

INDUSTRIES

AGRIFOOD: FOOD AND FOOD PROCESSING



INDUSTRY OVERVIEW: KEY FIGURES

- The AgriFood sector accounts for nearly 10 per cent of the national income and employment of the Netherlands
- The sector accounts for 25 per cent of the country's exports and more than 50 per cent of its trade surplus
- The Netherlands is the second-largest exporter of food in the world
- Every year the sector generates € 19.3 billion of added value and accounts for more than € 30 billion of exports

The strategic direction of Dutch economic policy is primarily based on the identification of a number of 'Top Sectors'. The AgriFood sector is one of the largest Top Sectors in the Dutch economy (after 'HTSM' - High-Tech Systems and Materials, and Chemicals)*.

Twelve of the world's 40 leading food and beverage companies have set up their Research & Development bases in the Netherlands.

In 2020 the AgriFood sector in Brabant comprised approximately 14,140 companies, responsible for some 84,830 jobs. More than one sixth of all AgriFood jobs in The Netherlands are located in Brabant.

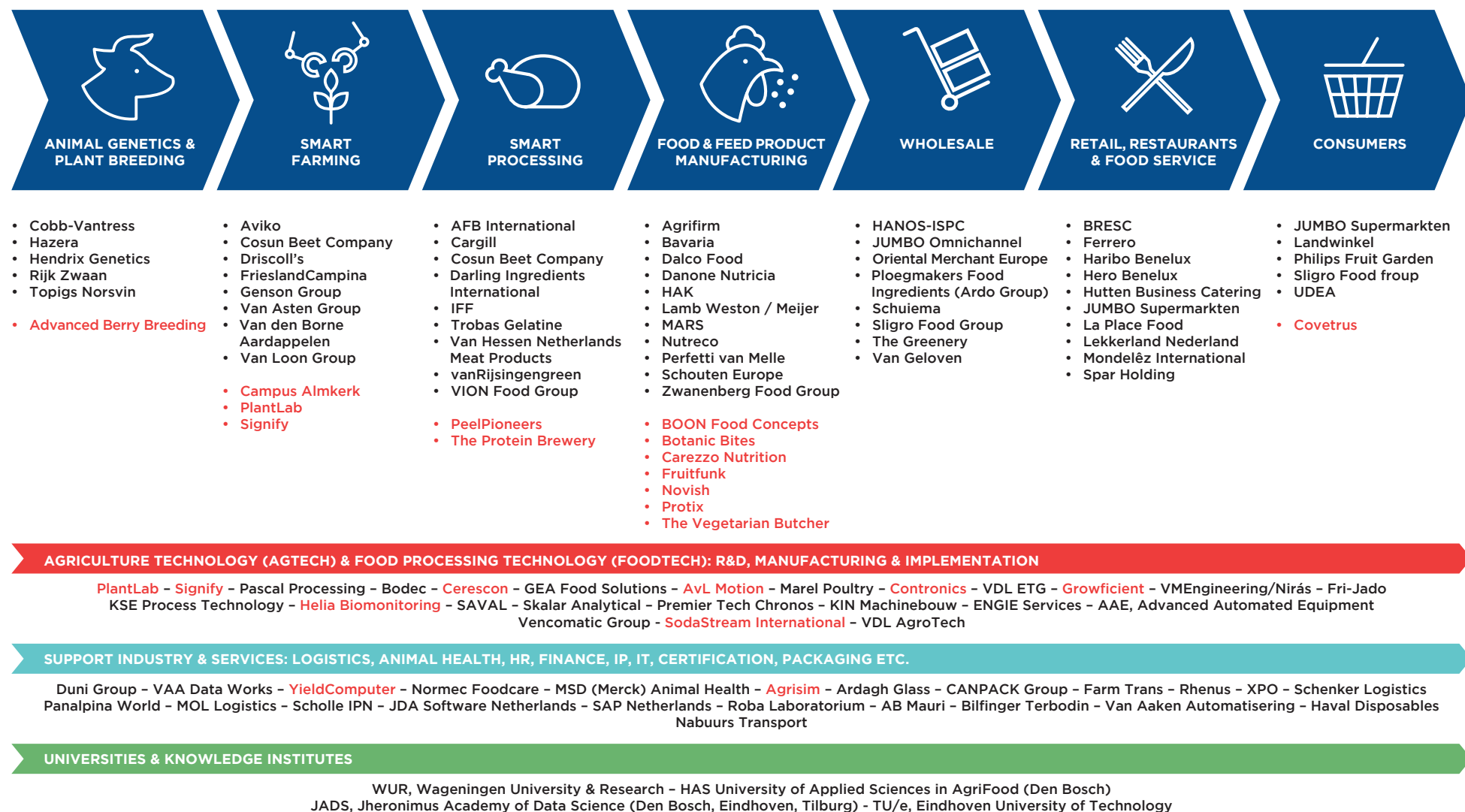
AGRIFOOD COMPANIES & JOBS IN BRABANT & THE NETHERLANDS, 2020

	Number of companies	Number of jobs
Brabant	14,140	84,830
The Netherlands	92,330	500,590
Share Brabant	15.3%	16.9%

* See: CBS, Monitor TOPsectors, Results measurement, 2018: € 87 billion Production Value (in 2017, according to Limited Definition).
Source: "TopteamAgri&Foodvernieuwd en versterkt", 2014. Trade surplus is defined as a positive balance of trade, where a country's exports exceeds its imports.
Vestigingenregister Noord-Brabant 2020, edited by Fanion onderzoek & advies

The complete AgriFood Value Chain in Brabant

Including a selection of companies.

