement of the profitability, efficiency and sustainability of the food system. With the climate changing, developments including new types of cultivars and even new species of plant will be needed, and this sets new requirements for practical plant breeding. Ensuring the adaptation of cultivars to changing conditions and improving yield capacity and yield reliability are also essential aspects. New techniques and technologies can be utilised in various ways in plant breeding. Examples of new technologies include genetic markers and genomic selection as well as various gene editing methods. New techniques can considerably shorten the time required for plant breeding and enable the inclusion of new traits in or elimination of unwanted traits from breeding material. Furthermore, more specific plant genome data or various imaging technologies may provide plant breeders with new tools. The research projects relating to this priority topic aim to create new opportunities for the breeding of crop cultivars, taking account of future needs, including when growing conditions change. The aim is also to produce new knowledge relating to the utilisation and application of technologies in plant breeding and to develop relevant competence in Finland.

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4. Increasing biodiversity of arable land, soil health, yield stability and habitat biodiversity

Biodiversity means the full variety of life: genetic variation within species, the number and abundance of species and the diversity of their habitats. Halting biodiversity loss is a global goal. Many plant, insect, bird and mammal species are directly dependent on habitats shaped by agriculture. The decrease in grazing, the overgrowing of arable land left uncultivated, the reduction in verge areas and the decline in the management of seminatural grasslands and wooded pastures have reduced the previously abundant biodiversity of these habitats. In Finland, the structural development of agriculture and other factors have resulted in grazing decreasing and, for example, grazing on large livestock farms no longer taking place to the extent that would have been possible with the same number of animals in previous decades.

Today, grazing is typically used in landscape management and the safeguarding of seminatural grasslands and wooded pastures, but grazing is small in scale despite its many benefits. Grazing and manure are generally regarded to increase the biodiversity of arable land. Adaptive grazing in turn is a method farmers can use to take measures to improve arable land health, water management and plant weather resistance in the conditions of their own farm, also taking account of animal welfare. Adaptive grazing seeks to reduce fertiliser costs and agricultural nutrient emissions, improve yield stability and extend the grazing period.

The assessment of the ability of the various measures to have an impact on the biodiversity of arable and non-arable land and on soil health and yield stability requires measurement, modelling and comprehensive economic review. Increasing biodiversity benefits should be financially viable for measures to be taken on a

large scale. Financial benefits could be gained from, for example, biodiversity markets where actions promoting biodiversity would be sold and bought like services. In addition, EU sustainability regulation (including the sustainable finance taxonomy and corporate sustainability reporting) may have future impacts on the requirements set by the value chain and on farm access to finance, which requires increasing and monitoring sustainability actions at farm level. The direct financial benefits to farmers arising from soil health and yield stability should also be demonstrable through long-term monitoring. In addition to financial incentives, farmers are likely to also need other sources of motivation to learn new sustainable ways of using land. These could include increasing cooperation between crop and livestock farms and peer learning between farmers.

Which incentives and solutions will generate a paradigm shift in Finland to large-scale increases in grazing improving biodiversity, animal welfare and the financial performance of farms, making diverse use of the various grazing methods and, for example, cooperation between crop and livestock farms?

What kinds of practical and easy-to-apply indicators are best suited for monitoring changes in the biodiversity and health of arable land? What kinds of indicators would demonstrate the financial benefits of biodiversity at farm level and therefore provide incentives for mainstreaming grazing and regenerative production? What kinds of indicators could be utilised in the marketing of products in, for example, biodiversity markets? What are the obstacles to regional and farm-specific change when the aim is to boost a transition towards adaptive grazing and cultivation? How could regional or local cooperation between crop and livestock farms to promote regenerative production turn into business benefitting both parties? How could cooperation between farms promote the maintenance of biodiversity? For example, good methods promote grazing and crop rotation, availability of grazing animals and maintenance of ecological corridors across farm boundaries. What kinds of advice and encouragement do farmers need to try out grazing methods that support regenerative production over the long term?

