# BRIGHT BRABANT

**Beyond boundaries**, Brabant's solutions to **global challenges**

OUR CHALLENGE

# Creating **sustainable food** systems

**In Brabant, we are working hard on sustainable food systems to ensure that there is enough high-quality food for everyone in the future, while also respecting our environment. Together with entrepreneurs, Brabant is focusing on the transition from animal to alternative proteins, accelerating precision farming, and combating food waste.**

*GrowWise. Tomatoes produced thanks to artificial sunlight, carefully controlled conditions, and vertical farming. It formulates growth methodologies tailored for vertical farming, addressing the demands of our expanding global population.*



AGRIFOOD

**The entire Agrifood value chain is represented in Brabant, from primary production to animal genetics and from vertical farm to wholesale. This applies to the entire sector as well as to sub-chains. And together they are proof that what really sets it apart is the unbeatable combination of representatives of the traditional agricultural sector with those of the High Tech sector. Brabant has all the ingredients to develop innovative, sustainable food systems and market them far beyond the borders.**

Punching high above its weight, the Netherlands is the 2nd largest exporter of agricultural products globally, hot on the heels of the United States with a landmass 270 times greater. One of the reasons for this is the rich heritage of agriculture and the compact and dense delta landscape. The Netherlands is densely populated, and with space at a premium, every centimeter of ground must be optimized. This has led to a legacy of collaboration to produce smart solutions with maximum yield. Today, agriculture and High Tech crossovers are defining the new Agrifood industry in Brabant, from agribots roaming the fields to 3D printing of plant-based burgers.

## No borders

Of course, it helps when one of the world's leading Agrifood research centers is part of the greater ecosystem. Wageningen University & Research (WUR) is a top global institute at the forefront of new developments in Agrifood. WUR engages with global multinational food producers, such as Unilever, local Brabant food producers, like Marel, and other knowledge institutes, such as the Technical University Eindhoven (TUe). It also enjoys close collaboration with another center of excellence just across the border in neighboring Belgium, the University of Ghent.

## Robust roots

The roots of today's Agrifood prominence can be traced back to three noteworthy family businesses that helped shape the current ecosystem: in 1891, Anton & Frederik Philips established a light-bulb factory in Eindhoven, Saal van Zwanenburg founded a slaughterhouse for export in 1887 in Oss, and Wim Hendrix started selling chickens in Boxmeer in 1916.

Also at the end of the 19th Century, in 1899, the Cosun agricultural cooperative was formed, focusing on creating intelligent sustainable solutions from plant-based products, primarily sugar beet, chicory, and potatoes. Fast-forward roughly 100 years, and the region now boasts a large concentration of highly specialized tech- businesses, and food production and processing excellence. These original regional pioneers created the foundation for today's new generation of Agrifood pioneers.

