BLAD

A publication by the Horticoop investment cooperative

Year 2 - **Issue 2**

Autonomous cultivation worth investing in

A social duty for the sector

Sustainability in the DNA

With annual figures 2022

HORTICOOP
GROWING TOGETHER

Contents

Cover photo: **Frits Mostert** from Kwekerij Mostert Nieuwerkerk BV

Foreword

Investments and sustainability. Two themes that are inextricably linked at Horticoop. There's no other way, at a time when the horticulture industry is under the magnifying glass. Worldwide challenges mean our sector is seen as a key link in matters such as resolving the global food problem. That is no minor task.
This issue of BLAD highlights from different perspectives how our sector is dealing with this.

As an investment cooperative, we have made it our duty to work with and for our members on building a sustainable future for our sector. We have recently made significant strides in that direction, and the time is upon us when we can say: we are up and running! This edition of the magazine will bring you up to date with the participations that have now been officially assigned to members, along with news of the initial investments with which we welcome two promising companies into our portfolio.
Blue Radix and Skytree will be introducing themselves and detailing the added value that their ground-breaking technologies will offer you.

Other contributors also have their say on sustainable developments and innovations in the horticultural industry.
For example, Wageningen Plant Research and Glastuinbouw Nederland present their views on robotisation, circularity and the future of greenhouse horticulture. Food for thought that serves as a useful topic for discussion for anyone in our business. In BLAD you'll therefore find various references to the Horticoop Community Platform. I invite you to share your opinion, review factsheets and videos, and share photos from your archives, because however forward-thinking Horticoop may be, we also have a rich history that we are eager to highlight!

Alongside in-depth stories, this magazine also contains our 2022 annual financial figures. CFO Hend van Ravestein provides a detailed explanation of the figures. We closed 2022 with good results, and despite the economic headwind, we expect to also achieve good results in 2023 as well. The first six months do not look bad but 2023 is an uncertain and volatile year for the industry. I look forward to working with our companies (including the new ones), knowledge partners and, above all, with you to make 2023 a successful year.

I hope you enjoy the read and wish you a great summer!

Steven van Nieuwenhuijzen
CEO, Horticoop

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The time is ripe

The allocation of participations is a fact!

On 21 March 2023, the members' council amended the statutes, which officially transformed Horticoop into an investment cooperative. The cooperative's assets were registered in the names of the members in the form of participations. With participations, members have a direct and measurable interest in Horticoop's investments. CEO Steven van Nieuwenhuijzen and CFO Hend van Ravestein give an update and explain the role of participations in the win-win cooperative.

In this short video, Steven answers frequently-asked questions about participations

CEO Steven van Nieuwenhuijzen and CFO Hend van Ravestein give an update about participations

A lot has happened since the transition started in 2021. Let's begin with a brief recap. How was it again?

Steven: 'Horticoop has changed from being a buyers' cooperative into an investment cooperative. Consequently, the role of Horticoop's assets has changed too. For over a century, Horticoop's assets were used for joint supply and wholesale activities, based on the belief that you go further together. Now that Horticoop has set a new course as an investment cooperative, the assets are actively invested in companies that develop innovative solutions for a sustainable horticultural sector. The reasoning behind this remains unchanged: by investing collectively, we grow together. What have changed, however, are the form and role of the assets. In "the new Horticoop" the equity is registered in the names of the members, in the form of participations.'

So, members are given participations. But what does that mean?

Hend: 'The participations represent a share of Horticoop's assets. Horticoop's assets are invested in companies that offer solutions for horticulture and are worthy of investment. This allows Horticoop members to benefit from technologies that, among other things, make their business operations more efficient, profitable and sustainable. In turn, these companies have potential customers, which means both parties are able to grow. The participation structure means members can benefit directly from the investments put into these companies because in addition to meeting their needs, members also share directly in the growth of Horticoop's assets. The participations may also entitle members to dividends when the decision is taken to hand them out. Additionally, the number of participations translates into the number of voting rights within the cooperative, such as in members' council elections. The participations give members a direct stake in investments in companies that add value. This befits a community where involvement is key for a win-win cooperative.'

How are the participations shared out?

Steven: 'On 21 March 2023, the participations were registered in the names of the members. The sales of members at Horticoop companies during the period 2016-2018 are what determined the assignment of participations. Members were informed about the number of participations that would be registered in their name and can also find this information on the Horticoop Community Platform. Incidentally, members can do a lot more on the platform. They can find the Horticoop's new articles of association, get in touch with Horticoop companies and share knowledge with other members. It's well worth a visit!'

Hend: 'As of next year, Horticoop will be able to issue up to 10% of the total number of outstanding participations annually. The same principle applies here: the more involved a member is, the more participations they will be allocated and the more dividend they will receive when the decision is taken to pay it out. Because by buying from Horticoop companies, both the members and the companies within the group and the cooperative can grow, and all members will reap the benefits. Incidentally, for the additional participations, 'member involvement' is defined more broadly than turnover alone. Actively participating on the Horticoop Community Platform, attending Horticoop meetings, and contributing to knowledge sharing are ways in which members can contribute to the win-win cooperative and increase their involvement with Horticoop.'

There was a delay in registering the participations in the names of members due to a tax issue. What was that about?

Hend: We did not want to issue the participations until we were sure that the tax authority would not count the conversion into participations as taxable transactions. Granting equity to each member can be taxed. Our position is that this does not apply in our situation. As we are a cooperative, the equity already belonged to the members. Under the new setup, this is no different. The existing equity is been registered under the members' names, and an allocation has been made; however, there is no new or increased value. The tax authority has since confirmed that they agree; the conversion into participations is therefore not subject to tax.'

Steven: 'Only when someone sells their participations, can the tax authority consider the returns as taxable assets. We are currently preparing that step. We hope and anticipate being able to make the participations tradeable between members at the beginning of next year. We shall of course keep our members informed of any developments in this regard. Meanwhile, Horticoop will continue to add investment-worthy companies to the portfolio, so the cooperative's assets will continue to grow and, correspondingly, the value of the participations!' ■

Monique van Wordragen,
Business Unit Director, Greenhouse Horticulture & Flower Bulbs

WUR researches sustainable opportunities

Innovations make the difference in the horticulture industry. Wageningen University & Research (WUR) follows developments closely and carries out its own research into innovative methods. Monique van Wordragen is the Business Unit Director of Greenhouse Horticulture & Flower Bulbs at Wageningen Plant Research, a division of WUR. She talks about the developments in greenhouse horticulture and what opportunities are in the offing.

Which themes are you focusing your research on, Monique?
'Since last year, we have been through some turbulent times. We have seen huge rises in energy prices, and although they have since gone back to normal, it was certainly a wake-up call for the greenhouse horticulture sector. After all, it consumes a lot of energy. We are working closely with the growers, so it is an important issue for us too. Sustainable horticulture has been our principal aim for years, and we have taken various steps in that direction. For instance, we are in the process of designing greenhouses that no longer use fossil fuels and are therefore fully electric. We have an example of this type of greenhouse on our site in Wageningen. It's a good start but we still need to develop it further. We are also looking for technical solutions to save energy. For example, we are working on a coating that can be applied to the roofs of greenhouses to allow light in but block a high percentage of radiated heat. This produces energy savings of around 20%. Of course, sustainability obviously encompasses more aspects than energy alone!'

When we think of sustainability, we do indeed think of energy savings. Which other aspects contribute to sustainable horticulture?
'Sustainability also covers issues such as the consumption of crop protection products and water, the emissions of chemicals and nutrients, and circularity. When it comes to crop protection, a lot of work is being done with predatory insects to deal with pest insects. This has been happening for decades. In recent years, we have been placing more attention to creating a good habitat in the greenhouse for these predatory insects. We are therefore conducting research into developing an ecosystem with all kinds of insects. They form what we call a standing army of insects that is present at all times and can intervene immediately if a pest insect enters. In order to create such an ecosystem, we need to place plants in the greenhouse that help establish a good habitat for the predatory insects. Those plants serve as hiding places, a breeding ground or food. Using what are known as banker plants, we can work effectively to develop organic pest control. We also try to make the plant itself more resistant to attacks by viruses or fungi. It is also important to have the right microorganisms in the soil or substrate. With the right growing conditions, you can stimulate that.'

'We research ecosystems with predatory insects and micro-organisms for crop protection'

I take it that besides crop protection, you also study chemical emissions.
'Certainly, we are also concerned with countering chemical emissions. We are conducting research into whether crops that are currently being grown in the open field can be moved indoors. For instance, we have developed a method for growing cotton in greenhouses. Open-field cotton-growing consumes huge amounts of water and chemicals. Greenhouse cultivation lets you save up to 90% in water and can be done virtually without plant-protection products and without compromising on the quality of the crop. It's a great example that demonstrates how bringing a crop indoors can contribute to sustainability!'

Is bringing the crop indoors still profitable?
'In the case of many crops, it currently still costs a lot more to grow many crops in greenhouses than it does in the open field because it uses much more energy. However, if that energy is green and you weigh up all the environmental damage caused by open-field cultivation, then it works out more favourably. It is worth bearing in mind that greenhouses are many times more efficient, especially the high-tech greenhouses we have in the Netherlands! They let you grow fifteen times as much product per square metre and as much as fifteen to forty times more product per litre of water. When all environmental effects are fully taken into account, the balance tips and it can be highly profitable to bring the crop indoors. This has already happened with strawberries and it works extremely well!' >

‘Sustainability covers more aspects than energy alone’

So growing strawberries in greenhouses has proved successful. How far have you got towards applying this method to other crops?

‘We have been very successful with vanilla, coffee, chocolate and tropical fruits such as passion fruit and dragon fruit. These are what the methods were developed for, allowing exotic products to be grown in the Netherlands. It makes a big difference in transport costs. This method can also be beneficial for the countries of origin because it allows better management of water consumption. In the Middle-East, for example, we have built several greenhouses and test centres due to the huge water shortage there. There is no shortage of energy there, so greenhouse cultivation means much greater production can be achieved.’

Which challenges still need to be met in terms of sustainability?