- 1) Measuring actions taken within the existing framework and developing solutions
 - o developing remote sensing methods
 - o measures relating to grazing and regenerative production
 - o developing the biodiversity market for threatened habitat types
- 2) Changing the framework towards
 - o concurrent promotion of biodiversity and climate targets (regulation and incentives)
 - o a revenue generation model where biodiversity actions are an integral part of food production and producer livelihood (towards mainstream solutions)
 - o local solutions and better synergy between forms of food production

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Who can apply

We would primarily like to see consortiums with a maximum of four partners as applicants. All organisations taking part with Ministry financing must be Finnish organisations. Enterprises may take part as consortium members, but we hope that they are primarily involved in the project as finance providers. The Ministry will not finance the product or service development or business development of individual enterprises. Instead, the results must be extensively and openly utilisable by a variety of user groups. The same person may only participate in one application as the lead applicant.

Submitting the application, parts of the application and applicants

How to submit the application

The application has to be submitted in the haeavustuksia.fi application system (select FOOD2.0 TKI-haku 2025) by 12 May 2025 at 16:15 on Monday. The system is opened on 14 March 2025. Do not leave the submit in the system to the last drop, as the system requires Suomi.fi identification (in the name of your organisation) and possibly up to two signatories. The research/project plan has to be one pdf file including CVs and possibly a report on the de minimis subsidies received by the enterprise during the tax years 2023-2025 (if funding is sought for the economic activities of the enterprise in accordance with the general de minimis Regulation).

NOTE! Each organisation applying for funding from the Ministry of Agriculture and Forestry submits its own application to the system and only applies for funding planned for its own organisation. This also applies when there is more than one funding applicant in the project (= research consortium). If there is more than one project the applicant for funding, each party to the research consortium shall give in the application system **exactly the same project name and project group**. Under this common name, the Ministry identifies which applications are the same project entity. The application can be edited in the system until it is sent.

Project size and duration and eligible costs

The maximum financing provided by the Ministry per consortium is around EUR 700,000. Financing will be granted in two instalments (2+2 years), and the project implementers will be informed separately about the finance allocation and the follow-up project. The maximum project duration is four years. The Ministry's financing may commence at the earliest on 1 October 2025 and the projects must end by 30 October 2029.

Financing for enterprises (for economic activity) is granted in accordance with the de minimis aid rules of EU State aid regulation ([Commission Regulation 2023/2831](#)). Except for certain economic activities, the total maximum amount of de minimis aid is EUR 300,000 per enterprise for the period of the current and two preceding tax years. The de minimis aid granted by all authorities is counted in the total amount. The application must be accompanied by a report on the de minimis aid received by the enterprise in 2023–2025.

How to prepare the project cost estimate and financing plan

If the organisation uses the total cost model, the application for financing is to be based on that. The amount of financing awarded to a research organisation and for non-economic activities is, as a general rule, a maximum of 70% of eligible total costs. Financing awarded to enterprises may be a maximum of 50% of eligible total costs but, however, no more than EUR 300,000 for a period of three years as laid down in the de minimis rules. If the total cost model is not used, the financing may cover the project's direct costs and, in addition, 17% for overhead costs.

The project plan must provide a breakdown of the budget by project year and applicant party and preferably also by work package. It is recommended that, in addition to Ministry financing and organisation self-financing, the project also has other financing, such as corporate financing, but it is advantageous for the project that the external financing does not reduce the applicant's own contribution but, instead, increases the size of the project.

Eligible costs comprise wages and salaries of researchers (including project leader) and other personnel, other direct costs (travel, materials and supplies, outsourced services, fees, etc.) as well as overhead costs. Machinery and equipment are not usually included in eligible costs. They may be eligible in some separately justified cases. In such cases, the compensation for these only amounts to the share used by the project, which is calculated on the basis of the depreciation period and usage share of the item. The Ministry of Agriculture and Forestry will not fund start-up or acquisition costs of research infrastructure, and the financing may not be used for scholarships or grants.

