Food for thought

Voedsel om over na te denken

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The sixth edition of the Flemish Agriculture and Fisheries Report (LARA / VIRA) was published in 2016. As the central theme is food, the report is entitled 'Food for thought'. The report is a description of the whole Flemish food system.

We describe what the Flemish eat, what attitudes, behaviors and trends play a role and what the economic, environmental and social consequences are. We analyze the different Flemish food supply chains and indicate the importance of distribution, processing and production. To meet the challenges of the Flemish food system we conclude with a set of recommendations.

This is a translation of the summary of the report.

You'll find the entire report in Dutch on **www.vlaanderen.be/landbouw/lara**.

Platteau J., Van Gijseghem D. Van Bogaert T., Vuylsteke A. & Merckaert B. (eds.) (2017) Food for thought. Voedsel om over na te denken. Summary, Department of Agriculture and Fisheries, Brussel D/2017/3241/178.

FOOD CONSUMPTION

Due to the economic growth, Belgian consumers' purchasing power strongly increased after the Second World War. Meat consumption doubled, and consumption of margarine, cheese, pasta, cake, fruit, candy and soft drinks increased too. In the meantime, affordable food was available everywhere and at any time. The downside was that the excessive amount of calories, even enhanced by the evolution towards a sedentary life style, may have favoured overweight and obesity.

We tend to buy more and more processed and packed food products in supermarkets, which offer a wide range of in-store and brand products. Marketing has become increasingly important. Trends in society such as interest in healthy and conscious food consumption and the digital revolution have influenced our purchasing behavior. Less time is available for cooking, but meals tend to be more diverse. Trends from restaurants or cooking programs on television find their way down to the kitchen at home. An ever increasing number of people find their way in an ever growing offer of restaurants and other food services.

The Flemish kitchen is traditionally known for its savory food, potatoes, meat, cabbage, butter and sauce, but it is as well receptive to new products and cooking trends. The Flemish are proud of their typical products and their Burgundian life style. The current feeding pattern is related to demography. The Flemish population is getting larger and older, households are becoming smaller and more people are from foreign origin.

The food consumption survey 2014-2015 shows that a Flemish daily consumes on average 128 grams potatoes and pasta, 155 grams of bread and cereals, 148 grams of vegetables, 189 grams of fruit, 171 grams of milk and calcium enriched soya products, 27 grams of cheese, 104 grams of meat and 24 grams of fish. The group of food products that are not necessary for a healthy diet, such as sugared and alcoholic drinks, count up to 563 grams per day and represent 20% of the consumption. Women consume more vegetables and fruit than men. Higher educated people tend to eat more vegetables, fruit and dairy products and less products from the 'residual group'.

Approximately three quarters of the Belgian population has a regular diet. The majority of the meals is consumed at home, although having a meal with friends, at the restaurant, at school or at work is not unusual.

Food and non-alcoholic drinks took about somewhat less than 13% of the total family budget in 2014. Immediately after the Second World War, this share amounted about half of the overall budget. Food expenditures vary from an average of 225 euros per month for the lowest income quartile up to 608 euros per month for the highest quartile.

About half of all fresh food products are purchased in large supermarkets (DIS1) in 2015. Hard discounters obtained a market share of 20%. Convenience stores stand firm, but specialty stores and public markets lost ground. Farm stores obtained the best result for potatoes.

The consumers purchasing decision is a complex and hard to understand process . Personal and socio-demographic elements, such as values, age and income play a role. Incentives coming from marketing and the surrounding, such as price, product features and distribution channels try to steer and influence consumer behaviour. According to the rational model, a consumer has a certain need and wants to satisfy it as good as possible, seeks for information, makes an assessment of the alternatives and chooses the product that best fits his/her preference. Other models focus more on impulses, habit formation and variation propensity when purchasing food.

When purchasing food, Flemish consumers are guided by sensorial aspects such as freshness, taste, odour and look. Price is an important criterion as well. Next comes safety and information on the packaging. Nearly all the Flemish say they are willing to waste less food.

There is a gap between attitude and behavior, between citizen and consumer. In this respect, a positive attitude towards sustainability can lead to non-sustainable food purchases, because other factors such as price, habits or a lack of information are decisive. Labels aren't always very effective to convince consumers.