‘Under the Water Framework Directive, the government and the industry have agreed that the horticultural sector is to be completely emissions-free by 2027, by which we mean emissions via water. At WUR, we have in recent years focused on technological developments so we can achieve this, through research programmes such as Glastuinbouw Waterproof (Waterproof Greenhouse Horticulture). This demands a lot of modifications to the green-houses. One such modification, for instance, may involve the continuous recirculation of water. Chemicals and nutrients can then largely be filtered out. Additionally, certain diseases can be eradicated by UV radiation, which combats the contamination of crops. However, recirculation also brings challenges because plants excrete organic substances through their roots, and these end up in the irrigation water. The substances can inhibit the growth of new crops. Finding a solution to this problem is currently one of our main areas of research.’

WUR develops interesting factsheets for growers. See their factsheet on robotics here!

Sustainability is not the only key topic at WUR. Which other developments are set to make a significant difference in the horticulture industry of the future?

‘We are also focusing on robotics and automation. We mainly need robotics to cope with the shortage of workers, especially abroad. Harvesting robots can help solve the labour problems that have arisen there. It often involves routine and repetitive work for which finding a workforce presents a challenge. In addition, horticulture is undergoing an increase in scale, requiring the automation of monitoring. This is done using sensors and is known as data-driven cultivation. We use sensors that monitor the plant, water quality, temperature and humidity. The data from the sensors then has to be translated into actions or advice for the grower. The sensors are becoming increasingly accurate. That is important because the more accurate the data, the more effective the growers can get it to work for them.’

Is data-driven cultivation a factor that will determine the greenhouse of the future?

‘We are indeed turning more and more to datadriven cultivation with artificial intelligence playing an ever greater role. A computer rather than a grower interprets the data and also decides what needs to be done. Business integration is taking place throughout the sector. Hundreds of small, local companies are rapidly becoming several dozen very large enterprises that operate internationally. That is changing the way the sector works. With our studies, we therefore try and respond to the transformation towards a future-proof greenhouse horticulture industry!’ ■

‘Our sector has a social duty to perform’

Horticoop is investing in the future of horticulture

Time flies! In 2021 our transition into an investment cooperative was announced. In the meantime, investments have become an intrinsic part of the daily routine of CEO Steven van Nieuwenhuijzen, CFO Hend van Ravestein and Director Investments Wilco Schoonderbeek. They discuss the steps already taken and express their expectations for the future.

Do you want to discuss current horticulture industry issues? Log in to the Horticoop Community Platform and join the conversation!

In 2021, Horticoop changed course and continued as an investment cooperative. This change of course was needed to turn Horticoop into a cooperative fit for the future. What stood out in 2022 as a result of the transition?

Steven: ‘First of all, the existing portfolio was scrutinised. For the companies whose core activities no longer align with Horticoop’s strategy, new owners have been or will be found. That was the case with Welkoop and Horticoop Andina. As for GEM and Holimco, a similar process awaits. The companies that still remain under Horticoop’s umbrella have been made independent wherever possible. Lensli and Horticoop Technical Services, for instance, have been given an autonomous management team, while Horticoop Technical Services has acquired a portion of the horticultural activities of Codema irrigatie & elektrotechniek. The companies have been given more freedom and responsibility for making choices in areas such as ICT and HR. As for the Bleijswijk team, it has been set up in a lean and mean way: a small core team, surrounded by a shell of external specialists who support us where necessary, leaving us to focus on our core tasks of investing, good shareholdership and community management.’

Wilco: As an investment cooperative, we actively seek promising start-ups and scale-ups that will add value to the greenhouse horticulture sector. In 2022 we actively presented ourselves as investors and began the initial talks. We have since announced two investments: in Skytree and Blue Radix. This really launched our investment strategy.’

Hend: ‘The success of this investment strategy will stand or fall on the involvement of our members. Last year we worked on ways to make it easier for members to get in touch with us and one another. We looked for the connection. The Horticoop Community Platform saw the light of day, as did the first issue of BLAD magazine. In addition, we organised two successful members’ days. These are important tools in our strategy aimed at building an active community!’

With the communication efforts and investments being made, you are actively putting Horticoop on the map. What has this yielded so far?

Wilco: ‘We are having to deal with a turbulent market. Volatile price movements, especially when

Wilco Schoonderbeek

‘We have since announced two investments: in Skytree and Blue Radix. This really launched our investmentstrategy.’

Wilco

it comes to energy, are causing uncertainty among growers who are worried about whether they can continue to run their businesses profitably. There is unrest in greenhouse horticulture. Plus, things have been happening in the financial sector; take the rising interest rates and the events surrounding Silicon Valley Bank and Credit Suisse, for example. Investors have become more circumspect. That is why the knowledge Horticoop brings in is increasingly appreciated. We are making a name for ourselves and have noticed that companies looking for an investment organisation, as well as investors who would like to work with us know how to find us. Besides financial resources, Horticoop has a large network and extensive knowledge and expertise. This makes us an appealing partner for organisations wanting to make it in the horticulture industry.’

Hend: ‘What also helps is that Horticoop understands that new developments in horticulture take time. And, for example, that you have to deal with annual seasons that simply cannot be rushed in order to get results. This is a lot different than, say, software companies. Horticoop cannot offer ‘fast money’ but it is a strategic investor whose knowledge and network sets it apart.’ >

One theme that can count on worldwide interest is sustainability. This subject is also being closely scrutinised in the horticulture industry. How is Horticoop dealing with it?

Steven: 'In recent years, there has been a clear shift from a do no harm strategy to actively making a positive contribution towards creating a sustainable world for future generations.

Steven van Nieuwenhuijzen

On one hand, the horticulture industry is seen as the sector capable of resolving the global food problem, whereas on the other hand, it is recognised as a sector that can boost well-being and happiness through ornamentals. In other words, our sector has a social duty to perform. I can see a role in this for Horticoop. We must contribute towards a sustainable future for greenhouse horticulture. On the one hand, we can do so by reducing our carbon footprint and emissions, and on the other hand by sharing ideas about increasing productivity, the feasibility of innovations and reducing labour costs.'

Hend: 'The social pressure Steven mentions is reflected in developments in public opinion on our industry that has accelerated the need for more sustainable business operations. We went to see for ourselves. How much energy does Horticoop consume? How can we encourage electric transport? How can existing Horticoop companies make a difference? At Lensli, for example, we are looking at peat-free potting soil and organic growing mats. At our substrate factory in Cuijk, we use the electricity from our own solar panels and, on balance, we feed surplus power back into the grid. At Lumiforte, we're developing even more biodegradable alternatives. Sustainability is also one of the criteria for rejecting companies from or attracting new ones into the portfolio. We are of course not alone in doing this. In every industry, this trend is being fuelled by banks and investors who are increasingly making their terms for companies conditional on the sustainability of their operations.'

Looking back over the past year, a lot has been done to anchor Horticoop's position as an investment cooperative. What is on the agenda for the second half of 2023 to strengthen this position?

Hend: In order to have the funds for Horticoop's investments available, we have set up an acquisition line with our main banker Rabobank. In addition, our liquidity position has been strengthened by the returns from divestments.

Hend van Ravestein

This means we are ready for future investments. The cooperative's assets have since been registered in the members' names through the allocation of participations. Now is the time to make preparations for the next stage: making these participations tradeable. We expect this will be possible next year.'

Steven: 'Members can expect regular updates from us and we are asking them actively to share their ideas with us. Without the involvement of members, we are nowhere. That is why we're organising another members' day in the autumn. Horticoop's Dragons' Den during the previous event really revealed our strategy to members for the first time. It was wonderful to see how the voices and expertise from the field and craftsmanship were also given a platform. We would be happy repeat it, so that we can use everyone's input and invest in the things that benefit our members the most.'

Wilco: 'Active input from members helps us find the right investments. Before the end of the year, we hope to be able to make further investment announcements!' ■

To read more about Horticoop's investments in Skytree and Blue Radix, see pages **14** and **20**.

Autonomous cultivation that's worth investing in!

Laurens van der Spek, Ronald Hoek and Rudolf de Vetten founded Blue Radix in 2019

Horticoop actively invests in companies that make a positive contribution towards a sustainable future for greenhouse horticulture. The investment cooperative recently added a new company to its portfolio: Blue Radix. This market leader in autonomous cultivation works closely with growers, implementing AI-controlled growing in greenhouses. Steven van Nieuwenhuijzen, CEO at Horticoop, talks to Ronald Hoek, founder and CEO of Blue Radix, about what the two companies have to offer each other and the rest of the horticulture industry.

Steven: 'Ronald, welcome to the club! Blue Radix is one of the first companies Horticoop invested in since becoming an investment cooperative. Of course we want to reflect on that because this investment represents a major step in the development of artificial intelligence for greenhouses. For quite some time, you have been developing algorithms for use in greenhouse horticulture. Can you tell us some more about this?'

Ronald: 'Certainly! In 2019, my colleagues Laurens van der Spek, Rudolf de Vetten and I founded Blue Radix. At the time we had already been involved in developing algorithms for growers for over six years. You can see Blue Radix as a spin-off of AgroEnergy, a Dutch energy provider that focuses entirely on greenhouse horticulture. At AgroEnergy, they develop algorithms that can be implemented in greenhouses to benefit growers in terms of their energy management. Although a welcome development, I believed the focus on energy alone was too limited. I wanted to create a bigger impact for growers by developing smart software for a wider range of greenhouse processes, such as controlling climate and irrigation. In 2018, Laurens, Rudolf and I took part in the Autonomous Greenhouse Challenge, a competition organised by Wageningen University & Research (WUR). The challenge was to control 100 square metres of greenhouse autonomously. In other words, to control climate, irrigation, and energy processes with algorithms without a grower having to turn the knobs on the climate computer. We came through that process with flying colours and that was what sowed seed for Blue Radix. Since then, we have been gradually building algorithms, always keeping the grower as our main focus. The main question at Blue Radix is therefore: what do growers want to achieve in their greenhouse and how can that be accomplished using algorithms?'

