

BLAD



A publication by the Horticoop investment cooperative

Year 4 - **Issue 6**



**Is there still a
licence to produce?**

**Horticoop's participations
are tradeable!**

Green fingers, steel arms



HORTICOOP
GROWING TOGETHER

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Cover photo: Daniel van den Nouweland, Marjoland

Foreword

The publication of this magazine marks a special milestone in Horticoop's history as an investment cooperative. The issue of this edition actually forms the starting signal for trading in Horticoop participations. This is a new phase for our cooperative and for members. Read all about it in this edition of BLAD.

As you've come to expect from us, Horticoop's BLAD provides an in-depth reflection on important greenhouse horticulture industry themes. This spring, we visited TU Delft and the RoboHouse field lab where, during a deep dive, members saw how technology and cultivation converge. From autonomous harvesters to smart sorting systems, robots are taking over more and more repetitive tasks. In BLAD we talk to innovators and growers about the opportunities and challenges associated with such technological progress. RoboHouse explains how it builds bridges in the innovation chain and cooperative members Kees Stijger and Marcel van Vliet explain how they combine green fingers with steel robot arms in their own companies. Leading rose grower, Marjoland, also uses technical innovations every day. Director Daniel van den Nouweland explains how AI-driven cameras help him create the perfect bunch of roses. All these unstoppable tech developments make you wonder: does greenhouse horticulture still have a licence to produce? The answer to this question is presented from three different perspectives: the grower, the technology and the finance. Read this fascinating discussion on page 4.

Of course, we also focus on sustainability. Alexander Boedijn from Wageningen University & Research gives his opinion about circular greenhouse horticulture. And we take a moment to discuss REKA, the soil improver that Horticoop recently added to its portfolio. And finally, we take a look at Horticoop's financial health. The 2024 annual figures can be found on pages 36-41, followed by a detailed explanation by CFO Hend van Ravestein, in which he not only reflects on the past but also looks forward. And this, in Marjoland terminology, certainly looks rosy.

I hope you all have a fantastic summer!

Patrick Groeneveld
Managing Director at Horticoop



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Does greenhouse horticulture still have a **licence to produce?**

Five insights on the future from the grower, the technology and the finance



Lambert van Horen

works as a Senior Analyst at RaboResearch Food & Agribusiness, a Rabobank department in which a team of analysts collect information and identify opportunities in all food and agribusiness industries. He specialises in ornamentals and covered cultivation. The knowledge gained is used internally by Rabobank's commercial and risk departments. Some of the work is also published and disseminated via presentations in the horticulture industry.

Annie van de Riet

is Chair of AVAG, the industry association of greenhouse horticulture technology, with 82 affiliated members, varying from greenhouse builders, installers and suppliers, many with an international focus. AVAG supports the industry by lobbying, stimulating innovation and quality, helping companies with international issues (including promotion), advocating improved alignment between education and business and prioritising sustainability.

Hend van Ravestein

has been Horticoop's CFO since 2012. Horticoop is an investment cooperative representing 278 horticulture industry growers and entrepreneurs. The cooperative invests in innovative companies that contribute to a sustainable and healthy future for the horticulture industry.

Greenhouse horticulture developments are unstoppable. Green fingers appear to be becoming secondary to data and robotisation. Does this mean the end of human involvement in horticulture? Will startups save the day? Will vertical farming replace traditional cultivation? And will greenhouse horticulture even have a purpose in the future? We present five statements to Lambert van Horen (Senior Analyst at RaboResearch Food & Agribusiness), Annie van de Riet (Chair of AVAG, greenhouse horticulture industry association) and Hend van Ravestein (CFO Horticoop). Three visions of the future, from growers, technology and finance.



Statement 1: Data-driven cultivation will be the norm within ten years and just having green fingers will no longer be enough.

This opening statement immediately provided plenty of talking points, highlighting subtle differences in terms of vision. Lambert began: 'Data-driven cultivation is already almost the norm, but I'd prefer to turn this around: people who think that it will only be about data in ten years' time are in for a rude awakening. It will be about the combination of using and interpreting data correctly and human ingenuity.' Annie agreed, stating that the development will be gradual: 'Data can help growers make decisions but I can't imagine that there'll be no need for human input. The industry is at a crossroads where we need to be brave enough to rely more on data.' Annie compares the development in data-driven cultivation with that of the self-driving car, in which we've moved from cruise control, via lane assist to self-driving cars. It was a good example to which Lambert issued a warning about the limitations of data: 'Ultimately all data come from the past and assume a certain stability and a standard situation. As algorithms don't work in the event of extreme changes, you'll need to revert to using your common sense.' Annie added: 'The advantage is that computers can process way more data than people. Models may be able to grapple with complex issues that we simply can't comprehend.' Hend emphasised the increasing need for support: 'The human factor remains key, but the number of people with green fingers is decreasing while the need for improved decision-making based on available data is increasing. You need human input to manage the cultivation process.' Lambert added an economic consideration to this: 'Make sure you keep an eye on the optimum returns. While new technologies aim to offer the average grower added value, the product must, of course, continue to deliver results!'



Statement 2: Cooperation between startups and established horticulture companies is the key to accelerating innovation.

Annie: 'Certainly! We need startups to wake us up and get us to try new things. As an industry, we need to create a breeding ground for innovation.' Hend emphasised the importance of translating technical possibilities into practical solutions: 'Innovations must above all find a good and useful application in practice. That's only possible if you bring various backgrounds and knowledge together.' Annie agreed: 'It's about cooperation. Established horticulture companies can test whether innovations are suitable for the market.' Lambert qualified this statement: 'Cooperation with startups isn't the key, it's a key. Just as important is how established horticulture companies organise their Research & Development (R&D) and make funding available for this. In the plant breeding sector, large companies have been successful in this area, but less money seems to be available for technology. They're actually dependent on startups for technological innovation.' Hend stressed startups' dependence on established companies: 'For startups, large companies' development budgets and cooperation with growers are extremely important. They can't develop successful new innovations with funding alone. Innovative startups will progress much further with support from established companies that are keen to get involved at an early stage and are willing to share their data.' Lambert acknowledged this and sees tensions between competition and efficiency in innovation: 'Of course, competition in innovation isn't a bad thing. But at the same time, it's a waste of money and time that, for example, at least fourteen initiatives are currently attempting to develop a tomato picking robot.' >



... Statement 3: Vertical farming will play an increasingly important role in future food production.

Lambert: 'No. Vertical farming does offer solutions for niche markets. It's an excellent breeding ground for technology and while some knowledge can be applied to other types of cultivation, global food supply mainly depends on outdoor crops such as potatoes, wheat, grains, rice, corn and soya. Vertical farming also requires major investments, while less advanced techniques are already unaffordable or are simply not financially viable for most companies.' Hend: 'Urban and vertical farming were often cited as a solution for demographic developments such as urbanisation of the southern hemisphere, population growth and the associated food insecurity. Vertical farming, which still mainly focuses on growing lettuce and herbs, is not a solution for these developments. It may, however, play a role in the changing food demand associated with changes in population composition and prosperity. Vertical farming is particularly expected to increase in places where high-tech greenhouse horticulture is not ideal, for example due to insufficient light, suboptimal temperatures, or a lack of water or space. There is a greater likelihood of achieving a competitive cost price in these places. The scale on which this happens will, however, be very different than in traditional horticulture.' Lambert backed this up with figures: 'Currently, there are 70,000 hectares of high-tech covered cultivation worldwide, 650,000 hectares of mid-tech and 3 million hectares of low-tech greenhouse farming. Vertical farming currently accounts for no more than 1,000 hectares, and I'm not expecting this to grow significantly in the first five years, even though there are areas where vertical farming is operating very well, such as Singapore and Japan. In the Netherlands, however, I do see hybrid systems appearing more often, in which vertical farming, greenhouse and outdoor crop production are combined during the cultivation process. I do see growth opportunities here.'

... Statement 4: The horticulture industry will have to communicate more actively about its contribution to climate and food solutions in order to retain its licence to produce.

Everyone generally supported this statement, although the conversation initially focused mainly on the solutions rather than on communication. For instance, Annie talked about how high-tech agriculture offers a solution for global food insecurity, land shortages and climate change, and that it promotes local food production. Lambert qualified this by stating that low-tech interventions can also increase yields. Annie nevertheless advocated high-tech solutions because of the need for higher yields per unit area in order to feed the growing world population. Hend also pointed to the impending fresh water shortages, in which high-tech horticulture could play a role in finding a solution. Hend: 'The media has portrayed the horticulture industry as an energy guzzler in recent years. We need to be more active in communicating that greenhouses offer the ideal opportunity to produce large quantities of food safely, efficiently and with minimal use of water and resources.' Lambert: 'Exactly, Hend. We need to handle scarce water and land as efficiently as possible to feed the global population. That's horticulture's licence to produce!'

'Water and land use are the two major themes in which our industry can play a role in finding solutions.'