IMPACT OF FOOD

Food can be a binding agent for society. Today, the availability of food in Flanders is no problem, but as for the access to it and the healthy use of it there is still plenty of room for improvement.

3% of the Flemish population has insufficient financial resources to afford a meal every two days. In 10 years time the number of clients of the food bank has doubled. Poverty makes unhealthy. Apart from an unbalanced diet, other factors play a role as well, such as housing, stress due to financial problems, an unhealthy lifestyle and access to health care. Being unhealthy can, in turn, lead to poverty.

Food is something very personal and intimate, something we personally identify with. At the same time it is a social event and brings people together. The rules, habits and traditions as a whole create social cohesion.

The last decades, the distance between producers and consumers throughout the food chain has grown gradually. Many consumers do not know how their food is produced and how it gets on the shelf. Recent initiatives such as urban farming and U-pick farms focus on re-uniting consumers and producers and/or the city with the surrounding countryside.

Healthy food provides the energy and nutrients we need to function optimally. The active food triangle gives recommendations for a balanced eating pattern offering enough variation. Ecological sustainability considerations – the impact of food on the planet – are included more and more into the debate on healthy food.

The food consumption survey 2014-2015 shows that Belgians don't consume enough fruit and vegetables, bread, cereals, potatoes, pasta and water. The consumption of cheese, meat and the 'residual group' is higher than what is recommended. The Belgians' average energy intake is about 2243 kilocalories per day. On average we eat too few carbohydrates and too much fat. A lack of physical activity is widely spread. Only 40% of all adults have at least half an hour of exercise each day, for women this goes even down to 30%. On average, we sit down 6 to 9 hours a day, depending on the age.

Overweight and obesity cause many health problems, such as developing chronical diseases, muscle diseases and certain kinds of cancers, and they have a high social cost. 29% of the Flemish people are facing overweight (BMI between 25 and 30) and 15% suffer from obesity (BMI = 30 or more). More than a quarter wants to lose weight.

Food is safer than ever in the industrialized countries, but the internationalization of food markets and the increasing complexity of production and trade chains are new issues of concern. Contamination of food may occur in the different links of the food chain.

The environmental impact of food covers the whole production and consumption system, starting from agriculture and fisheries, over supply, processing, packaging, distribution, stocking and the use, down to the stage where food becomes waste. For consumers, the environmental impact is not an easy decision criterion because a clear and simple measuring point is not available. During the last years, agriculture has tried to reduce its impact on environment. If the livestock volume remains unchanged, the effects of technological improvements will be more limited, at least in the short term, than a modified eating pattern.

The distance food covers, only partly determines its impact on environment. The life cycle analysis quantifies the entire environmental impact caused by a product, service or activity during the production, use or end-of-life. The footprint, such as the carbon footprint or water footprint, shows how many resources a country or region uses worldwide for its consumption or to what extent this consumption has a worldwide polluting effect. The current results are rather limited and fragmented, but they do all point in the direction of moderated meat consumption. Productivity gains and decreased food waste can reduce the ecological impact of food.

Our internationally oriented agrofood system provides economic top performances with regard to turnover, added value and export. However, many farmers and horticulturists are facing a defective profitability. In Flanders a favorable generational turnover in view of a future oriented sector is not forthcoming. Scaling up seems to be necessary for many farms to be able to step up production and to make the investments in order to comply with environmental, food safety and animal welfare standards.

Most of the supermarkets unite their efforts in retailers' cooperatives when purchasing products. Hence, only a small number of buyers determine how much most farmers and their other suppliers are paid for their products. Whether the suggestion of market power is correct, is hard to prove. Analyses of the sugar, dairy, beef and pork industry confirm that the margins are very small, particularly in the beginning of the chain. The average operating margins in the retail sector are traditionally the highest ones.

Farmers produce qualitative agricultural and food products meeting high public standards, but quite often they are facing market prices that don't cover production costs and have difficulties in keeping up with the growing competition and the increased liberalized market conditions. Some solutions focus on the masses. Other solutions commit to specific consumer needs or trends, still others on technological innovations. In order to obtain more power, farmers are increasingly seeking cooperation with each other, with other players in the food supply chain or consumers. The different Belgian links of the agrofood chain voluntarily take measures within the food supply chain dialogue.

