

**LARA
'18**

CHALLENGES

FOR FLEMISH AGRICULTURE AND HORTICULTURE

CHALLENGES FOR FLEMISH AGRICULTURE AND HORTICULTURE

The seventh edition of the Flemish Agriculture Report (LARA) was published in 2018.

The report deals with the challenges for Flemish agriculture and horticulture. At the same time, it provides a detailed description of the subsectors. A SWOT analysis (strengths, weaknesses, opportunities, threats) also takes place per subsector. Between the chapters, experts from policy, research and civil society give their vision on challenges faced by Flemish agriculture and how the sector should deal with them.

This is a translation of the summary of the report.

You'll find the entire report in Dutch on www.vlaanderen.be/landbouwrapport.

© Flemish Government, Department of Agriculture and Fisheries

Platteau J., Lambrechts G., Roels K., Van Bogaert T., Luypaert G. & Merckaert B. (eds.) (2019) Challenges for Flemish agriculture and horticulture, Agriculture Report 2018, Summary, Department of Agriculture and Fisheries, Brussels. D/2019/3241/075

1 CURRENT SITUATION

AGRICULTURE IS CHARACTERISED BY ECONOMIES OF SCALE, SPECIALISATION, DIVERSIFICATION AND INNOVATION

In 2017, Flanders had 23,225 agricultural businesses, 78% of which were of a professional nature. Compared to 2007, the number of agricultural holdings has decreased by slightly more than a quarter, a decrease of 3% per year on average. In particular smaller farms stop their activities, which leads to a constant increase in scale.

In 2017, agriculture and horticulture as a whole covered an area of 610,971 hectares. Thereof, the largest part is accounted for by fodder crops (maize and meadows) and cereals, with 56% and 21% respectively. Compared to 2007, the utilised agricultural area decreased by 2%, due to the reduction of the arable farming area and especially of the sugar beet area. The area of potatoes, fruit and vegetables, on the other hand, has increased. 37% of the cultivated area is in ownership.

The livestock consists of 1.3 million cattle, 5.7 million pigs and 34.2 million poultry. In ten years' time, the number of poultry (+24%) and dairy cows (+10%) has risen sharply, whereas the number of sows (-27%) and suckler cows (-16%) has decreased.

Compared to 2007, the average utilised agricultural area per holding has increased by one third, up to 26 hectares. A cattle farm has an average of 142 animals, a pig farm 2,121 animals and a poultry farm 55,015 animals. Holdings run by an older farmer are smaller than those run by a younger farmer. 18% of all farms don't have a natural person as holder, but a legal person. This business form is more common for holdings with a larger economic dimension, expressed in standard output.

88% of all farms have specialized in one of the three subsectors, livestock being by far the most important specialisation (50%), followed by arable farming (26%) and horticulture (12%). Within the livestock sector, cattle farming is the most important.

Regions specialising in one activity are clearly recognisable: fruit around Sint-Truiden, greenhouse vegetables north of Sint-Katelijne-Waver, ornamental horticulture east of Ghent, cattle in the Flemish Ardennes and the Pajottenland and intensive livestock farming (pigs and poultry) spread over West Flanders, Mè-tjesland, Waasland and Kempen.

Another form of specialisation is organic farming. At the end of 2017, 468 organic farms were active, including those in conversion. The number of organic producers has grown by an average of 9% per year over the past five years. The organic companies together cover 7,367 hectares or approximately 1.2% of the entire agricultural area.

A survey of the participants in the Flemish Farm Accountancy Data Network in 2017, showed that half of the agricultural and horticultural businesses carried out one or more innovation activities in the previous 2 years. Fruit production accounts for the highest percentage of innovative businesses (63%), followed by beef cattle farming (60%). The companies mainly invested in process innovations.

Currently, many farmers get an additional income from diversification activities, not directly related to production. According to the latest figures, there are 2,002 farms running a farm store, 857 farms doing contract work, 361 farms with a form of tourism, accommodation or leisure activities, and 252 farmers producing energy at their farms intended for sale.

AGRICULTURE IS AN ECONOMICALLY IMPORTANT SECTOR

The Flemish agricultural and horticultural sector realised a production value of 5.4 billion euros in 2016. By far the largest part (61%) comes from livestock farming. Horticulture and arable farming account for 30% and 9%, respectively. The five most important sectors in terms of production value are pigs (1.37 billion euros), vegetables (712 million euros), milk and derivatives (677 million euros), cattle (643 million euros) and non-edible horticultural products (503 million euros). Together they represent 72% of the total production value.