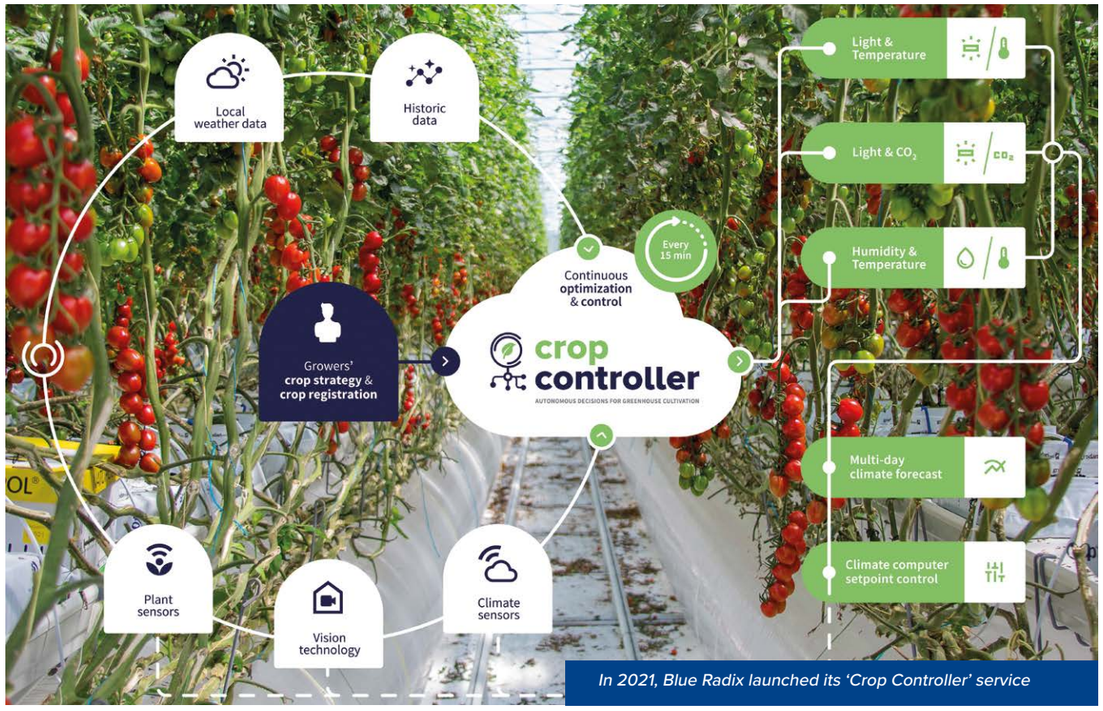
Steven: 'That mindset aligns perfectly with the essence of Horticoop. As an investment cooperative, Horticoop must contribute towards a sustainable future for the greenhouse horticulture sector. Growers are central to this; they are the core of the industry. Technology can provide added value. In talks with our members, we have noticed that there is a real need for it.'

Ronald: 'There is indeed a real need for technological solutions that will ensure greenhouse horticulture can continue to grow in a sustainable way. By way of illustration, the average age of growers in Europe and North America is about 59. That high age poses a problem for our sector. The recruitment of young growers is limited due to the labour-intensive nature of the job. Consequently, there are fewer and fewer experienced growers and the knowledge is dissipating. We can solve that problem partly with artificial intelligence. The grower remains in control but is strongly supported by technology when it comes to the implementation. We put the algorithms at the heart of the operation, so that growers do not have to spend their time making reactive adjustments to their greenhouse systems. Imagine a sunny day was forecast but clouds block the sun anyway. Our algorithms respond automatically to the conditions, controlling greenhouse parameters such as humidity, lighting and irrigation so the crops continue to grow optimally. It makes growing considerably less labour intensive, while simultaneously gathering data to ensure the knowledge is not lost.' >

'Blue Radix is here to help growers get maximum value from their data'

Ronald

CEO Ronald Hoek



In 2021, Blue Radix launched its 'Crop Controller' service

Steven: 'This means Blue Radix also offers a welcome solution to the increasing shortage of labour in our sector. What's more, the smart applications that take over the daily operations in the greenhouse mean growers have more time to focus on more tactical and strategic work, allowing them to oversee more acreage. Algorithms contribute to higher productivity and lower costs for growers. They allow the achievement of better results from cultivation and the sector can learn and expand more quickly.'

Ronald: 'That's right. And that growth is badly needed if we're to meet the increasing demand for healthy and safe food that goes hand-in-hand with a growing global population. We can tackle those challenges through the application of knowledge and experience as efficiently and effectively as possible. Artificial intelligence is a major asset.'

Steven: 'Indeed. In fact, we in the horticulture industry hold an important key when it comes to tackling the global food problem. Moreover, we can make the world a little more beautiful and happier place with ornamentals. I am proud that Horticoop is in a position to contribute to this progress in the sector. Investing in Blue Radix will bring about a new phase in AI development. Together, we can play a meaningful role on the world stage of horticulture. Entering a partnership like this one is a long-term commitment. I am fully confident that Blue Radix is the right partner to take artificial intelligence in the sector to the next level. Of course, although lots of great ideas are launched on the market, they often lack execution or distribution power. Blue Radix's proposition, that leaves growers manifestly at the helm, reinforces our belief as an investment cooperative in the positive contribution you can make to our members and to the sector as a whole.'

Ronald: 'That's good to hear! We are every bit as enthusiastic about Horticoop's shareholdership. Blue Radix is a young company with great ambitions. In 2021, we launched Crop Controller, a service that charts and optimises growers' cultivation strategies without human intervention, based on data gathered from the greenhouse in question. The introduction of Crop Controller went well and won us the trust of a great many growers. It strengthened our growth ambitions and our conviction that the changes we can facilitate are urgent. We want to use our technology to help as many growers as we can as quickly as possible. To accomplish this, we looked for investors who would be able to help us scale up. We found them in Navus Ventures, an independent private investment fund that is part of a family office linked to Lely. And in Horticoop! It's great to be able to join forces with partners who understand this complex market.'

Steven: 'The urgency you mention is something that Horticoop also sees. There are few growers that currently hold an optimistic view of the future when it comes to the continuity of their company. They have questions like: "Can I carry on paying for my costs?" and "How can I achieve higher productivity?". This shows just how great the need is to grow more efficiently and smartly, otherwise you're simply not going to make it. As an investment cooperative, we actively examine which companies align with Horticoop's investment strategy. If you want to be sustainable and make autonomous cultivation affordable and scalable, then Blue Radix's technology is more than welcome. I think there are many more investments to follow that can be linked to Blue Radix's activities. I look forward to going on that journey with you and seeing how Horticoop can support Blue Radix, by harnessing our ecosystem, involving our members and investing in areas such as sensors or robotisation.

Ronald: 'I am also very much looking forward to working with you and of course to interacting with your members. Because I can't stress it enough: the grower is pivotal. Blue Radix is here to help growers get maximum value from their data. We can only achieve that by keeping the dialogue open. And with an active community such as the one at Horticoop, that's fine; it is like having hundreds of experienced advisers who - hopefully! - want to support us in the continued optimisation of our software and the testing of new features. It is always fascinating to meet people who share the same interests. I therefore look forward to getting in touch with Horticoop's members through the Horticoop Community Platform and on the members' day in autumn. After all, working with Horticoop means working at the heart of horticulture.'

Steven: 'This partnership creates a bridge between knowledge, skills, history and a bright future for horticulture. The blue and green go well together!' ■

The ambitious team at Blue Radix

Members in the spotlight:

Five questions for **Loek van Adrichem**, co-owner of Van Adrichem Nurseries

Please tell us, who are you and what do you do?
‘I’m Loek van Adrichem (58) and I have been the proud co-owner of Van Adrichem Nurseries for 37 years. Our tomato nursery is a genuine family business. In 1950, my father began on my grandfather’s land in De Lier, which at the time covered 0.9 hectares. My three brothers and I took over the business. Over the years, we have expanded substantially to 35 hectares. We now have sites in Westdorpe and Steenbergen. Two of my brothers have since retired; they were succeeded by my nephews. So the third generation has already joined the business!’

What is the best thing about your profession?
‘Seeing the tomatoes grow in the greenhouse makes me very happy. Good production is important so we take good care of our plants. Of course we want to supply our customers with only the best quality and tastiest product. It gives me a nice feeling when the tomato plants look good and healthy.’

What is the biggest challenge?
‘Over the past two years, we have faced rising energy prices that have increased costs, which we have taken steps to reduce. For instance, we planted one of our greenhouses later and emptied two of them earlier. This meant we consume less energy while still being able to grow enough. In addition, viruses are an ever-present threat.

At the moment, the new ToBRFV virus the biggest culprit. It is hard to control and if the plants become infected by it, they die immediately. So it’s incredibly important that we work as hygienically as possible to keep the plants healthy.’

What are you doing about sustainability?
‘At our Westdorpe site, we recently invested in solar panels in addition to using residual heat and CO2 from a manufacturer of fertilisers for greenhouse horticulture among other sectors. At our other site in Steenbergen, we have switched from single to double screens in the greenhouses. This means when it’s colder we need less energy to maintain the temperature needed for growing. We therefore burn less gas. Consequently, this sustainable transition also helps combat the rising energy costs.’

Do you have any tips for other members?
“Think in terms of opportunities and solutions rather than problems! For example, when we were confronted with high energy costs, we went looking for a solution that would keep the business running. We could have stubbornly continued to grow, but instead we decided to empty several greenhouses earlier so there would be enough energy left for the rest of the business. A good level of cooperation within a company is also important. We believe that you get much further together than alone.’ ■

Loek van Adrichem among his tomatoes

Extracting CO_2 from the atmosphere

Horticoop is investing in Skytree technology

Rob van Straten, CEO at Skytree

Horticoop is investing in a promising technology: capturing CO2 from the atmosphere. Skytree's technology makes it possible to supply crops with CO2 with a high degree of reliability and emissions-free. Wilco Schoonderbeek, Director Investments at Horticoop, talks to Rob van Straten, CEO at Skytree about the innovation that could help the horticulture industry on its way to a fossil fuel-free future.

Wilco: 'Great talking to you, Rob! At Horticoop we are extremely enthusiastic about our investment in Skytree. We believe in the technology that you're developing to capture CO2 from the atmosphere and in the opportunities that this will create for the greenhouse horticulture sector. Can you explain to our members how this technology works?'

Rob: 'Of course! Our direct air capture or DAC technology uses advanced filters to extract CO2 from the air. The equipment consists of modules that can be combined to form larger units allowing us to capture large amounts of CO2. DAC technology can be deployed on any scale imaginable. The captured CO2 can be used by companies that need it for production purposes, for instance in greenhouse horticulture.'

Wilco: 'Before I got started at Horticoop, I imagined that CO2 was always readily available in the greenhouse horticulture industry. After all, it occurs in the air around us. But I soon found out that all kinds of supply methods are required to provide the crops with enough CO2 to ensure they grow successfully.'