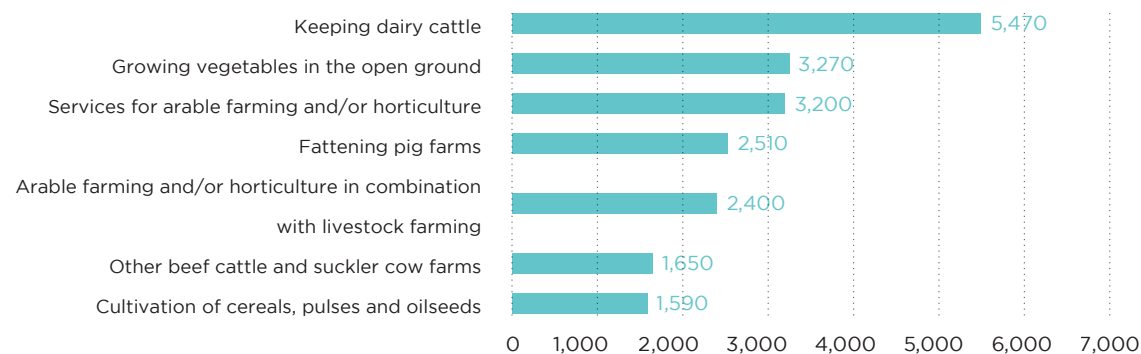


Source: Engel - Een Heldere Blik helder@benengel.nl - +31 (0)652612671

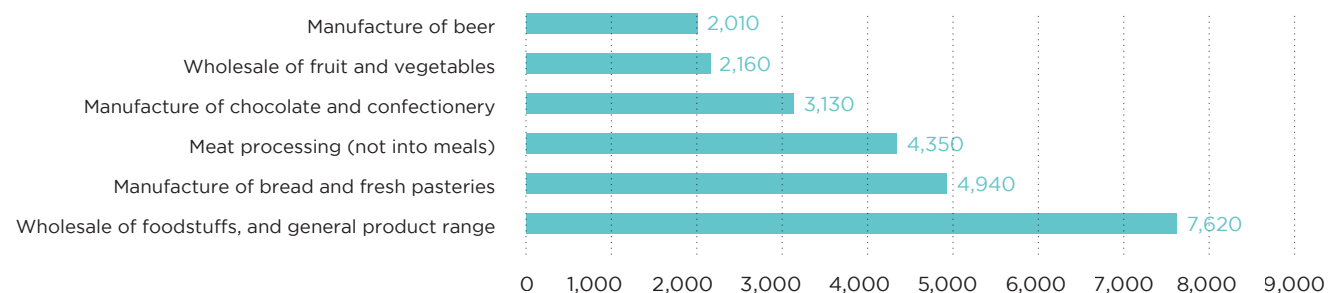
■ Start-up, scale-up or newly spun-off company
■ AgriFood

The top 5 segments of the Primary sector and the other AgriFood segments provide over 40,000 jobs. Half of total AgriFood employment in Brabant.

LARGEST BRANCHES WITHIN THE PRIMARY SECTOR IN BRABANT, NUMBER OF JOBS



LARGEST BRANCHES IN OTHER AGRIFOOD MARKET SEGMENTS IN TERMS OF JOBS



Looking at these graphs Brabant's priority segments in AgriFood can be deduced:

- Breeding & raising of animals, in particular: pigs, poultry, cattle & horses
- Processing of meat and meat by-products
- Bakery products & sugar confectionery
- Chocolat manufacturing
- Growing of vegetables, roots & tubers
- Growing of cereals, leguminous crops & oil seeds
- Production of beer & soda
- Wholesale in foods and drink products
- Manufacturing of dairy products
- Production of animal feed
- Manufacturing of animal health products
- Food design

Source: Vestigingenregister Noord-Brabant 2020; edited by Fanion Onderzoek & Advies

AgriFood companies in Brabant

Below is a selection of major AgriFood companies in Brabant.

Company	City	Product
Agrifirm Feed	Oss / Veghel	co-operative animal feed producer
Alltech Coppens	Helmond	fish feed production
Aviko	Cuijk	potato products
Bavaria	Lieshout	producer of beer and soft drinks
BODEC	Helmond	production and process optimisation
Cargill	Bergen op Zoom	modification of cereals
Coca-Cola Enterprises Nederland	Dongen	producer soft drinks (Coca Cola)
Cosun	Breda / Roosendaal / Dinteloord	agro-industrial company
Danone - Nutricia Cuijk	Cuijk	producer of baby food
Darling Ingredients International	Son and Breugel	valorization (animal) waste products
De Heus	Veghel / Andel / Ravenstein	animal feed
Döhler	Oosterhout	production of food ingredients
FrieslandCampina Consumer Prod. Europe	Nuenen	dairy
FrieslandCampina DMV	Veghel / Den Bosch	milk powder and proteins
GEA Food Solutions	Bakel	machinery for preparing & packaging food products
Hak	Giessen	canned vegetable manufacturer
Heineken	Den Bosch	brewery
Hendrix Genetics	Boxmeer	multi-species breeding
Huijbregts Groep	Helmond	high quality blends for the food industry
Hutten Business Catering	Veghel	major player in complete catering
Jumbo Supermarkten	Veghel	HQ 2nd supermarket/retail chain in the Netherlands
Kaak Dough Technology	Nieuwkuijk	manufacturer bakery machines

Source: Vestigingenregister Noord-Brabant 2020; edited by Fanion Onderzoek & Advies

Company	City	Product
Kwetters	Veen	producing, grading and packing fresh shell eggs
Kuhn-Geldrop	Geldrop	manufacturer of agricultural machinery
Lamb Weston Meijer	Bergen op Zoom	frozen potatoes / fries
Maison Van den Boer	Veghel	major party caterer
Marel Poultry Processing	Boxmeer	global market leader poultry processing equipment
Mars Nederland	Veghel	manufacturing chocolate bars
MS Schippers	Bladel	service industry for intensive stock breeder
MSD Animal Health	Boxmeer	veterinary medicines
Newtricious	Den Bosch	health focussed innovation on nutrition
Nutreco Nederland	Boxmeer	animal nutrition and fish feed
Peka Kroef	Odiliapeel	producer fresh chilled potato products
Perfetti Van Melle Benelux	Breda	confectionery
Protix Biosystems	Dongen	nutrients from end-of-life streams
Rijk Zwaan Breeding	Fijnaart	breeding of seeds
Sligro Food Group Nederland	Veghel	HQ deliveries foodservice and food retail companies
Suiker Unie	Dinteloord	sugar refinery
Teeuwissen Group	Cuijk	valorization of animal products and by-products
Van Asten Sterksel	Sterksel	breeding and pig farm
Van den Borne Aardappelen	Reusel	potato grower
Van Loon Group	Best / Eersel / Roosendaal / Son	meat products
Van Rijnsingen Green	Helmond	vegetable contractor, handling and delivery
Van Rooi Meat	Helmond	pig slaughtering
VDL Systems	Uden	equipment for food-processing and packaging
Vencomatic Group	Eersel	poultry farming systems /equipment
Vion Food Nederland	Boxtel/Tilburg	production of fresh pork and fresh beef
VM Engineering	Rosmalen	engineering, food technology
Zwanenberg Food Group	Oss	meat processing and conservation