TRENDS AND INNOVATIONS IN THE FOOD SYSTEM

Consumers feel a growing need for ease of use and the possibility to consume food in a place and at a moment they choose themselves. Our busy lives, changing composition of families and the aging population are elements that play a role. There is a wide range of possibilities: precut vegetables, frozen or preserved vegetables, ready-to-eat meals, e-commerce, home delivery or food boxes.

Moreover, consumers are increasingly seeking less processed, 'natural' food without additives, with a limited amount of identifiable, preferably local and organic ingredients. This includes direct selling at the farm or farmers markets, which accounts for 1% of all food spending. Community supported agriculture (CSA) and citizens buying directly from the local farmers ('Voedselteams' and 'buurderijen') close the gap between consumers and producers. Organic products are on the rise because people find them more healthy, tastier and ecofriendly.

More than ever, food is seen as something that can help one remain healthy. This goes along with the increasing life expectancy and the desire for a higher quality of life, but also with the rising emergence of lifestyle diseases and the related costs for society. Functional foods – from super fruits to vitamin tablets – contain a potential health promoting component. Research shows that Belgian consumers are reluctant towards health promises of functional foods. Food products are increasingly adapted to the specific needs of target groups such as elderly people.

Over the last years, more attention has been paid to the sustainability of our food. By making choices, consumers can reward more sustainable food production or penalize less sustainable alternatives. This way, they are able to set higher standards for animal well fare, fish production and fair trade.

New needs based on considerations of religion, ideology, health, sustainability or taste have changed our eating patterns. For example Islam and Judaism have specific prescriptions for certain food products to be acceptable for consumption. According to the food consumption survey, almost 2% of the Flemish have an eating pattern without animal products. Half of all Flemish is willing to eat less meat, mainly because of health and environmental considerations. Alternative protein sources with a high or low potential are algae and weeds, insects and artificial meat. The technique of printing food by means of a 3D-printer and this way offering personalized food is still in an early stage.

FOOD SUPPLY CHAIN

After the Second World War, Flanders developed as a region with an efficient and economically strong agricultural and food sector. From the 80s onwards, Flanders was facing great challenges due to increased social demands (e.g. environment and food safety) and the introduction of new technologies. The food industry went through a process of concentration. The influence of large supermarket chains on food production grew steadily.

Agriculture is part of a whole range of links constituting the food supply chain. In 2014, the Flemish agribusiness complex comprised nearly 35000 companies, accounting for a turnover of about 60 billion euros, an added value of 8 billion euros and employing about 145000 workers. Employment and the number of companies have decreased since 2008, mainly due to the yearly decrease in the number of farms, but the turnover and added value have increased. Agriculture and horticulture accounts for the largest number of companies, but the food industry is the biggest employer, provides the main part of the turnover and creates the largest added value.

Agrofood businesses are seeking ways to make their activities socially, economically and ecologically more sustainable. Especially with regard to ecological efforts, the food industry has made considerable progress over the last years. The socio-economic part of sustainability, in particular the inclusion of producers into the food supply chain, is less developed. The retail makes efforts too, but it is difficult to obtain a clear view due to the lack of a common framework and measuring methods, and because reports are fragmented. Today, farmers remain above all price takers, having to content themselves with a price that hardly covers the costs. Extensive cooperation between chain actors is needed to create added value and anticipate quality and sustainability trends.

Belgium has an open economy, which is certainly the case for the agrofood sector. The country's export of agro products amounted 42 billion euros in 2015. The import amounted 36 billion euros. This means the trade surplus is 6 billion euros. Flanders has a share of 81% of the import and 82% of the export. In particular animal products and agro industrial products contribute to this positive balance, each of them representing a surplus of 2 billion euros. Traditional upholders such as potato dishes, frozen vegetables, chocolate and beer are still doing well. 88% of Belgian export goes to neighbouring countries, followed by 18% to the other member states of the EU-28.

The agricultural supply is the stage dealing with production and trade of inputs: animal feed, fertilizers and crop protection, tractors, farm machines, livestock equipment, stable building and seeds. The Belgian compound feed industry produced 7 million tons of animal feedingstuff in 2014, employed 3600 workers and achieved a turnover of nearly 5 billion euros. The agrochemics, the subsector of the chemical sector, which focusses on agriculture by providing fertilizers and crop protection products, had an estimated turnover of 4.5 billion euros and created 2400 jobs in Flanders. In 2015, the equipment sector employed 3800 workers and had a turnover of 1.5 billion euros. The seeds sector achieved a turnover of 140 million euros and employed 450 workers.

