Netherlands

Smart Farming

How Dutch innovation, data, and design are shaping the future of open field cultivation

In and around the Farm of the Future (Lelystad, NL), farmers, research institutes, and companies work together on solutions that work in practice: measuring where it matters and steering where it pays off.
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With the new facilities at his Van den Borne Campus, potato grower Jacob van den Borne is taking the next step in the digitalisation of agriculture. Van den Borne also hosts Drone Days at his own AgridronePort.
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Foreword

Together we shape the future of global agriculture

The agricultural sector faces major challenges such as climate change, scarcity of inputs, and the need to produce more food for a growing population, with fewer hands and fewer resources. Smart farming and AgTech play a vital role in addressing these challenges.

Through the use of artificial intelligence, data-driven decision-making, robotics, and other innovations, food production can become more efficient, sustainable, and resilient.
The Netherlands is among the world's innovators in smart farming and AgTech. This success is based on our unique ecosystem, where governments, knowledge institutions, and businesses work closely together to drive progress.

Within this collaboration, this Smart Farming Guide has been developed on behalf of the Ministry of Foreign Affairs of the Netherlands. It is a joint publication of the Netherlands Enterprise Agency, the Dutch Ministry of Agriculture, Fisheries, Food Security and Nature (known in the Netherlands by its Dutch acronym, LVVN), the Regional Development Agencies (ROMs) and large cities, united in Trade & Innovate NL. Sector organisations FME and Fedecom and various partners across the Dutch AgTech and smart farming ecosystem have contributed to this publication. Together, we share the ambition to stimulate innovation and entrepreneurship and to showcase the Netherlands' leadership in AgTech on the global stage.

The agricultural challenges and solutions are not limited by borders. They are global in nature, and therefore require international cooperation. Collaboration across countries enables us to learn from one another, exchange knowledge, and accelerate innovation. As a global pioneer in AgTech and sustainable food systems, the Netherlands can contribute to this shared progress.

With this Smart Farming Guide, we aim to offer a comprehensive overview of the Dutch AgTech ecosystem in open field cultivation, highlighting innovative companies, field labs, international collaborations, and the supportive role of our government. We invite you to explore what the Netherlands has to offer and to discover new opportunities for collaboration and innovation that can help shape the future of global agriculture.

Annemieke Broesterhuizen
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Smart farming with direction and knowledge

How the Netherlands tackles agricultural challenges

Corné Lugtenburg
Project Leader Precision Agriculture, WUR Open Cropping Systems

Pieter de Wolf
Senior Researcher Sustainable Agriculture, WUR Open Cropping Systems

Open field farming faces major global social challenges, from labour shortages to climate change and stricter government regulations. This is precisely where Dutch innovation offers perspective. In and around the Farm of the Future, farmers, research institutes, and companies work together on solutions that work in practice: measuring where it matters and steering where it pays off.

The Farm of the Future in Lelystad is a Wageningen University & Research (WUR) practice location where the agricultural sector of tomorrow is taking shape. Here, new cropping systems, technologies, and measures are tested, which contribute to a sustainable, resilient, and economically healthy farming sector. It is a testing ground where theory meets practice, from robotics and sensor technology to biodiversity and soil health. The insights gained here are widely shared with the sector through initiatives such as the National Experimental Programme for Precision Farming (NPPL).

The NPPL is an initiative of the Ministry of Agriculture, Fisheries, Food Security and Nature and is implemented by Wageningen University & Research. Within NPPL, farmers apply autonomous solutions and precision techniques on their own farms under expert supervision. This ensures that knowledge is directly translated into practice. The results are then shared with other farmers, accelerating the adoption of smart farming techniques throughout the Netherlands.

The Farm of the Future in Lelystad is a Wageningen University & Research practice location.

What currently puts the most pressure on farm operations?

Corné Lugtenburg (Project Leader Precision Agriculture, WUR Open Cropping Systems): “Two main lines come together for farmers: requirements around emissions and climate, and the business model. Labour is scarce, crop protection products are changing, and pests and diseases are shifting due to climate change. This demands a smarter use of resources and time.” The combination of these challenges makes farming complex. Farmers must meet new environmental regulations, report on emissions, and at the same time keep their production going. Lugtenburg: “Where family or neighbours used to lend a hand, labour is now a real bottleneck. Less chemicals means more manual work or for instance higher energy use. That puzzle has to fit, technically and economically.”

Where does precision farming make a difference?

Lugtenburg: “Precision farming helps in three steps: monitoring, deciding, and acting. Sensor data, satellite images, and machine information provide continuous insight into crop conditions. This allows farmers to time interventions better and execute more precisely. It stabilises yields, reduces costs, and supports sustainability, as long as it fits within the crop strategy.”

Why is looking ahead crucial?

Pieter de Wolf (Senior Researcher Sustainable Agriculture, WUR Open Cropping Systems): “Solutions take time. Developing new varieties takes ten to fifteen years, and it can take just as long to bring technology from concept to application. That’s why at the Farm of the Future we design cropping systems that are ready for tomorrow: integrated, practical, and developed in collaboration with farmers, government, and industry.”

According to De Wolf, the agricultural transition is only possible if there is direction. “We shouldn’t be solving separate puzzle pieces, but rather focus on developing a long-term strategy. That requires collaboration and a shared vision of where we want to go: a farming system that is sustainable, economically viable, and socially valued.”

How do innovations gain momentum on the farm?

De Wolf: “By validating innovations in practice and identifying barriers, both technical and regulatory. Farmers need space to experiment without financial risk. In NPPL, farmers work with proven techniques under expert guidance, allowing them to discover what really works on their farm. That learning process is valuable; it prevents us from innovating for the sake of innovation.”

A clear example is the disease-detection robot in the seed potato sector. It started ten years ago as an idea and has since been taken up by several companies. Lugtenburg: “We combined knowledge and systems thinking, from early detection and variety choice to functional agrobiodiversity. The result: less manual work, more targeted action, and better insight into crop health and early detection.”

What is a key element for success?

De Wolf: “Collaboration. The Netherlands excels at working together. Public and private partners collaborate in integrated test environments. Start-ups and manufacturers quickly translate knowledge into practice, from optical sorting to autonomous machinery. That approach attracts international attention.”

The attitude of Dutch farmers also plays a role. They are well educated, entrepreneurial, and used to innovating. Lugtenburg: “The Netherlands is small with a high-density population (536 people per km^2). That drives efficiency and smart use of technology. Innovation is no longer a choice, it’s a necessity. And that makes our agriculture strong.”

What does this deliver for the farm of tomorrow?

Lugtenburg: “Above all, it delivers practical benefits: better data, more precise work at field level and tools that align with reaching goals such as nitrogen reduction and the preservation of biodiversity.”

De Wolf adds: “And it offers perspective. By continuing to learn, experiment, and collaborate, Dutch agriculture can respond to new challenges from the environment, the market, and society. Step by step, we’re building a future-proof agricultural sector: agile, innovative, and sustainable.”

Guido Landheer

“Innovation is in our DNA”

The Netherlands is a global innovator in smart farming. That is no coincidence, says Guido Landheer, Director for European, International and Agro-economic Ministry of Agriculture, Fisheries, Food Security and Nature. “Innovation is in our DNA. We have always had to work together to keep the water out and to produce food on limited space. You can still see that mentality today in our high-tech agriculture.”

According to Landheer, this innovative mindset did not appear overnight. “It has developed historically. We are used to working together. In the days before we had strong dykes and the water literally came towards us, cooperation was not a choice but a necessity. That has shaped us. It has taught us to look beyond our own borders, share knowledge, and search for solutions together. That culture of cooperation is the foundation of the innovative strength we see today.”

This cooperative approach has also become second nature in agriculture. “We have a strong tradition of collaboration between government, businesses, science, and civil society organisations. We call that the Dutch Diamond. Thanks to this model we can move quickly, develop new knowledge and ensure that technology actually reaches practice.”

The strength of the Dutch innovation ecosystem

The term Dutch Diamond refers to the four pillars of the Dutch innovation ecosystem: knowledge institutions, the private sector, government, and civil society organisations.
“Where the classic ‘triple helix’ mainly focuses on knowledge, government, and entrepreneurs, civil society organisations add something essential in the Netherlands”, Landheer explains. “They contribute expertise on food security, inclusion, and sustainability. Their involvement broadens and strengthens our innovation agenda.”

He gives the example of a project he recently visited in India. “There, Dutch companies work together with local civil society organisations on the production of plant-based proteins. Women from disadvantaged groups benefit from training and employment, while at the same time work is being done to improve local diets. This shows that innovation can be not only economically, but also socially valuable. That fits perfectly with the Dutch way of thinking: technology in the service of people and society.”

Guido Landheer (second from the right) at the Agritechnica 2025 in Hannover.

Innovation as an answer to new challenges

Landheer sees smart farming as the logical next step in this tradition. “The Netherlands has always been good at solving practical problems. We created fertile land where there was once water, we built infrastructure to export food, and we developed knowledge to produce a lot with limited space. Now we face new challenges: climate change, rising input costs, and scarcity of water and raw materials. And once again, you see that the Dutch response is innovation. ”Smart farming technologies, from robotics to precision agriculture, play a key role in this. “They help farmers to work more efficiently and more sustainably, using fewer resources and reducing emissions. But technology is not a goal in itself. It is a means to make our agriculture future-proof, safeguard food security and contribute to global sustainability.”

The role of knowledge and universities

An important part of this innovative strength lies in the Dutch knowledge landscape, Landheer notes. “We have a world-class university in Wageningen, which plays a leading role internationally. But just as important are the many applied research institutes and practical facilities, such as the Fruit Research Centre Randwijk. At this research centre advanced sensors and data platforms are used to collect real-time information on tree growth, fruit development and climatic conditions. By analysing this data, farmers can make more precise decisions regarding pruning, fertilisation and irrigation, leading to a more efficient use of resources and higher yields. Farmers can see what works, learn from each other and try out new applications. That is how we make innovation tangible.”

Government as a connector

In this ecosystem, the government has a clear role, he believes. “We are not the ones implementing innovation. That is done by companies and knowledge institutions. But we can create the right conditions. We bring parties together, provide support with funding and ensure that knowledge finds its way into practice. The Regional Development Agencies (ROMs) and large cities also play an important part in implementing innovation and

> “We have a strong tradition of collaboration between government, businesses, science, and civil society organisations.”

The NL-team at Agritechnica 2025.

economic programmes. Their involvement shows how broad the network is that contributes to agricultural innovation — spanning national government, knowledge institutions, regions and applied innovation partners."

Several instruments are available to do this, he explains. "Consider the National Growth Fund, which supports projects such as NXTGEN Hightech. Or international schemes such as the Seed Money Projects, through which we help form consortia between Dutch and foreign partners. This leads to collaborations in countries such as New Zealand, the United Kingdom and Germany in the field of smart farming. That accelerates knowledge exchange and market development."

In addition, the Netherlands Agricultural Network and embassies play an important role. "They are our eyes and ears abroad. They help companies find partners, gain market access, and explore new opportunities. Many innovation missions and trade visits have emerged out of that network. It can make the difference between a good idea and an international breakthrough."

Learning from other countries

At the same time, Landheer emphasises that international cooperation is not a one-way street. "We contribute a lot, but we also learn. During a visit to Bangalore in India, I saw impressive applications of sensor technology in agriculture. There is a great deal happening there in terms of data and ICT. The Netherlands holds a strong position, but that does not mean we know everything. Learning from others is just as much a part of innovation as sharing knowledge."

A guide that connects

According to Landheer, this guide on smart farming and open field cultivation fits seamlessly into this approach. "It shows what is happening in the Netherlands in terms of digitalisation and robotics. It allows companies to present themselves, gain inspiration, and make new connections. We regularly hear that previous editions have led to concrete collaborations. That makes it a valuable instrument for both innovation and international positioning."

He smiles: "Sometimes people ask: 'Nice, such a guide, will anyone really read it?' And then later you hear that a company has found a new partner thanks to an article. That is exactly what we aim for: encouraging connection and cooperation."

“The challenges are great, but the opportunities are even greater. Let us continue building the agricultural sector of tomorrow together.”

The future demands cooperation

At the end of the conversation, Landheer looks ahead. “Agriculture worldwide faces major challenges: from climate change to food security. We will only solve these issues if we work together intelligently, between companies, researchers, policymakers, and farmers. The Netherlands has everything it needs to continue to play a leading role: knowledge, technology, entrepreneurship, and a strong culture of cooperation.”

His message to the sector is clear: “Keep working together, within the Netherlands and beyond. Use the knowledge, networks, and instruments that are available. Look at field labs, take part in innovation missions and make use of programmes such as Seed Money and the Strategic Action Plan for Digitalisation and Robotics. And know that the government wants to be a partner in this transition.”

He concludes: “The challenges are great, but the opportunities are even greater. Let us continue building the agricultural sector of tomorrow together. Let’s farm the future together.”

International cooperation

Scaling Dutch smart farming worldwide

Smart farming does not stop at the border. For Dutch technology providers and agricultural entrepreneurs, international cooperation is essential to turn innovation into practice, at scale and adapted to diverse conditions. That is why the Netherlands is working closely with key partner countries such as Germany, France, and the United States (US). Each collaboration has its own focus, but all have the same goal: accelerating sustainable, data-driven, and more autonomous farming.

