

Organic Food and Farming in Flanders (BE)



**Research Strategy
2018—2022**

Colophon

The 'Organic food and farming in Flanders: Research strategy 2018-2020' is a joint publication of the Flemish Organic Research and knowledge Network (the FORK-network: Biobedrijfsnetwerken, CCBT and NOBL)

This document is an English summary of 'Biologische landbouw en voeding in Vlaanderen: Onderzoeksstrategie 2018-2020' in Dutch. The original Dutch version of the strategy is available via www.nobl.be, www.ccbt.be or www.bfvl.be.

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Organic Farming, Basis of an Agro-ecological Food System

In the Strategic Plan for Organic Agriculture 2018-2022, the Department of Agriculture and Fisheries of the Government of Flanders and several other organisations commit to contribute to a central ambition: 'Together towards more and better organic agriculture' and to developing and strengthening organic farming as one aspect of making the Flemish agriculture more sustainable.

With the 'Research strategy for organic food and farming in Flanders: 2018-2022' the Flemish Organic Research and Knowledge network (the "FORK network") aims, together with its partners¹, to contribute to make this strategic plan a reality. The thematic research strategy sets out where research efforts can contribute to create insights about how to develop robust and resilient agro-food systems and also to understand and scientifically underpin the strengths of organic food and agriculture to make agriculture and society more sustainable.

Organic agriculture is seen as the basis of a transition to an agro-ecological food system that uses fewer external resources, makes sustainable use of our agricultural soils and is resilient in times of increasing instability and unpredictability, and ensures stable production and a consistent food supply. Individual farms do not function separately but are part of the larger ecosystem that surrounds them.

¹ BIOFORUM, BOERENBOND, DEPARTEMENT LANDBOUW EN VISSERIJ, LANDWIJZER, INAGRO, PCG, PCFRUIT, PROFCENTRUM PAMEL, PROEFBEDRIJF PLUIMVEEHOUDERIJ, PIBO CAMPUS VZW, ILVO, UGENT, KULEUVEN, ODISEE, HOGENT-FACULTEIT NATUUR EN TECHNIEK, THOMAS MOORE INSTITUUT, FLANDERS'FOOD

We

- opt for a self-regulating system that functions based on agro-ecological principles.
- attempt to make optimal use of synergies between plant, animal, microorganisms and humans.
- strive for equilibrium and resilience achieved at the level of field, farm or landscape.
- search for the preservation of nutrients through the processing of organic products with a minimum use of technological auxiliaries and chemical additives.

Soil health is an important key element here. Adjusting livestock densities to the feed and food supply, balances animal and plant production systems. Extensive farming means less livestock and sustainable animal production based on local or regional balanced fodder production.

Choosing organic production methods is only part of the drive towards an agro-ecological food system. Creating a sustainable food system is a shared responsibility that requires collaboration at various levels. Fair trade, adjusted consumption patterns, local production and consumption and less food waste are other key elements within this food system.

In our search for answers, we will look for sustainability in all areas. In addition to ecological and social improvements, aspects such as economic viability, productivity, legal certainty and a long-term vision development are not ignored. In this way, the sum of all areas is more important than the progress made in just one aspect.

Research Aims and Themes

RESEARCH AIMS

With our research strategy, we want to help to realise the ambition of the strategic plan for organic farming and to support the vision of sustainable food production and consumption from the organic agriculture point of view. Our research for organic food and farming has two aims:

1. The **strengthening of organic farming and food production** by gaining insight into the way robust and resilient agro-food systems can develop in both ecological, economic, social and societal terms.
2. The **scientifically understanding** of the way how organic farming contributes to soil fertility and biodiversity, to the improvement of the environment, to animal welfare, plant, animal and human health, and to the establishment of fair trade relations, starting from the strengths of organic food and farming, for the benefit of the preservation of agriculture and society as a whole.

RESEARCH THEMES

Based on our vision and aims, the organic sector calls for research within three interconnected themes:

1. **Robust Organic Production Systems**
2. **Flexible Organic Chain Systems**
3. **High Quality Food and Food Processing**



1. Robust Organic Production Systems

Robust production systems have a strong adaptability to cope with unexpected events, external threats and change: diseases and pests, climate change, fluctuations on the market and changing government measures among other. Diversity and adaptability are characteristics of robust systems. Such resilient systems allow the farmer to manage resources and reduce costs better in short and long term, not only on farm level but also for the whole society.