The structure of the Flemish agriculture is characterized by specialization, scaling up, diversification and innovation. Among the 23995 farms in Flanders in 2015, 89% are specialized in one of the 3 sectors, livestock being by far the most important sector, followed by arable farming and horticulture. The number of enterprises has fallen by one third compared to 2005, an average decrease of nearly 4% each year. Mainly small enterprises stop their activities. The remaining enterprises are getting gradually larger. Covering 610000 hectares, agriculture accounts for somewhat more than half of the land use in Flanders. In 2015, Flanders had 1.3 million bovine animals, 6 million pigs and 32.1 million units of poultry.

The agricultural and horticultural sector achieved a gross production value of 5.4 billion euros in 2015. In this result, livestock represents 60%, horticulture 29% and arable farming 11%. The five most important sectors with regard to production value are pigs (1.4 billion euros), vegetables (680 million euros), cattle (680 million euros), milk and milk derivatives (640 million euros) and ornamental horticulture (480 million euros). Production value varies from one year to another. The total net added value was estimated at 1.2 billion euros in 2015. Approximately 26000 workers were employed in agriculture and horticulture.

With regard to the emission of very fine particles, the use of P and K fertilizers and the environmental pressure by crop protection products, the eco-efficiency of agriculture has improved between 2007 and 2014. However, this is not the case for other environmental indicators such as the use of water and energy and erosion.

The food industry is of growing importance within the Flemish industry: it represents 20% of the turnover, 18% of the industrial investments and 19% of the jobs. The major subsectors are the meat industry, production of oil and fat, production of beverages, preserving and processing of vegetables and the feedingstuffs industry. The food industry is a sector particularly composed of SME's. Only 7% of all establishments amounts 50 or more workers. Approximately 4700 companies achieved an overall turnover of 38.5 billion euros in 2014, almost 20% more than in 2008. The added value increased to 4.4 billion euros.

The primary energy consumption by the food industry seems to stabilize over the last years at approximately 44000 Tera joules. The overall CO_2 emission has decreased by nearly 30% since 1990 down to 2.1 million tons of CO_2. The water use in the food industry slightly goes up, but here too there is a disconnection between with the strongly increased production.

In 2014, 13 supermarket formats and 5 retailers' cooperatives were operating in Flanders. The wholesale distribution (mainly the big three: Colruyt, Delhaize and Carrefour) had a market share of 44% for the non specialized retail in Flanders. Next comes the medium sized distribution with 32% and the hard discounters (Aldi and Lidl) with 17%. The market share of the small sized distribution is continuously decreasing.

The Belgian food services sector consists of the subsectors hotel and restaurant business, catering and impulse (kiosks, petrol station, etc.). The hotel and restaurant business represents a turnover of nearly 13 billion euros in 2015. Catering (1.6 billion euros) and impulse (650 million euros) are following at a large distance.

Flanders has about 33000 hotel and restaurant businesses, mainly restaurants (53%) and watering holes (30%). The number of pubs is decreasing over the last few years, whereas the number of restaurants, holiday accommodations and catering businesses is growing. The restaurant and hotel business is very dynamic but chances of survival are small. In this sector 27000 self-employed persons are operating (helpers included), 68000 workers, representing almost 40000 full-time equivalents. The turnover amounted 7.4 billion euros.

MEAT AND DAIRY

Especially since the dioxin and BSE crises in the 1990s, traceability and food safety have become very important to consumers. The Federal Agency for the Safety of the Food Chain demands that each company complies with the appropriate guides for auto control primary production. The animal sector has drawn one common sector guide, managed by Codiplan vzw (Control animal production), initiated by the farmers organisations.

Within the pork sector there is vertical cooperation through integration, contracts and the integral quality system Certus. The feedingstuffs industry has a considerable influence on pork production. Horizontal cooperation in the pig industry is mainly achieved through cooperatives. Since 2016, the Flemish pig industry has a producer organization: the 'Vlaamse producentenorganisatie varkenshouders'. Recently, the slaughterhouses are moving towards a horizontal consolidation as well. The crisis in the sector, due to high feed prices and low market prices, persuaded the Government of Flanders to bring all stakeholders together at the G30 consultation.