Through initiatives such as Smart Autonomy for Precision Agriculture with Germany, Dutch and German partners are jointly testing robotics, precision irrigation and data use in real farming systems. With NXTGEN Hightech France, Dutch high-tech and agri-tech companies connect with French partners to develop and demonstrate autonomous solutions tailored to local crops, soils, and business models. And in the Orchard of the Future collaboration with the US, Dutch frontrunners in precision spraying and sensing work alongside American growers and researchers to modernise fruit production and reduce environmental impact. These partnerships show a clear pattern: combining Dutch expertise in technology, data and system integration with the scale, experience and local knowledge of international partners. Instruments such as Seed Money Projects (SMP) and Partners for International Business (PIB) help build strong consortia, open doors to new markets, and turn promising concepts into practical applications. In this guide, we highlight several of these collaborations. These are just a few examples, we collaborate with countries all over the world. From the US to Europe, from Asia to Africa.

The examples in this guide illustrate one message: by sharing knowledge, testing across borders, and co-creating solutions, we make smart farming stronger in the Netherlands and worldwide.

The Netherlands shares innovation in smart fruit growing

Fruit production in the Netherlands and in the US states of Washington and Oregon has a lot in common. Both regions face similar challenges: climate change, labour shortages, and the need to produce more sustainably and efficiently. That's what makes collaboration so valuable, says Peter Schellekens, Project Manager for Agriculture, Water and Food at FME and involved in the international Orchard of the Future programme.

"The cooperation within Orchard of the Future started with the insight that the Netherlands and the US are complementary", says Schellekens. "We're advanced in precision applications, spraying technology, and drift reduction, while American partners bring solid experience in irrigation and managing heat stress. By sharing knowledge, we strengthen each other."

Washington Tree Fruit Research Commission

A key partner in the US is the Washington Tree Fruit Research Commission (WTFRC). The organisation plays a central role in Washington State by funding research, coordinating innovation and connecting growers, researchers, industry and government. This makes the commission an essential bridge between science and practice, and a strong partner for Dutch companies and knowledge institutes.

Smart technology in the orchard

Within Orchard of the Future, Dutch and American companies, research institutes, and growers work together on innovation. From the Dutch side, it's about sharing knowledge and growing the earning capacity of the technology sector. "It's an initiative from the Dutch Government to introduce Dutch tech companies to the US market", Schellekens explains. "We organise trade missions, host US delegations, attend fairs, and help companies find partners or funding."

Active participants include Aurea Imaging and Munckhof, who now demonstrate their precision-farming innovations in the United States. During Washington State University's annual Field Day, several Dutch innovations were demonstrated live. "That drew strong interest from US growers and researchers", says Schellekens. "It's how collaborations for pilots and market introductions get off the ground."

Mutual inspiration

Working with the WTFRC also offers a useful mirror for the Dutch situation. "The Netherlands is strong in collaboration and innovation, but we don't yet have a single organisation that permanently connects growers, industry, science and government in the way the WTFRC does," says Schellekens. "We want to avoid losing knowledge and networks once the Orchard of the Future project ends. That's why I'm developing a plan for a permanent community, financed by companies that want to invest in the future of fruit-growing technology." The community will ensure continuity and allow the network to expand to countries such as Italy, England, Belgium, Germany and even New Zealand.

The Netherlands as innovator

On missions, Schellekens sees first-hand that the Netherlands is viewed as a global innovator in sustainable, precise spraying technology. "In the US, we still saw traditional spraying methods that lose a lot of product. In the Netherlands, we spray in a targeted way, with individual nozzle control and recovery systems that minimise drift. That stems from our regulations, but it also delivers an economic edge: fewer inputs, higher quality." Schellenkens: "It's inspiring how quickly knowledge and technology reinforce each other when you bring the right partners together."

Get involved

Companies that want to contribute ideas or support the new community around smart fruit-growing technology can contact Peter Schellekens at peter.schellekens@fme.nl.

The Netherlands and Germany accelerate smart farming together

Ard Nieuwenhuizen
Project Leader at Wageningen University & Research

With the Smart Autonomy for Precision Agriculture project, cooperation between the Netherlands and Germany is gaining fresh momentum. Project leader Ard Nieuwenhuizen of Wageningen University & Research aims to accelerate the use of robotics and precision farming together with his partners. “The ambition is clear: to bring technology further into practice, and to farmers in both countries.”

The project is part of the Seed Money Project (SMP). This programme is a part of the Dutch Knowledge and Innovation Agenda for Agriculture, Water and Food. Its goal is to connect SMEs, research institutes and international partners around innovative ideas that contribute to sustainable agriculture and food security. Smart Autonomy for Precision Agriculture has a budget of €50,000 and runs in 2025. The collaboration is carried out by Wageningen University & Research in cooperation with CropX and partners from Bavaria. Nieuwenhuizen explains: “Seed Money projects are short-term initiatives that serve as the ‘seed’ for larger ones. Our focus is on forming strong consortia around concrete challenges.”

Three pillars of innovation

The cooperation focuses on three technological pillars. “First, we want to improve the application of precision farming in irrigation and water management in wine and hop cultivation”, Nieuwenhuizen explains. “Second, we aim to increase the use of robots in daily farming practice, both in the Netherlands and Bavaria. Finally, we’re looking at data sharing and accountability within arable systems, how we can use data smartly to work more sustainably and efficiently.”

According to Nieuwenhuizen, the two countries complement each other well. “The Netherlands brings expertise in automation, sensor technology and data management. Germany offers scale, hands-on experience and a strong agricultural network. By combining those strengths, we can move faster towards autonomous cropping systems.”

Linked to a follow-up project

The current Seed Money Project is a one-year exploratory project. The ambition is to use the results of SAPA as the foundation for a new, four-year international research and innovation programme starting in 2026. “In that follow-up programme, we want to further develop and field-test autonomous machines and digital tools in both countries,” Nieuwenhuizen explains. “The Seed Money Project allows us to prepare that work now, build the right consortium and accelerate the route from prototype to practical application — for companies on both sides of the border.” This ambition fits well within broader efforts to strengthen international collaboration in the agri-tech sector.

An important initiative in this context is the Connecting Regions programme, run by the regional development agencies and sponsored by the Ministry of Economic Affairs. Through this programme, innovative smart farming companies are connected to international networks, and the Dutch agri-tech sector is jointly positioned abroad through trade missions, fairs and targeted matchmaking activities. A strong example of successful cross-border cooperation facilitated through these efforts is the Memorandum of Understanding (MoU) signed by the regional development agencies BOM, Horizon Flevoland, Impuls Zeeland, LIOF and OOST NL with the German partners Agrotech Valley Forum and Seedhouse Accelerator in Osnabrück. This MoU lays the groundwork for new innovative partnerships and collaborations in the field of smart farming.

Why investing now is crucial

Although innovation is high on the agenda, Nieuwenhuizen notes that R&D budgets are under pressure. “With rising costs and economic uncertainty, companies are more cautious about their investments”, he says. “But investing now is more important than ever. The agricultural sector faces major challenges around labour, climate, and efficiency. Without continuous innovation, we risk falling behind. Seed Money projects show that collaboration pays off: they bring the right partners together to make that next step possible.”

The Netherlands and France join forces for smart farming

Suzanne Verboon
Programme Manager Agro & Food at FME and domain lead for agri within NXTGEN Hightech

Cooperation between the Netherlands and France in the field of smart farming is taking clearer shape. During the state visit to Toulouse in October 2025, a Memorandum of Understanding was signed between NXTGEN Hightech and the French organisation RobAgri. With this step, both countries commit to jointly advancing agricultural robotics and digital farming.

“NXTGEN Hightech is a growth fund programme that aims to strengthen the Dutch economy and its technological position”, says Suzanne Verboon, Programme Manager Agro & Food at FME and domain lead for agri within NXTGEN Hightech. “For the agri sector, this means developing technologies that contribute to future-proof, autonomous food production. The Netherlands already has a strong knowledge base in high-tech and agri-technology. Now we are combining that strength with France.”

Connecting companies, knowledge institutes, and international partners

In her role at FME, Verboon focuses on connecting companies, knowledge institutes, and international partners. “The Dutch market alone is too small to develop these technologies for. Machines and robots must be applicable worldwide. At the same time, agriculture in France is different from the Netherlands: the climate, soils, crops, and the way of working. What is successful here does not automatically work there. That is why cooperation is so important.”

Entering the French market together

This collaboration takes concrete shape through NXTGEN Hightech France, within which Dutch and French parties exchange knowledge, demonstrate technology and innovate together. “We have a formal cooperation agreement with RobAgri, which, like us, stimulates the development of agri-robotics,” says Verboon. “In addition, we work towards multiannual programming, through the Partners for International Business (PIB) programme (an instrument of the Netherlands Enterprise Agency). Innovations developed with new technology also place high demands on farmers and growers. It is a different way of working for them. By joining forces, the Netherlands and France not only accelerate innovation, but also speed up technology acceptance. Within the PIB programme, companies can jointly enter the French market, organise demonstrations and find dealers or farmers to apply the technology in practice.”

Two-way exchange

Verboon emphasises that this collaboration works both ways. “We learn from each other. Dutch companies contribute expertise in robotics, data, and crop production, while French partners bring in-depth knowledge of their markets and local conditions. By combining these insights, you develop better-fitting technology and accelerate innovation on both sides.”

Smart farming in open field cultivation

Smart farming solutions provide significant innovations, aimed at increasing yields, reducing environmental impact and improving data-based decision making. Let's look at the application of agricultural technologies and innovations in outdoor crop production, specifically in open fields. This includes arable farming and outdoor horticulture, and the production of soft and hard fruits.

1. Precision farming:

monitoring and optimizing agricultural practices in real time.

Technologies:

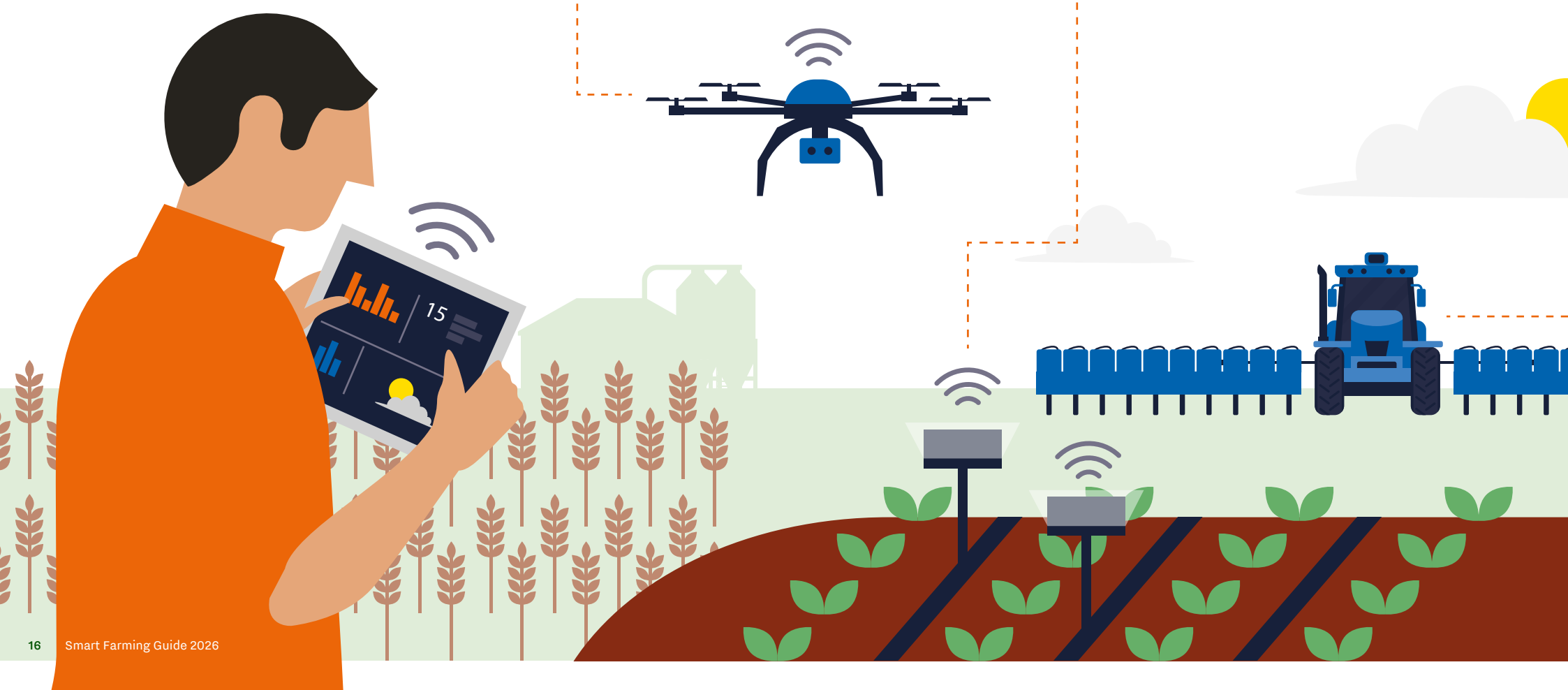
- GPS & GIS Mapping
- Remote Sensing (Drones & Satellites)

2. Sustainable water and nutrient management:

efficiency and sustainability are key drivers.

Technologies:

- Drip Irrigation with Sensors
- Fertigation Systems
- Cover Cropping & Soil Health Monitoring



3. Advanced machinery and equipment:

integrating sensors and control systems in modern equipment.

Technologies:

- Smart Planters & Seeders
- Sprayers with AI Vision

4. IoT and smart sensors:

collecting real-time data by Internet of Things (IoT) devices to support decision-making.

Technologies:

- Soil Moisture Sensors
- Weather Stations
- Crop Monitoring Sensors

5. Data-driven cultivation, AI & cloud platforms:

using Big data, artificial intelligence and Cloud platforms to enable the use of centralized farm-management systems.