The standard terms and conditions for research, development and innovation activities (RDI) financed by the Ministry of Agriculture and Forestry apply to applications for and use of the financing. [Standard terms and conditions for research, development and innovation activities \(RDI\) financed by the Ministry of Agriculture and Forestry.](#)

Open science, responsibilities and rights, publicity

Good scientific practice and open science

Commitment to good scientific practice is required from the applicants. The sites of research of the financed projects are responsible for obtaining any statements by ethical committees required for the research and for any permits required for carrying out the research. The projects must promote open science.

The Ministry requires that the research publications produced will be openly available. The Ministry calls on the projects to promote the reuse of data and to enable open access to their data and methods in accordance with the principles of open science and research. The projects must promote open cooperation with various stakeholders.

Consortium responsibilities and rights

Each consortium partner will receive its individual financing decision, but the consortium partners must agree in particular on the sharing of risks and results, the dissemination of results and the use and sharing of intellectual property rights. Any intellectual property rights resulting from the project, as well as related access rights, are allocated to the different consortium members in a manner which adequately reflects their work packages, contributions and respective interests. Enterprises must pay compensation equivalent to the market price for the intellectual property rights or access rights assigned to them.

Publicity of applications and data protection

Applications and their appendices are public documents, except for the project plan, which, as a general rule, is non-disclosable. This publicity is based on the Act on the Openness of Government Activities (621/1999). The activities of the Ministry of Agriculture and Forestry comply with data protection law.

Review, decision-making and use of financing

Review and decision-making

The applications will undergo peer review by a national panel that will provide the applications with a numerical rating and written comments and rank them in the order of merit for each priority. The panel will consist primarily of persons with a doctoral degree and with extensive expertise in research in the programme area and, in addition, of experts of the Ministry of Agriculture and Forestry. The review criteria can be found in Appendix 2.

The use, monitoring and invoicing of the funding granted comply with the standard terms and conditions of research and development activities funded by the Ministry of Agriculture and Forestry and other guidelines issued. The conditions and guidelines regulate, for example, the responsibilities of the responsible director and the principles of open science and intellectual property rights. Further guidance on monitoring and reporting on the content implementation of projects is provided in the Ministry of Agriculture and Forestry's general guidelines on reporting on research and development activities.

Review criteria

1. RELEVANCE OF PROJECT

- Supports the objectives and priorities of the Food 2.0 call
- Supports the objectives of Themes 3 and 4 of the Food 2.0 leading company programme

2. SCIENTIFIC QUALITY AND INNOVATIVENESS OF PROJECT

- The project's scientific quality and significance, strong basic idea and concepts
- Clear, realistic and measurable project objectives
- How innovative results or solutions can be expected
- Interdisciplinary approach and cooperation
- Background knowledge and utilisation of existing knowledge

3. ORGANISATION OF PROJECT IMPLEMENTATION

- Qualifications and experience of participants, coverage of expertise
- Project management
- Project's cooperation and its added value: competences supplementing each other, everyone with clear roles and resources
- Project implementers' own resources and financial commitment
- Financing realistic and cost-efficient in relation to the plan
- Financial and other commitment of those making use of results, e.g. financing received by the project from the sector and commitment of other finance providers

4. PROJECT'S ABILITY TO HAVE IMPACT, APPLICABILITY AND PUTTING RESULTS INTO PRACTICE

- Assessed ability to have an impact from the perspective of the Food 2.0 programme
- Assessed ability to have an impact from the perspective of the sector and of production, advisory services, trade and consumers and possibly government and legislative drafting
- Other environmental and societal impacts, such as employment, quality of life and ethicality impacts of the projects
- Result utilisation plan and utilisation potential in practice
- Who are the key actors with regard to the project results and have they been included in project preparation and implementation, and how suitable are the cooperation forms?

In addition, where necessary, **ETHICAL ASPECTS AND OPEN SCIENCE**, but no points are awarded for this

The criteria are rated on a scale of 1–5, where

5 = excellent: the application meets all of the requirements of the review criteria, features potential promoting innovation activity

4 = very good: the application meets the requirements of the criteria very well, with only few shortcomings

3 = good: the application meets the requirements of the criteria well, with some shortcomings

2 = satisfactory: the application meets the requirements of the criteria to some extent, with significant shortcomings

1 = poor: the application only poorly meets the requirements of the criteria or has serious shortcomings