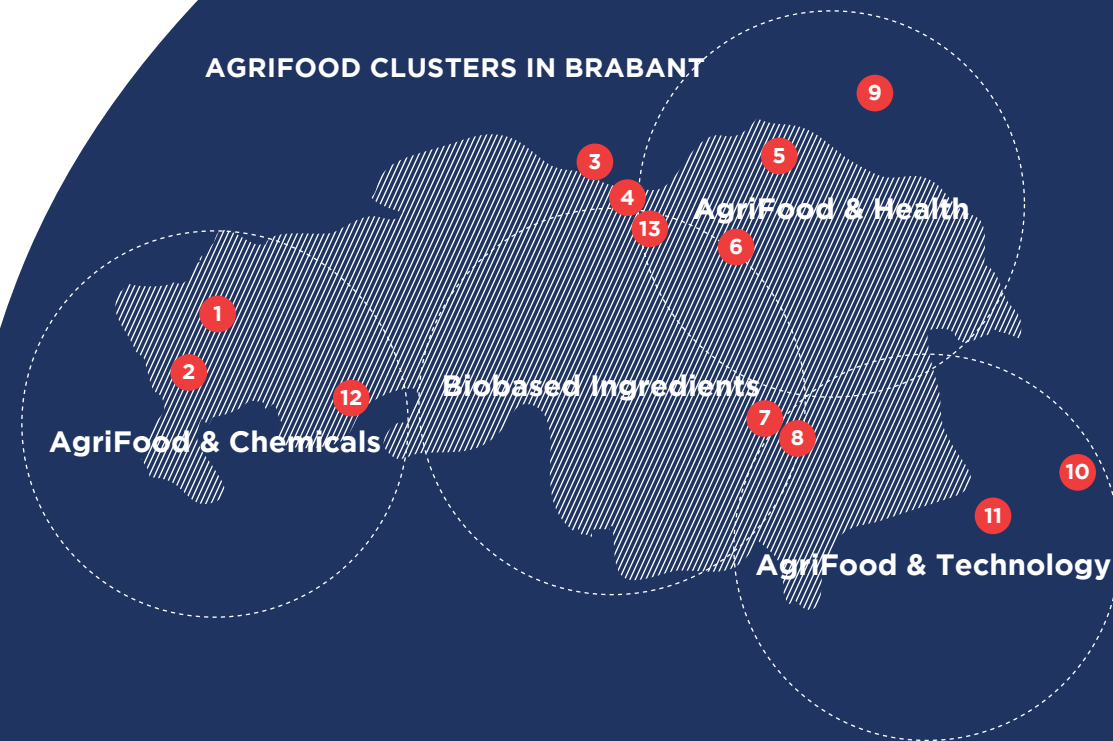
Source: Vestigingenregister Noord-Brabant 2020; edited by Fanion Onderzoek & Advies

AgriFood clusters in Brabant

In general, there are significant numbers of AgriFood companies across the whole of the province.

In West Brabant agricultural activities dominate, such as the production and processing of dairy, sugar beet, cereals and vegetable products. The region is also home to a number of 'biobased economy' initiatives, based on residues of agricultural production.

East Brabant is characterized as an important region for food-production and processing. Furthermore, there is a connected focus on technology, health and logistics.



AgriFood innovation centers, campuses & clusters in Brabant

- | | |
|---|--|
| 1. AgriFood Cluster Nieuw Prinsenland | 8. Food & Fresh Lab |
| 2. Green Chemistry Campus Innovation Center | 9. Food Valley Wageningen University |
| 3. InsectLab | 10. Greenport Venlo |
| 4. Agri Food Health Innovation Centre | 11. Feed Design Lab |
| 5. Pivot Park - Life Sciences & Health | 12. Tree Port Zundert |
| 6. FoodSquad | 13. HAS University of Applied AgriFood Science |
| 7. Foodtech Brainport | |

Brabant & AgriFood

The fresh and innovative region in food, food preparation, food safety and food perception

Food companies in Brabant excel in translating knowledge into new and improved products. Knowledge development mainly takes place at the multiple institutes in Den Bosch clustered around the HAS University of Applied Sciences.

Wageningen University (WUR) - one of the most outstanding universities in food and agriculture in the world - is another significant research hub, located just outside Brabant.

In the design, production and distribution of products, the food industry in Brabant clearly benefits from the presence of auxiliary companies such as equipment manufacturers, logistics providers, and also design and marketing specialists.

EQUIPMENT MANUFACTURERS

Equipment manufacturers (such as Vencomatic Group, Marel (Stork) and GEA) and packaging manufacturers (such as SCA Packaging, Mead-westvaco and Smurfit Kappa) are both present in Brabant.

AGRIFOOD LOGISTICS & DISTRIBUTION

Furthermore, logistics companies of varying sizes such as VDH Cool Logistics, Penske Logistics and XPO Logistics have developed tailor-made warehouse and transport systems to serve the food sector.

FOOD & FOOD PROCESSING

The basis for these support services is shaped by the significant presence of firms from both the primary and food-processing sectors. These companies include Rijk Zwaan Seeds Breeding, Van den Borne Potatoes, Van Asten Pigs, Kwetters, Aviko, Vion Food, Mars, Friesland Campina, Darling, Cosun and SuikerUnie.

AGRIFOOD MEETS HIGHTECH IN R&D

According to figures from the Netherlands Environmental Assessment Agency, the AgriFood industry in Brabant benefits from high rankings and scores in areas such as the high level of R&D in the private sector, the yearly number of patents, the high share of foreign companies in the sector, excellent road, water & rail connectivity and low transport congestion.

FAVOURABLE GEOGRAPHIC LOCATION & STRONG INFRASTRUCTURE

Brabant's strong transport infrastructure means it ranks as a strategic location when it comes to distributing fresh (perishable) products. The large customer base with high purchasing power of North-West Europe can be reached within half a day from Brabant. In addition, the major ports of Rotterdam and Antwerp, as well as the international airports of Amsterdam, Brussels and Düsseldorf, are all in close proximity.