Since a few years, the dairy sector has a code of conduct, establishing commitments for drawing up supply contracts. The auto control system 'integral quality care milk' was set up in consultation with the different players in the dairy sector. Within the dairy sector there are possibilities for horizontal cooperation through producer organizations as well.

Belbeef is a certification system for Belgian beef that comprises all stages in the Belgian production from farm to fork, and covers the common demands of all buyers involved. The quality system Belplume represents a number of improvements and/or tightenings in the poultry sector with respect to the standards defined at the EU level.

In 2015, the Flemish bought on average 40.5 kg of meat and meat products, for an amount of 390 euros. Poultry meat is at the top and is still growing, contrary to other kinds of meat. Home consumption of fresh dairy products amounts over 86 kg per person, for 230 euros. With respect to volume milk has the highest score, but cheese is the number one when it comes to the value. In terms of spending, Belgian cheeses have a market share of hardly 25%.

Since 2008 butchers have lost ground as suppliers of meat and meat products. The wholesale distribution is the market leader for fresh meat, while the hard discounters are the market leader for meat products. Similarly, milk and cheese are mainly purchased in large supermarkets.

Almost everywhere in Flanders animals are raised. Economically, pig farming has the strongest position in the province of West Flanders, somewhat less in the north of the province of Antwerp and Limburg. Livestock is mainly important in the region of the Campine, and poultry in the northern part of Antwerp and the center of West Flanders. Quite often, slaughterhouses and compound feed producers are located in the same regions.

In the Flemish slaughterhouses, 274 million animals were slaughtered in 2015, which comes down to 1,6 million tons of slaughtered weight. Measured in carcass weight, 64% was pork, 24% poultry meat and 12% beef. After being slaughtered, the carcasses are cut into parts at the cutting plants, in order to sell them to the distribution sector, the meat product industry or other food industries.

Milk processing, which is said to be concentrated, comprises the dairies, cheese making and ice-cream producers. 90% of the milk is bought and collected by only 6 milk purchasers. Milk processing has grown substantially over the last years and now represents 4 billion liters in Belgium.

Having exported animal products for a total value of 4.2 billion euros in 2015, the meat chain is very export oriented. Belgium is a net exporter of beef, pork and poultry meat. The most important export markets are the Netherlands, France, Germany, Poland and the UK. In 2015, dairy products represent a trade surplus of nearly 200 million euros. Cheese is the most important dairy import and export product.

In 2015, Flanders had 11850 livestock farms, 4150 pig farms and 500 farms with at least 100 boiler chickens. Their number has decreased significantly over the last 10 years. For each of these animal species, it is remarkable to notice that the number being raised at specialized farms is substantially growing. These specialized farms are characterized by a substantial scaling up process.

In Flanders cattle reared for meat production represented a production value of 4.2 billion euros in 2015. 56% of this result was on behalf of pigs, 28% of beef cattle and 15% of poultry. The dairy sector obtained a production value of 640 million euros. In 2013, the specialized milk and meat production farms employ 25000 workers on a regular basis. With 85%, the number of employees remained mainly family based.

FRUITS AND VEGETABLES

For the producers of fruits and vegetables the producer organizations play an important role in the distribution of their products, for both vegetables and fruit intended for fresh markets and for industrial processing. The 13 recognized producer organizations market 90% of all fruits and vegetables. Since 2012, the quality label 'responsibly fresh', which is integrated into the Flandria logo, reflects the variety of efforts made by this group of fruit and vegetable growers and the producer organizations to bring sustainable development into practice.

The last few years, the quantity of fresh fruit that is purchased for home consumption hovers around 41 kg, and amounted 96 euros in 2015. The tomato is the undisputed number one among fresh vegetables with 6 kg and 16.5 euros per capita. Truss tomatoes and cherry tomatoes take an increasingly larger piece of the pie. The

Flemish each consume 50 kg of fresh fruits on average, and spend 120.5 euros on it. The top three consists of apples, oranges and bananas. Jonagold remains the market leader for apples but loses ground in favour of the imported Pink Lady.