Hend

A controlled system needs much less water than when spraying water indiscriminately via large sprinklers or from aircraft, which results in 80 to 90 percent of our scarce fresh groundwater simply evaporating.' Annie: 'I notice that there's increasing support for the positive role greenhouse horticulture can play in the efficient use of water and land. I was delighted to be able to speak about this topic during the Climate Change Conference in Dubai. And although this perspective had never previously received much attention, here it fell on good ground, as they say in the industry!'

... Statement 5: Chemical crop protection will still be used in greenhouse horticulture in five years.

Lambert: 'Yes, but I'm hoping its use will be more curative than preventive. It's a tendency that's fortunately already started. I compare it to people: you try to eat well and live a healthy life, but every now and then you catch the flu and need some paracetamol. That's how it should be in greenhouse horticulture. Crop protection specialists are on hand in the greenhouses and they try to find the right balance by using organic crop protection but every now and then, you do need medicine.' As far as crop protection is concerned, Annie is convinced that technology can play a key role: 'Controlled environment agriculture helps keeping diseases and pests at bay. But you shouldn't think that you'll be able to entirely eliminate chemical crop protection within five years. You'll need to use chemicals occasionally as a curative measure.' Hend: 'Chemicals are sometimes needed, for example if the alternative scenario is losing a harvest.'

After all, destroying crops is far from sustainable. However, improvements in techniques and methods, and the introduction of organic alternatives will significantly decrease chemical use.' Lambert: 'I'd briefly like to return to the first statement about AI and data use. There are various developments here that may help reduce chemical use, including a major outdoor lettuce grower using laser beam technology to target weeds instead of using herbicides, or drones being used to catch flies in greenhouses. Although the question remains as to whether these developments will be ready to market within five years.' Hend concluded: 'Technical applications are much more accurate in detecting what's happening at an early stage, and deciding whether intervention is required. So, we can use less crop protection because we can work much more precisely. Basically, the market is developing rapidly in all kinds of areas, and our role is certainly far from over!' ■



Marjoland: for roses with roots and vision

With twenty hectares of greenhouses in Waddinxveen, Zuid Holland, Marjoland is Europe's biggest rose nursery. The family company mainly supplies the high-end market: florists and wholesalers that demand reliability and top quality. BLAD spoke with Director Daniel van den Nouweland about how Marjoland was formed, the strong family culture and the continuous innovations that are needed to keep growing the highest quality roses in the Netherlands.

Marjoland is a true family business, as is evidenced by the name: a contraction of the names of the founders – mother Mariola, father Joop and their surname Van den Nouweland. Joop and Mariola started growing cucumbers in 1978, but the young couple quickly made the switch to roses so they could stand out from the competition. Although growing cucumbers demands a lot of specialist knowledge, it's mainly about volume. With roses, the challenges for Joop were very different: it requires finesse and this enabled him to really put his own stamp on the growing process. Father Joop officially handed over the baton to his son Daniel in 2019. Daniel grew up among the roses and started his career with a holiday job at Marjoland. 'Cutting and sorting, for weeks on end. There were moments when I couldn't bear look at another rose.' However, he was soon given more responsibilities. 'When I was fifteen I was allowed to run the packaging hall. And during the summer holidays, I helped with crop replacement; an important time when the team decides which types of roses to keep and which are to be replaced by new ones. It's a really interesting process. I continued helping my parents in the greenhouses during my studies and I've now been working for the company full-time for almost twenty years.'

a short period of time, Daniel takes a different approach. 'We had a few difficult years following the financial crisis, a less successful rose variety and strong competition from Africa. Fortunately, after a few years the tide turned and we were able to start building on Marjoland's growth again.' Instead of expanding the surface area, the company focused on optimising performance per square metre. Innovation, precise climate control and smart investments have resulted in them being increasingly successful in growing roses of consistent quality. 'We decided to focus on high-end florists,' explained Daniel. 'For them every nuance counts, including bud size, shelf life and colour. It's a completely different market than the one for smaller roses from Africa that are destined for supermarkets. Our customers expect a rose of consistent high quality and we can only achieve that quality through continuous optimisation. It's exactly that level of detail during cultivation that enables us to produce roses profitably in the Netherlands.' An important step in increasing efficiency per square metre and growing more sustainably was replacing the traditional SON-T lamps with LED lamps. 'These are super-efficient and are a real energy revolution for us. But as they don't emit much heat, we decided to use energy screens and dehumidifiers to adjust our climate control system to maintain the right greenhouse climate.' >

More from less

Whereas Joop and Mariola managed to expand the nursery's acreage from 1.5 to 20 hectares in

A flourishing family company: Marjoland's Director Daniel (right) with sister Angeliën (left), father Joop and mother Mariola among their roses



Daniel van den Nouweland

A different approach

Good climate management is about knowing exactly what the plants are doing. And that you do that by measuring. Precise measurements of roses' moisture loss through evaporation enables them to remove just the right amount of moisture to ensure optimal plant growth. Marjoland invested in the Hoogendoorn IIVO climate computer to control the greenhouse climate as accurately as possible. This smart computer was installed by Horticulture Technical Solutions (HCTS). They integrated the computer with existing systems, including the connections to Marjoland's combined heat and power (CHP) units. 'HCTS were great to work with. They know all about smart system integration. The IIVO keeps the greenhouse climate stable as well as controlling our six CHP units. These systems simultaneously convert natural gas into electricity and heat, reducing fuel consumption by around 35% compared with separate systems. This reduces carbon emissions and optimises energy use. The released CO2 isn't wasted either, as this is fed into the greenhouse in a controlled

way, which helps the roses grow faster. We also increasingly purchase electricity so we can grow even more sustainably. All this is reducing both our natural gas use and our ecological footprint, step-by-step.'

Smart sorting with AI

Another innovation that Daniel introduced, is the use of smart cameras in the central sorting and packaging room. The new system reveals a wealth of additional knowledge about the roses, while also refining the sorting process. 'The smart cameras suspended above the sorting machines scrutinise each rose individually, enabling us to sort them even more precisely based on length, thickness and maturity, creating stunning, uniform bunches. It's really impressive when you consider that each sorting machine can get through some ten thousand roses per hour.' Marjoland invested in the AI-driven cameras together with three other local growers. 'It was much cheaper to purchase the cameras together. We can also compare the data we all collect, which enables us to better identify diseases such as powdery



The third generation is also growing up among the roses: Daniel's daughter Novi (left) and son Seb (right)



mildew and treat them locally.' Like partnerships between Horticoop members, this partnership also demonstrates how growers can strengthen each other: you can achieve more together by sharing knowledge, data and investments. Reliability is crucial for Marjoland, as they mainly supply specialist high-end florists within Europe. 'Our customers want assurance that every rose meets their exacting high quality requirements. Innovations including AI cameras enable us to guarantee consistent quality and florists and wholesalers know exactly what they'll be getting.'

Growing with a passion for roses and people, via Marjo Job

As well as energy and sustainability, labour is an important theme in horticulture. 'We organise the recruitment and care for employees really well here via Marjo Job - the employment agency run by my sister, Angelien. This enables us to have good control over our personnel management and recruit people who are a match for our family culture. It's important to us that we treat each other well, enjoy our work and that there's a familiar family atmosphere. Our close-knit family culture and pleasant working environment also help foster commitment and loyalty among

our 250 employees. My mother played a major role in creating this culture. Originally, most of our employees came from Poland. As my mother is Polish, she could talk to them in their own language and could help them easily if they had questions or problems. This quickly created a feeling of trust and they felt at home at Marjoland.'

Family atmosphere as catalyst for innovation

The roses are still growing in a warm family environment. Combined with continuous innovation, this family culture is a vital ingredient for Marjoland's successful cultivation. 'We work together to create consistent roses. I see it as a team effort. Together with my team, I'm continuously searching for ways to perfect our roses' growth. It's a fantastic plant and there's always something new to discover. And my team enjoys moving forward just as much as I do. I'm convinced we'll continue to make great strides. Every year, new insights help us improve our process - and the data we collect with our latest equipment play an increasingly important role.' This innovative mindset combined with a strong family culture are key to ensuring that Marjoland can face the future with confidence. ■

It's time!

Growth opportunities in horticulture: Horticoop's participations are tradeable!

Step by step

You can see the steps involved in the trading process on the right. If you still have questions, contact David Brand, Manager Communications & Community. cooperatie@horticoop.nl

The Horticoop cooperative has been a key player in the horticulture industry for over a century. What started as a purchasing cooperative expanded to become a dynamic investment cooperative that supports its industry members at home and abroad. The cooperative's dynamic approach will be evident yet again this summer, with the introduction of a trading period. For six weeks, members will be able to trade their participations among themselves: an important moment for the cooperative and for the industry!