LEADING IN FOOD AVAILABILITY, SAFETY & SUSTAINABILITY

There is increasing evidence that the high quality of the Dutch AgriFood products and processes, including food safety, also lead to business opportunities on a global scale. These opportunities include the development of less perishable raw materials, semi-finished products and convenience foods, e.g. potatoes and dairy products, to complete animal-raising, plant-growing and integrated processing systems and plants).

Talent Agrifood

Agrofood is an important sector for the Brabant economy.
17% of all agrifood jobs in the Netherlands is to be found in Brabant.

Brabant has a long tradition in educating talents in the primary agriculture and the foodprocessing industry.



Workforce: employment in agrifood by education level



Students: number of graduates

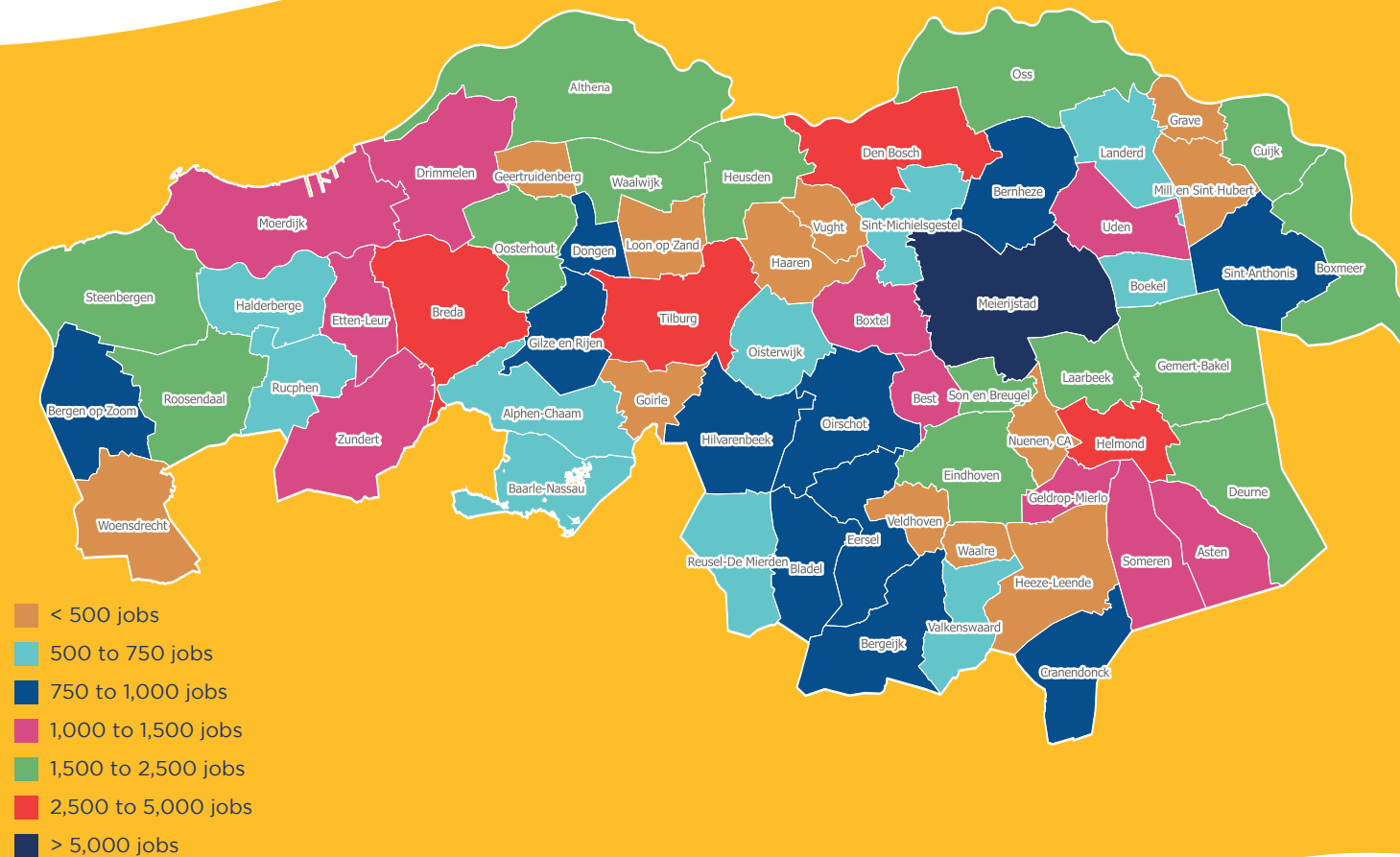


Unemployment

AGRIFOOD COMPANIES AND JOBS IN BRABANT AND THE NETHERLANDS, 2020

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NUMBER OF JOBS IN AGRIFOOD BY MUNICIPALITY



Workforce: employment

In Noord-Brabant 84,840 people are working in Agrifood. In this group 23% has an higher education (UAS / University (BSc/MSc)), 46.2% has a medium education (HAVO/VWO/MBO) and 30.8% has a lower education (primary school/VMBO).

This means that in Brabant 19,540 highly educated people are active in agrifood.