Rob: 'That's right. Market gardeners usually burn gas to heat their greenhouses and use the by-product CO2 to give their crops a boost. However, this method means market gardeners are dependent on gas prices and we've seen that these are subject to wide fluctuations. An alternative is to have CO2 delivered in tankers or along a pipeline. In each case it comes from sectors that have a surplus of CO2, such as heavy industry. But this brings with it major uncertainties with regard to the security of supply. With DAC technology, companies have a new and more economical alternative at their disposal. By connecting our equipment to their greenhouse, they can extract CO2 from the air themselves, so there's always plenty available!'

Wilco: 'The supply security of CO2 is an incredibly important issue for our members. Just like sustainability. We therefore went looking for companies that offered an alternative to CO2 from fossil fuels and came across Skytree. After the introductory meeting, we soon realised that what you have to offer is a need-to-have rather than a nice-to-have for our members.'

Rob: 'I can imagine that's the case. Just try to imagine Dutch greenhouse horticulture without the addition of CO2. Even a minor shortage can have huge economic consequences. That is part of the reason we think it is so important to develop access to an alternative source. But that's not all. Both gas combustion and CO2 deliveries from industry involve the burning of fossil fuels. The CO2 that is released is temporarily stored in plants, but it eventually ends up back in the atmosphere. This happens the moment the plants decay or, in the case of edible crops, after they've been eaten. These emissions are just as harmful as they are when they're first emitted. The CO2 that we capture using our technology eventually ends up in the atmosphere as well. But that's where it came from. No new CO2 is released due to burning fossil fuels. DAC technology therefore not only ensures supply security, it is also an important way for the sector to operate climate-neutrally in the long term.'

Wilco: 'The role this technology could play on the road towards fossil-free greenhouse horticulture sector was a significant reason for Horticoop to invest in Skytree. Not only because new legislation requires the sector to produce climate-neutrally from 2040 onwards but also because we want to shoulder our responsibility in the movement we as a society initiated. The high CO2 emissions no longer have a place in these times. We believe that Skytree's DAC technology will put us in a stronger position in the future.' >

Wilco Schoonderbeek, Director Investments at Horticoop

Skytree's modular, stacked Model 5-units

Rob: 'This is a particularly important movement in the Netherlands because no other country in the world adds more CO2 in greenhouse horticulture. If we can make the switch to CO2 extracted from the atmosphere, then we can set an important example to the rest of the world. We will also strengthen our global market position by no longer relying on fossil fuels and the increasing price of emissions will no longer be reflected in production costs.'

Wilco: 'Rob, you see opportunities everywhere! Knowing you, you will also have thought about applications beyond the horticulture industry.'

'DAC technology not only ensures supply security, it is also an important way for the sector to operate climate-neutrally in the long term.'

Rob

Rob: 'It's true that we are focusing on universally applicable technology as we look to the future. Our equipment can be used in all sectors where a demand for CO2 exists. It can also be used to remove CO2 permanently and place it in underground storage. These would result in being carbon negative, which is essential if we are to reduce historic emissions. This too lies within the technological scope of our equipment. Opportunities enough, then. However, we have decided to concentrate first on one sector, that being the horticulture industry, starting with the Dutch one. As far as we're concerned, it's the logical choice when you consider the great demand for CO2. Nonetheless, in the meantime we are running pilot schemes in other sectors.'

Wilco: 'In the horticulture industry, you are already several steps ahead. Can you say which stage Skytree is at there?'

Rob: 'Certainly! You can think of us as an advanced start-up. We have since extensively tested our technology and there are still a good number of tests scheduled. While we are gathering the latest results we need, we are working in parallel on scaling up our production process. That will mean not losing any time before we are able to launch our equipment on the market. This way we expect to be able to install the first production units for market gardeners in the second quarter of 2024. And in the meantime, our research and development will carry on as usual.'

Wilco: 'The scalability of your DAC technology is one of the aspects that appeals to us the most. Scalability of technology is never something you can take for granted. Being able to get something to work in the laboratory doesn't necessarily mean you can roll it out across the sector. However, at Skytree, we don't foresee any problems in that regard. That is down to the technology as well as the team behind it. You are an experienced entrepreneur and you take all your experience and lessons learned along with you. That is invaluable for investors like us and it gives the technology the opportunity of landing properly in the sector.'

Rob: 'Horticoop's investment plays a crucial role in the process that we currently are going through. As a team we are busy expanding our production and we need people and equipment to do that. In addition we are putting money into the activities that are needed to access the market. These include marketing efforts, as well as the development of standard contracts, installation methods, the roll-out of an ERP software system, and setting up our maintenance services. We are delighted that we can take these steps thanks to the capital that Horticoop and others have entrusted us with. Moreover, the way we work together also makes us happy. Of course, as a business, we need capital, but we also want an investor who believes in us. All too often, an investor wants to sit in the entrepreneur's chair, with all the consequences that entails. With Horticoop, I haven't had any indication whatsoever that you want to change our strategy.'

Wilco: 'That is indeed our approach. We are extremely enthusiastic about the case you have laid out and we are keen to put it into practice. Not only with our investment but also through our ongoing collaboration. I would like to explore ways of getting our members involved in this development, for example as part of future pilot projects. In fact, I expect a large number of them will be eager to get started as soon as possible. This technology might even prompt a new way of looking at income models, where CO2 is seen not only as an amenity but also as a source of revenue. Only time will tell. I look forward to seeing how the interaction between Skytree and Horticoop pans out!' ■

The Skytree team

Lumiforte for a better climate

At Lumiforte, part of the Horticoop portfolio, sustainability is an integral component of the business. At the beginning of this year, the supplier of premium coating set out its sustainability ambitions in a strategy. CEO Guido Janssen explains what this strategy means and how Lumiforte is going to achieve its ambitions.

Guido talks enthusiastically about Lumiforte's sustainable course: 'We aim for harmony between humankind, nature and business. To contribute to this, we have developed a concrete plan based on the four pillars of product optimisation, innovative solutions in the production chain, sustainable business processes and social sustainability.'

To measure is to know

The first pillar is product optimisation. Guido: 'Our coatings help growers save energy and water by allowing them to regulate the lighting and temperature in their greenhouses. To measure is to know though, so we have to provide insight into how much they can actually save using our coatings. Only then are the results tangible. To make this a reality, we are developing proof points that allow the sustainable impact to be measured, helping growers achieve their objectives.'

Coming up with impactful solutions together

The second pillar is all about innovative solutions through sustainable cooperation. Lumiforte is committed to ensuring the whole production chain is in harmony with humankind and nature. Guido: 'Together, we can make the most of what nature has to offer, while prioritising a positive impact on humankind and the environment. There's still lots of potential out there. To achieve this, we must continue to innovate, and we'd rather do so with like-minded people. For example, we are in talks with raw material suppliers and packaging companies. I am convinced that we can learn from each other and that together we can make the whole production chain more sustainable.'

Step by step, coat by coat

Every day, Lumiforte strives to minimise its ecological footprint, in line with the third pillar of its strategy: sustainable business processes. A plan to minimise wastewater and packaging waste will ensure significant savings. Guido: 'Within a period of two years, we shall reduce our packaging waste by 75% and wastewater by 50%. We will also ensure that within five years, a large part of production will be done locally, i.e. in the countries of purchase - for example, the US, Canada and China. To demonstrate that environmental aspects are firmly embedded in our operations, we aim to be granted ISO 14001 environmental management certification in 2025.'

Social sustainability

Sustainability goes beyond the environment, so our fourth pillar is all about a healthy and inclusive working climate. As a company with 70 employees, Lumiforte takes themes such as personal growth, diversity and equality as seriously as ever. Within two years, Lumiforte hopes to crown its efforts in the area of social sustainability by being granted a Great Place to Work certificate.

Fertile land

The four pillars support our efforts in helping create a world where humankind, nature and business are in harmony. It's a dream that can only come true if the whole Lumiforte team and all colleagues in the industry join in. It is therefore crucial that everyone plays their part in the sustainability strategy. Guido continues: 'It starts with becoming aware and commitment. The people in our sector are the fertile land on which the sustainability pillars can grow. So we want to encourage everyone to make a difference; together, we can do that!' ■

NEWS IN BRIEF

Horticoop joins Dutch Association of Venture Capital Companies

Horticoop has been admitted to membership of the NVP. The Dutch Association of Venture Capital Companies (NVP: Nederlandse Vereniging van Participatiemaatschappijen) has been in existence since 1984 and is a leading industry association of venture capital companies in the Netherlands. NVP members are professional domestic and international investors. As an investment cooperative, Horticoop is closely aligned with it.

The NVP represents 90% of assets managed by venture capital companies in the Netherlands. What is its main objective? The NVP represent the interests of venture capital companies towards stakeholders such as politicians, media, investors, entrepreneurs and regulators. In doing so, the NVP works towards improving the investment climate.

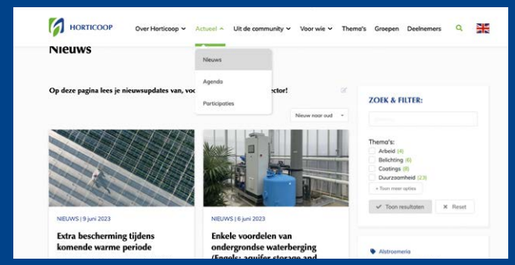
Through the NVP, Horticoop has access to a network of fellow investors. This is hugely important, given that the cooperative often conducts transactions with other investors. In addition, Horticoop gets access to a network of associates, and, through the NVP, the cooperative is kept informed about interesting legislative andregulatory developments and transactions that have taken place. In other words, it is a very welcome membership!

Find each other on the Horticoop Community Platform

From a glimpse behind the scenes at the companies on the members' council to interesting articles about our innovative sector; you'll find it all on the Horticoop Community Platform. An online community where knowledge is shared, information exchanged and contact made with Horticoop members and Horticoop companies.

David Brand, Manager of Communications & Community at Horticoop says that the platform was built to allow people to work together in a constructive way. 'It is important that we are able to find one another. The Horticoop companies each has its own professional knowledge in a certain area of our sector. We want to make this knowledge accessible to our members. That applies vice versa too: the members can simply share the knowledge that they acquire in their companies on the platform. Imagine a member has smart tips on saving energy, or would like to know which organic fertilisers can be dissolved in the irrigation water. It is great that other members are informed about this or have the opportunity to provide input. The Horticoop Community Platform is an exceptionally good means of communication for this sort of thing.'