In 2023, the cooperative's capital was registered in the names of the members in the form of participations that represent a share in the cooperative members' capital reserve. A new milestone for the investment cooperative is set to follow this summer. Manager Communications and Community, David Brand explained: 'The member council approved the amendment to the Articles of Association, enabling the trade in participations. For the first time, members will be able to trade their participations among themselves, enabling them to control the number of participations in their portfolio.' Horticoop invests in promising projects and companies, which offers growth and innovation opportunities. Members benefit from this growth via participations. David: 'If Horticoop's capital grows, our members benefit from this, for example, via dividend payments, with the dividend payment of 8 million euros earlier this year being a good example of this.'

Six exciting weeks

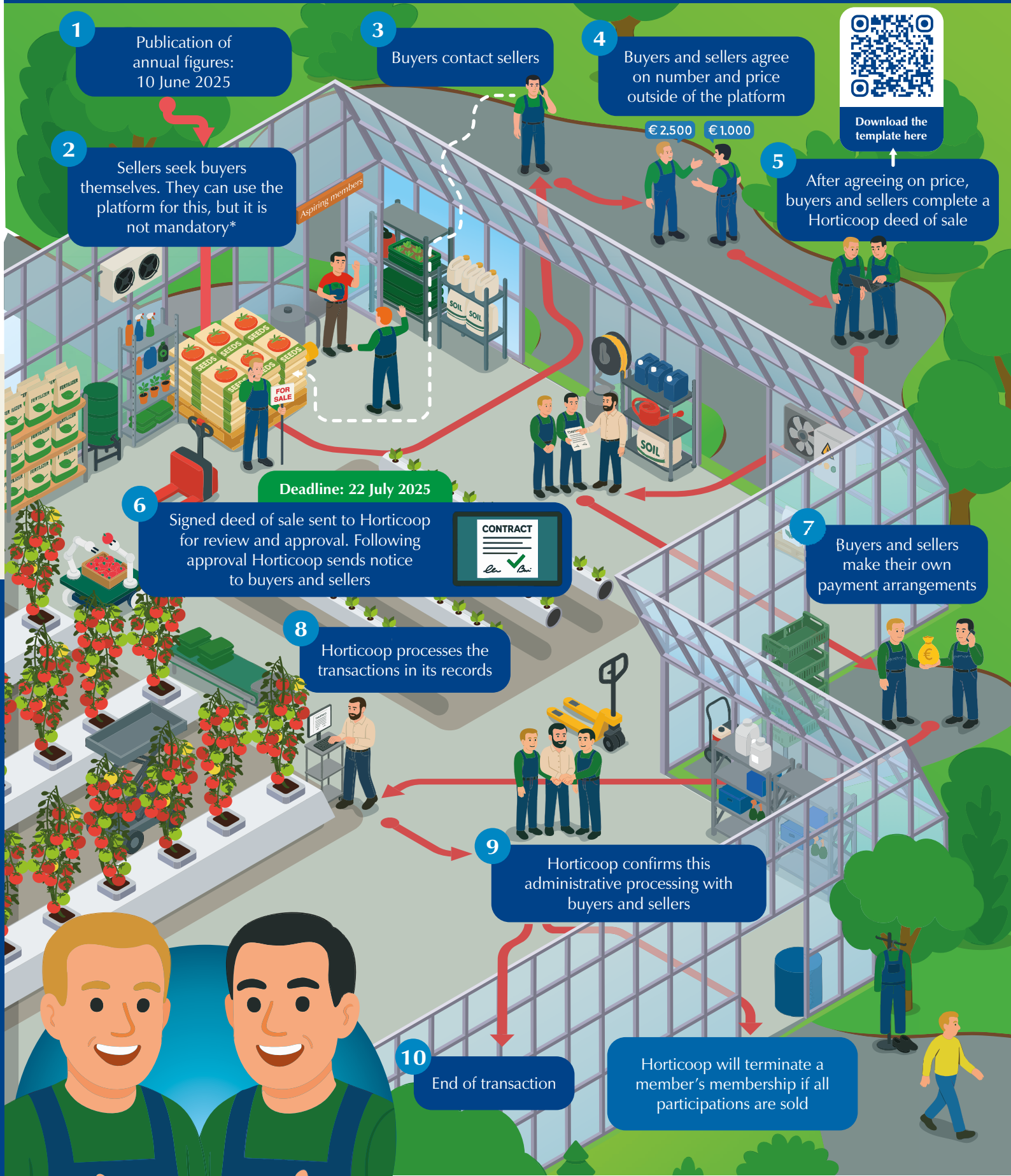
Once a year, following publication of the annual figures, there will be a trading period during which members can buy and sell participations among themselves. David: 'In 2025, this period runs from Tuesday, 10 June to Tuesday, 22 July. Members

are themselves responsible for finding a buyer or seller and they can use the Horticoop Community Platform for this. The value of the participations is determined by supply and demand, with the price also being agreed between the buyer and seller. Horticoop plays no role in this and does not communicate about prices. Of course, the Board checks whether the number of participations offered is accurate and that buyers do not exceed the maximum number.'

New members

If a company stops trading or is no longer active in the horticulture industry, its membership will be terminated and its participations will expire at the end of the notice period. Horticoop also welcomes new members. David: 'The addition of new member companies enables Horticoop to safeguard the cooperative's continuity as well as enabling more companies to contribute to and share in Horticoop's growth. That's why companies active in the horticulture industry are more than welcome as new members; both growers and horticulture suppliers. This keeps the cooperative moving forward so we can build a strong and sustainable future for horticulture together!'

Trading in participations: a step by step guide From 10 June to 22 July 2025



*The Horticoop Community Platform (www.horticoop.nl) can be used to offer participations for sale. No prices may be stated on the platform. Sellers can only sell to other members. If an interested buyer is not a member and the company meets the membership requirements, ask this company to become a member.



Five questions about trading

Find more
information about
the trading period
on pages 12-13

Manager Communications and Community, David Brand answers five pressing questions about trading in Horticoop participations.

1. Someone in my network is interested in my participations but isn't a member. Can that person buy my participations?

'Participations can only be traded between members. Companies that are not Horticoop members and are interested in purchasing participations can become a member. If they meet the Horticoop membership requirements, the process is quite quick and once they've joined the cooperative, they can contact members who are offering to sell their participations. If you know someone who's interested in purchasing your participations, it's worth letting them know about Horticoop membership!'

2. Why can't I mention prices on the Horticoop Community Platform?

'Horticoop's Community Platform is not permitted to act as an active marketplace due to supervisory regulations from the Dutch Authority for the Financial Markets (AFM); the independent supervisory authority for financial markets in the Netherlands. The Horticoop Board has, therefore, determined that no prices can be listed on the platform.'

3. Why do I need to use the platform?

'Although both the contact between members and the financial processing of transactions take place outside the platform, you still need the platform. In the first instance, to know how many participations you have. You can also make your intention to sell known on the dashboard, or check out who is offering participations for sale. The platform is also the place where you can find the purchase agreement template and other handy documents. So you don't miss any news about trading and to receive notifications from members posting messages, go to your personal profile and click on 'Horticoop participations' under "I have expertise in" and "I would like to know more about".'

4. What do I need to have arranged by Tuesday, 22 July 2025?

'Horticoop must receive the signed purchasing agreement by no later than Tuesday, 22 July at 11.59 pm. The checks, administrative processing and transaction confirmation can take place after this. The Board checks the number of participations and the sale is only finalised following this Horticoop Board verification and once the administrative processing has been completed. You will receive a notification about this.'

5. Is there a maximum to the number of participations I can hold?

'A member may hold up to 10% of the total number of pending participations. You cannot purchase any participations if this takes your share in the total to above 10%. If your share does exceed 10%, for example due to a decrease in the number of pending participations, your voting rights will be restricted. The share in the dividend will, however, continue to be based on the actual share in the total number of pending participations. This enables Horticoop to guarantee that all members have a say, regardless of the number of shares they hold.'

If your question wasn't answered here, scan the QR code for more questions and answers!



Greenhouse circularity

En route to a circular greenhouse horticulture industry



Alexander Boedijn

Whereas circularity was just another fashionable word a few years ago, its meaning is now crystal clear. The greenhouse horticulture industry is facing the challenge of reducing its dependence on primary raw materials while remaining economically viable. Circularity, closing the loop on raw materials and materials, offers a promising perspective here. It's a complex transition that according to Alexander Boedijn, Circular Greenhouse Horticulture Programme Leader at Wageningen University & Research, goes way beyond the greenhouse.

The linear 'extract-make-throw away' model is being replaced with a more sustainable alternative in greenhouse horticulture. Tell us more!

'Our current economic system still mainly involves extracting raw materials to make products, using them and then throwing them away. That's not a sustainable model. Not only because the raw materials will run out at some point, but also because they end up as waste after use. Recycling is a widespread principle that's also used in

greenhouse horticulture chains. And yet, the majority of the raw materials still end up as waste. This needs to change. A circular economy is about maximising the value and environmental value of raw materials. In sustainable raw material chains, waste streams from a production process are not actually considered as waste but are reused as new raw materials. To make this workable for the horticulture industry, we need to reconsider the entire production resource life cycle, from the extraction of raw materials to waste processing.'