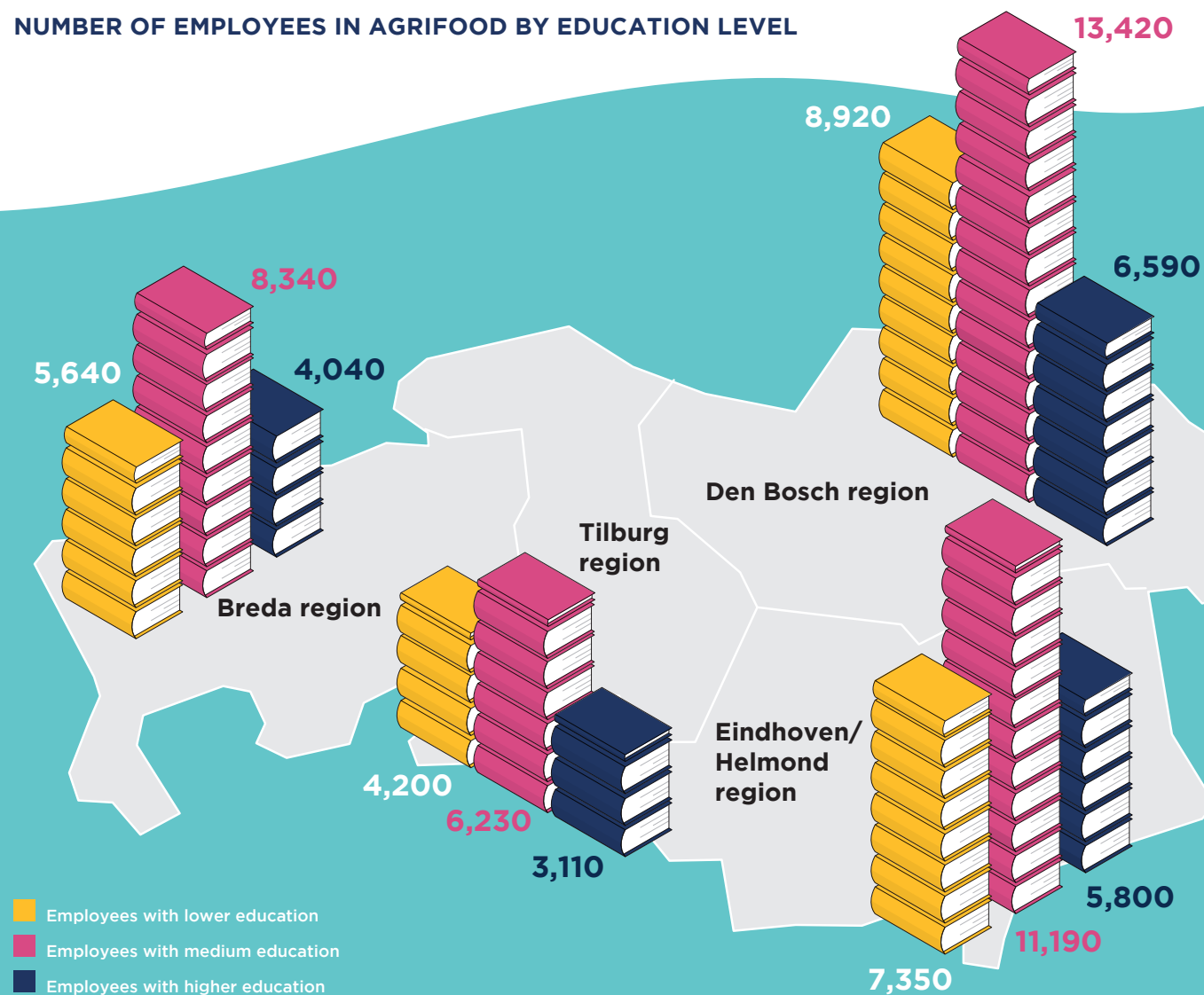
The Den Bosch region accounts for most of the jobs in agrifood (28,930) of which 22.8% are highly skilled jobs.

Agrofood	Total	Low	Middle	High
Breda region	18,010	5,640	8,340	4,040
Tilburg region	13,540	4,200	6,230	3,110
Den Bosch region	28,930	8,920	13,420	6,590
Eindhoven / Helmond region	24,340	7,350	11,190	5,800
Brabant	84,830	26,110	39,180	19,540

Agrifood	Total	Low	Middle	High
Breda region	100%	31.3%	46.3%	22.4%
Tilburg region	100%	31.0%	46.0%	22.9%
Den Bosch region	100%	30.8%	46.4%	22.8%
Eindhoven / Helmond region	100%	30.2%	46.0%	23.8%
Brabant	100%	30.8%	46.2%	23.0%

Sources: CBS (2017), Vestigingenregister Noord-Brabant 2020, edited by Fanion onderzoek & advies

NUMBER OF EMPLOYEES IN AGRIFOOD BY EDUCATION LEVEL



Sources: CBS (2019)/Vestigingenregister Noord-Brabant, 2020

Graduates technical education

Graduates form the largest group of new people entering the labor market. In Brabant there is no university that is specialized in agrifood, but the worldwide known Wageningen University can be reached within the hour. Brabant is home to the HAS University of Applied Sciences that is specialized in agricultural research and studies. On a yearly basis more than 590 students graduate at HAS UAS.

When it comes to specialists on proces technology the Department of Chemical Engineering and Chemistry at the Eindhoven University of Technology (TU/e) is of importance. Chemical engineers that graduate here are very skilled for operating in large plants of the food processing industry. In 2020 290 students followed a master study in Chemical Engineering.

At vocational level about 3,050 students have graduated in 2020 from an agrofood related study at MBO.

6,180 students at the secondary educational level follow programs that suit the demands of the agrifood sector. These students mostly continue their education at a higher level at a UAS or University.

GRADUATES AGRIFOOD STUDIES, UNIVERSITIES OF APPLIED SCIENCES

	2015	2016	2017	2018	2019
HAS Den Bosch	450	500	540	540	590

GRADUATES MEDIUM EDUCATION LEVEL IN AGRIFOOD (2020)

	MBO	HAVO	VWO	Total graduates in Agrifood
Breda region	710	640	680	2,030
Tilburg region	710	570	500	1,780
Den Bosch region	1,450	870	920	3,240
Eindhoven / Helmond region	190	990	1,010	2,190
Brabant	3,050	3,070	3,110	9,230

Sources: DUO, 2021

JOBSEEKERS WITHOUT A CONTRACT, 2020 (YEAR AVERAGE)

Education level			
Breda region	Low	Middle	High
Agricultural professions	270	80	-
Technical professions	4,320	1,310	310
Tilburg region	Low	Middle	High
Agricultural professions	160	50	-
Technical professions	3,940	940	200
Den Bosch region	Low	Middle	High
Agricultural professions	190	50	10
Technical professions	3,410	1,020	270
Eindhoven/Helmond region	Low	Middle	High
Agricultural professions	290	100	-
Technical professions	5,550	1,480	420
Brabant	Low	Middle	High
Agricultural professions	910	280	10
Technical professions	17,220	4,750	1,200

Sources: UWV, www.werk.nl

KNOWLEDGE INSTITUTES AND NETWORKS

Brabant has a sophisticated industrial research and education infrastructure. For the food systems industry, the presence of both the Eindhoven University of Technology (TU/e) and multiple knowledge institutes for high-tech manufacturing offers great advantages.