Technologies:

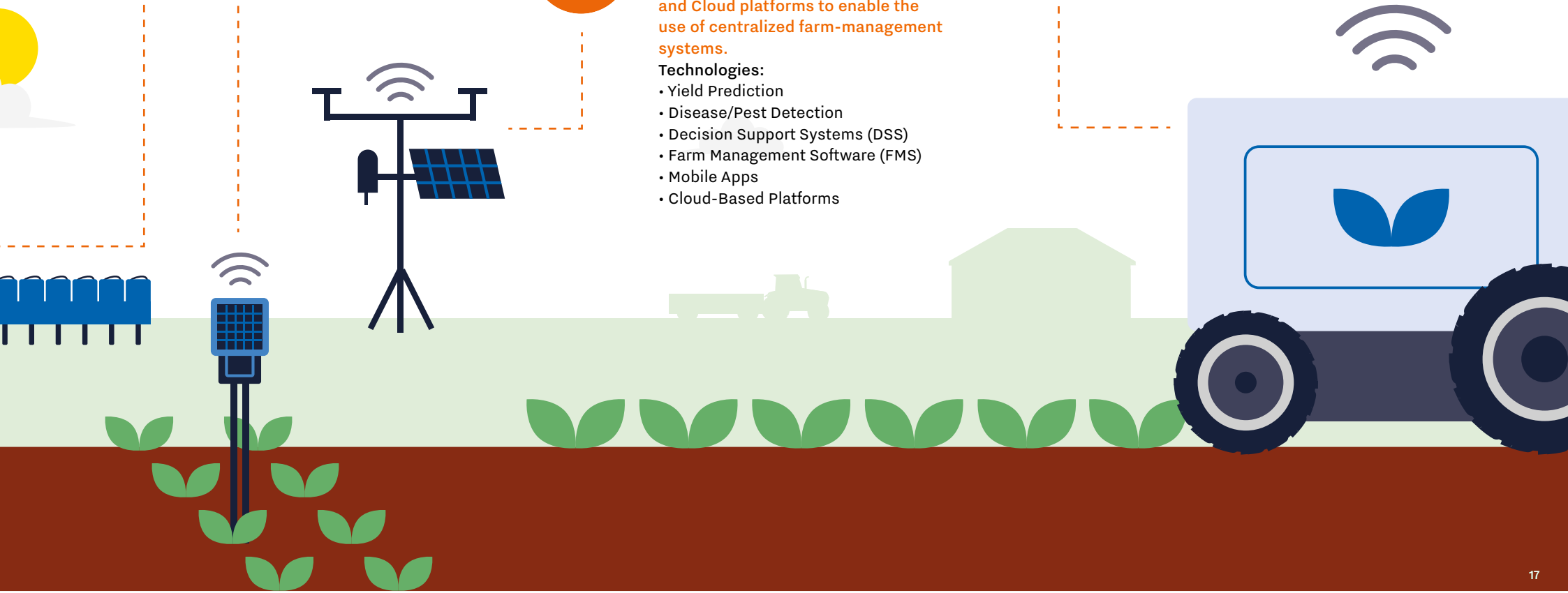
- Yield Prediction
- Disease/Pest Detection
- Decision Support Systems (DSS)
- Farm Management Software (FMS)
- Mobile Apps
- Cloud-Based Platforms

6. Automation and robotics:

reducing labor costs and increasing operational efficiency.

Technologies:

- Autonomous Tractors & Machinery
- Weeding Robots
- Harvesting Robots



Theme 1

Precision farming

Dutch agriculture has always been defined by precision. On a small patchwork of fields bounded by dykes, every centimetre counts. Over generations, farmers have learned to read the land, the texture of the soil, the pattern of wind and rain, and to match each crop to its place. Today, that instinct is enhanced by technology. Precision farming translates what farmers already know into data they can measure, share, and act on.

Using GPS-guided tractors, satellite images, and drones, Dutch farmers can now measure variations in soil fertility, moisture and crop growth within a single field. Variable-rate technology allows them to tailor inputs such as seed, fertiliser, and crop-protection with surgical accuracy. The result is higher efficiency, lower emissions, and improved soil structure. It's farming that works with nature rather than against it, protecting biodiversity while safeguarding yields.

From measurement to management

Precision farming isn't just about machines; it's about mindset. Data only becomes valuable when it leads to smarter decisions in the field. That's why the Dutch approach places such a strong emphasis on knowledge exchange and co-creation. Farmers, advisory services, technology developers and research institutes work closely together to test and refine new tools under real conditions — from heavy clay to light sandy soils.

Instead of focusing solely on hardware, they look at what the data means in practice: how variable-rate fertilisation affects soil health, how moisture monitoring can help prevent drought stress, or how digital maps support more targeted crop management. It's a practical, hands-on way of working that reflects the broader Dutch philosophy: government, science, business and farmers collaborating to innovate sustainably, one field at a time.

Technology serving craft

Knowledge institutions such as Wageningen University & Research play a key role. Their field trials show how precise nutrient management can reduce nitrogen losses while maintaining crop performance. Farmers receive digital maps that translate complex data into simple visual layers, showing where to sow more densely or where to hold back on fertiliser. This is technology serving craft, not replacing it. The same goes for technology using satellite-derived information to help farmers decide when and how much to irrigate. In arable regions from the Dutch polder to sub-Saharan Africa, this supports smarter water use and higher yields. It shows how Dutch innovation in precision farming begins at home but contributes globally: one field map at a time.

Sustainable, profitable and future proof

Precision farming, then, isn't a gadget trend. It's a systemic shift that turns data into dialogue: between farmer and field, science and practice, technology and tradition. The Netherlands sees it as the cornerstone of a sustainable, profitable, and future-proof food system.

Experiencing data in the field

With the new facilities at his Van den Borne Campus, potato grower Jacob van den Borne is taking the next step in the digitalisation of agriculture. The campus in Reusel already served as a knowledge and innovation centre for precision farming but now features modern facilities and extra space to better connect research, knowledge sharing, and practical application.

“We want to show what data can really mean for agriculture, not just measuring, but experiencing”, says Van den Borne, who has been at the forefront of smart cultivation technology for nearly twenty years. His company, Van den Borne Aardappelen, has become a testing ground for precision agriculture. Since 2006, he’s been collecting data by using sensors, drones and GPS to work more efficiently and make better agronomic decisions. “We started measuring to save costs”, he explains. “But now we use data to prevent soil compaction, build up organic matter and improve crop rotations.”

The renewed campus provides space for visitors, students and companies to share knowledge and test innovations. “We have modern work and presentation areas, but more importantly: space to learn from each other”, says Van den Borne.

Field of the Future

The highlight is the Field of the Future, what he calls “the most digital field in the world”. Three crop rotations are monitored there in great detail. Visitors can explore the data themselves through an app. “It’s basically geocaching with precision farming data”, he explains. “You walk through the field and see the variations in soil and crop growth. Red means things aren’t going well; green means they are. You have to experience it to truly understand it.” In addition, he’s setting up a network to monitor nitrate leaching at the Field of the Future and collaborating with water boards on water quality measurements. Van den Borne also hosts Drone Days at his own AgridronePort. “Someone has to dare to try new things”, he says. “We show what doesn’t work, but more importantly, we show what does. And we give startups the space to test their ideas.” He concludes: “I love innovation. If we can develop solutions that help achieve agriculture’s goals, that’s not just great, it’s essential.”

Jacob van den Borne
Potato grower and owner
Van den Borne Campus

Theme 2

Sustainable water and nutrient management

Water defines both the Dutch landscape and Dutch agriculture. For centuries, Dutch farmers have worked within narrow margins, keeping fields fertile while holding back the sea. That same ingenuity now drives a new challenge, which is managing water and nutrients in a changing climate. The aim is clear: maintain yields, restore soils, and protect biodiversity. Achieving it, however, requires precision, innovation and a holistic view of the landscape.

The Netherlands recognises that sustainable agriculture begins underground. The Ministry of Agriculture's Water and Soil Guiding policy calls for integrated management: every farming decision must consider its impact on water systems and soil life. Healthy soils store carbon, retain moisture and reduce runoff. They're the foundation of climate adaptation.
Dutch farmers use real-time data to guide irrigation and fertilisation. Moisture sensors, weather stations, and satellite imagery help them schedule water use to match plant demand. This isn't high-tech for its own sake; it's a pragmatic response to increasingly erratic rainfall. By aligning irrigation with soil capacity, farmers save water, and prevent nutrient leaching.

Circular by design

The concept of circularity runs deep in Dutch agriculture. Farmers collect rainwater from barn or greenhouse roofs, reuse drainage water and incorporate organic matter to improve soil structure. Nutrients are viewed not as waste but as valuable resources to be recycled. Programmes supported by the Dutch government encourage nutrient monitoring and balanced fertilisation, turning environmental responsibility into economic advantage.

The government places this effort within a broader global context. Dutch expertise in soil and water management is exported through bilateral partnerships, improving productivity while safeguarding ecosystems. It's the same logic that built the Dutch polders, applied to a global challenge.

A climate-smart future

Weather extremes make every resource more valuable. By monitoring soil moisture and plant stress in real time, Dutch farmers can anticipate drought and act early. The Water and Soil Guiding policy builds on these insights, promoting a balance between productivity and ecological health. Healthy soils store more carbon, absorb more water and require fewer inputs. This is proof that precision and resilience go hand in hand.

Bringing innovation to life within Next Generation Farming

The agricultural sector of tomorrow requires collaboration between technology, crop expertise and entrepreneurship. At the Brightlands Campus Greenport Venlo, these elements come together in Next Generation Farming, an innovation cluster where companies, researchers, and students work on solutions that can be put into practice directly.

“It’s about more than research alone”, says Loes Janssen, Business Developer Future Farming at Brightlands Campus Greenport Venlo. “We bring together parties that each hold a piece of the puzzle. Plant breeders, technology developers, packaging companies, processors, they’re all working towards the same goal: a sustainable, future-proof agricultural sector.”

Fast transition from fundamental research to practical application

The R&D facilities that make this possible are being developed under the name Kronos Vitale, in collaboration with Brightlands Campus, Innoveins Seed Solutions, BrightBox and HAS Green Academy. Janssen explains: “The need comes directly from the market. Farmers and processors are looking for ways to make crops more resilient, reduce the use of chemical inputs, and prevent food loss. These labs make that possible.”

According to Niels Peeters, Director of Innoveins Seed Solutions and co-founder of Kronos Vitale, it’s the first time so many disciplines are literally coming together under one roof. “We have laboratories for phenotyping, seed technology, biotechnology, processing and packaging. This allows us to measure, test and improve across the entire chain, from seed to end product. It shortens the path from fundamental research to practical application.”

Connecting cultivation and technology

That link between technology and cultivation is essential, says Peeters. “Innovation only has value when it can be applied. We make sure technology doesn’t stay on the shelf but reaches the field. By sharing knowledge, facilities and data, companies can innovate faster and reduce costs.”
In the new labs, work is underway on climate-resilient seeds, biological crop protection and sustainable packaging. With imaging technology and AI, researchers can observe how plants respond to stress factors such as drought or nutrient deficiency. In bioreactors, micro-organisms are tested that contribute to healthy, robust crops. And in the Postharvest Technology Lab, research focuses on extending shelf life without compromising quality.

Developing talent

Alongside technology, talent development plays a major role. What makes the innovation cluster truly stand out is its direct link to education, fueling swift knowledge exchange and the growth of new talent. Students work in the labs on real assignments from industry. Janssen explains: “They don’t just learn about the latest techniques but also how collaboration works in practice. That’s the foundation for the agricultural sector of the future.”
The strength of Next Generation Farming lies in its open character, she adds. “We invite companies to participate. Anyone who wants to test an idea, develop a new product or connect data to crop knowledge is welcome. Together, we’re building a circular, smart, and resilient agricultural sector.”

Bringing innovation to life

With initiatives like this, the Netherlands shows how technology and cultivation go hand in hand. While elsewhere people are still experimenting, here concrete solutions are already being developed. As Peeters sums it up: “We quite literally bring innovation to life – in the lab and in the field.”

Niels Peeters
Director of Innoveins Seed Solutions at Kronos Vitale

Loes Janssen
Business Developer Future Farming at Brightlands Campus Greenport Venlo

Theme 3

Advanced machinery and equipment

The Netherlands is known for its inventive approach, which really shows in the machinery that drives its farms. Dutch engineers design with purpose: to make machines smarter, cleaner and kinder to the soil. In open field farming, that means creating equipment that's both high-tech and down to earth, able to navigate varied terrains, reduce inputs and help farmers meet environmental goals without compromising on efficiency.

The innovation process is collaborative from the start. Manufacturers, research institutes, and farmers sit around the same table to refine designs and test prototypes. This partnership model ensures that technology aligns with real agronomic practice. The result is equipment that does more than move across the land; it helps shape a sustainable relationship between farmer and field.

Smart tools, lighter touch

Modern open field farming demands precision at every step. Dutch-built devices now combine GPS control, section management, and automated calibration to reduce overlap and waste. Lightweight frames prevent soil compaction, keeping the underground ecosystem alive. Spraying and spreading systems can adjust rates in real time, guided by data from sensors and field maps. Every drop and every granule counts. This focus on precision is also an environmental commitment. The Dutch government highlights machinery and robotics as key export strengths that contribute to the transition toward climate-smart agriculture. By integrating advanced engineering with sustainability standards, the Netherlands positions itself not only as a manufacturer but as a knowledge partner.

Building resilience through design

Farmers worldwide face similar pressures: stricter environmental rules, volatile weather, and rising energy costs. Dutch equipment helps them adapt. Sprayers with twin-nozzle technology, for example, ensure uniform coverage even at lower pressures, reducing drift and chemical use. Sensors mounted on devices adjust fertiliser application to the plant's exact need, reducing nitrogen losses. These innovations turn regulation into opportunity, proving that sustainability can drive competitiveness.