WUR is designing circular chains to reuse raw materials for as long as possible. How does your research contribute to the circular transition in greenhouse horticulture?

'In a non-circular chain, waste products are not used or reused, which is a pity if a crop's leaves, for instance, still contain useful proteins, fertilisers or fibre. That's why WUR is conducting various studies to implement circular principles in practice in greenhouse horticulture. There's also the question of how we can "add value" to materials. We're focusing on six material streams: growing media (substrates), carbon, plastic, fertilisers, biomass and water. The research questions vary depending on the biggest challenges for the sector, such as the finite nature of certain fossil fuel resources. To prepare for this, we're conducting research into alternative sources for essential fertilisers, such as phosphate. Another important circularity driver is reducing the environmental impact. Various projects are currently underway for each material stream. For instance, we're testing the technical and economic feasibility of Direct Air Capture technologies to filter carbon from outside air. And we're conducting studies on the potential of various materials as peat substitutes in growing media. To make plastic use more sustainable, we're looking into using bio-based raw materials, recycling and biodegradable plastics. WUR is hoping that these and many other studies will provide practical knowledge to enable growers and suppliers to take targeted sustainability steps by using circular principles.'

Such tools are welcome now that people are increasingly feeling how urgent circularity is. Which developments play a role in this?

'An important driver is the growing social and political pressure to become more sustainable; a pressure we see, for example reflected in the Corporate Sustainability Reporting Directive (CSRD). It's expected that more and more companies will be obliged to publish their sustainability figures each year. The FloriPEFCR and FreshProducePEFCR (Product Environmental Footprint Category Rules) can be used to calculate a product's environmental impact. These PEFCRs comprise EU-approved calculation rules. The goal of this uniform calculation method is to provide reliable results to enable comparisons to be made within the greenhouse horticulture industry. The CSRD and PEFCRs provide growers and suppliers with more insight of their environmental impact.

This will hopefully encourage them to take further sustainability measures, for example because they can use these as marketing instruments for consumers and shareholders. Scaled up circularity also offers economic opportunities, such as reduced dependence on imported, critical raw materials and the development of new business models that focus on reuse and on maximising the value of waste streams.'

The 'reuse' theme is not unknown in greenhouse horticulture. What's the best way for horticulturists to build on existing initiatives?

'Lots of sustainability measures are already in place in greenhouses for efficiency and profit margin reasons. In this respect and compared with the rest of the world, the Dutch greenhouse horticulture industry is incredibly innovative and high tech with respect to sustainability. Fertiliser and water circularity has been a feature for many years. The challenge now lies in extending these working methods throughout the chain and reducing the dependence on primary, non-sustainable raw materials. Such a transition is a complex process that takes time and demands cooperation. We need to look at the total picture within a circular economy, which means focusing on raw material suppliers and other suppliers as well as waste stream processors. Just consider how many raw materials that are needed in a greenhouse are extracted from the earth worldwide, including oil for plastic, gas for CO2 and potassium for fertilisers. We need each other get this movement off the ground. And the best way to make a start as a horticulturist? Take a look beyond the walls of your own company. How can you ensure that the resources you need to produce your product are more sustainable? And can you find partners who can convert your own waste into usable raw materials or new products? Fortunately, you don't need to reinvent the wheel for circular production, as there are so many initiatives in the Netherlands you can get involved in, at regional level too! We need to close the loop together.'

Interested in learning more about greenhouse horticulture circularity initiatives?

Contact Alexander Boedijn: alexander.boedijn@wur.nl



Healthy soil, healthy crops

Horticoop invests in REKA soil improver

Horticoop added REKA to its company portfolio in early 2025. This company offers a wealth of soil improvement expertise and solutions. Managing Directors Aron Oosthoek and Eric Egberts explain the solutions REKA offers the horticulture industry.



Aron: 'REKA is all about soil health. Crops really benefit from healthy soil. The healthier the soil, the more resilient the crops and the more likely they are to survive in harsh conditions. To create healthy soil, REKA develops, produces and sells products in three product groups: inoculants, biostimulants and nutrients.'

Eric: 'Inoculants ensure that nutrients in the soil become available to the plant. This could be fungi or bacteria. Biostimulants, such as seaweed and amino acids, don't feed plants directly, they stimulate a plant's internal processes. Just like caffeine does with people. Our nutrients, the third product group, are treated with an organic coating and we sell fertilisers that we blend ourselves.'

Aron: 'The coating is extremely important as this enables you to reduce the chemical impact on the soil. For example, if you add a chemical phosphate to the soil, all fungal hyphae will be destroyed. Or if you add urea to the soil, a large amount of carbon will be lost. Of course, you want to prevent this, and that's where the coating comes in.'

'We have the ambition and potential to go global.'



Eric

Strategic partnerships

Eric: 'REKA is a Koppert carve-out. We have a strategic partnership with them. We complement each other. Our inoculants and biostimulants are mainly marketed through Koppert's channels. We have production locations and partnerships in the Netherlands, Kazakhstan and India, and we have the ambition and potential to go global.'

Aron: 'We've been producing mycorrhizal fungi in India since the end of 2022. This inoculant creates a network of fungal hyphae to transport carbon and various nutrients to and from the plant, as well as to other soil organisms. That's why the fungal network is also referred to as the 'highway of the soil'. Mycorrhiza can even work with the plant to restore depleted soil.' >



Managing Directors Eric Egberts (left) and Aron Oosthoek (right)

Eric: 'We're seeing renewed enthusiasm for mycorrhiza, which is a great reason to expand our production! There was already a boom in mycorrhiza ten to twenty years ago, but at that time the product wasn't marketed very well. The mycorrhiza we produce, package and ship from India is pure, clean and of high quality. The first tests in the Netherlands are currently being conducted on strawberries, chrysanthemums and anthuriums. That's a great step forward!'

Aron: 'In the Netherlands, our focus is on field-grown cut flowers and we're working, for example, in partnership with Horticoop member, Harry Wubben Flowers. And with respect to substrates for pot plants, we're also helping growers make the switch to low-peat substrates. As such substrates are less effective at retaining certain fertilisers, our nutrients offer a solution here. The same applies in vegetable cultivation, where growers switching to cultivation using coconut substrates are facing the same challenge.'

A new generation of growers

Aron: 'I notice that growers are not sure what our products actually do to their soil. They know it works, but exactly how remains a mystery.'

If we can show them how it works, we can look together at what's going well and what can be improved.'

Eric: 'These are the reasons why we're working with Vivent Biosignals; one of the other Horticoop portfolio companies. The Vivent biosensors can monitor plant health continuously and in real time. We can use these data not only to show growers that our products are working, but how. Our goal is healthy soil, with the result being fresh, sustainable and nutrient-rich crops. We'll be delighted when soils around the world are less depleted, and consumers can see that a product has been grown without any chemicals. Growers are doing their best to minimise their use of these harmful chemicals. Hopefully, we can give them that extra push.'

Aron: 'Ultimately, we need to develop a carbon-negative industry. To achieve that, the majority of growers need to invest in their soil rather than exhausting it in order to invest in the crop. Changing people's mentality is a challenge. I can't simply tell farmers in Kazakhstan or Costa Rica that they should grow crops differently. They're using methods that go back generations.'

'We need to develop a carbon-negative industry.'

“

Aron

We can only convince this new generation by helping them collect data locally themselves and showing them that this works. They're not thinkers, they're doers.'

Joining forces

Aron: 'Horticoop became a REKA shareholder this year. Horticoop and REKA are on the same page, and I'm convinced we'll remain so in the future. During the investment process, we reached an agreement very quickly. Horticoop always comes up with new ideas, new startups and investment opportunities. I'm looking forward to continuing our partnership along the same lines.'

Eric: 'We aim to enter into partnerships with companies that complement REKA's and Horticoop's knowledge. There are companies in our network that we can help, and companies that can help us. If we join forces, in the future we can

offer growers an even more complete group of products to enhance their soil and crops.'

Aron: 'We're doing everything we can to develop and improve our products. Simply conducting research in a laboratory isn't enough; we need input from growers. Their feedback is vital, so I hope that they'll continue to welcome us with open arms for a closer look in their greenhouses. Because, to market innovations as quickly as possible and make them available to growers worldwide, we need the knowledge of those who understand the lay of the land. That's why we're inviting Horticoop members to share their ideas with us. There's always a cup of coffee ready and waiting for you here! ■

Share ideas with REKA?

Contact Aron! a.oosthoek@rekasoilag.com
06 - 52 20 51 57



Vidi Prava, one of the REKA biostimulants

From initial meeting to signing on the dotted line

Horticoop's investment process



Patrick Barendse

Horticoop invests in companies that help create a more sustainable horticulture industry. It takes time and thorough research to decide whether to invest in a company. Horticoop's Investment Analyst, Patrick Barendse, explains the investment process using the example of REKA, the company that Horticoop added to its portfolio in 2025.