Food and food processing companies are well served by Wageningen University (WUR) and the many institutes on its campus that focus on nutrition. Wageningen is in the immediate vicinity of the eastern part of Brabant. The east of Brabant itself is home to a sound educational infrastructure for agriculture and food production. Higher agricultural education is taught in Den Bosch and Helmond and secondary agricultural education is taught in several cities in Brabant.

Research and education

WAGENINGEN UNIVERSITY AND RESEARCH CENTRE (WUR), WAGENINGEN

Wageningen University and Research Centre (WUR) is a collaboration between Wageningen University and the DLO Foundation. The scientific quality of WUR is affirmed by the prominent position the university occupies in international rankings and citation indexes.

WUR is situated within a half-hour drive from the north-eastern part of Brabant. It has several internationally renowned branches, some of which are actually located in Brabant (esp. concerning animal breeding). The domain of WUR consists of three related core areas:

- Food and food production
- Living environment
- Health, lifestyle and livelihood

Specific research topics:

- Production of safe, healthy and tasty foods
- Sustainable solutions for conflicting land use
- Lifestyle improvement
- Food production in densely populated areas (such as The Netherlands)

www.wageningenur.nl



HAS UNIVERSITY OF APPLIED AGRICULTURAL SCIENCES, DEN BOSCH

With its roots in higher agricultural education, HAS University of Applied Agricultural Sciences (HAS) is focused on animal and plant production. The university is a dynamic center of food and agribusiness, playing its own supporting role in the innovation of the knowledge infrastructure of the sector. HAS has strong links with science (WUR) and the professional field and is an important source of interns and graduates for industry. HAS has intensive cooperation and interconnection with the AgriFood sector.

www.hashogeschool.nl



HAS KNOWLEDGE TRANSFER, DEN BOSCH

Besides providing education, HAS University of Applied Sciences is committed to a two-way 'knowledge transfer' network with local companies. HAS Knowledge Transfer is therefore an important source of interns and their knowledge of innovation in AgriFood production and processing for local companies. HAS has initiated a number of programs to support companies in the AgriFood sector with product and process innovation, knowledge in the area of environmental issues and marketing and sales expertise.

www.haskennistransfer.nl/onderzoek-advies



Research and education

AVANS UNIVERSITY OF APPLIED SCIENCES, TILBURG, BREDA AND DEN BOSCH

The AVANS UAS provides education and research in eight sectors across nine locations in Breda, Den Bosch and Tilburg. The research arm of AVANS participates in various centres of expertise, such as:

- Biobased Economy
- Caring Society 3.0
- Sustainable Innovation
- Art and Appearance
- Sustainable Business.

www.avans.nl/onderzoek/expertisecentra

CENTRE OF EXPERTISE BIOBASED ECONOMY, BREDA

The Centre of Expertise Biobased Economy (CoE BBE) in Breda has been established by the AVANS and HZ Universities of Applied Sciences. Its goal is to promote knowledge, education and research in the field of biobased economy.

Research focuses on the south-western part of the Netherlands (including western Brabant) - also referred to as the Biobased Delta where 'Agro meets Chemistry'. Research inside Brabant focuses on the valorization of organic ingredients (by means of transferring knowledge, education and research). CoE BBE also provides interns and internships for companies in the biobased sector

www.coebbe.nl

FOOD & FRESH LAB, HELMOND

The Centers for Innovative Craftmanship (CIV) provide a platform for entrepreneurs, scientists, teachers and students to work together in order to enhance the quality of (technical) education. MBO students are connected to SMEs to improve the knowledge and knowledge transfer between the education sector and the labor market.

The CIV 'Agri & Food' centers include the 'Food & Fresh Lab' - this is the practice laboratory and pilot environment for the food industry in south-east Brabant.

www.foodandfreshlab.nl



Networking organization

FOOD CONNECTION POINT (FCP), HELMOND

Food Connection Point (FCP) is an umbrella organization made up of local food regions. It acts as an intermediary between food entrepreneurs, government, educational institutes and other industries. Its three goals are:

- Matching labor supply (education) and demand
- Improving the image of the industry
- Increasing the innovative power of the food sector

The food regions represented are:

- Helmond
- Veghel/Uden/Schijndel
- Venlo

www.foodconnectionpoint.nl



Locations and Campuses

FOOD TECH PARK BRAINPORT, HELMOND

The mission of Food Tech Park Brainport is to deliver a tangible contribution to global sustainable food production, in both a quantitative and a qualitative manner. This is done through valorization of knowledge and the application of innovations on the cutting edge of food and technology in the AgriFood sector.

Food Tech Park Brainport is an 11-acre (4.5 hectare) business park that provides locations for businesses and R&D facilities in keeping with its core mission. The organization wants to utilize cross-overs in food and technology, to:

- Accelerate valorization and innovation processes, especially within SMEs
- Strengthen the international position of these companies in export activities
- Improve the labor market for the food and technology sector

Companies located on Food Tech Park (selection):

- Bodec
- Carezzo Nutrition
- Holland Aqua
- Pascal Processing / AVURE
- Vertec

www.foodtechpark.nl



Locations and Campuses

GREEN CHEMISTRY CAMPUS, BERGEN OP ZOOM

The Green Chemistry Campus, on the premises of SABIC Innovative Plastics in Bergen op Zoom, is a business accelerator for biobased innovations. Large companies, SMEs, knowledge institutes and government agencies work together in an open innovation environment to develop new biobased technologies and products with a focus on performance materials, chemicals and coatings.