Behind every improvement is a network of R&D investment. The Top Sector Agri & Food and the Top Sector Horticulture & Starting Materials together channelled nearly one billion euros annually into research. Their projects covered everything from digital calibration systems to low-emission engines, linking industry expertise with academic insight. The Top Consortium for Knowledge and Innovation (TKI) coordinated the knowledge and innovation agenda within the Top Sector framework and continues to do so in the current policy context.

Smart machines need smart collaboration

For centuries, Dutch farmers have been known for their ingenuity. In a country where land and space are limited, efficiency has become second nature. That mindset is also reflected in agricultural machinery: innovative and constantly evolving. Ron Houweling, Manager of Innovation and Policy at Fedecom, the industry association for manufacturers, importers and dealers of agricultural machinery, sees it happening every day.

Houweling represents a sector that provides thousands of jobs and plays a key role in sustainable food production. “We focus on the themes that shape the future of agriculture”, he says. “Sustainable machinery, automation and robotics, and the nitrogen and energy transition. We take an active role when it comes to politics and policy.”

From tractor to thinking machine

In agricultural technology, innovation is shifting from the tractor to the device behind it. “Tractors have been able to drive autonomously for years”, Houweling explains. “Now the real intelligence lies in the device, which increasingly takes control of the tractor.” Sensors and software monitor every operation – from seeding depth to spray pressure – intervening or alerting the farmer if needed. The result: more precision, less waste, and better insight into soil and crop conditions.

Smart is more than just robots

When people think of smart farming, they often picture autonomous robots. “But it’s much broader”, says Houweling. “During a trade mission to Toulouse, we saw companies working on sensor technology, data platforms and weather stations that support better crop management. It’s the combination of all these elements that makes agriculture smarter.”

That cross-disciplinary collaboration, from mechanics to data analysis, is the Netherlands’ greatest strength. “We may not have big tractor factories, but we have many agile tech companies that listen to farmers, build solutions, and test them in practice. That makes us inventive.”

The power of a hands-on mentality

“What I admire most”, Houweling says, “is the entrepreneurial drive. Many start-ups see opportunities and just get to work. They build, test and learn, true to the Dutch ‘less talk, more action’ mentality.” These innovators develop tools that detect weeds, spray precisely or check each seeding unit, steps towards agriculture where technology and craftsmanship reinforce each other.

Policy as an accelerator

“The sector wants to move faster”, he adds. “Young farmers are eager to innovate but need clear direction. With a stable government vision and targeted support for smart-farming adoption, we can accelerate progress.” Fedecom advocates for such policies, connects companies and knowledge institutes, and raises awareness of technological opportunities.

Looking ahead

In the coming decade, machines will increasingly make autonomous decisions, turning farmers into data managers. “That requires new skills but offers great opportunities”, says Houweling. “The Netherlands may be small, but it’s leading the way in smart, sustainable agricultural machinery. And the best part is: we’re doing it together, from farmer to inventor. Collaboration is our strongest driving force.”

Ron Houweling
Manager of Innovation and Policy at Fedecom

Theme 4

IoT and smart sensors

In Dutch fields, decision-making is going digital. Tiny sensors buried in soil, mounted on machinery or fixed to weather poles send constant updates: temperature, humidity, soil moisture, and nutrient availability. These devices, linked through the Internet of Things (IoT), give farmers eyes and ears in every corner of their land. Instead of relying on routine schedules, they can now react instantly to what the field needs.

The Dutch government's digitalisation agenda for agriculture supports this transformation. It emphasises data standardisation, sharing and governance so that devices from different suppliers can speak the same language. For farmers, that means clarity and trust: one dashboard that integrates all their information into simple, actionable insights.

IoT technologies fit perfectly within the Dutch Diamond model. Tech developers provide hardware and software; research institutes validate performance; the Netherlands Enterprise Agency facilitates knowledge exchange and funding; and farmers close the loop by testing the tools on their own fields. It's innovation grounded in practice.

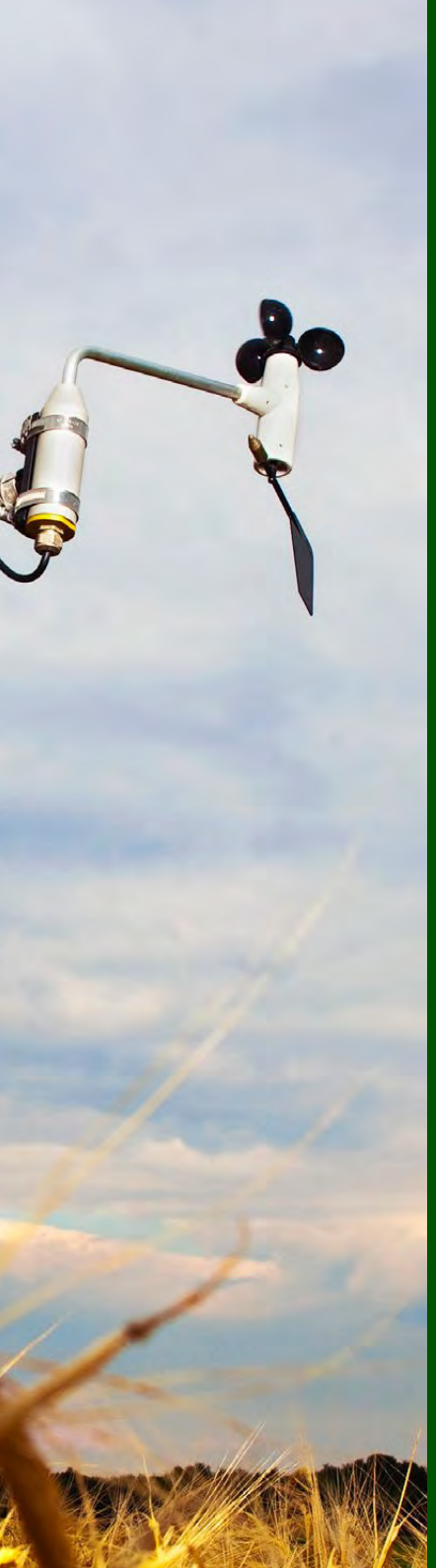
Better timing, smaller footprint

Real-time sensing makes every operation more efficient. If a soil probe reports falling moisture levels, irrigation can start before stress affects the crop. If weather data predicts rain, fertiliser application can be postponed, preventing runoff. The benefits are cumulative: less waste, lower emissions, higher resilience. For crops like potatoes and onions, which dominate Dutch arable rotations, these gains translate directly into quality and profitability.

The environmental pay-off is equally strong. Monitoring soil and plant health reduces unnecessary inputs and helps track long-term trends. Combined with national policies, sensors help build a system where sustainability is measurable, not abstract.

Pilots

In precision-farming pilots across the Netherlands, soil-moisture sensors and local weather stations now guide irrigation for open field crops. Farmers receive alerts on their phones when the field needs water, turning data into timely action. The technology is simple, but its impact profound: fewer pumping hours, healthier crops and greater resilience against drought. The Dutch lesson is clear: connect everything, but keep the farmer at the centre.



Smart and data-driven: how the Netherlands is shaping the agriculture of tomorrow

Monitoring plants, soil and the environment with sensors is no longer just a vision of the future. Yet we're only at the beginning of what's possible, says Pieter Vlaar, Business Development Manager at Vertify. "Thanks to data, sensors, and the Internet of Things (IoT), we can detect diseases and pests earlier and take targeted action. That saves inputs, labour and emissions."

Vertify is an independent research institute conducting applied research for the plant production sector. Traditionally, its focus was on the effectiveness of chemical crop protection products, but that has shifted in recent years. "Society is asking for less chemicals and more sustainable solutions", Vlaar explains. "That's why we developed the Integrated Crop Approach, a model that combines all factors, from biodiversity to water management. Data and sensors are the connecting link."

Smart combinations

The Integrated Crop Approach shows that sustainability isn't about a single solution, but about smart combinations. "A flowering field edge, proper water management, resilient varieties and the right timing of interventions, it's all interconnected. Data helps us fit those pieces together."

Responding faster with data and IoT

According to Vlaar, the success of green products depends heavily on timing. "Chemical products often have a long-lasting, systemic effect. Green alternatives work for shorter periods and need to be applied at exactly the right moment. Sensors, drones, and satellite data make it possible to detect the onset of a disease or pest early on. That way, you can act preventively, with far less impact." IoT, the network of smart devices that collect and exchange data, makes this possible. "Sensors in the field, drones in the air, and software on machines all communicate with each other", Vlaar explains. "This flow of information gives growers real-time insight into what's happening and what's needed."

Vertify is testing systems that use drones or spraying technology to apply crop protection products only where they're truly needed. "With task maps or cameras on machines, we can already determine intervention areas down to the plant level for certain crops. For others, we can restrict treatment to a small section of the field. That means we no longer need to treat the entire area. That's precision farming at its best: less waste, lower emissions, more insight."

Green when possible, chemical when necessary

The role of sensors and smart software is growing fast, but the farmer remains essential, Vlaar emphasises. "Monitoring and decision-support tools help guide choices, but the farmer stays in control. Our motto is: green when possible, chemical when necessary. We want to reduce as much as we can, while safeguarding food security. That takes smart technology and common sense."

Vlaar believes this is where the Dutch strength really shows. "We work in detail, combine knowledge with practice, and always look for the balance between innovation and feasibility. That pragmatic approach makes the Netherlands a true innovator in precision agriculture."

Pieter Vlaar
Business Development Manager at Vertify

Theme 5

Data-driven cultivation, AI & cloud platforms

Data is reshaping agriculture much as the plough once did. For Dutch farmers, it's not just about collecting numbers; it's about understanding what they mean. Artificial Intelligence and cloud platforms now analyse vast datasets from satellites, sensors and field machinery, providing early warnings for pests, diseases and nutrient deficiencies. This intelligence turns farming into a continuous feedback loop: observe, analyse, act, and learn.

The Dutch innovation ecosystem thrives on collaboration. Data-driven cultivation brings together tech start-ups, universities and farmers in co-creation projects. Shared platforms ensure that discoveries don't stay confined to research but reach the field quickly. These digital collaborations embody the Dutch Diamond principle: every partner contributing knowledge, transparency and trust.

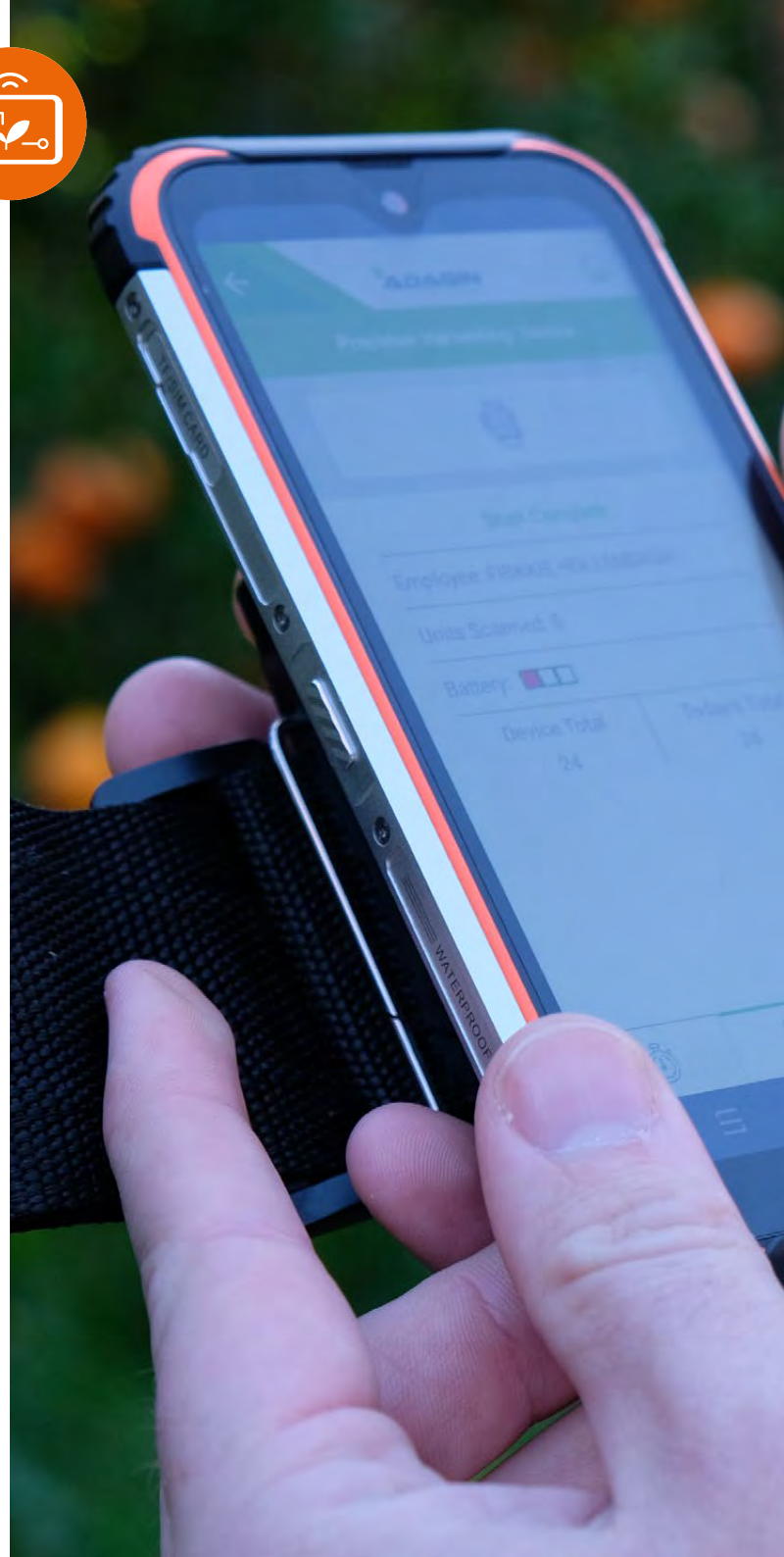
The Dutch government identifies digital technology and data governance as essential to sustainable food systems. By integrating AI with real-world agronomy, the Netherlands aims to enhance both productivity and accountability. Cloud-based tools also make data accessible beyond national borders, allowing Dutch expertise to support climate-smart agriculture worldwide.