In Flanders, fresh vegetables and fruits are mainly purchased in large supermarkets. Since 2008, the share of farms and farmers markets, public markets and specialty houses is growing. With respect to processed fruit and vegetables, supermarkets are mainly facing competition from hard discounters. Most companies specializing in the production of frozen vegetables are located in West Flanders, in the region around Roeselare, where many vegetables are grown outdoors. Fruit production is much concentrated in the triangle of Tielt-Winge, Hoeselt and Sint-Truiden, where many fruit processors are located as well. There is also a clear link between the regions providing fruit and vegetable production and the auctions' location.

Belgium is the European leader in the sector of frozen vegetables with a production of 970000 tons of frozen vegetables in 2015. The large majority of the supply of vegetables is assured by contract farming. Moreover, 210 million liters of fruit juice is produced in Belgium, mainly from imported concentrates of citrus fruits.

Almost as much fruit and vegetables are imported to Belgium as are exported abroad. Besides tropical fruits (bananas, pineapples, kiwis) and frozen vegetables, the top export products are completed by fruit juices, tomatoes, nuts, preserved vegetables and pears.

In 2015, Flanders had 5700 farms growing fruit or vegetables, 2300 of which can be considered as specialized in fruit and vegetables. One third focusses on growing vegetables, one third on growing fruit. The acreage of each farm has grown considerably over the last few years.

Although the fruit and vegetables sector only covers 7.5% of the entire agricultural area, it obtained a gross production value of 1.1 billion euros, representing 20% of the value of the Flemish agricultural production in 2015. Tomatoes, leek, mushrooms, chicory and salad are the top products with regard to vegetables. When it comes to fruit, we talk about apples, pears and strawberries. Specialized fruit and vegetable farms employ about 7100 workers on a regular basis. The sector employs many seasonal workers, of whom about 87% are people from abroad (mainly Poland and Romania).

POTATOES, SUGAR AND CEREALS

Arable farming is characterized by a large number of suppliers, opposed to a small number of buyers and fluctuating production levels, due to fluctuating acreage, weather conditions, diseases and plagues. After the reform of the Common Agricultural Policy , no new producers organizations have been set up in Flanders.

The farmer organizations and the consultation platform on processing and trade of vegetable raw materials and products have developed together the Vegaplan Standaard, which specifies requirements ensuring the quality of vegetable products. In the potato sector, contract farming is mainstream due to the expansion of potato processing companies, which are united in the professional organization of Belgapom. The grain merchant is an important link within the grain chain, between growers and compound feeds and the starch industry, mills and non-food. The Belgische Confederatie van de Bietenplanters (Belgian confederation of beet planters) and the Algemene Maatschappij van Suikerfabrikanten van België (General association of Belgian sugar producers) have been set up in order to organize the production and marketing of sugar beets in compliance with common rules.

Potatoes remain the most popular basic element for a meal. In 2015, the Flemish bought on average 33.5 kg of fresh or processed potatoes, representing a value of 32 euros. However, purchase volume has strongly decreased since 2008. Similarly, bread consumption at home has gone down, from 52 units or 86 euros per person down to 38 units or 68 euros per person. Beer – another grain product – accounts for a consumption of 71 liters per person. The average Belgian consumes approximately 95 grams of sugar per day.

In Flanders, about 3/4 of all fresh potatoes are bought in the supermarket, the majority of which is purchased in those of type DIS1. Despite the supermarkets' dominance, the potato remains the food product obtaining the largest market share with regard to direct market farms: 13%. In Flanders, bakers remain the channel par excellence for bread and pastry, but their share has shrunk from 55% in 2008 to 45% in 2015.

Potato processing is concentrated in the south of West Flanders, an important region for arable farming, and in the province of Hainaut, just across the language border. Flanders has 34 enterprises with potato processing as their main activity. The sector has developed substantially since the 80s. There are somewhat less than 3000 grain processing enterprises, mainly producers of bread and pastry chef products, but also mills, starch enterprises, milk producers and breweries. Belgium is left with only 2 sugar companies: Tiense Suikerraffinaderij and Iscal Sugar in Fontenoy.

Anno 2015, Belgium is the largest exporter of pre-fried potato products in the world. Trade surplus for potatoes and preparations of potatoes peaks over 1 billion euros. Belgium is a net importer of cereal grains, such as bakery and brewery cereals, but a net exporter of processed cereal products, such as beer and pastry. The trade balance of sugar shows a surplus of 0.5 billion euros.