Agricultural products and their derivatives account for 11% of all Belgian imports and 12% of all exports in 2017. In 2017, Belgium exported 45 billion euros of agricultural trade products. Imports amounted to 38.5 billion euros. Consequently, the Belgian trade surplus amounts to 6.5 billion euros. In particular animal products contribute to the positive balance, with a surplus of 2.1 billion euros. Agro-industrial products, such as crop protection products and fertilisers (1.9 billion euros) and arable farming products (1.6 billion euros), have a trade surplus as well. Flanders has a share of 83% in national agricultural imports, and 85% for exports. Belgium accounts for 8% of the total agricultural exports of the EU-28, ranking fifth in Europe, following the Netherlands, Germany, France and Spain.

According to the agricultural survey, 48,453 persons were regularly employed in Flemish agriculture and horticulture in 2016.

Converted to full-time workers (at least 38 hours per week or 20 days per month) and taking into account the irregular employees, this means 39,315 full-time workers. 43% work on specialised livestock farms. This is followed by specialised horticultural farms (35%) and arable farms (12%). With 61% of the total number of regular employees, the labour force is predominantly family-based. Horticulture is an important employer for foreign employees.

AGRICULTURE IS EMBEDDED IN THE SOCIAL FABRIC

The average age of farmers in charge of professional businesses in Flanders has continuously increased over the past few years from 50 years in 2007 to 54 years in 2016. Only 10% of all farms have a holder younger than 40 years, while 16% are older than 65. One fifth is between 50 and 54. The number of female farmers remained constant at approximately 10%.

Only 13% of all farmers older than 50 have a probable successor. The succession raises particular problems for the economically smaller farms. Increasingly capital-intensive production systems, combined with the crisis situation in agriculture, cause a high degree of uncertainty. As a result, children are less interested in taking over their parents' business.

Younger managers are usually better educated. For younger managers, the percentage with only practical agricultural experience is only 17%, while for older farmers it is still 48%. The larger the farms, the more the managers have had higher agricultural education.

Nine out of ten farmers find their work interesting and eight out of ten are satisfied with their job. However, one in five suffers from high to very high stress. The main worries are uncertainty about income, administrative burdens and problems regarding the acquisition of additional land. This is the conclusion of a survey on well-being in the sector, in which 550 managers of the Flemish Farm Accountancy Data Network participated in the spring of 2017.

According to a five-yearly study on the image of Flemish agriculture and horticulture, the Flemish population gave the farmer in 2017 an overall score of 7.3 out of 10 and the sector a 7.1 out of 10. These are slightly lower scores compared to 2012. Flemish people who regularly purchase from a farmer have a more positive opinion of the sector. Those who are not interested in agriculture and horticulture have a remarkably more negative opinion of the sector.

In their diversification activities, farmers include a clear commitment to society and the environment as well. This appears, for example, from the 446 active care farms. Care farmers spend a total of 259,029 hours on care activities. There are also 2,952 farmers with management agreements for nature, environment and landscape management. The management agreements are related to erosion control, field edge management, small landscape elements, botanical management and species protection. Agriculture has a strong positive impact on the rest of the rural economy in terms of employment, activities, processing and tourism.

THE IMPACT OF AGRICULTURE ON ITS NATURAL ENVIRONMENT

Intensive and highly productive agriculture is not possible without fertilisation. The use of fertilizers causes losses of nitrogen and phosphorus to the environment with consequences for the quality of ground and surface water. A problem which, despite the efforts made, is still relevant.

The total use of animal manure in Flanders has decreased from 100.6 million kg nitrogen and 48.3 million kg phosphate in 2007 to 92.1 million kg nitrogen and 40.6 million kg phosphate in 2016. This is a decrease of 8.5% for nitrogen and 16% for phosphate. The total manure balance is in balance, but some farms still have a balance problem.

Total emissions of potentially acidifying substances from agriculture have fallen by 6% in 2016 compared to 2007. Nevertheless, agriculture remains the most important source of acidifying emissions in Flanders with a share of about one third. Ammonia emissions account for 89% of the potentially acidifying emissions of agriculture in 2016.