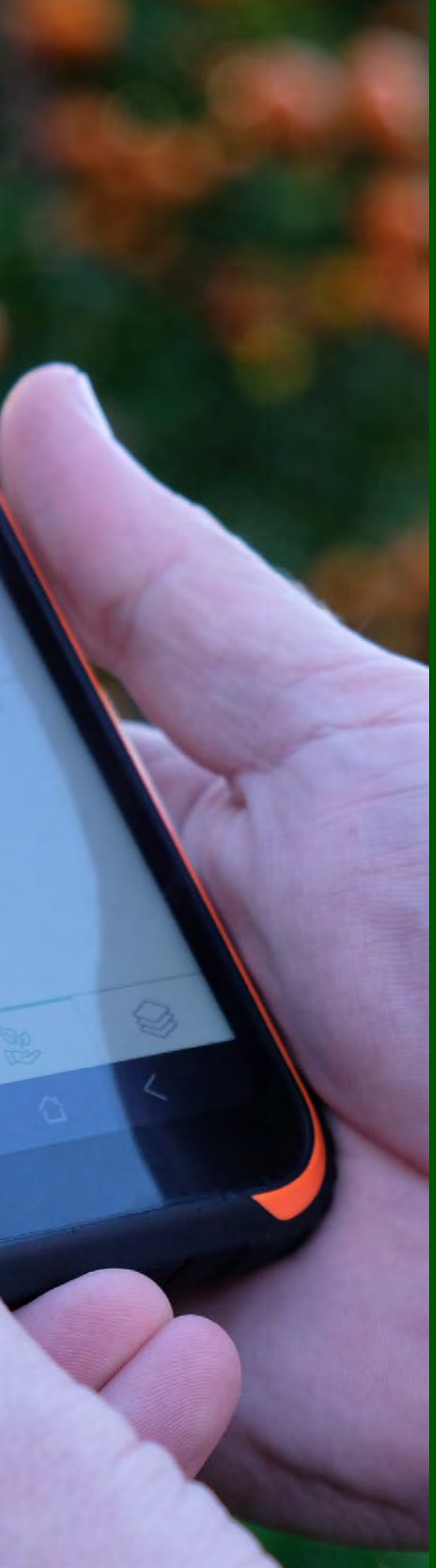
Smarter decisions, stronger soils

AI doesn't replace farmers' experience, it strengthens it. Algorithms can predict how soil will respond to different crop rotations or weather extremes, and in this manner guides choices that build resilience. Data-driven nitrogen management helps to meet climate goals without reducing output. And by documenting these results, Dutch agriculture gains credibility in sustainability reporting, aligning with European directives like the Corporate Sustainability Reporting Directive (CSRD).

Data

Dutch digital know-how scales globally. Using AI-controlled climate systems, specific programmes support local growers with data-driven cultivation training. The same principles apply in Dutch open field farming, where integrated cloud platforms analyse field data from multiple seasons to recommend sowing dates and fertiliser timing. It's farming informed by intelligence, where experience meets evidence, and data helps the soil thrive for generations to come.





Data as the driving force behind smart open field farming

From sensors in the field to full supply chain transparency, digitalisation gives farmers greater control over their operations and helps the sector demonstrate measurable sustainability progress. BO Akkerbouw is taking the lead, developing a code of conduct for data use and concrete steps towards a well-functioning data ecosystem.

"Farmers want to see what's happening in real time, from tractor and harvester to storage, and use that information easily", says André Hoogendijk, Director of BO Akkerbouw, the Dutch open field farming sector organisation. "It leads to gains in yield, quality and sustainability." Information that travels with the product through the chain also enables reporting to buyers and conscious consumers, for example, on CO_2 footprint, crop protection and biodiversity. Demand for this kind of transparency is growing, partly due to CSRD reporting obligations for large companies.

Rules that inspire trust

To make data sharing safe and purposeful, BO Akkerbouw developed the Code of Conduct for Data Use in Agrifood (adopted at the end of 2024) after consulting more than 100 organisations. The code goes beyond legal requirements, aligns with European frameworks and clarifies key principles such as purpose limitation, ownership and access. "As a grower, you want to be certain who uses your data, for what purpose, and how it stays protected", says Hoogendijk. The code raises awareness across the sector and is now being embraced beyond open field farming, even attracting international attention.

From fragmentation to connection

In practice, things are still complex, emphasises Corné Kempenaar, Coordinator for Data & Precision Agriculture at BO Akkerbouw. Data from a single farm is often spread across 20 to 50 systems: machines, labs, and advisory platforms. Interoperability is limited, making it difficult to combine data for management or reporting purposes. A current example is proof of precision fertilisation for CAP eco-activities under the EU's Common Agricultural Policy, such as precise nutrient application: this information sits as a task map on the machine, but transferring it in a standardised way to both the grower and the Netherlands Enterprise Agency is still challenging.

Building a data ecosystem together

BO Akkerbouw is working with the Dutch Federation of Agriculture and Horticulture (LTO), WUR and the Netherlands Enterprise Agency on a roadmap for an open data ecosystem and exploring a collective approach to connect key data sources. The goal: strengthen the farmer's position and reduce administrative burdens. Practical applications are already emerging. The Biodiversity Monitor open field farming (BMA app), for instance, integrates multiple data sources per farm, providing growers with insights and shareable Key Performance Indicator scores. And goal-oriented fertilisation management (such as the upcoming N-Min tool) requires reliable measurements and digital tools for decision-making and accountability.

Ready for the next step

With more robots, sensors, and data-driven management, the volume of data will continue to grow. "That's exactly why we need to get the basics straight now", says Kempenaar. With clear rules and working connections, data can become what it's meant to be: a practical steering tool for sustainable farming, less paperwork and a transparent supply chain.

André Hoogendijk
Director of BO Akkerbouw

Corné Kempenaar
Coordinator for Data & Precision Agriculture at BO Akkerbouw

Theme 6

Automation and robotics

Walk across a modern Dutch field in early spring and you might meet a quiet companion: a small robot moving methodically between rows, sowing or weeding with unwavering accuracy. It's a glimpse of what's already happening in open field farming across the Netherlands, where automation is transforming how labour, time and resources are used. The goal isn't to replace people but to give them better tools. When machines handle repetitive or heavy tasks, farmers can focus on strategy, soil health and innovation.

The Dutch agriculture sector has always mixed ingenuity with practicality. Robotics is a natural extension of that tradition. Dutch engineers and growers are developing autonomous vehicles, sensor-guided implements, and AI-driven control systems that keep operations running day and night. Precision becomes continuous, not occasional.

Collaboration in design

What sets Dutch automation apart is collaboration. New field robots aren't created in isolation inside labs; they're co-designed with farmers on real soil. The Dutch model, connecting government, knowledge institutions, business, and end users, ensures that technology meets real agronomic needs. The Dutch government identifies robotics as a strategic export area contributing to both sustainability and economic resilience. Testing facilities across the country allow prototypes to operate in varied conditions: heavy clay, sandy soils, and the wet, compact fields typical of low-lying provinces. Engineers refine navigation, battery life, and safety protocols based on farmer feedback. The result is machinery that's technically advanced yet robust enough for daily use.

Smarter, cleaner, lighter

Automation is also driving sustainability. Lighter autonomous vehicles reduce soil compaction, while electric power cuts fuel use and emissions. Robots can target weeds mechanically, eliminating or minimising herbicides. In open field crops such as sugar beets, onions and carrots, this precision reduces both costs and environmental pressure. Combined with digital mapping and variable-rate control, robotic systems create the foundation for regenerative soil management.

Innovation and food security

Dutch policy actively supports these developments through innovation clusters and government-funded programmes that link start-ups with established machinery manufacturers. Internationally, the Netherlands shares its robotics expertise with partners aiming to strengthen local food security. This is proof that practical technology can also be diplomacy.

Smart robotics only truly lands when technology and cultivation grow together

High Tech NL brings together technology companies, researchers and growers to turn agricultural innovation into real-world impact. According to Elvis Bajric, Cluster Manager for Robotics & AI, that only works if everyone's involved. "Without the grower, you miss the mark. It's about building something that lasts, together."

High Tech NL is an association with over three hundred members, divided across clusters such as Semiconductors, Life Sciences, Energy and Robotics. Bajric is responsible for the latter. "We connect parties that need each other: tech companies, research institutes, and the agricultural sector itself. We organise events, conduct market research, work on funding projects, and take part in trade missions."

The association always looks at what the sector needs, whether that's an advanced robotics or AI project or a smart planning tool that saves time. Bajric: "The question is always: where's the real demand coming from, and how can technology help meet it?"

From technology push to field-driven demand
Five years ago, High Tech NL launched the AgroBots programme to bridge the gap between the high-tech sector and agricultural practice. "In the beginning, it was mainly a so-called 'technology push'", says Bajric. "Together with our network, we came up with ideas from a technological perspective. Now it's the other way around: we start with the grower's question." Within AgroBots, growers, tech companies and research institutes work together to find solutions that aren't just innovative but genuinely work on the farm. "We don't want to develop a robot nobody's waiting for", says Bajric. "The grower is at the table from the start, so their knowledge of crops and soil is part of the design process."

Tangible results in the field
This approach is delivering concrete results. Bajric mentions the chrysanthemum cutting sorter. This is a robot that automatically classifies and distributes small cuttings. "It's the first machine in the world that can do this. Growers achieve higher yields and more consistent quality."

Learning through collaboration
According to Bajric, the programme's strength lies in mutual learning. "Sometimes a grower says, 'My robot stops after three hours: the batteries aren't strong enough, the navigation's off,' and so on. When technology companies within the projects hit a problem like this, we activate the wider network to bring in the right specialists."

Looking ahead
The Netherlands is a significant global player in agricultural innovation, and Bajric sees the next step clearly: moving from pilots to practice and scale-up. "The technology is there. Now we need to keep innovating and make sure farmers apply these technologies in their daily cultivation."

Elvis Bajric
Cluster Manager Robotics & AI at High Tech NL

Dutch smart farming expertise

Looking for specific expertise or technological solutions? In this section, Dutch companies and other organizations in the smart farming sector introduce themselves and their solutions and expertise.

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Adagin Technologies provides practical solutions that enable real-time fruit tracking and traceability from the moment of harvest. Their lightweight hardware sensors are used directly during picking to record the origin and movement of each batch, creating a transparent and verifiable data trail throughout the supply chain. Quality inspection results are automatically linked back to their source, giving producers detailed insights into picking performance and product quality.

These insights drive data-based improvements in yield, consistency, and handling, allowing producers to identify and address quality issues proactively—before they impact the market.

Across the industry, Adagin's approach supports proactive quality management, waste reduction, and the optimized operation of fruit supply chains. The systems adhere to recognized industry standards and integrate seamlessly with complementary technologies and production methods, enabling collaboration and interoperability throughout the fresh produce value chain.

Theme

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AeroVision helps organisations unlock the full potential of geo-information. The company starts with users' real needs and explores how spatial data can drive meaningful innovation. Depending on the challenge, this may result in a strategic vision, expert advisory support, procurement guidance, or the development of a proof-of-concept.

With a user-first mindset, AeroVision selects the right technologies for each situation—whether satellites, drones, IoT sensors, or GNSS navigation. For more than 20 years, AeroVision has been a trusted partner in the agricultural sector, supporting governments, processors, growers, and suppliers.

AeroVision also leads the way in developing data-governance solutions, ensuring that data use within the sector becomes safer, more reliable, and better connected.

Theme

AG Leader Europe B.V.
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Ag Leader is a pioneer and recognised technology innovator in precision agriculture hardware and software. The company manufactures and markets industry-leading precision farming technology.

Ag Leader's equipment enables both experienced and inexperienced tractor operators to manage farm machinery effectively, while managers can remotely monitor field activities in real time. Ag Leader's farm management software is designed to help growers make smart, profitable business decisions.

Ag Leader has an EMEA office in Heumen, the Netherlands. Founded in 1992, the company has achieved consistent growth and expansion by providing value-driven products that help growers and agricultural professionals achieve and maintain successful, profitable operations around the globe.

Theme

Agri Poppe
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Agri Poppe is a Dutch agricultural innovation company dedicated to developing practical and sustainable solutions for modern crop harvesting. Founded in Zeeland, the heart of arable farming, the company focuses on improving efficiency and reducing losses under challenging field conditions. Its flagship innovation, the AP-LIFT system, revolutionizes potato and root crop harvesting by enabling continuous operation on heavy clay, peat, slopes, and stony soils without clogging or downtime. Designed for versatility, the system can be used for multiple crops like onion, beetroot, carrots, celeriac and many more crops without reconfiguration. With a strong focus on adaptability, fuel efficiency, and soil preservation, Agri Poppe combines hands-on farming experience with cutting-edge engineering to make harvesting more reliable, sustainable, and profitable worldwide.