In 2015, Flanders has 15700 farms growing arable farming crops: 13400 with cereal grains, 7800 with consumption potatoes and 3300 with sugar beets. Among all those farms, 5400 have specialized in arable farming. Arable farming crops account for 35% of the entire area of arable lands. The largest part thereof is occupied by cereals (67%) and potatoes (20%). The average area per farm has increased significantly. The production value of potatoes representing 340 million euros in 2015, is much higher compared to cereals (126 million euros) and sugar beets (48 million euros). Specialized arable farms employed 8300 workers on a regular basis: 7000 relatives and 1300 non-relatives.

FISH AND SEA FOOD

The cooperation between actors within the Flemish fisheries sector is often intended to obtain a higher level of sustainability. In this context, the covenant on sustainable fisheries was signed by the minister of Fisheries, the Department of Agriculture and Fisheries, ILVO, Natuurpunt and the Redercentrale (the recognized producers organization for the maritime fisheries sector). The sector deals with current challenges such as the landing obligation via task forces. Better communication among ship owners and with the other links of the food supply chain, such as the processing, may help improve the coordination between supply and demand.

In 2015, the Flemish consumed on average 9 kg fish products at home and spent 100 euros on it. Fresh fish and crustaceans and mollusks account for about half of this. Home consumption has substantially fallen since 2008. Salmon and cod, two mainly imported species, both represent half of the fresh fish that was sold. For consumers, fish has a healthy image, but it is said to be expensive and the diverse range of supply is insufficiently known.

The mainstream supermarkets (DIS1) are the market leaders for the sale of fresh fish and sea food in Flanders. Hard discount is close second. Fish stores have lost ground over the last few years.

In Belgium, there are 271 fish processing companies, 68 of which having it as their main activity. The largest concentrations are located nearby the fish auction of Ostend and Zeebrugge and in the Brussels region. 22% of the undertakings only focus on handling or primary processing (such as gutting) and 55% only focus on secondary processing (e.g. smoking, frozen fish and prepared meals). Fish processing undertakings mainly choose for wild caught fish and aquiculture from abroad, since large buyers seek stability with regard to volume, availability, quality and price.

Belgium is a net importer of fisheries products. The Belgian trade deficit amounted 830 million euros in 2015. Approximately 43% of the import comes from outside the European Union. Belgium mainly exports crustaceans and mollusks to France and fish to the Netherlands. There is also much re-export of foreign fisheries products such as scampi, salmon, tuna and pangasius.

The Belgian fisheries supplied 22500 tons in 2015, representing 82 million euros. 82% of the catching was traded in domestic ports, mainly Zeebrugge (12800 tons) and Ostend (6600 tons). Part of the supply in ports abroad is not transported in refrigerated vehicles to the home ports, but is sold on the spot. For the Belgian fleet, the most important foreign ports are situated in the Netherlands. The average price of all fish sold in Belgian ports increased by 6% in 2015.

The Flemish fishing fleet consisted of 75 commercial vessels at the end of 2015, representing an overall capacity of 45300 KW and 14100 gross tonnage. Compared to 2014, 3 vessels disappeared from the fleet. 35 vessels are part of the large fleet segment, 41 of the small fleet segment. A fishing vessel is on average 28.5 years old. During the last decades, Dutch ship owners have bought into the Flemish fishing fleet. The Flemish fishing fleet is active in the own sea areas as well as EU waters.

Belgium disposes of about 60 fishing quota in total that are managed collectively. Over the last years, the plaice quota have grown significantly due to the good biological conditions of the stocks. However, the sole stock has been decreasing for three years in a row. Belgium exchanges nearly its entire haring quota with the neighbouring countries. The Flemish fisheries sector fishes several stocks simultaneously, but is clearly specialized in flatfish. Plaice and sole account for respectively 33% and 13% of the supplied fish volume in 2015. With regard to the supply value, the ranking is the other way around. Sole accounts for 37% of the value creation and plaice for 14%.

Like every economic sector, the fisheries sector has an impact on its environment. With respect to fisheries products, Belgium has a large foot print due to the high net import, not only from the EU but also from areas farther away. According to the FAO, one third of all monitored fish stocks in the world is being fished on a biologically non-sustainable level, but fish stocks in the North Sea which are important to the Flemish fisheries sector, are doing considerably better compared to the previous years. The sector has taken several initiatives to reduce the disturbance of the seabed by beam trawl vessels and to improve fuel consumption. Littering in the Belgian part of the North Sea consists for 90% of plastic. Micro plastics may have a negative influence on the maritime ecosystem.