In 2016, the total net primary energy consumption by the agricultural sector amounted to 27.9 petajoules (PJ), a clear increase compared to the previous year. Greenhouse horticulture remains the largest energy user, but its share has dropped from 53% in 2007 to 42% in 2016. Natural gas is the main energy carrier. Its share has risen from 21% in 2007 to 59% in 2016. Since 2010, Flemish agriculture has become a net producer of electricity through CHP installations (combined heat and power) and solar panels. Technical innovations are still possible to save fossil energy, such as heat recovery during dehumidification, energy screens, heat pumps and use of residual heat.

The share of agriculture in the total Flemish greenhouse gas emissions is 10%. In 2016, the Flemish agricultural sector was responsible for the emission of 7.4 megaton CO₂ equivalent. In the period 1990-2016, the Flemish agricultural sector has achieved a reduction of greenhouse gas emissions of 23%, whereas this is only 10% for all sectors in Flanders.

We estimate the use of crop protection products at 3.2 million kg of active ingredient in 2016. Compared to 2011, this is an increase of 0.5 million kg of active ingredient or 18%. A look at the annual distribution equivalents, a measure of the pressure that crop protection agents exert on aquatic life, shows that the index has risen over the period 2011-2016, after it fell dramatically at the beginning of the century due to the withdrawal of the most toxic products from the market.

Total water consumption in agriculture and horticulture in 2016 amounted to 55.6 million m³. The value has fluctuated around 53 million m³ in recent years, depending on the weather conditions. The vast majority is ground water (60%) and rain water (30%).

90% of food losses and residues from agriculture are valorised. 70% finds its way back to the soil, 11% is used as animal feed. Of the 907,000 tonnes of food losses in Flanders, 36% are due to agriculture, 25% from the food industry and 23% from households. The remaining percentages are for catering, retail, auctions and fisheries.

AGRICULTURE IS PART OF A LARGER AGRI-FOOD CHAIN

The agricultural sector is an important link in a series of links that make up the agri-food chain. In 2016, the Flemish agribusiness complex had 34,325 businesses, representing a turnover of 61.7 billion euros, investments worth 2 billion euros, an employment of 151,872 workers and an added value of 8.3 billion euros. With 70%, agriculture and horticulture provide the majority of businesses and the share of 44% makes it an important employer as well. The food industry provides the largest share of the turnover (65%), makes the most investments (58%), creates the largest added value (62%) and is the second most important employer (43%). The agricultural intermediary distribution, producer organisations and other sectors, such as suppliers, account for the remaining percentage.

In 2016, a Flemish household spent 13% of its total expenditure (or 4,775 euros per year) on food products. Within the expenditure of Flemish households on food, meat accounts for the largest share with 22%, followed by bread and cereal products (17%), vegetables (11%) and milk, cheese and eggs (11%).

2 CHALLENGES FOR AGRICULTURE

VIABLE AGRICULTURAL BUSINESSES

Agriculture should be economically sustainable. This means that a farmer must be able to earn a living or a fair income from his business. A farmer's income has always fluctuated because he depends on natural factors such as climate, weather conditions, pests and diseases. Political stability too has a major impact on prices. In addition, market mechanisms and power relations in the food supply chain also lead to a low income for the farmer.

Farmers are increasingly exposed to fluctuations in world market prices. Volatility is increasing, as dependence on other commodity markets increases. Competitiveness on the world market is strongly influenced by elements, such as energy prices (or more generally input costs), available infrastructure and exchange rates. The European Union has also opened its market to larger quantities of duty-free or duty-reduced products, which results in more competition for farmers.

While the price paid to European farmers for their products is barely increasing, the price of inputs such as land, fertilizers, animal feed and crop protection products is rising sharply. Production costs are relatively high in some sectors, mainly due to increased labour costs and costs resulting from new regulations on environment, health, animal welfare and food safety. The income support provided to farmers under the Common Agricultural Policy should help to ensure a fair income. The safety net for farmers has been considerably reduced over the past years. In some sectors interventions by public authorities are still possible, such as withdrawing products from the market or paying partially storage costs. Some producer and interbranch organisations have been set up to strengthen the farmer's market position.

There are considerable differences in negotiating power between the various market players within the food chain. This leads to situations where the weakest link, often the individual farmer, is in a vulnerable position. Retail, on the other hand, is strongly concentrated and engaged in a competitive struggle. Supermarkets lure consumers with low prices or discounts for food products.

In order to obtain a sufficient income, farmers often invest in diversification and specialization, which requires high investments and capital intensity. A different strategy farmers may adopt, is to seek added value, e.g. by organic farming or by selling their products on the farm. This also requires new investments and often a totally different way of working. Finally, more and more farmers and/or their partners have another job.