Theme

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Agrifac is at the forefront of agricultural technology, offering advanced machinery designed to meet the evolving needs of modern farmers. Agrifac understands the dreams, struggle and challenges they face: maximising yield and quality, minimising environmental impact and cutting input costs amidst unpredictable weather, political regulations and rising expenses.

Agrifac's promise, Your Future Delivered Today, encapsulates their commitment to innovative, efficient and impactful solutions that tackle these challenges head-on. Their technologies ensure that every drop hits the right spot.

Theme

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AgroExact provides farmers with hyperlocal weather and soil insights. The company's smart weather stations and soil moisture sensors deliver real-time, field-level data on rainfall, wind, temperature, humidity, and leaf moisture. The system continuously monitors microclimate and soil conditions, enabling farmers to detect water stress, optimise irrigation, and prevent disease pressure before it occurs. Through an intuitive app, complex data is transformed into clear, crop-specific recommendations. AgroExact empowers farmers to make confident, data-driven decisions that reduce waste, improve yields, and promote sustainable resource management for long-term resilience.

Theme

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AGROWIZARD

AgroWizard enables growers and nurseries to do magic with data. With the help of innovative hardware products, various smart software applications such as a stem thickness meter, and an online data platform, they offer growers the opportunity to take the next step in precision agriculture.

AgroWizard believes that data-driven decisions result in lower costs, higher yields, greater knowledge, and reduced business risks for growers. AgroWizards mission is to revolutionise the precision agriculture cycle by making complex technologies such as big data and artificial intelligence accessible, understandable, and usable for our customers.

Theme

Agurotech
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Agurotech

Agurotech is a Netherlands-based AgTech company helping farmers make better decisions with reliable sensor technology and smart software. Founded in 2020 and headquartered in Amsterdam, Agurotech designs and manufactures robust soil, crop, and weather sensors in the Netherlands, complemented by a powerful app that delivers tailored irrigation advice, frost alerts, spray planning, and field-level moisture maps. Their unique chatbot provides 24/7 first-line support, reducing service costs and ensuring farmers always get quick answers. Today, Agurotech is active in more than 20 countries across four continents, working with growers, distributors, and cooperatives to improve water efficiency, crop yields, and farm profitability.
With strong backing from investors including Rabo Ventures, Navus (Lely family), Wesemael Group, and ROM InWest, Agurotech is scaling globally.

Theme

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AgXeed is at the forefront of smart, autonomous agricultural technology, always with both feet firmly on the ground. Everything they do starts with respect: for farmers, for the land, and for the generations who depend on them. Combining advanced technology with a true understanding of farming and the land AgXeed creates practical and reliable solutions that make a difference where it matters most, on the land. By reducing pressure and complexity, AgXeed enables farmers to focus on what truly counts: healthy soil, thriving crops, and a resilient business. Their promise is clear: Freedom to Farm. Power to Grow.

Theme

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Research & Development company AIgro B.V. focuses on disruptive technology. They share a passion for technology and a desire to solve difficult problems. AIgro B.V. invents, designs and engineers new technologies and products that have lasting global impact. Their main expertise is in Robotics and Sensing & machine vision. Currently they have a Autonomous tool carrier that is easy to operate and highly versatile in the field, whether it's mowing, hoeing or monitoring- our machines assist where needed autonomously.

Theme

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Aminocore develops, produces and markets amino acids and amino acid based products for the agricultural sector.
Besides being the market leader in The Netherlands, they export their products to leading formulators and distributors in more than 30 countries worldwide and their products are already used on more than 4.000.000 ha.

Using an exclusive-to-us natural amino acid, the products of Aminocore are more effective and safer than chemically hydrolysed amino acid products.

All Aminocore products are organically certified and contain the highest levels of easily absorbable free amino acids and plant functional metabolites available in the market. With proven results at very low application rates and improved nutrient uptake by plants of up to 30%, they deliver growers measurable, consistent value.

Theme

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Since 2007 Andela Techniek & Innovatie B.V. has specialised in developing and producing innovative machines for national and international companies in the agri- and food sector. They translate the wishes of customers into innovative and functional solutions with attention to sustainability, environment, soil, water and society.

Andela Techniek & Innovatie is full-liner in chemical-free weed control and supply machinery to both organic and conventional arable farmers. With the Andela Robot Weeder and the Andela Electro Weeder, they offer chemical-free solutions for use both inside and outside crop rows.

The Andela Robot Weeder is a fully automated, autonomously driving weeding robot that detects and then removes various weeds in the row in different crops using an AI algorithm.
This robot is the sustainable and efficient answer to the labour shortage in agriculture.

The Andela Robot Weeder can be used 24/7, 100% chemical-free, is powered by solar energy and is equipped with RTK GPS.

Theme

Aurea Imaging

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Aurea Imaging is an AgTech company helping fruit growers unlock the full potential of their orchards through precision insights. With advanced camera systems and smart data tools, Aurea translates tree-level information into practical colour-coded maps, which can be turned into prescription maps for root pruning, thinning, spraying, and harvesting.

With solutions like TreeScout, Aurea makes the invisible visible — from blossom clusters to tree vigor — enabling growers to act early, reduce costs, and improve fruit quality and yield. Trusted for its close partnerships with growers, Aurea combines technology with hands-on field support, ensuring that data translates into real results.

Theme

AVL Motion

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AVL Motion revolutionises asparagus cultivation by becoming the global leader in automated selective harvesting technology, eliminating dependence on manual labour, and delivering unmatched quality, and reliability, to feed the world. Their mission is to empower (asparagus) growers with sustainable, efficient, and cost-effective harvesting solutions, that eliminate dependence on manual labor, enhancing productivity, profitability and be carefree as a grower with real-time data and smart farming.

Products & Services offered

Autonomous selective harvesting is the answer to increasing labor shortages in horticulture.
They have successfully automated the manual harvesting of asparagus in an innovative way. The core of the machine consists of an ingenious carousel, equipped with 12 harvesting modules. The machine drives and harvests autonomously.

- AVL Compact S9000, autonomous selective harvester for asparagus; coverage up to 12 ha
- Selective harvesting solutions for row crops
- High-capacity pick and place solutions; based on patented gondola machine technology

Theme

BBLeap B.V.
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BBLeap wants to change spraying — for good. Their mission is simple: Clean Food, Clean World. That starts with giving every plant exactly what it needs. No more averages, no more guessing. With our LeapBox, any sprayer becomes a precision machine. The result? 100% accuracy — every droplet, every plant, every time. They don't optimise old systems, BBLeap brings a new standard: Excellent Spraying.
And farmers feel the difference right away — better results, less stress, and full control. From the Netherlands to Australia, growers are already on board, showing what's possible when technology truly serves the field. This is more than a product. It's a leap forward. And it works.

Theme

Croptimal B.V.
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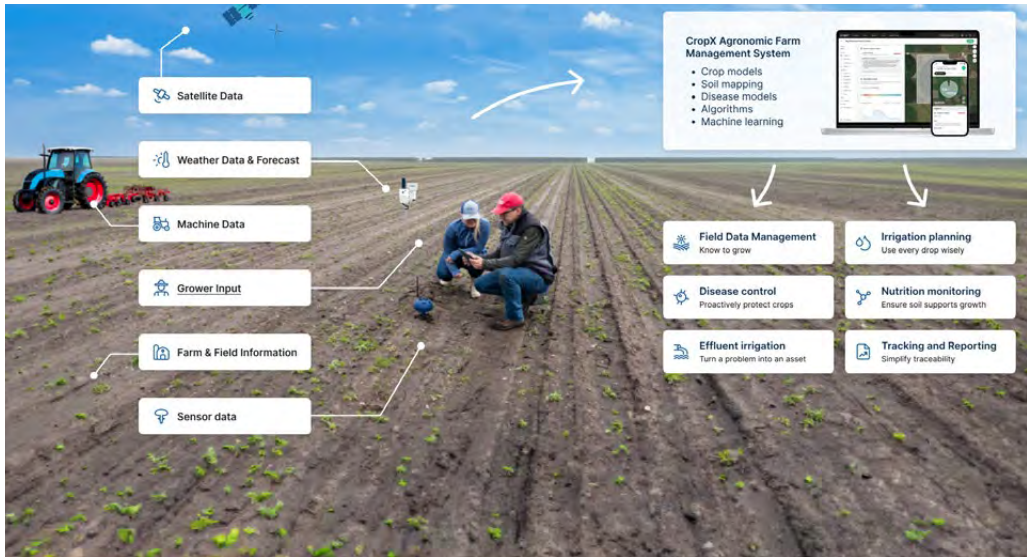
Croptimal B.V. offers the opportunity to gain greater insight into crops at the plant level. Their first product is the detection of viruses in seed potatoes. By using Croptimal's technology, seed potato growers can reduce the risk of rejection or downgrading and increase work efficiency during seed potato selection. The technology involves a camera box that utilises Artificial Intelligence (AI), ultimately offering endless possibilities for crop monitoring at the plant level. The camera box can be mounted in various setups, initially for virus detection in potato cultivation. This can be mounted on their self driving vehicle or on other setups.

Theme



CropX B.V.
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CropX Technologies is a global leader in agricultural analytics, delivering real-time soil and crop insights through its advanced sensor technology and AI-driven platform. By integrating in-field data with satellite imagery and weather forecasts, CropX empowers farmers to optimise irrigation, fertilisation, and crop protection decisions. The result: increased yields, reduced input costs, and improved sustainability. With a presence in over 50 countries, CropX supports growers across diverse climates and crop types, from large-scale operations to specialty farms. Its scalable solutions are trusted by agronomists, researchers, and AgTech partners worldwide. CropX is transforming agriculture—making it smarter, more efficient, and climate-resilient.

Theme

Doktar Technologies B.V.
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Doktar develops agricultural programmes that translate sustainability goals into tangible results. By combining technologies with integrated solutions in the field, they drive farm efficiency and regenerative transformation while ensuring verified data and full traceability from sowing to harvest.

As such they integrate cutting-edge solutions to create long-term, measurable impacts in the medium of regenerative agriculture: soil, water, biodiversity, and carbon. The company's programs have lasting, traceable effects measured through various sustainability indicator schemes aligned with international standards, ensuring transparency and accountability in our sustainability efforts. Doktar helps companies track Scope 3 progress, manage carbon impact, water stewardship, soil health and biodiversity, guide resource investments, and make informed decisions at scale.

Theme

eLEAF B.V.
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eLEAF has a 20+ year track record in providing satellite-based data and services to optimise agricultural production, support sustainable water management, and to assess climate risk. Their data and applications support clients worldwide to use water sustainably, increase food production and protect environmental systems. We pioneer in operational satellite based solutions, and continuously improve our algorithms to make sure we keep offering cutting-edge and relevant products. eLEAF works for (international) governments, the United Nations (providing near realtime evapotranspiration data to the WaPOR dashboard), and corporates in the food & beverage, agricultural and financial domains. They make complex data interpretable and insightful, to feed a growing population.

Theme

EOX Tractors
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EOX Tractors develops autonomous, zero-emission machines powered by battery and hydrogen. Combining power, innovation, and performance, they are the sustainable alternative to traditional machinery for various agricultural and industrial applications. Their autonomous systems enable users to rethink processes and time management, allowing work to continue efficiently and safely without constant human supervision. Through data-driven insights and analytics, users can optimize performance and make smarter operational decisions. By adopting EOX technology, users gain true independence, free from fossil fuels, rigid schedules, and labour limitations, creating a new way of working that is sustainable, intelligent, and future-oriented.

Theme

Exploras Agro Development B.V.
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Exploras specialises in agricultural research with a strong focus on open field cultivation. The company has extensive experience with vegetable crops, arable farming, bulb cultivation, tree nurseries, and fruit production. Research activities can be carried out under GEP certification, ensuring high-quality and reliable results. Exploras offers a complete service package, including the execution of treatments (such as spraying), field observations, data collection, and statistical analysis of research results. By combining practical field expertise with scientific accuracy, Exploras supports the development and evaluation of crop protection products and fertilisers. Its clients include companies in the crop protection, fertiliser, and agricultural supply industries, who rely on Exploras for independent and professional research in real-world growing conditions.

Theme

FieldWorkers B.V.
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FieldWorkers develops practical, low- and high-tech agricultural machines together with farmers to accelerate the transition to sustainable farming. Instead of focusing on long-fetched developments, they create technology that can be applied in the short term. Their solutions focus on challenges in arable farming and include the WEED-e, a manual weeding aid, and the Colorado Beetle Catcher, a mechanical device for pest control both designed in close collaboration with farmers. The company's newest innovation is an autonomous harrowing machine that is 100% powered by solar energy. FieldWorkers also provides an autonomous platform as a carrier for different tools. With more than 100 machines sold in just over 5 years, they have long passed the start-up phase and are currently upscaling.

By combining engineering expertise with farming experience, FieldWorkers delivers innovative, affordable, and user-friendly machines that help growers reduce pesticide dependency and improve efficiency, making sustainable agriculture more accessible and future-proof.

Theme

Fine Field B.V.
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FineField is a Dutch AgTech company specialising in the development of electric, autonomous harvesting machines for blueberries. Headquartered in the Netherlands, with a U.S. branch — Fine Field US, LLC — established in 2024, the company serves berry growers across Europe and North America. FineField is active in 17 countries, supporting growers worldwide with advanced harvesting technology. The machines are designed to preserve fruit quality and reduce losses, using a patented brush system that gently encloses the plant to minimise bruising. Fully electric and powered by solar panels, they offer a sustainable alternative to manual labour. FineField's autonomous robot can replace 50 to 100 manual pickers, drastically reducing labor dependency. Each machine features a live data connection for remote service, diagnostics, and harvest data collection, helping growers monitor and improve performance. With a focus on innovation, efficiency, and sustainability, FineField is shaping the future of berry harvesting.