Flanders has 363 recognized fishermen. Still, it remains a challenge to find well-trained crew members. It remains a dangerous profession, although a whole range of rules have been introduced to improve working conditions on board and to optimize safety. The law on employment contracts in the sea fisheries sector from 2003 gives fishermen income security.

The last years, aquiculture has boomed worldwide, but in Belgium the economic value still remains rather modest. Production amounted 332 tons in 2013, accounting for a value of 4.5 million euros. The traditional Belgian aquiculture is situated in Wallonia, mainly raising trout. In Flanders, new farms have emerged recently for omega perches and prawns. The complexity of the production process and legislation are a barrier, just like the tough competition from abroad, where production costs and sustainability standards are often much lower.

FOOD FOR THOUGHT

Food is a basic necessity of life affecting public health. At this moment, the worldwide food production is sufficient to feed the entire world population, but due to political, economic and institutional barriers the available food is unevenly distributed. At the same time, the food system has a dramatic impact on natural resources.

Flanders fulfills a role in the worldwide food production because of its highly productive agriculture and horticulture and its export oriented agrofood industry. In its vision on 2050, the government of Flanders states that the food system has to seek integrated solutions, innovative value chains and system innovations in the food system, so that all players in the chain get fair prices for their products and the food production can reduce its ecological foot print.

At the social, health, environmental and economic level, agriculture is facing a number bottlenecks. In this context, food production, processing and distribution are increasingly happening separated: these activities may take place at a large distance from each other. Food related welfare illnesses are on the rise, whereas starvation and food poverty have still not disappeared from the world. European consumers have lost touchwith their food production, which above all has to be cheap and safe. At the same time, there is a certain interest in shorter food supply chains and more sustainable production. Farmers have a weak position within the food supply chain, and have increasing difficulties to get a decent income out of their activities. Moreover, questions rise about the ecological viability of our agricultural system, that lays a substantial burden on our soils, water and resources, and is responsible for a considerable part of the greenhouse gas emissions and the deterioration of biodiversity. Food losses are detrimental for the environment and the economy.

This report offers 6 directions for solutions:

1. A common strategy for the public authorities, the private sector and research focused on the Flanders agrofood valley can contribute to an innovative, sustainable and multifunctional management of agrofood businesses. A focused cluster policy run by entrepreneurs should help start the transformation of the food system and start to reinforce its knowledge-based character.

2. A more sustainable consumption is presumed to be the key to a system change and an incentive for innovation. This will urge common efforts to stimulate behavioural change, technological developments, public procurements and legislation.

3. Both agriculture and the food industry can make steps towards a more sustainable production. Technical measures, such as increasing diversity of vegetable and animal species and optimizing soil functions may be beneficial for production and improve sustainability and resilience at the same time. High tech and quality may well go along. One example: high-precision agriculture.

4. Stimulating more sustainable relations, exchange of knowledge and information and transparency are essential elements for more sustainability within the food supply chain. New instruments should lead to a fair value distribution and internalization of external costs. Thanks to their direct link with consumers, the distribution and food services dispose of strong levers to make consumption more sustainable.

5. Currently, there is no coherent policy with regard to food production, food consumption and food flows. Moreover, the complexity of the food system confines the possibilities for the different authorities. A food policy will have to take into account the interdependence of production, processing, distribution and consumption. Policy makers should mainly create the conditions for a shift towards a food system that supplies healthier and more sustainably produced food.

6. Consumers are not only sensitive to comfort, quality and price, but are also increasingly sensible for sustainability, animal welfare, health and fair trade as well. Examples are urban farming, CSA and citizens buying directly from the local farmers ('Voedselteams' and 'buurderijen'). These niches or innovating practices experiment with new economic business models and raise awareness among consumers. In addition, research, innovation and development are major incentives for the transition to a sustainable food system.

Thus, the Flemish food system is facing many challenges and opportunities. The six offered directions for solutions show that a more sustainable food system requires a shared responsibility and a shared ownership of all actors within the authorities, industry, civil society, research institutions and consumers. This report wants to reach a hand for dialogue.