Patrick: 'We come across interesting potential investment opportunities in various ways. For example, via our network, or during the regular market analyses that we conduct. The next step after this is further investigation into the company's segment. For instance, during the investigation phase into REKA, we researched the market for inoculants, biostimulants and nutrients. We also contacted REKA's suppliers and customers, including a Horticoop member. The advantage of having a large member database is that there's always a member company that's connected to

the company we're investigating. Members help us gain even better and deeper insight into the company. If Horticoop approaches a company itself, we refer to this as inbound. Horticoop's strong reputation means that most companies we approach are keen to engage in dialogue with us. But there are, of course, also companies who don't need an investor at the time we approach them. Nevertheless, I believe that conducting market analyses and actively approaching companies works, which is why we're sticking to this labour-intensive process.'

Outbound strategies

'Companies sometimes also contact Horticoop themselves, which we refer to as outbound. These companies aren't always a match for Horticoop and our investment strategy, for instance because the company is still in its infancy. However, we're also regularly contacted by interesting companies. One advantage of this group is that there's a slightly higher chance of striking a deal, as the companies have indicated that they're looking for an investor. We're also increasingly being approached by acquisition advisors on behalf of companies. That's because we've made major investments in our brand awareness over the past year-and-a-half. We've really put Horticoop on the map as an investor and we're now reaping the rewards.'

Meeting the conditions

'Companies Horticoop invests in need to meet many conditions. There are hard criteria, such as the financial status and location, as well as quality criteria, including the management's role after the acquisition. It takes a lot of time to go through all these conditions carefully. In most cases, if the initial analysis is positive, we generally draw up a non-binding proposal. This gives us more time

to investigate further whether the company really meets all the conditions. For example, with REKA, we conducted additional commercial, financial and legal investigations, partly in cooperation with external consultants. It's interesting that REKA has production and sales facilities in Kazakhstan and India, but this also poses various risks. That's why Horticoop colleagues visited the facilities in both countries to obtain a good impression of the company. The investment team also produced a growth plan together with REKA's management.'

From binding proposal to deal

'Following internal approval, we can issue a binding proposal. After that it's a question of finalising the transaction documents and signing on the dotted line. This is our starting signal to get working with the company on the growth plan. The lead time of the investment can vary significantly and depends on unforeseeable circumstances that can arise during the process. It's also important that we work as a team and keep each other informed during all investment process phases. After all, we're investing on behalf of our members, so it's essential that our approach is sound. A good investment matures slowly!'

A deal in 7 steps





Members delve into various themes during the knowledge sessions



DEMO plaza formed the decor for inspiring interactive sessions and live demos.



Robotics applications were shown during the breakout session



Insights were exchanged over drinks

Where technology and cultivation converge

Reflecting on the deep dive at RoboHouse and TU Delft

We explored the boundaries of traditional horticulture on Monday 24 March 2025 during an exclusive Horticoop deep dive. At RoboHouse, the dynamic TU Delft field lab, members were given a glimpse of the industry's future in which robots and data appear to be the green fingers of tomorrow.

Greenhouse developments are progressing rapidly. Horticulture production is increasingly relying on high-tech developments: from robots that support operational tasks, to new technologies for improved water management. Reason enough to share knowledge about this theme. And what could be a more suitable location than RoboHouse;

a field lab that focuses on efficient cooperation between people and robots for a better society? The theme of Horticoop's meeting at the end of March: the future of high-tech in the greenhouse. Horticoop members were offered a unique opportunity to observe and experience innovative automation and robotisation solutions.

Beyond green fingers

Following an introduction about RoboHouse, members were inspired by various industry innovation projects. And it didn't stop there. Following a short bus trip, the programme continued in the TU Delft Aula Conference Centre. Here, participants could attend the High Tech Horticulture & Agriculture meeting organised by our knowledge partner, TU Delft. There were also in-depth breakout sessions during which research into for instance 5G communication in greenhouses and sustainable energy solutions were highlighted. And of course, the integration of robotics in greenhouse horticulture was also presented. Based on the latest research, TU Delft explained how companies are reaping the benefits of this technology in their own greenhouses.

Harvest of the future

Armed with new knowledge, the participants then gained practical inspiration during interactive sessions and live demos at DEMO Plaza. Because, how exactly will automation and robotisation impact greenhouse horticulture? Together with experts and other cooperative members, the participants explored the answers to this question and new, future ideas were planted, including about AI-driven apps that

optimise harvesting forecasts and smart wireless sensors for agriculture. The successful day concluded with drinks and an extensive buffet. It was a great way to make new connections and convert unique insights into concrete plans.

“

'Horticoop aims to inform members about relevant innovations within the industry. After all our strength lies in shared knowledge. The deep dive at RoboHouse and TU Delft was a great example of this, where participants obtained knowledge, discovered innovations and made valuable connections. Interesting insights were exchanged that will undoubtedly contribute to future-proofing the greenhouse horticulture industry.'

David Brand –
Manager
Communications
& Community



RoboHouse, the bridge builder in the innovation chain



Mark Bruijnen

The link between research and the business community is how Programme Manager, Mark Bruijnen describes RoboHouse. The field lab on the TU Delft Campus focuses on robotics and AI, and helps growers and others to investigate the added value of these two components of AI and robotics in their own work.

One of the TU Delft goals, in addition to education and research, is valorisation: converting knowledge into commercially feasible products, processes or services. RoboHouse plays a key role in this. The field lab links scientists and researchers to companies that face issues that robotics may be able to solve. Mark explained: 'Before a technology can be placed on the market as a product, it needs to go through various phases. RoboHouse is the link between the knowledge that is collected in research and the product that ultimately ends up on the market. We play a key role in demonstrating the possibilities of robotics and researching the technological and economic feasibility of robotic solutions.'

Broader application of existing research

Everyone can consult RoboHouse if they have a question. Growers often use the RoboHouse services. A condition is that the company engages in physical work for which robotics may offer a solution. Mark explained: 'Within the NXTGEN High-tech programme, we're working with TU Delft on research into such topics as harvest and post-harvest robotics. For example, fundamental research was conducted on using a robot to harvest tomatoes. Our added value is in researching how this technology can be applied to other fruits including aubergines and sweet peppers. We try to work with a partner that has access to a large group of growers, such as Horticoop or Greenport West-Holland.'

Improving the possibilities for a product's use will hopefully increase the willingness of, for example, a machine builder to invest in the product.'

Tailored innovation projects

RoboHouse helps both large organisations as well as SMEs. Where innovation projects in the first category can take up to a year, with SMEs the process from intake to advice can be completed in twelve weeks. Mark: 'We first conduct a site visit to assess the complexity of the problem ourselves. Our robotics engineers then get to work, together with the grower. We determine the technical challenges and devise solutions for these. Ultimately we deliver a robotics solution concept. We sometimes refer people to other parties who already have a solution for that particular problem. If there isn't already a solution, we conduct a feasibility study of the developed concept, after which we advise the company.' RoboHouse does not formulate a business case but explains the components used in the proposed robotics solution and the investment required for each component. Mark: 'In doing so, we hope we can help companies take the step towards robotics, or to show them that they're not quite ready for this as it's not yet viable for them.'

Robotics in orchid cultivation

One of RoboHouse's successful projects was in orchid cultivation. Mark: 'Five orchid growers asked us to investigate how to simplify the physically demanding process of inserting stakes into orchids. We first analysed the bottlenecks of this delicate process. After devising solutions, we conducted experiments in our own test centre. In contrast to commercial developers who need

time to create a support base for their complex solutions, we developed a less complicated method. Initially, we could only resolve the first thirty per cent of the problem, namely inserting stakes into easy plants. Slowly but surely, this helps you build a dataset, which means that the robot makes fewer and fewer mistakes and can, for example, also insert the stakes correctly into plants with problematic roots.'