Theme

Flikweert Vision
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Flikweert Vision was founded on the farmyard, shaped by years of hands-on experience in agriculture. Flikweert Vision saw firsthand how manual quality sorting is often time-consuming, imprecise and frustrating, and how technology can sometimes feel disconnected from the people who use it. That is why they set out to build a sorting machine that truly works in practice: reliable, user-friendly and developed from the real needs of growers and processors. Because only when technology truly fits the field, the sector can move forward.

Flikweert Vision develops optical sorting machines for potatoes and onions. Using smart technology and practical innovation, they help growers and processors automate and future-proof their sorting processes.

The systems of Flikweert Vision assesses each product in milliseconds using advanced cameras and artificial intelligence. The machines are fully designed, built and tested in-house. They are compact, robust and easy to integrate into both new and existing sorting lines.

Theme

Frans Vervaet B.V.
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Frans Vervaet B.V., founded in 1957 and based in Biervliet, Zeeland, is a Dutch family-owned company specialised in self-propelled agricultural machines, such as beet harvesters and slurry applicators. Employing about 200 people, Vervaet invests heavily in R&D, focusing on durability and efficient use.

Vervaet machines are renowned for their reliability, long service life, and strong resale value, making them a trusted choice for contractors and farmers worldwide.

A major step forward is Vervaet Connect, their cloud-based IoT platform. Machine data is continuously transmitted to this system, where it can be used for improved troubleshooting, reducing downtime, and enabling predictive maintenance. Precision farming is also central: slurry applicators use NIR technology combined with task maps to regulate nutrient application, maximising efficiency and reducing environmental impact. Their beet harvesters can measure sugar beet yield directly by GPS location, providing detailed yield maps.

Theme

GPX Solutions B.V.
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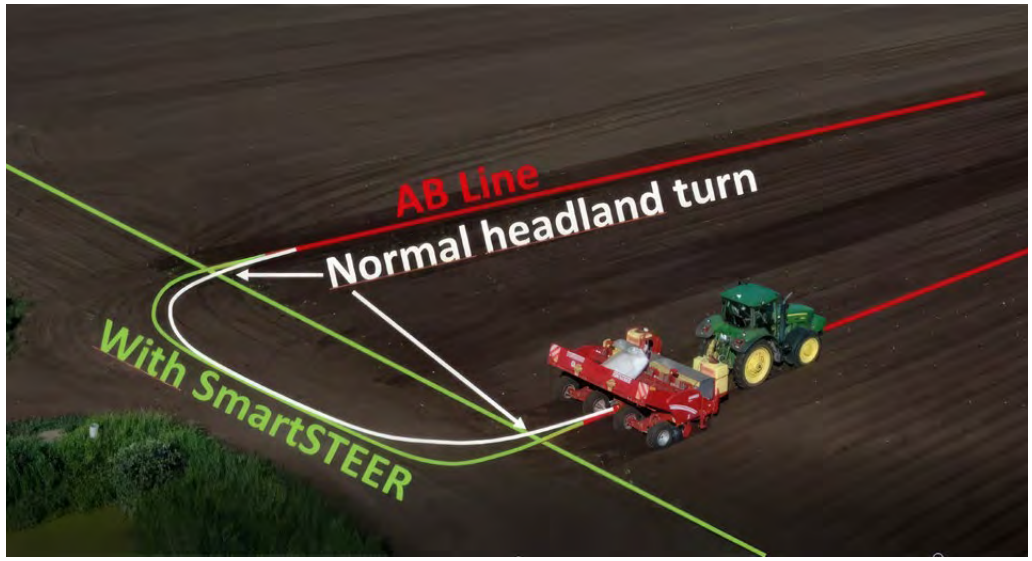
GPX Solutions B.V. develops and manufactures an autonomous aftermarket kit to support farmers during busy periods during the year and be able to work more efficiently.

Their aftermarket kit is designed for every tractor brand or tractor type. They integrate a Vehicle Depending Module on the tractor and listen to the (existing) GPS module. Finally, by integrating their safety system in front of- and around the tractor, they are ready to work autonomously within 2 weeks. The driver will be able to create a route and add different actions to the route. Any user can follow the tractor and receive real-time information about RPM, oil temperature, fuel level, fault codes of the tractor etc.

From MF, till Kubota, from CNH till Fendt, each tractor will leave our location with autonomous functionalities. The dream of GPX Solutions B.V. is to build an Experience Centre for Future farming. They are very close to achieving this dream.

Theme



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SmartSOLUTIONS was founded in 2012 from a vision to make better and smarter use of GPS technology. It started with SmartPLOUGH, an ISOBUS-based plough width control system, followed by SmartCONTROL for nozzle-by-nozzle spraying and using sensors, prescriptions. The most popular product, SmartSTEER implement steering adds precision, has easy installation and adds headland automation for comfort and additional efficiency.

All solutions are designed for simplicity: no extra screens, just control via the tractor's ISOBUS display, while the Smart module handles the rest.

Initially developed as an add-on for local Ag Leader RTK systems, SmartSOLUTIONS quickly became an international success and came also compatible with multiple brands. Today, it stands for proven quality, reliability, and innovation that's easy to apply. Homburg continues to invest in technology that helps farmers work smarter and maximise machine performance.

Theme

LUXEED Robotics B.V.
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The European Commission wants to reduce pesticide use by 50% by 2030. As a result, the agricultural sector is increasingly seeking alternatives to herbicide crop protection. LUXEED Robotics wants to fundamentally change the way weeds are managed: No pesticides or manual labour, but lasers and artificial intelligence.

While many existing high-tech solutions are only available to large-scale farms, LUXEED Robotics wants to make the technology accessible to small and medium-sized farmers.

Small and medium-sized farmers have no access to innovative technology to cover their whole land at a reasonable cost. Methods such as mechanical or electric weeding often require several centimetres of clearance to avoid damaging crops. The technology of LUXEED Robotics is accurate down to the millimeter.

LUXEED Robotics is now ready to demonstrate their laser working on onion fields for interested farmers or research fields.

Theme

Nivavi

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Across agriculture, labour shortages are straining operations. Nivavi provides a powerful solution by transforming conventional machinery into fully autonomous units using their specialised retrofit kit. This delivers rest and reliability to the farm operation.

The critical challenge with autonomy is the monitoring of the implement behind the tractor: a tractor operating 'blindly' will continue to work in case of a clog, breakdown, or other problem. This will lead to significant crop damage.

Nivavi eliminates this risk. Their system constantly monitors the implement for failures. In case of a problem, the tractor automatically stops, and specialised Nivavi staff solve the issue remotely from their control center. This ensures reliable, damage-free work, allowing the farmer to overcome labor challenges and operate with guaranteed peace of mind.

Theme

Odd.bot

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Odd.Bot is a Dutch agri-tech company dedicated to sustainable farming through robotics. Its flagship product, the Maverick, is a fully autonomous field robot that removes weeds without chemicals. Powered by artificial intelligence, it distinguishes between weeds and crops with millimetre accuracy, then mechanically eliminates the weeds while protecting plants and soil health. The Maverick is lightweight (500kg), electric, and works day and night with swappable batteries, significantly reducing labour needs and chemical dependency. Its adjustable working width makes it suitable for various crops and row sizes, providing flexibility across farm types.

By combining autonomy, AI-driven precision, and sustainability, Odd.Bot helps farmers cut costs, improve yields, and transition to environmentally friendly practices. Founded in 2018, the company is scaling its technology across Europe, preparing for large-scale adoption of chemical-free, robotic weeding in modern agriculture.

Theme

OnePlanet Research Center
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OnePlanet is a unique innovation initiative founded by three leading organisations: imec from Leuven (Belgium), Wageningen University & Research (WUR) and Radboud University. They collaborate to advance innovative microchip and digital technologies designed to enhance and support every stage of the agrifood value chain. The mission is to drive digital transformation in agriculture and food systems through:

- Smart sensor technologies including photonics
- AI-powered robotic control using digital twins and predictive models
- End-to-end quality monitoring and food processing innovations
- Environmental and climate monitoring through integrated sensor and data systems
- Collaborative innovation via living labs and knowledge ecosystems

By combining deep tech expertise with agrifood domain knowledge, OnePlanet ensures that digital, AI, and robotic solutions are applied across the full agrifood spectrum. This broad scope strengthens connections between agriculture, food, and technology, and enhances visibility among international partners, research institutions, and industry stakeholders.

Theme

Pixelfarming Robotics
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Pixelfarming Robotics is shaping the future of sustainable agriculture with advanced robotic solutions. Driven by the vision of healthy food from healthy soils in flourishing environments, they create innovative technologies that give farmers the freedom to work towards regenerative and self-sufficient systems. The mission is to deliver products that increase autonomy, agility, and efficiency, enabling farmers to operate independently and ecologically responsibly.

Their flagship innovation, Robot One, removes weeds without chemicals using high-power lasers – reducing manual labor while protecting valuable crops and the environment. By combining smart technologies with the expertise of forward-thinking farmers, Pixelfarming Robotics empowers a new generation of game changers to build resilient and future-proof food systems.

Laser precision for tomorrow's harvest.

Theme

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RAPAGRA
PLANT HEALTH CHECK

Rapagra is located in Wageningen, The Netherlands. The team created an app (Android and Apple) and a shoebox-size scouting robot (CamBot) for open field agriculture measuring plant health per plant. The app can be used without the robot. The app measures plant health, stress, growth and forecasts where in the field the biggest impact of a disease might occur. The app also gives advice on how to relieve stress from the plants (irrigation, nutrients, soil, seed), yield loss (temperature, irradiation, local pollution) and diseases (fungi and bacteria) by monitoring fields continuously. The app is not just dependent on satellites, Rapagra adds drone data but also uses meteorological data to understand stress and impact of diseases for day-2-day monitoring. The CamBot, based on activating the photosynthesis in the chlorophyll (leaf green) in the night, maps and monitors individual plant health autonomously. The CamBot counts aphids (lice) under the leaf. The CamBot monitors the lice colonies and locations and forecasts when they will expand and fly out. This is important since lice are the main source of spreading viruses in the field.

Theme

RH3S B.V.
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rh3S
SOIL
SENSOR
SYSTEMS

RH3S develops and manufactures mobile soil sensors for precision agriculture. RH3S's passive gamma sensors operate without contact. They measure the soil composition in the topsoil. The sensors are suitable for mapping soil texture and nutrient levels. RH3S produces systems for soil surveyors, agricultural entrepreneurs, and agricultural service providers. RH3S products provide high resolution digital soil maps for precision agriculture. RH3S products are equipped with technology that enables direct output within ISObus. Simply good.

Theme

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RMA
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For over 35 years RMA has been supporting growers with smart sensor technology, expert advice, and personal support. They make sensor technology accessible and understandable for every grower, with one goal: maximum yield with minimal use of resources.
RMA installs a soil moisture sensor at a suitable location and adjusts the system to the crop and soil.

Every 30 minutes, the system measures rainfall and moisture content in different layers.
The data is translated into a clear irrigation recommendation. For more valuable information, a weather station can be added to provide insight into crop evaporation and disease risks.
Their advisers look over the shoulder, share knowledge and are ready to help when needed.

The technology is smart, but it's the advice that makes the difference. The result? High yields, premium quality and sustainable crop management.

Theme

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ROMETRON
intelligent agricultural solutions

WEED·IT
precision spraying

Rometron is a Dutch technology company with more than twentyfive years of experience in developing and manufacturing reliable and practical precision spraying solutions. With the WEED-IT precision spraying product line, Rometron helps farmers and contractors apply crop protection products more efficiently. This saves costs and reduces the environmental impact.

The WEED-IT solutions consist of three products:

- WEED-IT QUADRO: spot spray technology that automatically detects weeds and applies herbicide precisely, preventing waste.
- WEED-IT AQRATE: ensures highly accurate application at plant level through advanced PWM technology.
- WEED-IT DASH: a smart tool that provides instant insight into spray jobs and makes in-depth data analysis possible.

With these systems, Rometron contributes to a future-proof and sustainable agriculture. The solutions are developed in the Netherlands and used worldwide.

Theme

S&dB B.V.
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S&dB believes in working with nature to optimise farm productivity. Their patented vSET technology integrates high-precision sowing with regenerative agricultural practices, combining efficiency with ecological practices. By shifting part of the seeding process from the field to a controlled factory environment, vSET minimises seed loss and ensures ultra-precise placement of crops with fine seeds such as onion and carrots.

S&dB's biodegradable seed tape carries seeds and essential nutrients, supporting vigorous early growth while enabling direct drilling into green cover crops. This approach reduces erosion, enhances soil health, and promotes circular agriculture.

S&dB's innovative sowing machine accurately places vSET into the soil, ensuring every seed truly counts. Designed as a cost-effective alternative to high-end precision equipment, vSET brings sustainable innovation within reach for farms of all sizes helping growers increase yields, improve soil health, and secure resilient farm incomes.

Theme

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Sensoterra develops wireless soil-moisture sensors and delivers real-time insights that enable precision irrigation, reduce water waste and boost crop productivity. With an API-first platform and calibrated sensors compatible with all soil types, we support growers, horticulturists and water-managers globally.

Founded in the Netherlands and deployed in more than 40 countries, Sensoterra offers low-cost, easy-to-install systems capable of withstanding harsh environments and remaining maintenance-free for years. Our mission: "Making Sense of Water" — because if you can't measure it, you can't manage it.

Theme

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Sieger creates drainage cleaners for the future. Thanks to Siegers's innovative technology and efficiency, farmers can continue to focus on what they do best. By offering future-oriented solutions, Sieger ensures that their customers are always ready for the future.