PRIMARY PRODUCTION: A SYSTEMIC APPROACH

The current challenges are related to achieving an optimal, plant as well as animal, production in equilibrium with the ecological and social capacity of the production system. Attention is given to optimising soil fertility, increasing biodiversity and implementing the best environmental practices and high standards in the field of animal welfare.

A fertile soil is central in the production of a healthy crop

A fertile soil is core in the production of a healthy crop – and by extension a healthy farm. The understanding and support of soil processes that support a healthy crop development and of crop development with a positive effect on the soil, is fundamental to both plant and animal production.

To meet this, research is needed to create insight in the nutrient cycle in relation to soil management and the effect of it on a proper weed management and the control,

(preferably preventive) of pest and disease pressure.

Animals remain healthy through good animal management and the use of robust breeds

Attention should also be given to the selection of tolerant and resistant varieties adapted to the organic and agro-ecological production environment. A good genetic basis and the choice of less vulnerable crops, but also the richness of species and a well-balanced production environment are at the basis of healthy crops and production system. A better understanding of functional agrobiodiversity, above as well as below surface processes, should allow steering and using these processes more targeted.

In organic animal production, the focus is on the selection of robust breeds, the supply of balanced rations (produced on farm or regionally harvested), the maintenance of healthy animals and the preservation of the welfare of the animals. An optimal design of the housing, the outer area and/or meadows according to the needs of the animals, contribute to the expression of the natural, species specific behaviour which is core in animal welfare.

Attention should also paid to preserving of nutrients throughout animal and plant production systems, and this until consumption.

The interaction between the different elements of the production systems makes a system-oriented approach necessary.

INNOVATIVE STRATEGIES AND TECHNOLOGIES

In the pursuit of further sustainability and optimisation of organic production systems, innovative strategies, technological developments and further optimisation in processes are essential. Hereby, the diversity of companies and the relatively small scale of many organic farms must be taken into account.

Technological and process innovations should provide solutions regarding productivity, labour efficiency, product quality, environment and health.

Innovative strategies, technological and process innovations provide solutions

Optimal and farm specific combinations of green manure, innovative combinations of crops (such as agroforestry), efficient crop rotations and rational fertilisation strategies need further development. Based on the understanding of the functioning of the ecosystems on organic farms different ways should be explored to stimulate diversity and to close cycles.

In addition, new types of production units, that combine intensification of the organic production with multi-functionality and/or new forms of cooperation between specialised farms and firms, offer opportunities to create diversity and close the nutrient cycle on the regional level.

ORGANIC AGRICULTURE, NATURE, LANDSCAPE AND ENVIRONMENT

The ambitions of the organic sector do not stop at the farm gate. Aspects such as climate change, biodiversity, nature, landscape and sustainable food production transcend the farm boundaries. The organic sector wants to play a pioneering role in reducing the impact of agriculture on climate and the environment and wants to deliver a positive contribution to the landscape and the environment

Organic agriculture is recognised for its values related to preserving soil fertility, closing cycles, encouraging natural animal behaviour, conserving natural elements and improving the quality of the landscape and the environment, but needs further scientific evidence and support in its further development of its potential.

The interaction between elements such as a healthy soil, a well-balanced nutrient provision, the natural environment and the biodiversity on a farm results sometimes in balancing positive and negative effects against each other. Research can help to understand and optimise the interaction among all of these elements and help to reduce trade-offs.

The organic food and farming sector wants to play a pioneering role

2. Flexible Organic Chain Systems

Almost everywhere in Europe, the supply and demand of organic products is growing. In different sectors, Flemish farmers underuse these market opportunities. Currently the demand of organic products is still higher than the increase of the local primary organic production. For many Flemish organic producers it is a challenge to find the right market and sell their products at a fair price.

SOCIO-ECONOMY AND SOCIETY

Profitability, limiting risks and good competitiveness are central in the quest for economic sustainability. Hereby, it is important to create insights in the economic figures, cost structure, economic developments and in the innovation potential on market, sector and farm level and the impact on policy measures on this. This helps farmers to be more resilient in the market by better understanding of their negotiating margin.

Economic sustainability cannot be separated from the social and ecological sustainability of the organic sector, however. Organic agriculture needs production, distribution and trade that is transparent and fair and brings the actual social and environmental costs into account.