If you would like to join us in helping build a healthy future for the horticulture industry, then scan de QR code, log in and join the conversation on the Horticoop Community Platform!



Sustainability in the DNA

Peter van de Pol, owner of Schoneveld Breeding and Horticoop member

Sustainability is more than a buzzword for Peter van de Pol, owner of Schoneveld Breeding in Wilp, the specialists in breeding cold-tolerant potted plants. Peter is a pioneer who leads the way in the pursuit of a sustainable approach for the entire product chain. His approach is one that both economically and ecologically can be kept up by future generations. Horticoop talks to the man who has embedded sustainability in his DNA. 'It's a part of my plants and my company!'

As the son of potato farmers in the Biesbosch near Dordrecht, Peter often heard his parents talking over dinner about the price of a kilo of potatoes and how to add value. At the time, the best that could be done was cutting them into chips or producing crisps. The former Horticoop commissioner now knows that there are plenty of other ways to add value to a product, thanks to the work experience he has gained. After studying tropical agriculture, he worked in a leading tissue culture propagation company. Peter recounts: 'Although I learned a great deal at the tissue culture propagation company in Zeeland, I still wanted to work abroad. I swapped my workplace for Tanzania and set up a production operation for a chrysanthemum breeder there. While I was there, I mainly worked with the cuttings propagation method.' It was his interest in managerial involvement that brought Peter back to the Netherlands, where he started at Schoneveld Breeding as Operations Manager. The Tanzanian connection remained, as Schoneveld Breeding runs part of its propagation activities in the East African country. 'Since 2007, I have been the owner of Schoneveld Breeding, where I can combine all the knowledge I have acquired in the field of breeding, as well as cutting, seed and tissue propagation methods, in the processes we conduct here. If I'd known what I know now when I used to sit at my parents' kitchen table, I would have become a potato breeder and propagator. You can do so much with them.'

DNA unravelled

Plant breeding is an interesting line of business that benefits consumers as well as growers. At DNA level, father and mother plants are unravelled so that specific characteristics can be handed down to the new generation of plants by making modifications in the nucleus. It's a long process in which more than ten years has to be spent on each modification. That means it isn't simply a question of following the latest fashion trends; you really have to look ahead an even set the trends yourself. Peter: 'For example, we look at new colours and appearances, abundance of flowers and increased durability. But at least as important is the matter of how growers can be helped, with modifications that remain invisible to consumers. You can make a plant more resistant, for instance, by selecting according to ethylene insensitivity so the plant's ageing process can be slowed down. It is also possible to make plants tolerant to moisture and cold so they can still produce lots of beautiful flowers at lower temperatures. That is great for the growers because is means they don't have to heat the greenhouses as much. This way, the breeding process provides added value, allowing us to make a difference for growers and help them, for example, in making their processes more sustainable.

Economic durability

Peter: 'Sustainability is often linked to ecology but I also like to link it to economics. This is frequently forgotten, whereas it is equally important. By intervening in the basis of a plant, we can add value, creating a higher sales value for the grower. Because, if we develop a plant that needs less water, inhibitors or fertilisers, it benefits not only the environment but also the grower's wallet. Significant investments are needed to make processes more sustainable. Growers must be given the prospect of recouping those outlays.

> 'If I'd known then what I know now, I would have become a potato breeder. You can do so much with them!'

I am convinced that each product should be paid for according to its worth and try to ensure that it is economically durable for growers to produce sustainably. For example, by entering into exclusive agreements with retailers on quantities and the minimum price they have to pay growers. Through gradual and targeted market launches, we can achieve realistic prices for all parties in the supply chain.' >

Innovative supply chain partner

In other areas, too, Schoneveld is taking steps to promote sustainability in the sector. Peter sees Horticoop as an innovative supply chain partner in that process, especially through joint research into innovations. For example there are several trials that Schoneveld Breeding is working on with Horticoop, such as the growth development of plants in peat-free potting soil. Peter: 'In our line of business, it's all about genetically determined characteristics. Together with Lensli, one of Horticoop's companies, we research various additives, from bacteria and fungi to solid elements. We conduct extensive trials, and develop and select plants that are naturally, i.e. genetically, predisposed to grow well in peat-free potting soil. So when the time comes and growers switch to a different potting soil, the roots of our plants are prepared for it. Plants that have not undergone that development will exhibit peculiar symptoms when they are placed in different soil. Those symptoms need to be corrected with inhibitors or fertilisers. By making early modifications in the nucleus of the plant, you avoid having to use additional substances.' That too is sustainability, according to Peter: 'We work together on creating a sustainable future for future generations.'

Practice what you preach

Barry White sang it and Peter van de Pol does it: "Practice What You Preach". Because if all you do is talk the talk, nothing will change. And as he puts it himself, if you don't start anywhere, you won't get anywhere. At Schoneveld, there are plenty of sustainable initiatives, both large and small, although if it were up to Peter, it could never go far enough. 'As a company that embeds sustainability in the DNA of plants, clearly we also have to strive for it in our own production processes. That is why we work, for instance, with a closed hydrological cycle. We are also exploring whether we can buy biogas from the waste processing plant across the road, and we are working with the Vallei & Veluwe Water Board to convert household wastewater into usable fertilisers. In addition, we participate in a solar farm next to our complex. The fact that the power grid in the Netherlands is so congested means we are unable to use the power generated there ourselves, but we can contribute to the solar farm. Moreover, 40% of the power we draw from the grid s generated from renewable sources. Maybe it isn't as sustainable as we might like it to be, but it's currently the best available option. Some ideas don't work, but that's all part of innovating. It makes me even more motivated to look further for solutions. It's a matter of trial and error. There are enough proven principles that, when combined, could lead to major changes. For instance, I am now in talks with businesses in the area with a view to exploring solutions that would make us less dependent on public power utilities. We are working on local alternative solutions that will allow us to use renewable energy at reasonable costs.'

'If you don't start anywhere, you won't get anywhere'

'If you want to go fast, go alone; if you want to go far, go together'

Peter's drive to collaborate stems from an intrinsic motivation to make the world a more beautiful place by adding value to his environment. His key weapon: surrounding himself with people with that same passion. He finds that in collaborative partnerships. 'If you want to go fast, go alone; if you want to go far, go together'. All too often, I still come across companies that are hesitant about sharing knowledge. In practice, you find that rather than getting in each other's way you can actually help one another move forward. A strawberry breeder can share his insights with a tomato breeder without shooting himself in the foot. On the contrary, you can learn from each other. It was thanks to that conviction, for example, that Breeding Accel was born; a platform for breeders made up of six breeding companies who have joined forces. And it works! My advice to everyone is to go and find people to collaborate with! That is also the beauty of Horticoop, where the same mentality and the enthusiasm for strengthening each other is prevalent.'

Transferring knowledge far beyond the national borders

Schoneveld Breeding has a site in the Gelderland town of Wilp, with 180 employees and a production site in Tanzania with over 90 employees. Although in terms of distance, they're thousands of miles apart, when it comes to social awareness, they're on equal footing. Peter: 'We have a responsibility to our surroundings. That is certainly true when it comes to education and knowledge transfer. We apply this internally; for example, a closed hydrological cycle system, born in Tanzania out of the necessity to cope with drought is now used in Wilp. We also engage with the outside world; for example, by providing education. In the Netherlands, we work with high schools and universities. In Tanzania, we set up a school. "Enkedego Primary School" started as a day-care centre for the children of our workers, and now teaches 450 pupils from all over the region. It's a fantastic development that I'm immensely proud of!' ■

Pupils of the Enkedego Primary School in Tanzania

Members in the spotlight:

Five questions for **Marius Rodewijk**, co-owner of Rodewijk Bloemen

Please tell us who are you and what do you do?
'My name is Marius Rodewijk (46) and I have greatly enjoyed being co-owner of Rodewijk Bloemen for over 20 years. That means that I spend thirty per cent of my time on business management and the other seventy per cent on growing and crop activities. I've been surrounded by roses since I was a child. My father was a rose grower and was also co-owner of Rodewijk Rozen, as the company was called in those days. Although he's quite elderly now, he still spends a couple of days a week working in the nursery.'

That's great! So it's a real family business?
'Certainly! In 1953, my grandfather Gerard Rodewijk purchased a plot of land in Roelofarendsveen. At the time mange-tout, strawberries, lettuce and cut flowers were grown here. In the 1970s, Gerard and his team started growing roses. This quickly became a specialisation and soon afterwards, what was originally Gerard's vegetable nursery was renamed Rodewijk Rozen. A couple of generations and many rose crops later, my brothers and I took over our father's business.'

Has a lot changed since?
'Three years ago, at our Roelofarendsveen nursery, we switched from roses to cut hydrangeas, adding Rodewijk Hortensia's to the portfolio. We also have a nursery in Valkenburg, where we grow roses - both regular and edible ones - and for the past six months we also grow cut Hellebore cut flowers.'

Why did you decide to include this crop?
'Growing different crops means we spread the risks. It was during the corona crisis that we began here in Roelofarendsveen and in Valkenburg it was a consequence of the energy crisis. By growing different species of cut flowers, we save energy. Roses are grown all year round so they need constant lighting. On the other hand, Hydrangeas don't need warmth and you only have to keep the frost off them in the winter. Although Hellebores do need some warmth, they only need a little. That cuts down on energy bills!'

You are on the Horticoop Members' Council. What added value does this membership provide you with?
In the greenhouse horticulture industry, we are always running into something that, as entrepreneurs, we need to find a suitable solution for. If it isn't the energy crisis, then in a few years there will be another challenge that we have to deal with. The beauty of our business is that we are continually innovating. That is why I am happy to be a member of the Horticoop Members' Council. It is valuable and interesting to meet people who work in the same sector. That's how you help each other grow!' ■

Marius Rodewijk in his rose greenhouse

The strength of cooperatives for market gardeners

Glastuinbouw Nederland on circularity and cooperation

Adri Bom-Lemstra, Chair of Glastuinbouw Nederland

How can we prevent water from becoming a similar problem to nitrogen? What consequences will the war in Ukraine have on the sector? Every day, Adri Bom-Lemstra, Chair of Glastuinbouw Nederland is involved with issues that have a major impact on the greenhouse horticulture industry. She tells us about developments in the sector and how circularity and cooperation can make a difference.