Different scenarios

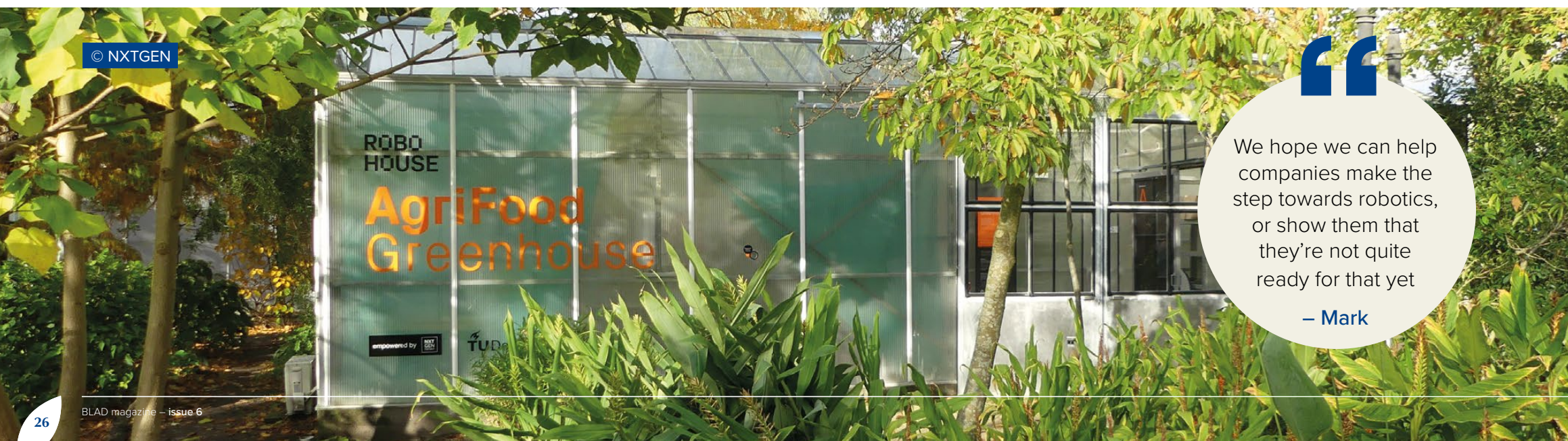
Each innovation project results in an overview of the components required in the robot system and the potential costs, supplemented met possible next steps and scenarios. Mark: 'In the case of orchids, it was ultimately decided to transfer the knowledge we gathered to machine builders. They're now taking the next step with the growers based on the simplified concept we devised. Working this way also ensures that we get the market thinking.'

Specially developed greenhouse

Within the NXTGEN project, we developed a special greenhouse on the campus. This enables researchers to test their innovations on a small scale in a realistic environment. 'We know that greenhouse demonstrations help establish a product's feasibility and gain acceptance from everyone in a company – from the IT manager to the director', emphasised Mark. 'A greenhouse also allows us to test versions more quickly as we don't have to keep moving the robot installation between the lab and the greenhouse.'

Seeking opportunities

Although the use of robotics solutions in greenhouse horticulture is currently still in its infancy, Mark sees tremendous potential for this. 'I'm convinced there are major technological gains to be made in this area that is still a relative unknown for many people. As entrepreneurs become familiar with robotics and innovation processes, and accept that a '30 percent solution' can be a start, they'll increasingly see and capitalise on opportunities. As soon as the added value of robotics becomes clear, entrepreneurs will start investigating this and sooner or later they'll have a robot in their company!'



© NXTGEN

ROBO
HOUSE

AgriFood
Greenhouse

supported by

TU Delft

We hope we can help companies make the step towards robotics, or show them that they're not quite ready for that yet

– Mark

Green fingers, steel arms: Robots in horticulture

Kees Stijger

Kees Stijger and Marcel van Vliet, respectively tomato and gerbera growers, share their views on the role of robotics in their companies. With both feet firmly planted in reality and an eye for innovation, they talk about opportunities, challenges and why robotisation in horticulture is no longer a luxury, but a necessity.

Kees Stijger, Tuinbouwbedrijf Kees Stijger

'We'll need to start investing more and more in automation and robotisation in greenhouse horticulture. Potential employees are not keen on repetitive and physically demanding work, which is resulting in increasing labour shortages. I'm convinced that robotisation can be a key solution to this problem. Robots can carry out these tasks much more efficiently and there's no physical strain for employees. Take the process of tomato plant lowering, for example, which is currently still done manually. Lowering the plant as it grows ensures that it hangs lower in the greenhouse, allowing the plant to grow taller and more vigorously, ultimately producing more tomatoes. Having robots carry out this task means you don't need so many employees for this. I'm keeping my eye on developments in this area and I'm curious as to what the future will bring.'

Food will become unaffordable

'Costs also play a role for us. Robotisation is a means of making production more efficient and cost effective in the long term. In the start phase, investments do increase the cost price, but in the long term they result in considerable labour cost savings. That's why I find it so important that we keep a close eye on robotisation developments. Increasing wages and labour shortages are resulting in food production being increasingly expensive. The consequence is that fresh food will be unaffordable. Of course, we need to do what we can to prevent this and I'm convinced that robotisation can be a decisive factor.'

A triangular relationship

'For further development of robotisation in horticulture, it's essential that we make connections between science, technology and practice. This

triangular relationship was clearly visible during the Horticoop deep dive. Scientists generally have a clear picture of how something needs to be done, but technicians and growers often see that certain adaptations are needed. Technicians develop the design, but sometimes don't have a good enough insight of what happens in

daily practice. Science needs to understand how things work in practice and those of us working in the field need to understand where the science comes from. The cooperation between these three groups is vital, because without each other, you can't progress. That's why I'm so committed to improving coordination and cooperation.'

Marcel van Vliet

Marcel van Vliet, Kwekerij Esmeralda

'Robotisation is crucial in safeguarding the future of Dutch horticulture. The availability of labour is declining, while wage costs are rising. Labour is and will always be the biggest cost item for many companies, although replacing employees through full automation and robotisation certainly isn't the goal. You'll always need people for management, control and maintenance. The primary focus of robotisation in horticulture should be on alleviating physically demanding work and reducing labour costs, without completely replacing human labour. Streamlining activities and reducing costs enable us to increase the likelihood of being able to future-proof our company.'

Collective strength

'This necessity is even more acute at our nursery because gerbera cultivation is relatively small-scale. For us, cooperation with colleagues is essential. Whereas larger crops can wait for market-ready solutions, as gerbera growers we must actively approach suppliers and

invest together to enable innovation. And that's something we're doing! It's also important to invest at the right time. Not too early, when the technology hasn't been tested or developed enough, but certainly also not too late. You don't want to be left behind.'

Networks

'Meetings such as the Horticoop deep dive (see pages 24-25) are incredibly important in helping me stay informed of the latest developments. I really recommend that every member grasps an invitation to these types of meetings with both hands, because you meet colleagues, researchers and technicians, gain new and interesting insights and build a truly invaluable network. You can suddenly bump into just the person you need. Not everything you see and hear can be used immediately in your own company, but you gain so many insights into the potential opportunities that will be available in our industry in the future. Robotisation is no longer just an option, it's a vital step to safeguard the future of our industry.'

Your company in other hands

The ins and outs of the sale of your company



Mathijs Breederveld (left) and Jerry van Leent (right)

Your company has grown, the long-term plan is paying off, and you've reached the point at which a good next step is to sell your company to another entrepreneur or private equity firm. Mathijs Breederveld and Jerry van Leent, Directors at YEALD, deal with this every day, as YEALD specialises in strategy, mergers, acquisitions, financing and real estate, specifically in horticulture companies. They explain how the sales process works.



YEALD's head office is in Honselersdijk.

PHASE 1 - PREPARATION

Step 1: Introduction

Mathijs: 'Ideally, we first determine a strategy with the customer so we can build a connection. Finding the right partner to implement this strategy can be a goal in itself, but it can also occur unexpectedly, and it's not unusual for entrepreneurs to approach us for a sale without any previous cooperation.' The initial meeting clarifies the sales aspirations and motivation, as well as whether they want to sell a minority or majority of the shares. The sales process, which takes nine months on average, starts after this analysis.

story about how that will be achieved.' The implementation of this plan must also be clear. Investors can help professionalise the company, but it must be able to continue operating independently. So, the management must be well organised. Mathijs: 'It's crucial that the seller is able to present their own story and future vision. Do they want to remain as a director or shareholder? And if so, what control do they want to retain? There's usually just one opportunity to negotiate about this.'

'It's crucial that the seller is able to present their own story and future vision'

Mathijs

Step 2: Strategy

Everything starts with strategy. The mission, vision, strategy and growth plan are incorporated into a value creation plan. Jerry: 'During the strategy phase, we examine the trends, collate all important business information and conduct in-depth interviews to discuss how the ambitions can be achieved. A growth plan with potential is also essential. Buyers, and certainly private equity firms consider the return on investment and value appreciation, so it's essential to have a good

Step 3: Information memorandum

The information memorandum contains all the information a buyer needs to make an offer, including the growth plan, all relevant information about the company, the USPs, the entrepreneurs, the market and the value chain. A financial analysis is also included in this memorandum. >

Step 4: Compiling a longlist & shortlist

The shareholder preferences and preconditions for potential buyers are drawn up, including culture, strategy and financial resources. A longlist of potential parties is then produced, which is assessed against the criteria. This results in a shortlist of the most suitable candidates.

PHASE 2 - SALE

Step 5: Approaching potential buyers

The selected candidates receive the information memorandum and a process letter. Jerry: 'After reading the memorandum, a meeting is often arranged with the potential buyer to provide further explanation.' In the process letter interested parties are asked to submit a non-binding offer and, in addition to financial terms, to detail their vision on topics such as the future vision and the role of the current shareholder(s). Mathijs: 'We also assess the strategic and cultural match. The offer is important, but you also need to ensure that the company spirit isn't lost through integration or through the departure of the current entrepreneur(s).'