Choose Sieger Machinery for drainage cleaners that meet your future needs.

Theme

Smart Agri Technology B.V.
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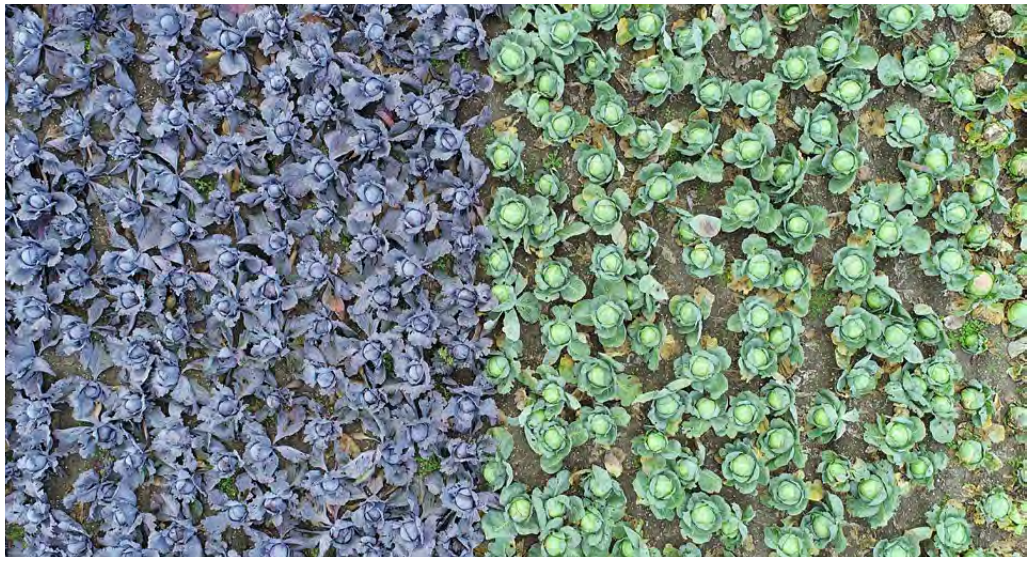
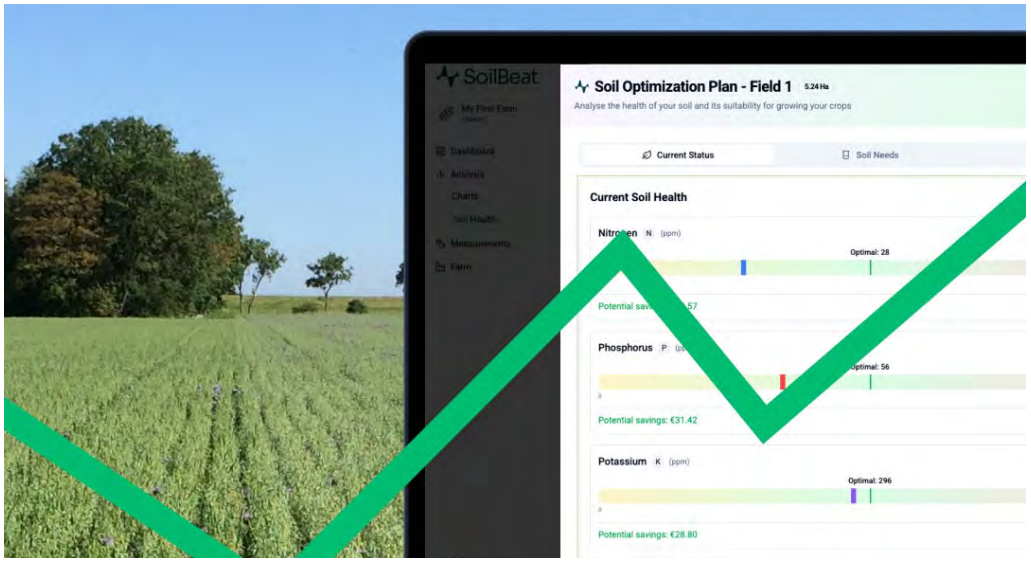
Smart Agri Technology B.V., operating under the Doorgrond brand, is an innovative Dutch technology company based in Groningen and Dronten. The company makes precision farming accessible to farmers by offering smart, data-driven solutions and developing them in collaboration with manufacturers. With technologies such as autonomous robots, camera-guided hoeing technology, and precision spraying, Doorgrond helps farmers cultivate more sustainably, reduce soil stress, and save labour. Smart Agri Technology serves as the umbrella organisation for the development, integration, and support of these applications, while Doorgrond focuses on their practical application on the farm. In this way, the company connects high-tech innovation with daily agricultural practices, with the goal of a more efficient, future-proof, and environmentally friendly agricultural sector.

Theme





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SOIL-Data understands the challenges of modern agriculture. They analyse the sector's day-to-day challenges, develop innovative solutions, and translate them into concrete, directly applicable concepts. Together with agri-tech companies, forward-thinking farmers, research institutes, and government agencies, they turn these ideas into real impact. SOIL-Data applies geo-information from drones, satellites, and advanced spatial analysis.

The work of SOIL-Data covers a wide range of topics: from precision agriculture and smart soil maps to crop monitoring, sustainable land management, and the development of secure, integrated data ecosystems. They create strategies and concepts that make the agriculture of the future more efficient, resilient, and sustainable — always with a strong focus on delivering tangible results.

Theme

SoilBeat
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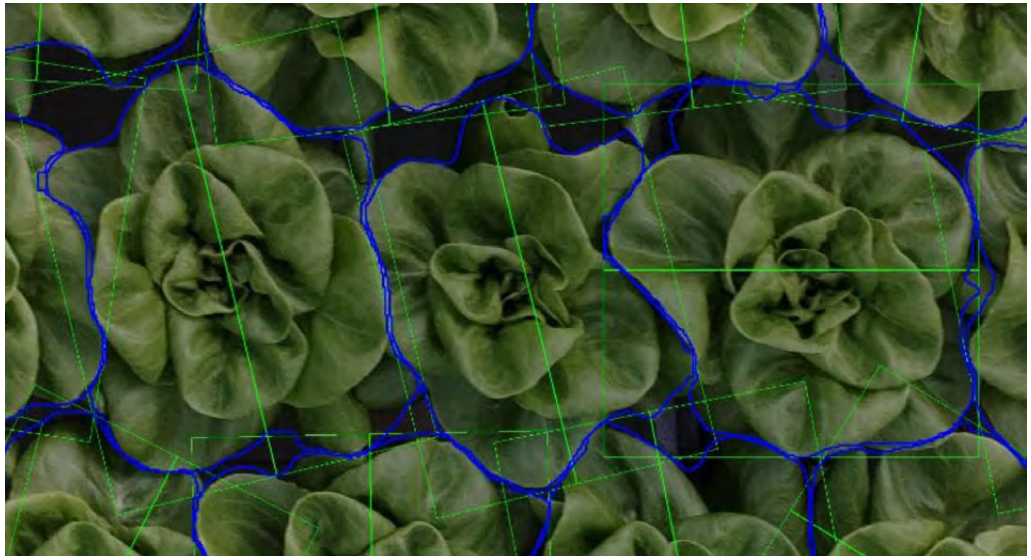
SoilBeat is an AI-powered agronomy platform that helps farmers and advisers make faster, data-driven decisions to improve soil health, crop resilience and nutrient efficiency. The platform brings together soil analyses, plant sap data, field observations and weather information into one intuitive dashboard. With intelligent calculators, trend analyses and actionable nutrient recommendations, SoilBeat translates complex lab results into clear insights for every growth stage.

Designed for both conventional and regenerative farming systems, SoilBeat supports more precise fertiliser planning, reduces input costs and strengthens long-term soil balance. Advisers can manage multiple farms, create tailored recommendations and monitor progress across seasons.

By combining science-based agronomy with practical field expertise, SoilBeat accelerates the transition towards climate-smart and regenerative agriculture—helping growers worldwide build healthier soils and more profitable cropping systems.

Theme



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Trabotyx merges innovation with the hands-on practicality that modern agriculture requires — creating the ideal tool for European farmers. Their vision is simple: one machine for all crops and every field layout. Trabotyx's TOR combines artificial intelligence, precision laser weeding, and autonomous technology to keep vegetable and flower bulb fields perfectly clean and productive.
In 2026, Trabotyx will deliver 10 TOR robots to farmers across the Netherlands, backed by their dedicated service and support team. Looking ahead to 2027, Trabotyx plans to expand internationally in partnership with like-minded collaborators. By making TOR accessible to growers worldwide, they contribute to the development of sustainable food systems for future generations.

Theme

Track32
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Track32 has been developing computer vision and AI systems since 2018, for applications such as camera-controlled weeding, drone-based crop growth monitoring, automated breeding trials, and post-harvest sorting. The company offers project work, but also has its own product portfolio, specialising in measuring young plants: www.seedlingmeasurementservice.nl. The systems of Track32 are highly flexible in terms of camera carriers and output format, both real-time and non-real-time. Track32 can be contacted to discuss your computer vision and AI needs.

Theme

VAA Data Works
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Producers, suppliers, buyers, and processors in industry in general, and the agri-food business in particular, face enormous challenges: reducing CO2 emissions, resolving the nitrogen crisis, labour shortages, and improving biodiversity. Smart data management and the use of sensors, robots, and AI help solve these problems.

VAA Data Works empowers organizations to work smarter with data. The company designs and builds tailored data and software solutions particularly for the agri & food sector, aligning seamlessly with operational processes, strategic ambitions, and industry-specific challenges. By connecting data across the entire value chain, they enable faster decision-making, deeper insights, and more intelligent action.
The technology of VAA Data Works is people-centric: they combine domain expertise, artificial intelligence, and customer insights to create software that truly makes a difference. Whether it's optimising production, enhancing transparency, or unlocking predictive capabilities, our solutions help organizations turn complexity into clarity and data into value.

Theme

VBTI Consultancy B.V.
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VBTI develops advanced AI and robotic systems that make agricultural processes smarter, more autonomous, and more sustainable.
The company focuses on Physical AI technology that enables machines to see, decide, and act within complex, natural environments. Through its proprietary OneDL platform, VBTI integrates data, deep learning, and field experience into a continuous learning cycle. This allows agricultural machines to constantly refine their performance and precision.

Applications
- Smart harvesting
- For various crops in the agriculture sector
- Sorting and grading
- Quality, size, ripeness, damage
- Crop and yield monitoring
- Vision-based data for smarter decisions
- Machine vision control
- Adjust speed, picking, or sorting actions in real time

By combining artificial intelligence with robust engineering, VBTI transforms agricultural challenges into scalable, reliable automation that increases yield, reduces waste, and alleviates labour demands, shaping the future of intelligent farming.

Theme

Vegniek B.V.
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Vegniek is passionate about innovative machine development. Their roots lie in agriculture and they are based in Emmeloord (Flevoland), “the potato capital of the world”. Sustainability and new cultivation and production methods mean that new machines are constantly needed. Vegniek responds to this demand by developing innovative machinery. With their knowledge of metal, hydraulics, pneumatics, transmission and control technology, Vegniek is able to continuously develop machinery that is better, smarter and of even higher quality. They mainly focus on potato cultivation and soil cultivation in general, distinguishing themselves by focusing on specialised machines.

Vegniek sees opportunities in AI-driven optical disease detection in seed potatoes; they are developing an optical potato selection machine.

Theme

Vertify
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Vertify is one of the leading agricultural research centers in the Netherlands, specializing in practical, application-oriented research. With its own facilities in North Holland and the region Westland, and trialfields at more than 100 locations throughout the Netherlands and Belgium.

Explore

Vertify is the market leader in applied research, specializing in plant health and cultivation systems. The organization is active in arable farming, flower bulbs, field vegetables, greenhouse horticulture, and fruit. Vertify conducts research projects focused on product and process innovations for its clients — for example, testing new sustainable crop protection products, fertilizers, LED lighting, hydroponic growing systems, seed treatments, and climate strategies. The application for, and management of subsidy projects is also an important part of Vertify’s work.

Explain

Vertify enables its clients to demonstrate innovations to growers, suppliers, education, government, and buyers. The results of its research are presented during various open days and trade fairs throughout the year, both nationally and internationally.

Explore with us today, explain the future of tomorrow.

Theme

WolkyTolky B.V.
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WolkyTolky helps growers and crop advisors manage their crops more efficiently through reliable field measurements and clear decision support. The company provides robust, modular monitoring systems for weather, soil, and irrigation – including weather stations, the Drain Monitoring System (DMS) for substrate crops, and SoilSense for soil and substrate measurements. All data is collected in real time and displayed in the user-friendly WolkyTolky app, with clear graphs, alerts (such as frost warnings based on wet-bulb temperature), and reports for growing degree hours, chill hours, and temperature sums. This enables growers to optimise irrigation, climate control, and crop protection, saving water and resources while reducing risks. WolkyTolky connects seamlessly with Agromanager for spray log registration and supports disease models such as RIMpro, Welte, and Fruitweb. Thanks to its modular design, you can start with a basic setup and expand with additional sensors as needed. WolkyTolky makes data-driven cultivation practical, reliable, and easy to apply in daily operations.

Theme

Yookr B.V.
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Yookr focuses on making data usable through real-time data visualisation, prediction and control on an independent data platform. The platform integrates sensor-, drone-, camera-, satellite- and other process data. The company's motto is: generating data, combining data with the expertise of the customer, delivering reliable data on which the customer can act, achieving the best possible result in the market.

In doing so, Yookr aims to contribute to the food-, energy- and climate transition for a healthier and more sustainable green world.

Theme

Colophon

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