The advocacy organisation Glastuinbouw Nederland unites and supports greenhouse horticulture entrepreneurs. What current developments are on the minds of your members?

'There are various developments that we are keeping a close eye on at Glastuinbouw Nederland. Topics such as energy, plant health, water and labour are always high up on the agenda. Attention intensifies on one of these major themes according to a range of factors. For instance, new European regulations have made crop protection a hot topic. To counter disease and infestations in greenhouses, we have to use organic means wherever possible. When it comes to organic pest control, we have come a long way, but we're not there yet. The extra attention this issue is currently receiving due to the amended regulation may produce a surge of solutions. This also happened with energy consumption in greenhouses, which was highlighted last year as a result of the war in Ukraine. The high gas prices left market gardeners having to find alternative - often sustainable - solutions so they could continue growing their crops. Although the greenhouse horticulture sector has been working on sustainability for many years, the rising gas prices accelerated the process. High gas prices are of course no fun, but they have helped drive innovations.'

So in that sense, the price increase has had a positive effect. Which gas-related innovations are researchers currently working on?

'One of the most important gas-related products for which alternatives are needed are cogeneration or combined heat and power (CHP) plants. At the moment we still use CHPs powered by gas. We use them to produce heat and electricity, or power, that can be used in the greenhouse. What is not used can be fed back into the power grid. Each day, that can amount to twenty-five per cent in heat and electricity. That is significant! Nevertheless, completely gas-free production is of course much better for the environment. We therefore need to develop an alternative to the CHP plants, for example a CHP that runs on hydrogen or green gas. Another potential solution is geothermal energy. This involves drilling into the ground and extracting renewable heat from the subsurface of the earth, which can then be converted into usable energy. Geothermal energy can even generate so much heat that market gardeners can supply buildings in the area. This development, which started in the horticulture industry, is therefore also finding its way into the built environment. This exchange between market gardeners and the surrounding area is turning our sector into an incredibly important player. However, we are not yet able to switch completely to geothermal energy because sufficient heat can only be extracted from deeper earth strata that are difficult to reach. To wean ourselves completely off fossil fuels, geothermal methods will require further development.'

'The exchange between market gardeners and the surrounding area is turning our sector into an important player'

You mentioned that plant health, energy and water are issues that are demanding attention. What about water policy in the Netherlands?

'There is a growing focus on the quality and future-proofing of water. The question of whether there will be enough water for people, animals and plants in the future comes up ever more frequently. In many parts of the Netherlands, the surface and groundwater bodies are polluted by drug residues or fertilisers. The European Water Framework Directive means government targets have been set to make the surface and groundwater bodies cleaner by 2027. From that year onwards, no more fertilisers or other contaminants may finish up in the water around greenhouses. That is a key concern for market gardeners. For a long time the targets set seemed a long way off but now 2027 is suddenly fast approaching. Market gardeners must therefore step up their efforts to meet the targets. Market gardeners have taken significant steps to improve the quality of surface water, partly due to the water purification directive in force since 2018. In the coming years, they will have to ensure no water leaches out of their >

greenhouses and that they use the right measuring equipment. If our industry keeps to the targets and requirements, we will ensure that we meet the set guidelines.'

That's clear then; water policy is a key issue. The greenhouse horticulture sector is also heavily involved in becoming more sustainable. What can you tell us about that subject?

'The first major step towards making greenhouses more sustainable involves saving water and energy. In addition to the gas-free alternatives I mentioned earlier, we can look at using LED lighting instead of the traditional type. These are obvious developments within the sector but innovation does not stop there. In fact, that's just the beginning! For example, the colours of LED lamps affect the colour of crops; nuances that the human eye can scarcely perceive can have a huge impact on the crop. White roses must remain white, so there can be no red edges on the petals caused by the use of lighting. Each development provides new insights. The same applies, for example, to the use of screen cloths to retain heat in greenhouses and save energy. The additional screens change not only the temperature but also they cause an increase in the humidity and CO2 levels. Due to its negative impact on the environment, the extra CO2 cannot simply be released into the atmosphere. We need to find a solution, which means more research is needed. Each step taken raises new questions. This is reflected in the areas of energy, crop protection and water. At Glastuinbouw Nederland we are engaged with this on a daily basis.'

Circularity is regularly mentioned as the key to a more sustainable way of growing. How does Glastuinbouw Nederland view circularity?

'Circularity means reusing products you've finished with as raw materials for new ones. Water is not the only resource that is recirculated and reused, so is energy. How can we retain the energy generated in the greenhouse and use it multiple times? In the case of geothermal energy several different parties profit from the heat that is extracted from the earth's subsurface. We refer to this system as a heat roundabout. And that is only one of the many applications. For example, the crop residues can also be recycled, and once we conducted a test using tomato plant stems and remnants of freesias to make paper and building materials. As far as I'm concerned, reusing residual materials from horticulture in this way is the future!'

In terms of innovation, how is the Netherlands doing on the world stage?

'I am confident in saying that the Netherlands is at the cutting edge! But we're not the only country that is striving for ever more innovation. Lots of other countries are trying to match us; Israel is on the right path and the USA and China are doing their utmost, which is just as well. I am very much in favour of propelling each other to great heights, especially when you consider the challenges we face together. The ever-growing global population combined with limited water resources means we will have to use our planet's resources in a smart way to avoid crises and make sure enough food is produced to feed everyone. Greenhouse horticulture plays an important part in this. The existing knowledge we already have of growing in a controlled environment, in the greenhouse with all kinds of climate technology, can be applied globally. We have the knowledge and techniques to grow crops efficiently in cold countries as well as in very hot ones. We can market that knowledge if there is demand for it, even for growing in the desert.'

'Each step taken raises new questions. This is reflected in the areas of energy, crop protection and water.'

So as a small country, we are big in applying innovations in greenhouse horticulture. How can organisations such as Glastuinbouw Nederland ensure we hold on to that leading position?

'The beauty of the greenhouse horticulture sector is that we collaborate a lot. In the course of my career, I have looked in on many different industries, such as aerospace and shipbuilding. A distinguishing feature of the greenhouse horticulture industry is that we really want to lead the way, for example finding sustainable solutions and the energy transition. And the Spring Memorandum and Climate Memorandum also show that horticulture has a role to play in this, including, as already mentioned, with the energy we return to society through CHPs and the search for alternatives to fossil fuels. The exchange between market gardeners and the surrounding area is turning our sector into an incredibly important player, to which the government also attaches importance. The Climate Memorandum shows there is a clear interest in our innovations and that people can see they present opportunities for many other sectors in the Netherlands. The opportunities could never have existed if the horticulture organisations were not prepared to share fresh innovations and knowledge with each other. There is a realisation that we need each other to move forward and that encourages the development of knowledge. Together, organisations such as Horticoop and Glastuinbouw Nederland ensure continuous development in the sector through the ongoing sharing of knowledge. That is something to be proud of.'

Where are the greatest opportunities?

The challenges we face in the Netherlands and throughout the greenhouse horticulture sector are so great that our only option is to join forces. We need to carry on seeking each other out, not only within sector but also further afield, for example, in universities. In nearby Westland, traditionally a centre of Dutch greenhouse horticulture, we have TU Delft. The university has a vast knowledge of energy and water, as well as of robotisation and automation which are used extensively in greenhouses. Horticulture and the university can help each other a great deal. We need to carry on making discoveries together!' ■

Will Dutch greenhouse horticulture hold onto its leading global position? Log in to the Horticoop Community Platform and join the conversation!

Hort Americas is growing with the market

Across the ocean, Hort Americas, a company in Horticoop's portfolio, sells innovative horticultural supplies. Despite changing circumstances in the sector, Hort Americas is building on its success with expansions into Canada and Mexico. Chris Higgins, General Manager of Hort Americas has his say.

© Appharvest, Kentucky USA

Chris, how is Hort Americas doing?

'We are strong because Hort Americas has come through several very good years. 2023 has mainly been a challenging year though, and one in which we are learning a great deal because the horticulture industry is changing at a rapid pace. In recent years, investors were prepared to put up a lot of capital, but increased interest rates, inflation and challenging markets mean they are now taking fewer big risks. Moreover, the focus is currently not so much on how quickly a company in which they've invested can grow, but rather on how fast they can get a return on their investment.'

So, economic developments are making their mark on the investment climate in the US horticultural sector. What impact is that having on Hort Americas?

Currently, it's the companies, products and technologies that have had little opportunity to demonstrate profitability that are particularly struggling. In general, the more technologically advanced a solution is, the more difficulties I see. Fortunately, at Hort Americas, we focus on technology that has already shown what it is capable of over several years. We only buy and sell products and services that can increase the earnings from a harvest, reduce operating costs or cut down on labour. LED growing lamps are a great example of that. They are in great demand and there are still many opportunities for a company that can offer horticultural expertise, customer service and quality products. We believe that we are that company and that our track record supports that belief. That's why we have invested in selling LED lighting.'

Hort Americas initially only operated in the United States but now you have expanded into Canada and Mexico. That's a great move! Can you tell us about it?

'The market for LED lighting is still appealing, and that isn't only true for the United States. In other countries, the application of this technology also offers infinite opportunities.