Companies & institutes located on the Green Chemistry Campus (selection):

- Aiforo
- Alpha-Enzymes
- Bioclear
- Shared Research Center Biorizon
- BioTorTech
- DPI Value Centre
- Millvison
- Nettenergy
- NNRGY Crops
- Planty Pot
- Progression Industry
- Retoplast
- TNO
- VITO

www.greenchemistrycampus.com



GREEN CAMPUS, HELMOND

The Green Campus is located in the Suytkade area of Helmond. On campus, lower, medium and higher education courses in the fields of 'food and nutrition' and 'green leisure' are combined with the day-to-day practice of trade and industry. The campus can accommodate at least 1,200 students. Adjacent to the educational area, flexible office space is available to companies in the food and leisure sector. The campus has developed into a knowledge / expertise center that stimulates co-operation between educational institutes and food/food processing companies.

www.degroenecampus-eu.nl



Brabant Innovation in AgriFood

In Brabant three priority innovation themes have been identified:

1. AgriFood & Technology
2. AgriFood & Health
3. Biobased economy (BBE)

1. AGRIFOOD & TECHNOLOGY

In the future, the Brabant AgriFood sector will be a high-tech supplier of renewable resources for the food, feed, chemical, construction and energy sectors. Within this theme, the focus in terms of export is as much on technology itself, as it is on specific products and services.

The most important developments in this discipline are:

- Precision farming (use of drones, soil scanners, autonomously operating equipment) and the use of apps for better management and efficient use of resources (nutrients, water)
- New growing systems (e.g. growing on water)
- Processing and conservation techniques (e.g. under high pressure/pascalisation)
- Use of robots (e.g. for harvesting or processing)
- 3D printing of food
- Development of sustainable livestock management systems

Companies active in this discipline include:

Marel Stork Pork & Poultry Processing: Produces innovative machines for slaughtering and meat processing

Vencomatic Group: Designer and builder of livestock management systems, particularly for the poultry sector

VM Engineering: Engineering company specializing in technological solutions for the AgriFood sector

Van den Borne Potatoes: European frontrunner in precision farming



2. AGRIFOOD & HEALTH

‘Specific products for specific target groups’ is the main strategic priority within this theme, where the focus lies on health benefits.

The most important developments in this discipline are:

- Personalized food and personalized medicine
- Awareness: Showing the relationship between nutritional value and health
- Co-operation between knowledge centers and companies, aimed at the development of healthy nutrition and behavioral change in food patterns
- Shortening time to market: Validation of scientific knowledge in real-life environments
- Public health in relation to animal diseases.

Companies active in this discipline include:

Newtricious: Specializes in health innovation in food

Darling Ingredients International: Specializes in innovative and sustainable processing (and valorization) of organic waste and animal by-products as natural ingredients for feed, food and nutrients

Teeuwissen: Specializes in valorization of animal by-products

Hutten Catering: Caterer to companies, hospitals and health centers, and events

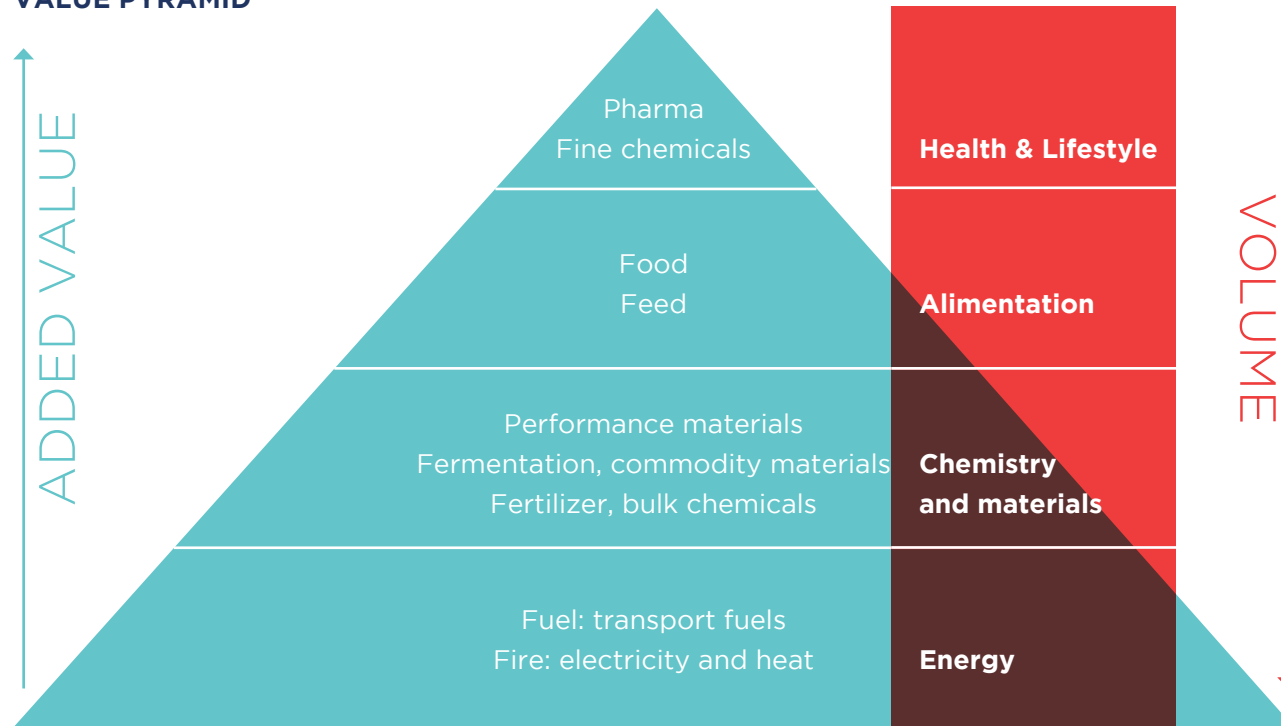


3. BIOBASED ECONOMY

Over the past decade the 'BioBased Economy' (BBE) has become an increasingly important topic within the AgriFood sector. The development of various valorization chains utilizing organic waste - from both agricultural production companies and food processing companies - ensures that companies and knowledge institutes actively involved in biomass sustainability issues are part of the AgriFood cluster.

The value of biomass is determined by its application and can be summarized by the value pyramid below.

VALUE PYRAMID*



* Products in the topsegment of the pyramid (fine chemicals) give high added value, but lower volumes. The lowest added value (heat production) from burning residuals, is located at the bottom of the pyramid, but these volumes need to be high
Source: Min. of EconomicAffairs,Green Deal,'Kamerstuk 33043-33', 2014

In Brabant, like most regions, cross-sector partnerships arise between large industry and SMEs. They are often financially supported by the government to overcome the bottlenecks in the fields of R&D, testing and upscaling.