NEW FARMERS

Due to the small number of new, starting farmers and the stable number of farmers stopping their farm business, Flanders is facing an increasing ageing and shrinking farmer population. Old farmers often retire without someone taking over the farm business. A smooth intergenerational handover is often impossible due to the reduced attractiveness of the profession and the hurdles starting farmers encounter.

Farm business managers have to manage ever bigger businesses, are increasingly dependent on uncertain markets and capital markets to finance their business. Problems such as stress, poverty and liquidity often occur within farm businesses. Compared to the past, farmers also have less contact with consumers, resulting in less respect and appreciation from the consumer's side, so that farmers have lost some pride in their job. Regulations have also become more complex and involve a lot of paperwork.

New farmers encounter many hurdles, of which access to land (buying or renting) is considered the most important. Taking over or starting up a farm business also requires more financial resources. Young farmers or starting farmers often do not have sufficient access to capital, they only have limited equity.

The intergenerational handover, when a child takes over the farm business from its parents, still is the most common way of starting a farm business. But some new farmers did not grow up on a farm and do not have a previous link with agriculture. They can bring in new insights and often have a network from outside the sector.

SPACE FOR AGRICULTURE

From a spatial point of view, Flanders is highly urbanized and 'petrified'. Every day, approximately six hectares of open space disappear. The remaining open space is also increasingly fragmented.

Land is an important production factor for agriculture. Farmers need land to farm, to graze animals and to build farms. As a result of changing regulations, agriculture even needs more space, e.g. to spread manure. In Flanders, agriculture and horticulture can perform their activities on 46% of the Flemish surface area.

In the countryside, agriculture is now more under threat than ever before, even within the space intended for agriculture on spatial plans. The status of (reconfirmed) agricultural area appears insufficient to protect agricultural land from transformation processes such as hardening, petrification and the use of vacant farm buildings for purposes other than agriculture. Currently, 11% of the agricultural land is not being used for agriculture. But 11% of the land used for agriculture is legally not intended for farming activities.

Farm land is scarce and threatens to become almost unaffordable for family farms and young farmers. When a farmer stops his business, he tends to sell his land and buildings to the best bidder, who is often a non-farmer. Financially powerful companies buy the land as an investment, because they often speculate on another use, but they never farm themselves. In the best possible case, they lease the land (on a seasonal basis) to professional farmers.

Increasing spatial efficiency in agriculture can be achieved through a combination of intensification, mixed land use (including shared use), re-use and the temporary use of space.

CIRCULAR AGRICULTURE

Over the past century, agriculture has managed to increase its production considerably. The agriculture and food system has evolved towards a very efficient, but linear system of extraction and exhaustion. There is a strong dependence on natural resources such as nutrients, proteins, fossil fuels, agro-chemicals, water and land. Some negative consequences of the linear system are soil degradation, environment pollution, waste and spillage.

A resource efficient food system reduces the environmental impact, takes advantage of renewable resources in a more sustainable way and uses all resources more efficiently. Preventing losses in the agri-food chain therefore is a priority. Biomass is at the heart of the circular economy. It is a renewable resource that captures CO₂ from the air. Biomass can be widely extracted from crops, wood, grasses, algae, animal residues and residual flows that arise in the chain, from harvest to final processing and consumption.

In agriculture and horticulture, solutions mainly focus on efficiency to prevent losses. A circular farm usually closes the resource loops as much as possible on its own farm or with a few neighbouring farmers. Soil-bound, mixed farms have been doing this for a long time. The farmer seeks can also seek outlets for certain residual flows of his farm without the valorisation of residual flows being an end in itself. However, this requires coordination with many partners from different sectors. In addition, there is a great deal of research into new crops or applications that provide added value in the bio-economy.

Successful development of the bio-economy requires an adaptation of the current infrastructure, technology, policy, markets, industries and personal beliefs. Moreover, new or adapted logistics processes and value chains are needed, between related and non-related industries in order to maximise the value of the available biomass.

CLIMATE CHANGE

Agriculture has an impact on climate change. On a global scale, agriculture is responsible for 17% of greenhouse gas emissions, while in Flanders greenhouse gas emissions amount to 10%. Agriculture mainly emits methane (CH₄) and nitrous oxide (N₂O), which come from digestion in ruminants, the production and storage of manure and soil use.