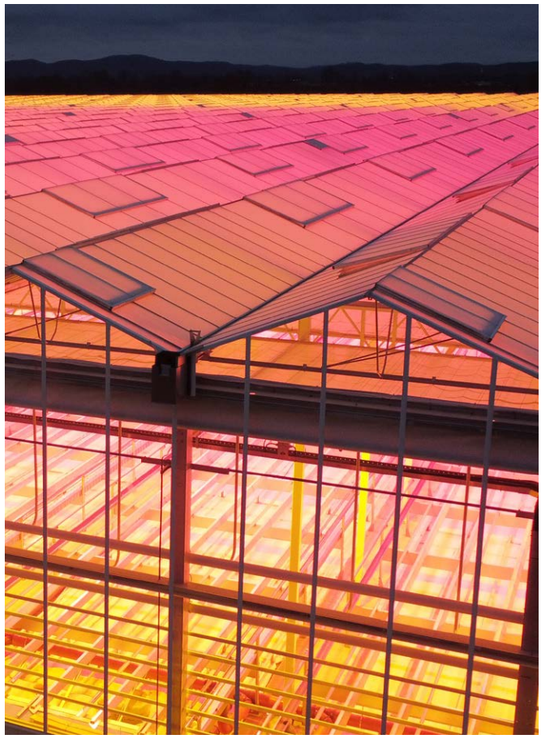
Chris Higgins

'If you want to sell more lighting it makes sense to go to areas where the sun shines less'

Hort Americas is happy to respond to demand. The move to Canada was a logical one for us. Because if you want to sell more lighting, you need to go to areas where the sun shines less. For us that meant heading northwards. In Canada, this year we're focusing on developing key relationships with customers and partners in the industry, so we can establish our position in the blooming Canadian horticultural sector. In Mexico we took a different approach. For now, we are not focusing on selling products there but on offering education. With a wide range of online and offline courses and consultancy, we help the growers understand the science behind their production process. Our focus therefore shifts according to the country, but in both cases I look forward to strengthening how we work with our local partners.'

So, ample opportunities! You said you've learned a great deal recently. Which lessons will you take on board when it comes to future decisions?

'In a changing market, you have to be flexible and adaptable. We used to make quick, large moves. We still do so but we are more aware of the costs and risks involved. What we have learned over the past two or three years is helping us become more focused on our customers and offer our services in a way that befits the economic zeitgeist. The fact that we have a small, agile team and dedicated partners such as GE Current, Grodan and Agrofast helps. Furthermore, we are committed to our business model that is set up in a way that allows us to grow with the market. That is why we continue to invest!' ■



Members in the spotlight:

Five questions to **Frits Mostert**, co-owner of Kwekerij Mostert Nieuwerkerk BV.

Frits, how long have you been in the business?
'I am from a long line of true growers. We have been in horticulture for around 150 years. Among other achievements, my great-great-grandfather was instrumental in establishing the Rotterdam vegetable auction in 1915. Now, for generations, we have been growing various species of houseplants at our family business Kwekerij Mostert. I started here in 1980 after gaining my HAVO diploma. In 1994, my father handed the baton to me. Since 2017, my four sons have also been working for the company, which I'm very proud of!'

What is the best thing about your profession?
'Combining nature and technology is the most appealing aspect for me. Every day, I'm greatly involved with nature, getting the plants to grow as well as possible. To optimise that biological process, we use all kinds of technical solutions and automation in the greenhouses. For instance we use a camera-controlled machine to stake the Scheffleras. I enjoy actively working with technology. That's always been the case! When I was a boy, I used to tinker with mopeds.'

What is the biggest challenge in this profession?
'Our greatest challenge is keeping tropical pests under control, especially the pepper thrips that spread so rapidly. To combat these thrips, we try to use organic substances wherever possible. Unfortunately, these organic agents don't always turn out to be powerful enough, and we are forced to use chemical pesticides after all. The government has set limitations on the use of chemicals, which make controlling pepper thrips all the more difficult. New infestations like this will continue to be a major challenge in the future.'

How do you engage in sustainability?
'We have around 200 solar panels and we intend to add even more. If we want to increase the number of solar panels, we will also have to invest in upgrading our power connection. This will increase our grid capacity. We will also need that if we want to start heating sustainably using a heat pump and aquathermal energy. Our greenhouses will then be heated by energy from a nearby water source. In the long term, of course, our aim is for production here to be as carbon-neutral as possible.'

What would you say is the way to become a good entrepreneur?
'First and foremost, I think entrepreneurship is something that has to be in your blood. But even then it's all about spotting opportunities and daring to take a leap into the unknown. For instance, my sons have been introducing innovations since they joined the nursery, such as setting up a webshop from which our plants are sold throughout Europe. I am happy that I can pass my experience of being an entrepreneur on to my children and give them tips. They have learned a lot not only by growing up in the business but also by discussing the issues and challenges at the kitchen table. As a market gardener you're in the luxury position of always being able to sit down with your family at mealtimes. We would discuss anything and everything at the kitchen table, and we still do so today.' ■

Frits Mostert in his nursery

NEWS IN BRIEF

Horticoop Technical Services expands to Venlo

Since last year, the façade of number 30, Faunalaan in the Limburg city of Venlo, that formerly housed Codema irrigatie en installatietechniek, has sported the logo of Horticoop Technical Services BV (HCTS). By recruiting a large number of Codema's former employees (Codema was declared bankrupt in May 2022), Horticoop invested in the horticultural technology activities of the cooperative. The premises were rented, the stock taken over and the telephone lines reconnected. HCTS Director Tom Zwijsen and HCTS Sales Manager Ben Hoogendoorn are enthusiastic about the opportunities that this expansion of activities brings with it.

Tom: 'The expansion means HCTS has welcomed lots of new technical specialists into the team. The addition of Venlo to our existing sites in Bleiswijk and Klazienaveen also means we have a nice national spread of HCTS branches. And that's not all.
The site reaps the benefits of being conveniently close to our neighbours to the east putting the German market within easy reach and making Austria and Switzerland considerably more accessible.'

The Venlo premises can also count on their approval. Ben: 'The older HCTS premises date back to the time of wholesalers, so now they are too big to function optimally. On the other hand, thanks to the practical layout of the Venlo premises, we now have the opportunity to run the operation efficiently. This facilitates a streamlined working environment where processes run smoothly allowing targets to be achieved effectively. In other words, the Venlo site is a valuable asset for Horticoop Technical Services!'

Horticoop was present at the F&A Next Conference.

F&A Next Conference merges innovation in food and agriculture in Wageningen

In May, Wageningen was the bustling venue for the annual F&A Next Conference where innovators in food and agriculture, investors and start-ups from all around the world gathered together. This two-day event, held on the campus of Wageningen University & Research, was dedicated to accelerating pioneering innovations in the food and agricultural sector. The conference offered a platform for inspiring speakers, panel discussions and networking opportunities. Innovative start-ups presented their revolutionary ideas to an interested audience of investors and industry experts. It focused on various themes, such as alternative sources of protein, circular agriculture, precision farming and sustainable food system management.

Of course, as an investment cooperative, Horticoop couldn't be absent from this event. Wilco Schoonderbeek assumed the role of moderator on one of the panel discussions and reflects on a successful meeting with a sense of satisfaction: 'Controlled Environment Agriculture (CEA) has just been through a difficult period, due mainly to the high energy costs. At the same time, the call for food security with the efficient use of resources and concern for the climate is greater than ever before. During the panel, we had a useful exchange of knowledge and ideas on how CEA can help in meeting these challenges. Emphasis was placed on the importance of cooperation and investments in sustainable solutions to tackle global food challenges together. It's a message that Horticoop wholeheartedly agrees with!' The F&A Next Conference again proved to be a key platform for innovations in the Food and Agri sector.

Photos from the archive

Horticoop was founded over a century ago and has a rich history with companies that have been members of the cooperative, sometimes for generations. Fortunately, that history has been captured in photos. Horticoop delved into the archives and found these historic photos that offer a glimpse into the horticulture industry of old.

1. Horticoop member Wim Meeuwsen poses with his family at Het Zand.
2. In 1967, homes make way for new greenhouses.
3. Damen's cold frame area at Het Zand.
4. Manual watering of geraniums at Lanters nursery.

If you have any photos in your archives that show how work used to be done the horticulture industry and how is has developed over the years, and would like to share them with other members, then please let us know via this **QR code**!
You never know, you might see your photos and the story they tell in a future issue of BLAD.

Horticoop's companies

An overview of the investment cooperative's varied portfolio

Horticoop manages a diverse portfolio of companies, each of which makes a unique contribution to a sustainable and future-oriented horticultural sector. To see which companies they are, read on.

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. See also p.24

Lensli

Lensli is a leading producer of premium substrates for horticultural use, serving all of the industry's segments and crops both at home and abroad. Regardless of which crop the substrates are produced for, consistent quality is always paramount. Its dedicated team of specialists is hugely committed to offering the exact substrate composition that helps make a crop successful.

Horticoop Technical Services

Horticoop Technical Services combines and installs smart technology in the fields of water, light, climate, energy and data for the horticulture of tomorrow. From service and maintenance, to constructing new building projects and replacing or improving existing systems.

Hörle Torv

Hörle Torv peat farm of Hörle, Sweden has a long history and deep expertise in the peat sector. The unique characteristics of the Hörle Torv peat bog form an essential part of Lensli's range of substrates.

Gärtnereinkauf Münchingen

Gärtnereinkauf Münchingen (GEM), a company based in the south of Germany, supplies mainly potted plant companies and garden centres with an extensive range of potting soil, fertilisers, pots and other products, including technical products. The company also sells retail products to consumers. And successfully too, thanks to its expertise, flexibility and efficient logistics, GEM has grown considerably in recent years.

Holimco

Holimco is based in the French village of Villevêque near Angers. Specialising in horticultural equipment and technology, the company has now become an authority in the French horticultural industry. Using a wide range of machinery, robots and equipment, the company helps to promote crop growth and high-yield cultivation. With over 70 years of experience, Holimco has accumulated valuable knowledge that is helping improve the sustainability of the industry.