Brabant province is divided in two sub-regions, East and West. Based on the different regional characteristics of the BBE in the Province of Brabant, the eastern part of Brabant is characterized as the **Biobased Business Brainport**. Biobased Business Brainport is focused on the valorisation of minerals from animal and plant residues towards food, feed and pharma.

Biobased Delta (in West Brabant) is mainly focused on agro functionals, plant ingredient quality, biobased aromatics, biobuilding blocks and (bio) coatings.

A selection of leading Biobased initiatives and partnerships for innovation in Brabant:

- Green Chemistry Campus (SABIC Innovative Plastics - plant location Bergen op Zoom)
- Cosun Biobased Products in Roosendaal
- Agro & Foodcluster Nieuw-Prinsenland/Suikerunie Dinteloord
- Industrial area/Energy Web Moerdijk
- Centre of Expertise BioBased Economy (CoE BBE), located in Avans University of Applied Sciences in Breda and HZ University of Applied Sciences in Flushing (Vlissingen)



* See also Chapter 'Knowledge institutes and networks'

Brabant's contribution to global AgriFood challenges

On a national level the Brabant AgriFood sector contributes significantly to the Top Sector's strategy. This strategy aims to help find global solutions to economic, AgriFood-related challenges on three levels:

1. Resource efficiency
2. Increased added value
3. International leadership

1. RESOURCE EFFICIENCY

This requires new innovations in sustainable food systems to help produce an increased volume of high-quality food using fewer raw materials. Potential actions to achieve this goal include: sustainable livestock farming; utilization of waste products; bio-based economy; efficiency improvements; and market and supply chain innovations.

Companies in Brabant concentrating on this issue include:

Cosun: Manufactures biobased products from vegetable raw materials that don't compete with food consumption.

Suiker Unie (part of Cosun): Employs sustainable responsibility throughout the entire chain of sugar beet production and processing: sustainable agriculture, minimization of soil received with the beet, production of green gas, water and gas savings, minimization of transport pollution, water footprint with customer.

BODEC: Employs production and process optimization, and large-scale trial productions.

MS Schippers: Provides goods and services for farmers to improve their productivity.

Vencomatic Group: Provides goods and services for the poultry sector to improve sustainability and animal wellbeing.

Darling Ingredients International: Creates sustainable food, feed and fuel ingredients for a growing population.

Topigs: Pig farm focused on genetic research and innovation to enable the cost-efficient production of pigs.

Hendrix Genetics: Generates solutions for the animal protein sector through innovative and sustainable genetic solutions.



2. INCREASED ADDED VALUE

Development of AgriFood products with increased added value, focusing on health, sustainability, taste and convenience. Potential priority areas in this thematic area include: healthy aging; weight management; cardiovascular health; salt reduction; flexibility in use of raw materials; protein innovations; and improved packaging and storage technology.

Companies in Brabant concentrating on this issue include:

Hutten Catering: Large catering company which provides all kinds of catering solutions.

Lamb Weston Meyer: Leading global supplier of frozen potato products and appetizers.

Rijk Zwaan: Aims to increase the world food supply and the consumption of vegetables by laying the groundwork for healthy and attractive vegetables.

Teeuwissen: Produces functional ingredients, herbs and spices. Helps customers develop, adjust and optimize their production process and recipe. Specializes in water and fat management; coating systems; tumbling and injection mixing; preserving agents; and customized products.



3. INTERNATIONAL LEADERSHIP

This focuses on developing system solutions to meet global agriculture and food production challenges, and builds on the strong export position of the Netherlands.

- Food production - availability, consistency & sustainability
- Food quality
- Food safety

Recent years have seen Brabant excel in these areas.

Companies & initiatives in Brabant concentrating on these issues include:

Nutricia: Producer of infant and child nutrition and medical nutrition. Known for Nutrilon and Olvarit.

Danone: Producer of healthy dairy products.

Green Chemistry Campus: The Green Chemistry Campus, on the premises of Sabic Innovative Plastics in Bergen op Zoom, is a business accelerator for biobased innovations. B2B entrepreneurs (including both large companies and SMEs), knowledge institutes and the government work closely together in an open innovation environment to develop new biobased technologies and products, with a focus on performance materials, chemicals and coatings.

Biobased Delta: In the south-west of the Netherlands, entrepreneurs in Zeeland, Zuid-Holland and Brabant are exploring the possibilities offered by biological raw materials in a biobased economy. Under the umbrella name Biobased Delta, entrepreneurs, knowledge institutes and government agencies are working to strengthen the leading position of the region in the biobased economy. They work together across borders in several respects, not only between the various sectors in the Netherlands, but also with business professionals in Flanders, northern France and the German province of North Rhine-Westphalia.



Biobased Delta has three priority areas:

Green raw materials

R&D of alternative raw materials to replace or supplement fossil fuels:

- Algae and seaweed
- Natural (horticultural) ingredients
- Agro (residual) flows
- Natural fibres (e.g. flax and hemp)

Green building blocks

- Many types of synthetic materials, chemicals and coatings are made from the chemical aromatics benzene, toluene, xylene and phenol
- Biobased Delta programmes focus on development of alternative aromatics from green raw materials and research of how fibres from agro residual flows can be utilised more effectively

Process industry

- Biobased Delta is involved in various initiatives aimed at connecting waste nad residual streams in the process industry and optimizing logistic flows and use of multi-modal opportunities: road, rail, water, pipe-line, air

Strengths AgriFood Brabant

It is worth noting that the majority of total Dutch AgriFood employment can be found in three focus regions situated in, or near to, Brabant.

Just North of Brabant, the city of Wageningen can be found with its WUR university and surrounding region of Food Valley. This region can be seen as the international heart of fundamental research in AgriFood.

The region with focus points in (West) Brabant specializes in agriculture such as dairy, sugar beet, cereals and vegetables (open ground and greenhouse), and the processing of these products. This also is a region with many biobased economic initiatives, based on the use of agricultural residues.

East Brabant is characterized as an important region for food production and processing (animal and vegetable) by the large AgriFood complex. Furthermore, there is a (connected) focus on technology, health and logistics.

Overall, one conclusion is justified: the whole AgriFood value chain is present and well-developed in the province of Brabant in the Netherlands. The illustration at the beginning of this chapter provides a perfect illustration of that fact.