Due to its close connection with the rest of the ecosystem, agriculture is particularly sensitive to disturbances within the ecosystem. Not all effects of climate change are negative by definition. For example, the higher CO₂ concentration in the atmosphere is an additional fertiliser for plants. But in recent decades, the yield of agricultural crops has fluctuated more strongly, due to diseases and pests and extreme climatologic conditions such as heat waves, drought, thunderstorms and storms. Agricultural land in coastal regions is in danger as a result of rising sea levels and salinization of the soil. Plants suffer from high ozone concentrations.

The current climate policy approaches climate change from three angles. Mitigation aims to reduce greenhouse gas emissions. Adjustments in feed rations and feed tonnage, but also stable and manure management can, for example, reduce methane emissions from livestock farming. This also includes the production and use of renewable energy sources. Adaptation focusses on measures that offset the effects of climate change. This can be done by growing alternative crops or new bred varieties and varieties which have a higher drought resistance or which can grow under saline conditions. Finally, land use has a direct impact on CO₂ concentrations in the atmosphere. The CO₂, which is fixed in the soil and in biomass, does not contribute to climate change.

HEALTHY AND SUSTAINABLE DIETS

Healthy food provides us with the necessary energy and nutrients to function. Despite the powerful ability that food and diets can offer us, we see that this potential is not fully used.

Belgians consume too little fruit and vegetables, bread and cereal products, potatoes and pasta and water. The consumption of cheese, meat and the residual group (rich in calories, poor in nutrients) is higher than recommended. Lack of exercise is widespread. Overweight and obesity are the cause of many health problems, such as the development of chronic diseases, muscle diseases and certain cancers. These diseases have a high cost for society.

Scientists performing research on sustainable and healthy diets, agree that eating no more food than necessary reduces the environmental impact and obesity. Diets rich in animal products have a greater negative impact on the environment and health. When changing consumer behaviour, the highest impact is to be expected from an integrated approach. More and more people are considering health and sustainability when buying food products at the supermarket. The power of consumers' dietary choices on food system health and sustainability outcomes is undeniably great.

PROTEIN TRANSITION

The worldwide increasing and unsustainably demand for animal proteins is challenging agriculture to shift towards more supply and valorisation of vegetable proteins. The shift towards the consumption of more vegetable proteins also offers opportunities for the agricultural sector. Protein transition refers to new ways to make high-quality proteins available to humans in a more direct and sustainable way. This can be done by producing animal feed entirely from proteins that humans cannot consume (e.g. by-products from the food industry), by partially replacing animal proteins by vegetable proteins (e.g. legumes and grains), by processing vegetable proteins into a product comparable to meat (e.g. meat substitutes 2.0 or hybrid products) and by developing and upscaling alternative proteins (e.g. algae, insects or cultured meat).

A shift in production and consumption towards more vegetable and new sources of proteins clearly has some consequences for livestock farming. Clarity about the production space for livestock farming will stimulate the sector to accelerate innovation, develop new business models and focus more on alternatives in the coming decades.

RECONNECTING WITH THE CONSUMER

By 2050, more than two-thirds of the world population will live in cities. To feed all these people, enough food must be produced. Agriculture has therefore become more intensive and more industrialised. Globalization means that our food travels around the world. But there are also many ecological challenges. A geographical and psychological distance has arisen between people living in the city and their food, between consumers and producers.

All over the world, cities have taken up a more active role in food supply. Not only from a food security point of view, but also from the point of view of sustainability, social development and public health.

In Flanders, too, where the city and the countryside are close to each other, there is increasing suspicion among people living in the city about the current farming methods and the way our food is produced. At the same time, there is a growing awareness of and interest in food production and consumption. The link between the urban consumer and the rural producer must be (further) strengthened. The farmer can offer farm sales or a self-picking garden or set up other diversification activities such as nature management, care farming and farm tourism. Short chain initiatives such as local farmer markets and local food teams reduce the gap between farmer and citizen. More and more cities and municipalities are now adopting local food strategies that support the development of alternative food systems. New urban farmers are using fallow land, roofs and basements.

DATA REVOLUTION

Data play a crucial role in technological innovation and have become increasingly important in agriculture. They can be generated via GPS systems on tractors or drones, soil and crop sensors, satellite images and apps. They can be used to monitor soil, crop, animal and climate in real time. The communication and cooperation between different systems and devices is crucial to exploit the potential of the data.