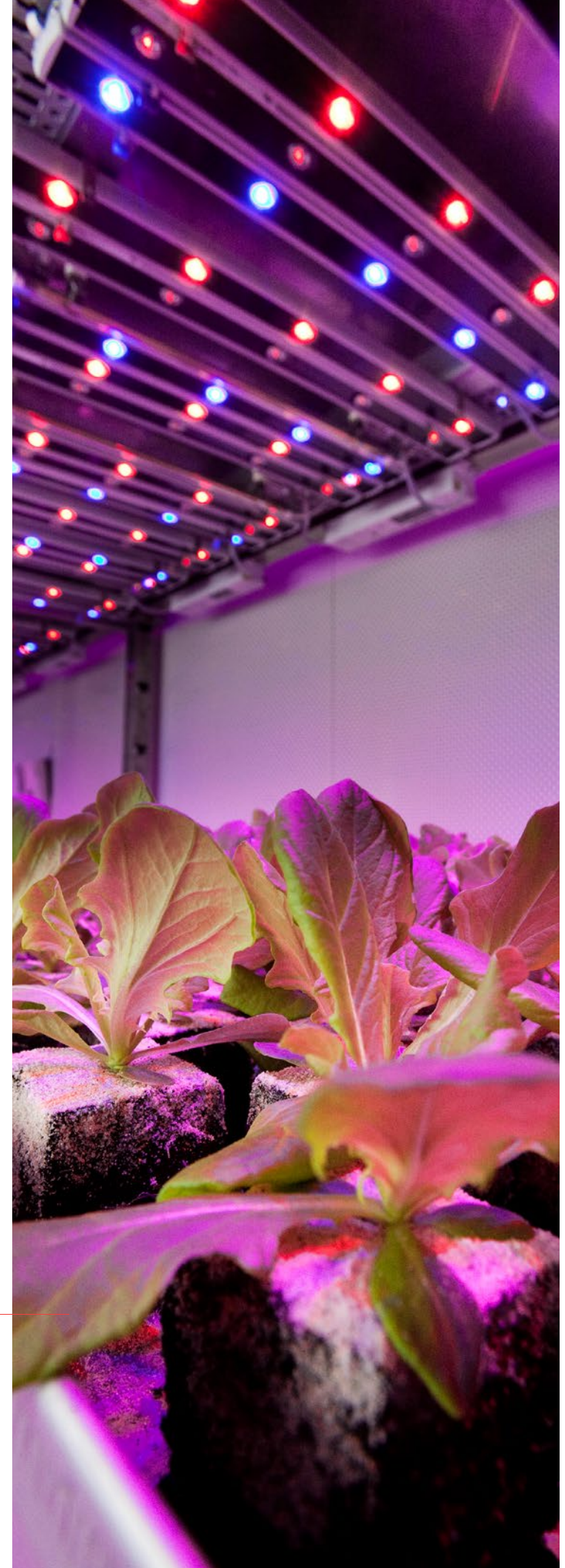
## Hubs & ecosystem

The presence of a strong Triple Helix collaboration between, industry, academia, and government, means that companies and knowledge institutions work closely together in a well-orchestrated approach to developing new solutions. The region is rich in centers of excellence and knowledge institutions that work directly with farmers and firms to come up with next-generation technologies, solutions, and applications, including Campus Almkerk, Precision Agriculture Center South, PlantLab, GrowWise Research Center by Signify, Cosun Innovation Center/ Inicio, Green Protein Center of Excellence & Nieuw Prinsenland, and the Green Chemistry Campus.

## Global challenges

With ongoing climate change, global population increase, and geopolitical disturbances, food security

*GrowWise. Vertical farms offer the opportunity to extensively test the optimal conditions on a large scale without requiring a significant amount of surface area.*







# Why **Brabant excels** in **Agrifood**

## Complete supply chain

The presence of the complete supply chain from growers to processing and logistics.

## Collaborative model

The collaborative model between various companies, universities, and government entities, leading to valuable partnerships (e.g., Green Protein Excellence Center, CHIEF, project Grow).

## Strong manufacturing industry

An exceptionally strong manufacturing industry in primary food production and processing, including companies like Danone/Nutricia, LambWeston/Meijer, and Can-Pack.

## Well-developed Agrifood clusters

Well-developed Agrifood clusters, campuses, and shared facilities such as Foodtech Park Brainport, Green Chemistry Campus, and the Jam Factory.

## Relevant knowledge institutions

The presence of relevant knowledge institutions in the region, including HAS, WUR, TU/e, and JADS.

## Food production value chains

Several fully developed individual food production value chains, such as from potatoes to fries and starch, and from milk to dairy products and specialized baby food.

# Facts & figures

**14,490** companies

**17.9%** (85,120) of the total Agrifood jobs in the Netherlands

**€7.15 billion** total Agrifood export Brabant 2021

**16.5%** growth export Agrifood Brabant 2015 – 2020

**#1** province in production value in the Netherlands

**22.9%** growth of foreign companies in Brabant between 2016 – 2021

**Recent foreign investments in Brabant**

LEMKEN

REDEFINE MEAT

MSD Animal Health

LIVEKINDLY Collective

has never been higher on the agenda. Most of the world's food systems are heavily animal-based, highly demanding on resources such as water and land, and create environmental problems such as CO2 effluent from cows. Experience has shown that high-intensity arable farming is also detrimental to the environment, leading to reduced biodiversity, soil exhaustion, and monocultures that bring disease vulnerability.

## Future solutions

Brabant is perfectly placed to answer these problems. The region is rich in Agrifood disruptors that leverage its High Tech sector to create what could be a paradigm shift in future food production. The entire region is literally a field lab, with thousands of acres of arable land, greenhouses, and indoor farms available for testing new concepts, plus the innate desire to collaborate that exists throughout Brabant across all sectors. Consequently, Brabant is the perfect hothouse for farming innovation. Everywhere one looks in Brabant, one can find innovative startups and scale-ups pushing the boundaries and developing future Agrifood solutions.

*3D Food Printing by TNO - revolutionizing the future of food production.*

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## Food-tech excellence

The rise of plant-based alternatives to animal proteins is a significant development in the human food chain and a vital one if we are to be able to feed the world's expanding population and mitigate climate impact. The combination of excellence in agri-tech and food-tech puts Brabant at the cutting edge of these new developments. In fact, the world's first lab-grown burger, financed by Google founder Sergei Brin, was developed in the south of the Netherlands in 2013. It is a transition that will take time; however, the intensive farming knowledge and advanced process technologies that exist in Brabant are helping to develop novel products that are efficient, tasty, and cost-effective. For example, specialist companies such as IFF create flavors for artificial meat products made by plant-based Beyond Meat.

Additionally, companies such as Marel, as mentioned earlier, are transitioning from processing meat products to bio-based alternatives, employing their considerable knowledge and expertise in processing. In fact, Marel and ADM are establishing a joint innovation center at the Wageningen Campus to support the innovation of next-generation, protein-forward foods from concept to commercialization.