A sustainable food supply, now and in the future, asks for more attention to the complexity and the role of cycles in the sustainability of the food supply. From the agro-ecological cycling principle, attention should be given to the balance between the growth of plant and livestock production and between consumption and production and to the reduction of food losses and the reuse of residual waste flows from urban areas.

DEVELOPMENT OF MARKET AND CONSUMPTION

To achieve stable market development, products should be available with a price/quality ratio that meets consumers' expectations and a price that covers the costs of the whole chain.

As more companies want to convert to organic production, it is necessary that the consumption continues to grow. New consumers must be attracted, new consumer segments (such as schools, care institutions, public authorities ...) explored. Support at product development and innovation can offer a wider range of organic products.

Optimisation, coordination, and cooperation based on the characteristics of the organic chain are necessary. Relations between primary food production and food consumption should be reinforced by shorter and/or transparent chains (block chain), based on consumer confidence and a greater proximity between producer and consumer can be stimulating.

Consumers are the driving force

Resilience in the food chain can be increased by optimisation, alignment and cooperation (e.g. by establishing producer groups and organisations and/or chain organisations in organic) and through new organisational farms in the production, processing and product marketing. A fair trade between the chain partners is core (including true pricing).

3. High Quality Food and Food Processing

The organic consumer expects 'whole' foods, where no vitamins, minerals or other elements need to be added. Therefore, further insight in the nutrient content of crops and products, the losses throughout the chain and its relation with the agricultural production method is needed.

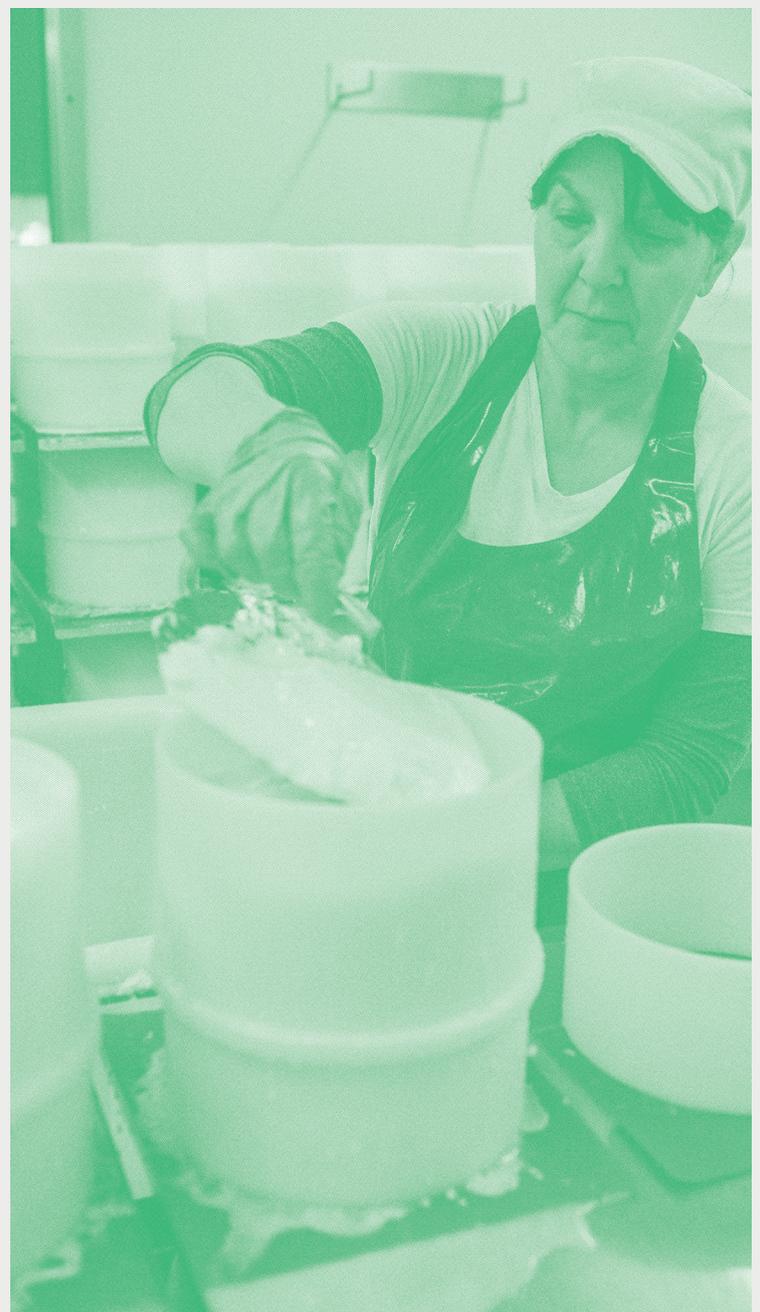
More insights about what losses occur where throughout the chain (production, harvest, preservation, transport, processing) and how to prevent these are therefore essential.