Step 6: Negotiations

Negotiations between the parties take place after receiving the offers in order to realise the full potential of the transaction. This often leads to drawing up a letter of intent with a single party.

Step 7: Letter of intent

The most important conditions relating to the transactions are recorded in the letter of intent. An exclusivity agreement is also often signed, whereby the seller agrees to negotiate only with this buyer for a certain period of time.

PHASE 3 - CONCLUSION

Step 8: Due diligence

Due diligence usually starts after signing the letter of intent. The buyer investigates the legal, financial, fiscal, operational and/or technical information to identify potential risks and verify the accuracy and completeness. The company's impact on the environment, the surrounding area and sustainability are also increasingly investigated. Findings can result in changes to the transaction conditions but good preparation

and a good information memorandum can minimise these changes.

Step 9: Drawing up transaction documentation

Following agreement on the final transaction conditions, a sales agreement is drawn up. This is a detailed version of the letter of intent, incorporating any due diligence findings into guarantees and indemnities. If the seller decides to continue after the transaction, a management agreement and/or shareholder agreement will also be drawn up. Engaging a good transaction lawyer is essential in this phase.

Step 10: Closing

The deal is finalised. Both parties sign the final sales agreement. The transfer of shares then takes place at the notary's office. And then: champagne! ■

YEALD tips for the potential sale of your company

1. Maximise your business potential by running your company as though it will be sold tomorrow. Getting your company ready for sale can sometimes take years.
2. Involve a few trusted individuals within your organisation at an early stage in the sales process, especially for the financial aspects. Going through a sales process on top of your daily work is tough.
3. Make sure that you have a good advisor on hand to take you through the process and to act as a buffer to rationalise emotions.
4. Be open and discuss your situation with industry colleagues. Jerry: 'Horticoop offers great opportunities for you to do this, such as the member meetings. Make good use of them.'

Innovation in the greenhouse with REKA and Vivent

An experiment with innovative techniques from two companies in Horticoop's portfolio. It's possible! Cultivation Manager, Tom Joris from Harry Wubben Flowers talks about his experiences with REKA biostimulants and Vivent biosensors. Although it's still a pilot project, the initial results are extremely promising: plants recover more quickly and there's less dieback.

What are your experiences with the REKA biostimulants and the Vivent biosensors?

'Initially, biostimulants that help the plant handle stress sounded too good to be true. The same applied to the biosensors that could apparently indicate exactly how a plant is feeling. And yet, it turns out not to be fiction. Following our own experience and experiments, we're convinced that they work because both products provide valuable insights and tangible benefits during cultivation.'

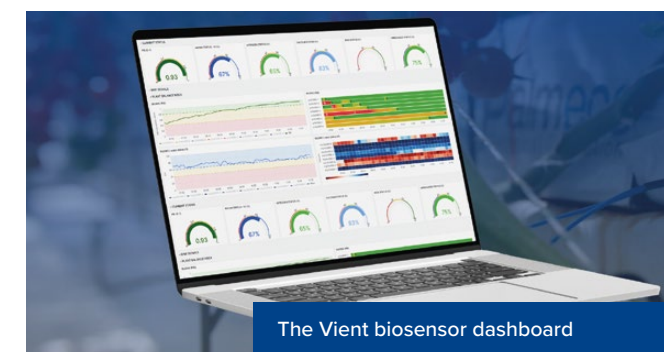
How do these products complement each other?

'It was said that biostimulants help plants cope with stress, but as the effect isn't visible to the naked eye, it wasn't clear whether this really worked. With the biosensors, we could actually measure this for the first time, which confirmed

that the REKA products do what they promise and that the Vivent biosensors measure reliably.'

What results have you seen?

'Biosensors measure the plant's activity, including how they respond when they're watered. This is actually a stress factor for plants. For this test, we used biostimulants in part of the greenhouse and didn't use them in another part. The plants treated with biostimulants recovered much more quickly from this stress than the untreated plants. We could monitor this difference live via the biosensor graphs.'



Why do you get involved in such tests?

'We're aiming for continuous innovation and improvement so that we can eventually become entirely organic growers. The REKA and Vivent products help us with this: we use less fertiliser, produce less waste, have fewer pests and diseases, stronger plants and healthier soil. Basically, we're getting closer to our goal! If we can demonstrate that we can grow good flowers in a sustainable way, without pesticides, we'll have made real progress and can hopefully act as an example to others.'

What advice would you give other Horticoop members

'Try new things! The mentality of "that's how my grandad did it" doesn't get anyone anywhere. If you are ambitious and want to still be a grower in thirty years, you need to look at how you can innovate. Start by talking to an advisor. See how much it costs and what it can offer. That's the first step. We're simply delighted that we took that step!'



The Horticoop Companies

An overview of the investment cooperative's varied portfolio

Horticoop manages a varied portfolio of companies, each of which plays a unique role in promoting a sustainable and future-oriented horticulture industry. To see which companies they are and what they do, read on!



Horticulture Technical Solutions

Horticulture Technical Solutions believes that the future of horticulture is all about smart, data-driven solutions. The company combines and installs smart technology in the fields of water, light, climate, energy and data for the horticulture of tomorrow.



Blue Radix

Blue Radix is a market leader in Autonomous Cultivation, the technology in which artificial intelligence can take over human actions. The company develops AI solutions for virtually all day-to-day greenhouse activities. This enables it to provide solutions to the global challenges that arise with the growing global population's increasing demand for healthy and safe food. With Blue Radix's AI applications, growers can use their knowledge and experience in the most efficient and effective way.



Lumiforte

Lumiforte makes smart coatings that help growers protect their crops from too much heat and light. Using these coatings allows the conditions in the greenhouse to be regulated. This creates the right greenhouse climate for each season. Lumiforte is the leading international producer of coatings, continually launching innovations on the market to optimise growers' yields per square metre.



VitalFluid

VitalFluid

VitalFluid translates knowledge of plasma technology to Plasma Activated Water (PAW) applications in agriculture and horticulture. PAW can revolutionise the field by offering a more sustainable and environmentally-friendly approach to growing crops. PAW applications can be used as a sustainable source of nitrogen and a natural alternative for chemical crop protection.



Vivent

Vivent is a world leader in crop diagnostics and supplies 'wearables for plants' that provide growers with improved insight into crop health. Vivent's system makes ingenious use of plant electrophysiology for this. The advanced biosensor measures and interprets a plant's real-time responses to disturbances in the balance between the plant and the environment (stressors), even before visible symptoms appear. Diseases, pests, and other stressors are therefore recognised earlier, allowing growers to take appropriate crop measures at an early stage.



REKA

REKA is working towards a sustainable future by improving soils, with plants playing the starring role. By developing innovative solutions, REKA enhances plant resilience, which in turn stimulates soil life and ensures natural carbon storage. This approach enables REKA to link science to practical applications and help farmers and horticulturists increase their yields and achieve sustainable agriculture and horticulture through healthier soil. Horticoop welcomed REKA to its company portfolio in 2025. [See also p.18](#)



CE-Line

CE-Line is a high-tech company that develops unique analysis equipment to conduct all laboratory analyses of irrigation and drain water from within the greenhouse. This makes a lot of data available quickly. CE-Line has software, mechanical and chemical expertise in house and operates internationally. In addition to horticulture, the company is also taking initial steps in analysing such things as wastewater that is reused for the production of bioplastics.



Skytree

Skytree works on innovative solutions to reduce carbon emissions and promote sustainability. As a leader in the battle against climate change, it aims to make a positive impact on the environment. Using Direct Air Capture (DAC) technology, Skytree captures atmospheric CO2 via a filter system to both reduce emissions as well as for compensation purposes. This technology is playing a key role in boosting environmentally-friendly methods and building a greener future.



Hort Americas

Hort Americas started out as a wholesaler in the American town of Bedford, Texas. It has since evolved to become a leading specialist in urban and vertical farming, horticultural products and LED grow lights. As well as

being a sales channel, Hort Americas is also a knowledge centre that even offers certified training programmes. Through technology and education, the company is reinforcing progress in the horticulture industry.