Blue Radix

Blue Radix is a market leader in Autonomous Growing, the technology in which artificial intelligence can take over human actions. The company creates AI solutions for virtually all day-to-day greenhouse activities. This allows it to provide solutions to the global challenges that come with the increasing demand for healthy and safe food by the growing global population. Blue Radix's AI solutions give growers the opportunity to apply their knowledge and experience as efficiently and effectively as possible. Blue Radix was added to the Horticoop portfolio in 2023. See also p.14

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. See also p.36

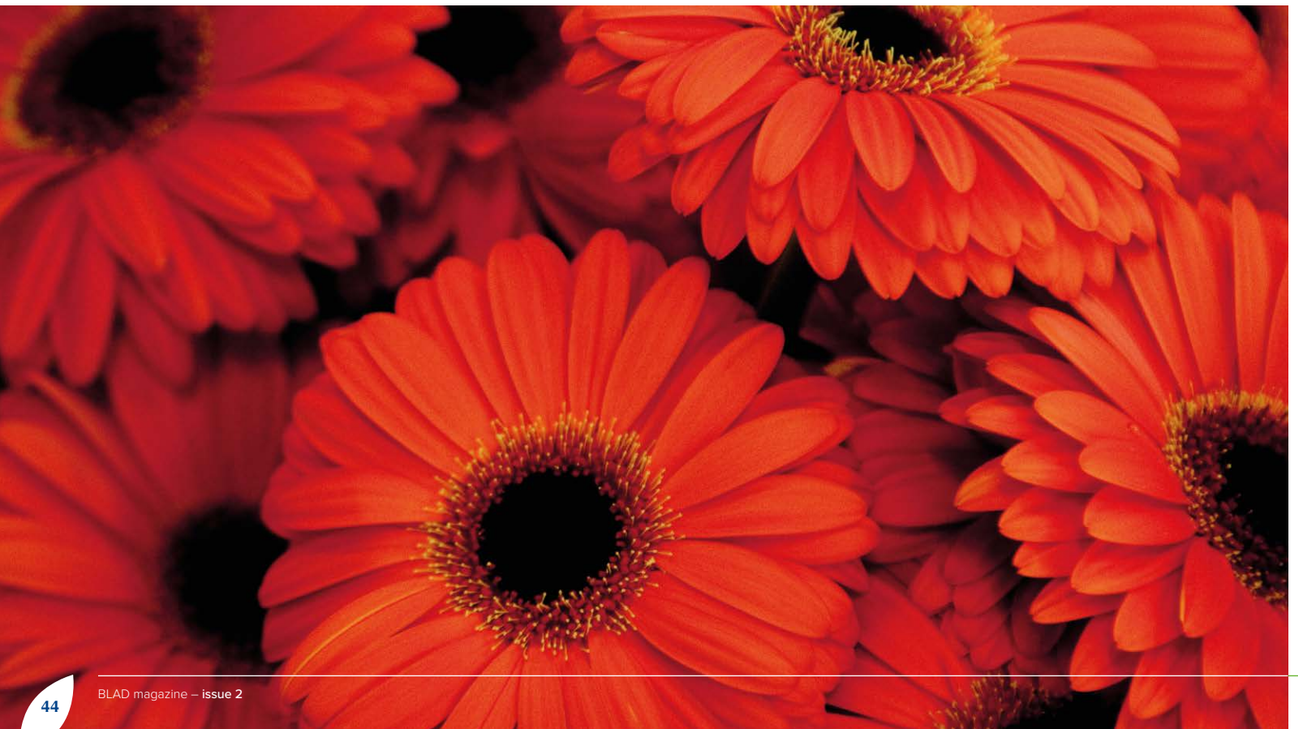
Horticoop Scandinavia

Horticoop Scandinavia is the go-to place for growers in Denmark, being the place where they can find all the products they need for their production process. Its key customers are pot plant growers in Denmark, Sweden, Norway and Finland. The wealth of knowledge on hand among the staff members, set this small but expert team apart in the Scandinavian market.

Skytree

Skytree develops and implements innovative solutions for carbon reduction and sustainability. As a pioneer in the battle against climate change, it works tirelessly to make a positive impact on the environment. In an effort to cut and compensate carbon emissions, Skytree uses Direct Air Capture (DAC) technology that captures CO2 directly from the air using a filter system. This technology is playing a crucial role in boosting environmentally friendly practices and building a greener future. Horticoop welcomed Skytree to its company portfolio in 2023. See also p.20

Annual figures 2022



Consolidated income statement 2022

	2022	2021
	x € 1,000	x € 1,000
Net turnover	162,055	142,575
Other operating income	514	510
Total operating income	**162,569**	**143,085**
Cost of raw materials and consumables	116,945	100,800
Staff expenses	21,383	18,242
Amortisation of intangible and tangible fixed assets	4,489	4,222
Other operating expenses	15,439	14,102
Total operating expenses	**158,256**	**137,366**
	4,313	5,719
Interest expenses	249	272
Pre-tax profit	**4,064**	**5,447**
Taxes	-1,167	-2,059
Share of unconsolidated participating interests	654	204
Third-party share in the profits	-1,000	-583
Group result after tax	**2,551**	**3,009**

Consolidated balance sheet as of 31 December 2022

(The proposal for the appropriation of profit has not been taken into the balance sheet)

Assets

	2022	2021
Fixed assets	x € 1,000	x € 1,000
Intangible fixed assets	12,040	13,088
Tangible fixed assets	22,520	23,844
Financial fixed assets	1,595	1,936
Total fixed assets	**36,155**	**38,869**
Current assets		
Stocks	17,801	17,155
Trade receivables	11,915	10,105
Receivables	2,912	4,745
Cash at bank and in hand	11,325	17,435
Total current assets	**43,953**	**49,441**
Total assets	**80,108**	**88,309**

Liabilities

	2022	2021
Equity	x € 1,000	x € 1,000
Equity	54,585	52,030
Solvency	65.4%	59.2%
Third-party share	1,955	2,434
Group equity	**56,540**	**54,464**
Provisions	1,461	1,874
Long-term liabilities	4,103	7,960
Current liabilities	18,004	24,011
Total liabilities	**80,108**	**88,309**

Key figures

Turnover net
x € 1,000

2022	162,055
2021	142,575
2020	141,440
2019	129,432
2018	186,022

Profit after tax
x € 1,000

2022	2,551
2021	3,009
2020	3,566
2019	-1,663
2018	2,361

Equity
x € 1,000

2022	54,585
2021	52,030
2020	48,818
2019	45,433
2018	47,082

Solvency: Equity-to-asset ratio

2022	68.1%
2021	58.9%
2020	56.5%
2019	61.5%
2018	57.7%

EBITDA
x € 1,000

2022	8,802
2021	9,941
2020	12,510
2019	7,046
2018	13,327

Operating cash flow
x € 1,000

2022	-447
2021	11,466
2020	12,221
2019	7,736
2018	8,765

Number of members

2022	379
2021	383
2020	394
2019	394
2018	510

Average number of employees

2022	286
2021	288
2020	350
2019	348
2018	374

Annual figures 2022

Notes to the 2022 figures

CFO Hend van Ravestein explains the developments and financial results of 2022. You'll find an overview of the annual figures and key indicators on pages 44-48 of this magazine.

Disinvestments of operations

Hend: 'As an investment cooperative, Horticoop focuses on activities that promote the development of modern and sustainable technologies in the horticulture industry. This is why we are closely examining Horticoop's company portfolio and parting company with activities that no longer align with our strategy.' This led to the sale of the 75% equity stake in Horticoop Andina S.A. in Ecuador in 2022, as well as the 50% stake in Twenthe Fleur Beheer B.V. Shortly after the end of the year, on January 2, 2023, Horticoop sold six Welkoop stores to an external party.

Hend: 'Also, at the end of 2022, a letter of intent was signed with an interested buyer for our German wholesale company, Gärtnereinkauf Münchingen GmbH, in which Horticoop holds an 85% equity stake. This sales process is expected to be completed in 2023.'

Revenue development

Horticoop's consolidated net turnover rose by 13.7% to € 162.1 million in 2022, compared to €142.6 million in 2021.

x € 1,000	2022	2021
The Netherlands	57,600	51,325
Other EU countries	57,614	59,140
Other countries	46,841	32,110
Total sales	**162,055**	**142,575**

Hend: 'The above table shows the revenue development per geographical segment. Developments in energy and raw material markets, together with changes in transportation costs, have led to an overall increase in the purchasing prices. Horticoop has been able to partially pass on these increases to the sales prices, which has contributed to the total revenue growth achieved. Revenue has also increased in the Netherlands thanks to the acquisition of part of Codema's technology activities in Venlo.' In Denmark, revenue fell in comparison with what was a highly successful year in 2021. This is mainly due to the increased electricity prices, a decline in LED projects, and a significant fall in crop production using assimilation lighting. In other countries, despite the sale of Horticoop Andina S.A. we achieved a revenue increase. Hend explains: 'This is due to a doubling of sales at Hort Americas, which has seen highly successful growth in terms of its LED projects over the past two years.'

Profit

Hend: 'We closed 2022 with a net profit after tax of € 2.6 million. Net profit in 2021 amounted to €3.0 million. Profits were slightly lower than we had been hoping for in 2022, but given the developments in the sector and the world around us, we are not dissatisfied.'

Balance sheet

The balance sheet total decreased to €80.1 million in 2022, compared with €88.3 million in 2021. Equity at the end of 2022 increased to €54.6 million due to the addition of the profits. The solvency ratio – equity as a percentage of total assets – is 68% (2021: 59%).

Cash flows and funding

Total cash flow for 2022 was minus €6.1 million. 'This is mainly due to the increase in working capital. Most companies have seen inventory positions increase due to price rises and longer or uncertain delivery times. There was also a net increase in working capital at Hort Americas due to LED projects. In addition, regular and extra repayments were made on loans. In 2022, we comfortably met our banking covenants and we expect this will also be the case for 2023,' said Hend.

Investment strategy

Hend: 'In the coming years, Horticoop's investment strategy will have a significant impact on the development of financial results, positions and cash flows. We expect to see a positive development in terms of revenue and profits by investing in existing and new companies. For future investments, we will partly use our own liquidity and seek external funding. Our ambition is to invest at least 35 million euros in acquisitions over the next two years.' Meanwhile, Horticoop has made its first two investments in innovative start-ups in 2023 with the addition of Skytree and Blue Radix to its portfolio.

Expectation for next year

Hend: 'In 2023, we are aiming for profit growth from our substrate, technology, and coatings operations. However, the developments in the sector, global economic changes, and the ongoing war in Ukraine, make forecasts uncertain. The implementation of our investment strategy, involving both investments and divestments, could have a major impact on the cooperative's profits. We are closely monitoring market developments so we can hold our course and make 2023 another successful year!' ■

Horticoop wishes a fantastic summer!

Whether you're travelling, enjoying a staycation or want to put on some appropriate music in the greenhouse... these Horti-hits will see you through the season!

1. **Tomatenplukker – DJ Maurice**
2. **Daisies – Katy Perry**
3. **Kiss from a rose – Seal**
4. **Let it grow – Eric Clapton**
5. **Flowers – Miley Cyrus**
6. **Een hete nacht in een kouwe koelcel – Kromme Jongens**
7. **The rose – Bette Midler**
8. **Some like it hot – The Power Station**
9. **Here comes the sun – The Beatles**
10. **Every rose has its thorn – Poison**

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