Functional ingredients added in conventional processing to extend the preservation of products are often not allowed in organic. This requires a reconciliation of the preservation and the processing in function of the organic product and the development of techniques that make additives redundant and prolongs the shelf life.

Processing of organic products is more than working with organic ingredients alone. It requires its own, flexible approach, with own recipes and processing techniques, that must still largely be developed.

Research is needed to see where the ecological footprint of a product can be further reduced

It is important to ensure that the sustainability lead within the organic production is maintained and investigation of where the ecological footprint can be further reduced, is necessary.



Research Approach

In achieving this research strategy, attention is asked for:

Demand-driven research starting from concrete questions and needs of farmers, market participants, policy makers or legislation.

System-oriented research that takes into account the complexity of the agricultural and food system and the importance of viewing the production system as a whole instead of as a collection of individual parts or elements. This takes into account the ecological, economic and social impact of the system. A system approach goes beyond the individual field, farm or company. The entire economy and the environment, such as the rural community, a region or the catchment area, needs to be addressed.

Co-creative approach with room for collaboration between different scientific disciplines and expertises. In addition to researchers, farmers and other actors from the chain are actively involved in the planning and execution of the research as co-facilitators of knowledge and the validation and implementation of results in practice.

Organic and conventional farming can learn from each other and inspire each other

Where possible, cooperation is sought between organic and conventional agricultural research. Organic and conventional research can learn from each other and inspire each other in the further development of a sustainable agriculture, food production and consumption.



The Flemish Organic Research and Knowledge Network

In Flanders, three networks support research and knowledge and information exchange for organic production: NOBL (Netwerk Onderzoek Biologische Landbouw en voeding), CCBT vzw (Coördinatiecentrum praktijkgericht onderzoek en voorlichting biologische teelt) and Farmers' networks (Biobedrijfsnetwerken).

Together they form the foundation of the Flemish Organic Research and Knowledge network (the FORK network). As initiator of this strategy, the network, together with their members, commits to realise it through a co-creative process, where possible in collaboration with researchers studying agriculture in a conventional and organic context.

The network is open to all questions from researchers, policy makers and practitioners... about research design and implementation, dissemination of research findings and/or exchange of knowledge for the organic food and farming sector. The network wishes to facilitate the development of demand-driven participatory and trans-, multi- and interdisciplinary research.

**Through collaboration,
we want to be the driving
force in the development
of an efficient knowledge
policy in Flanders**

NOBL stands for **Network for Organic food and Farming Research**. The network brings together researchers, policymakers, and representatives from (organic) farmers unions and other agricultural and food networks to share knowledge, ideas and experiences and to formulate advice on priority research topics and the organisation of research for organic food and farming in Flanders. Currently the

network represents BioForum, Boerenbond, Departement Landbouw en Visserij, Landwijzer, Inagro, PCG, pcfruit, Proefcentrum Pamel, Proefbedrijf Pluimveehouderij, ILVO, Ugent, KULeuven, Odisee, HOGent-Faculteit Natuur en Techniek, Thomas Moore Instituut, Flanders' Food en CCBT. ILVO coordinates the network.

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CCBT stands for **Coordination of applied research and extension on organic farming** in Flanders. It coordinates and stimulates research and extension activities on organic farming in eight applied research centres (Inagro, PCG, pcfruit, Proefcentrum Pamel, Proefbedrijf Pluimvee- houderij, PCS, PSKW, and PIBO Campus vzw. The CCBT launches small-scale research projects financed by the Government of Flanders. Farmers are involved in determining the topics of these research projects. CCBT coordinates also the dissemination of research results and knowledge to farmers (e.g. Biopraktijk.be).