Annual figures 2024

Consolidated income statement 2024

	2024	2023
	x € 1,000	x € 1,000
Net turnover	68,328	124,034
Other operating income	1,844	1,313
Total operating income	70,172	125,347
Cost of raw materials and consumables	42,767	85,533
Staff expenses	10,848	18,716
Amortisation of intangible and tangible fixed assets	2,494	4,322
Other operating expenses	8,104	12,125
Total operating expenses	64,213	120,696
	5,959	4,651
Other interest income and similar revenue	361	148
Interest expenses and similar costs	(19)	(307)
Profit before tax	6,301	4,492
Taxes	(2,035)	(951)
	4,266	3,541
Share of unconsolidated participating interests	36,282	(915)
Profit after tax	40,548	2,626
Third-party share in the profits	(224)	(497)
Group result after tax	40,324	2,129

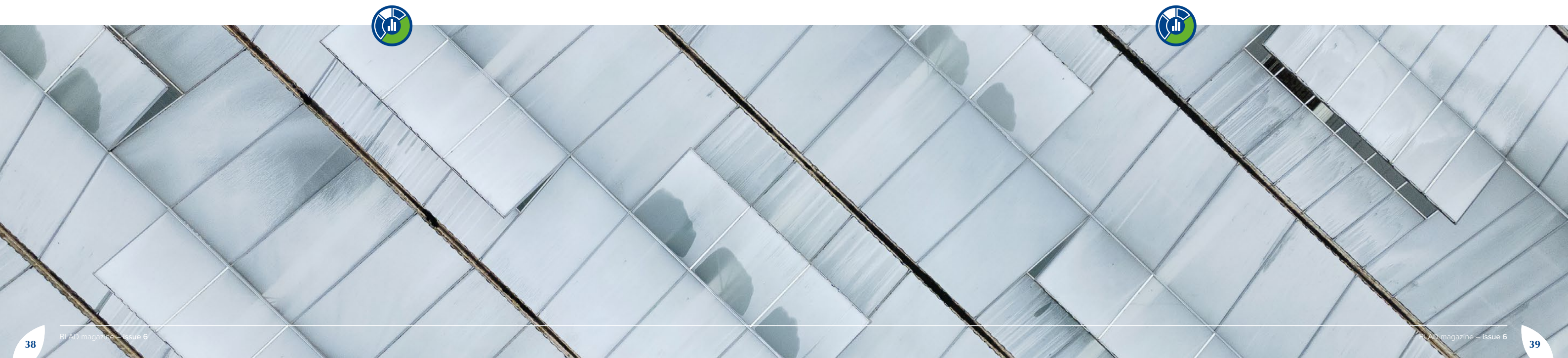


Consolidated balance sheet as of 31 December 2024

(proposed profit appropriation for accounting purposes)

Assets	2024	2023
	x € 1,000	x € 1,000
Fixed assets		
Intangible fixed assets	497	10,562
Tangible fixed assets	13,410	18,722
Financial fixed assets	15,212	8,992
Total fixed assets	29,119	38,276
Current assets		
Stocks	2,148	10,864
Receivables	5,130	13,312
Cash at bank and in hand	68,439	16,856
Total current assets	75,717	41,032
Total assets	104,836	79,308

Liabilities	2024	2023
	x € 1,000	x € 1,000
Equity	89,090	56,618
Third-party share in equity	660	1,214
Group equity	89,750	57,832
Provisions	91	883
Long-term liabilities	-	1,636
Current liabilities	14,995	18,957
Total liabilities	104,836	79,308



Key figures

Turnover net
x € 1,000

2024	68,328
2023	124,034
2022	162,055
2021	142,575
2020	141,440
2019	129,432

Equity
x € 1,000

2024	89,090
2023	56,618
2022	54,585
2021	52,030
2020	48,818
2019	45,433

EBITDA
x € 1,000

2024	8,453
2023	8,973
2022	8,802
2021	9,941
2020	12,510
2019	7,046

Number of members

2024	278
2023	280
2022	380
2021	380
2020	394
2019	394

Profit after tax
x € 1,000

2024	40,324
2023	2,129
2022	2,551
2021	3,009
2020	3,566
2019	-1,663

Solvency:
Equity-to-asset ratio

2024	85,0%
2023	71,4%
2022	68,1%
2021	58,9%
2020	56,5%
2019	61,5%

Operating cash flow
x € 1,000

2024	3,201
2023	8,785
2022	-447
2021	11,466
2020	12,221
2019	7,736

Average number of employees

2024	154
2023	215
2022	286
2021	288
2020	350
2019	348

Pending participations

Total pending participations as of 5 February 2025:

Horticulture suppliers	39,204
Horticulture growers	35,339,154

Total 35,378,358

Annual figures 2024

Notes to the 2024 figures

CFO Hend van Ravestein explains the developments and financial results of 2024. You'll find an overview of the annual figures and key indicators on pages 36-41 of this magazine.

The horticulture and greenhouse horticulture industry is undergoing a tangible transition. Horticoop connects members and companies and stimulates cooperation in the industry. The cooperative invests in companies that develop innovative solutions to help future-proof the horticulture industry and make it more sustainable. As well as benefiting from these innovations, Horticoop members also benefit from the potential value growth of these companies. A good example of this is the dividend payment of 8 million euros that was announced at the end of 2024. There has been a major focus on positioning Horticoop in the market as a professional and committed investor. This is beginning to bear fruit, with Horticoop being approached more frequently for investment opportunities in 2024. At the end of 2024, various opportunities arose that offer tremendous potential for new investments

Investments and disinvestments in activities

Hend: 'As investment cooperative, Horticoop focuses on activities that promote the development and production of modern and sustainable technologies in the horticulture industry. A review of the company portfolio examined whether the companies are still in line with Horticoop's strategy.' This led to the sale of the majority interest in Lumiforte Holding B.V. in September 2024. Horticoop retains a minority interest. In addition, as of 1 February 2024, the Lensli business activities were sold and Horticoop sold its 78% equity interest in Horticoop Scandinavia A/S on 3 May 2024. Hend added: 'Horticoop acquired various strategic minority interests in 2023 and continued to invest in the growth of these participations last year.'

Profit

The year 2024 closed with a net profit (after tax) of € 40.3 million. Net profit in 2023 amounted to €2.1 million. Hend: 'The exceptionally high net profit is mainly due to the book profit realised on the sale of the majority interest in Lumiforte Holding B.V.' At the same time, Horticoop recorded write-downs on several startup investments in line with its accounting policies. Hend: 'The losses at two startups in which we had a stake of over 20%, resulted in an accounting write-down of €3.5 million. For two other startups, whose current market value we estimate to be lower than the investment value, we recorded a write-down of €2.2 million.'

Revenue development

Consolidated net turnover decreased to €68.3 million in 2024, compared with €124 million in 2023. This decrease is mainly due to the sale of Lensli business activities, the sale of the shareholding in Horticoop Scandinavia A/S and the partial sale of the interest in Lumiforte. The table on the right shows the revenue development per geographical segment and per type of revenue.

Revenue per segment

x € 1,000	2024	2023
The Netherlands	26,754	43,825
Other EU countries	19,851	46,058
Other countries	21,723	34,151
Total revenue	68,328	124,034

Type of revenue

x € 1,000	2024	2023
Trade	20,894	54,848
Production	26,807	53,061
Technical systems	20,627	16,125
Total revenue	68,328	124,034

The impact of the sold business activities can also be seen in the decrease in revenue in trade and production.

Employees

In 2024, on average there were 154 employees working in the group, with this number being 215 in 2023. Hend explained: 'This fall was caused by the sale of activities.'

Balance sheet

Horticoop's balance sheet total rose to €104.8 million in 2024, compared with €79.3 million in 2023. The increase is mainly due to the partial sale of Lumiforte. Equity at the end of 2024 increased to €89.1 million. The solvency ratio – equity as a percentage of total assets – is 85% compared with 71% in 2023. An interim dividend payment of €8 million was also decided for 2024, which will be paid out in 2025. This has already been deducted from the equity.

Cash flows and funding

In 2024, Horticoop saw an increase in cash and cash equivalents of €51.6 million, mainly driven by the positive cash flow from divestment activities of €49 million. Cash flow from financing activities amounted to a negative € 1.2 million. Hend: 'This is due to standard and additional repayments to credit institutions. These repayments ensured that Horticoop will be free of long-term liabilities to credit institutions by the end of 2024, which is a major milestone.'

Investment strategy

Hend: 'Horticoop made strategic investments in innovations in the industry in 2024. There were additional investments in existing minority holdings, such as Blue Radix, Skytree, Vivent and VitalFluid. These investments, and future expansions or divestments, will influence the development of Horticoop's turnover, results and cash flows. Plans are currently being developed to establish a new investment fund in the second half of 2025, with Horticoop as the main investor. If investments are made within this fund this year, no additional return is expected in 2025.'

Expectations for next year

Horticoop is forecasting a consolidated net result of €10.7 million for 2025. 'Although this forecast remains uncertain', explained Hend. 'The result is influenced by economic conditions, such as the situation regarding the US import tariffs and the results of our startup portfolio. The target for is to further improve the operating result by stimulating the growth of our portfolio companies. In 2025 we are also expecting to sell our properties in Bleiswijk and Cuijk. Developments are highly dependent on both our investment and divestment strategy and on macroeconomic factors such as energy and raw material prices. We will of course monitor these developments closely so that we can continue to take the right steps and ensure that 2025 becomes another successful year!'



Hend van Ravestein, Horticoop CFO

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