Sugarbeet is another key Brabant crop in the foodtech revolution chain. The region's rich clay soils are ideal for sugarbeet production, and the established traditional producers such as Cosun and Van Gilse today produce zero waste, utilizing 100% of the sugarbeet via efficient production and smart residual streams. Even the clay adhering to the harvested beets is recycled for making roads.

# 5 most **promising** Agrifood **start-ups** in Brabant

With over 1,500 startups, Brabant has truly became a startup province with a strong focus on technology. The Brabant40 is an initiative of several Brabant-based organizations in the startup ecosystem, including BOM, The Gate, Braventure, Rewin, and Brainport. It is a list and an award for the most promising startups in a year. The following startups made the top 40 in Agrifood innovations.

AgroExact

FruitPunch AI

inphocal

RELEMENT

VitalFluid

## Food-tech pioneers

Just as Brabant's early Agrifood pioneers came up with groundbreaking solutions, their legacy is still strong in Brabant, inspiring the Agrifood pioneers of today who are truly at the cutting edge of the protein transition from animal- to plant-based. One of the most commercially successful Dutch food-tech pioneers to date is Brabander Jaap Korteweg, who established the Vegetarisch Slager (Vegetarian Butcher) brand in 2010. Working with food and nutrition specialists, he came up with a range of products that were so successful that Unilever rapidly acquired the brand. Schouten is another traditional Brabant business founded in 1890 and still going strong today.

The original Schouten bakery business, under Henk Schouten, is now producing plant-based protein alternatives to meat and delivering to 50 countries worldwide. Wim de Laat, CEO of The Protein Brewery, is on a mission to transition the sector from animal- to plant-based proteins for the production of plant-based, highly nutritious food ingredients. His efforts have won him the accolade of 'Deloitte Future Winner.' Kees Aarts is another CEO helping the transition process. His company, Protix, is the largest insect farm in the world, and he is at the forefront of the new wave of knowledge and technology necessary to develop insect proteins as a game-changing source of nutrition.

## Agri-tech hotbed

Experience has shown that high-efficiency arable farming is often detrimental to the environment, leading to reduced biodiversity, soil exhaustion, and monocultures that become vulnerable to disease. This demands new concepts and approaches to solve the ever-growing demand for healthy food on the ever-more-populous planet. Brabant is ideally placed to answer these problems through the ingenuity of its modern farmers.

Jacob van den Borne, a potato farmer in North Brabant, established the world's-first drone aerodrome. Jacob employed precision farming to maximize his crop yields and used his fleet of drones to implement precision watering, variable dosing of herbicides, monitoring, and other parameters. He is a member





*LocalTea Zundert. LocalTea sought tea plants better suited to thrive in a cooler climate. After a search spanning several years, they curated a fine selection, enabling to establish the first large-scale tea plantation in Western Europe.*

SHOWCASE

# Redefine Meat

Redefine Meat uses 3D-printing to produce meat substitutes with flavour, taste, and texture comparable in quality to animal meat. Its ‘New-Meat’ aims to go beyond today’s alternative meat products to provide the full sensory experience of meat, including flavour profile, texture, and aroma. New-Meat is already commercially available within food services in the Netherlands, Germany, Israel, and the UK, while also featuring on the tables in high-end Dutch restaurants.

Redefine Meat established operations in a former meat processing plant in Brabant to launch in the Netherlands, with the aim to serve the growing demand for sustainable meat products in Europe and solidify its roadmap to become “the world’s largest meat company, harnessing technology instead of animals”. Having existing facilities in place enabled Redefine Meat to grow its operations, adapting old infrastructure for plant-based alternatives. Thanks to the marriage of old and new, the former meat processing location is now reaching a new market.

of the ingenious National Nursery for Precision Farming (NPPL). This platform helps farmers increase their yields, lower costs, protect the environment, and improve food quality through technological innovations. Agri-tech innovator, Gert Hermans of Pixel Robotics is overseeing the introduction of ingenious agribots that provide plant care at the plant level, or ‘pixelfarming’. Other initiatives include converting existing tractors into autonomous vehicles and creating digital ecosystems to link farmers in the data chain so that wiser decisions can be made in the data-driven farming revolution.

The region is rich in Agrifood disruptors that leverage its High Tech sector to create what could be a paradigm shift in future food production.

*Scan the QR-code for more information and facts & figures about Agrifood in Brabant.*

## Value chain

AGRITECH

LEMKEN · plantlab · PIXELFARMINGROBOTICS · AVL Motion · Hazera Seeds of Growth · signify

FOODTECH

Cosun · The Protein Brewery · EXBERRY · PeelPioneers · PROTIX · Redefine Meat · schouten

HIGH TECH SUPPLIER NETWORK

marel · MTA creating mechatronics · VDL · GEA

FACILITIES / RESEARCH

bodec · Cosun · dab Delta Agrifood Business · HAS green academy · JADS Jheronimus Academy of Data Science · TU/e Eindhoven University of Technology

(this is a selection of companies)

BRABANT
IS BRIGHT
POWERED BY BOM