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Biobedrijfsnetwerken (Farmers' networks) bring together organic farmers of the same subsector (poultry, dairy cattle, beef cattle, vegetables & arable crops, goats, pigs, mixed farms, berries, pome and stone fruit, flowers and greenhouse crops). The farmers of each network meet regularly to share their technical knowledge and experiences or exchange information with advisors and researchers and other experts depending on the agenda. The farmers' networks are supervised by a facilitator and an expert. The facilitator is an employee of BioForum, but also farmers and growers themselves or other persons closely involved in the sector sometimes take up this role. The Biobedrijfsnetwerken drive research via its cooperation with CCBT and NOBL.

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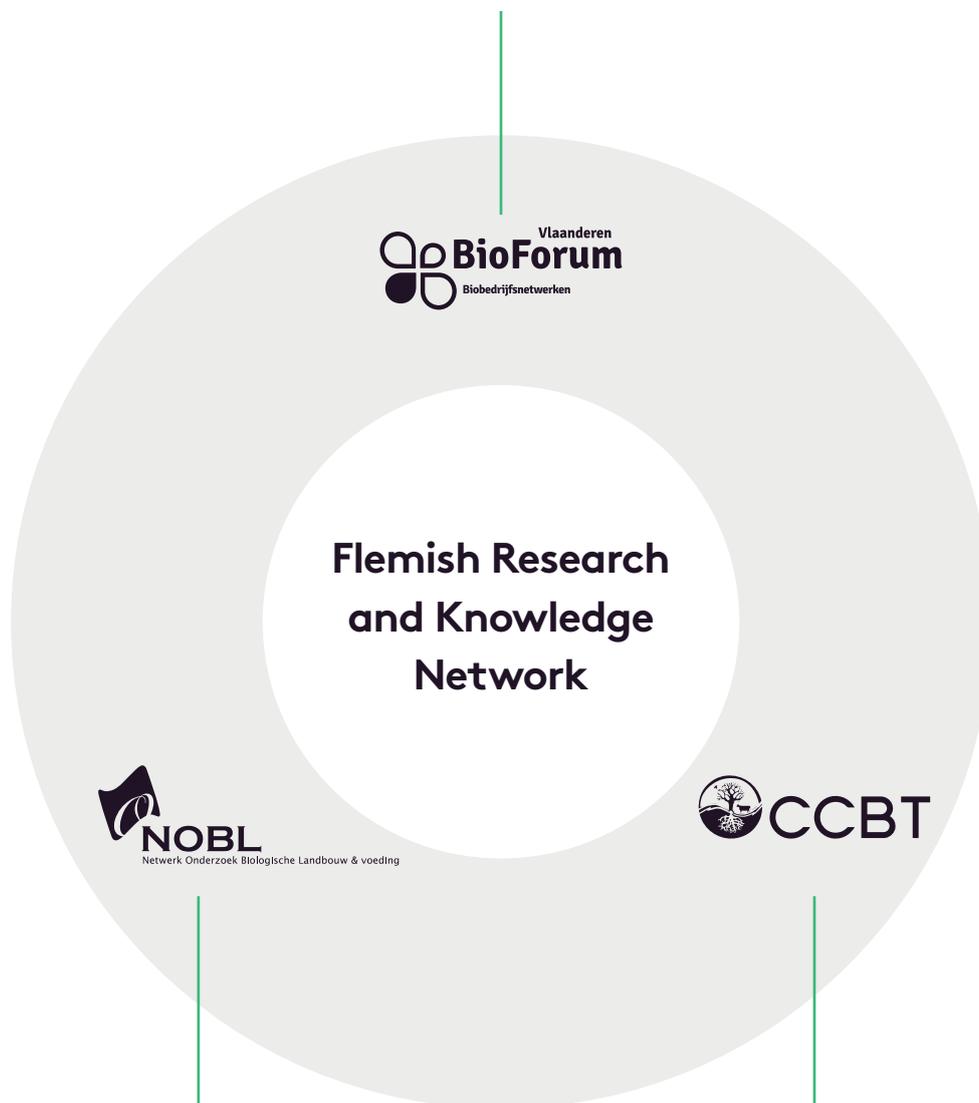
Do you have questions about research for organic food and farming in Flanders? Do you have ideas for writing a research proposal and you are looking for partners?

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