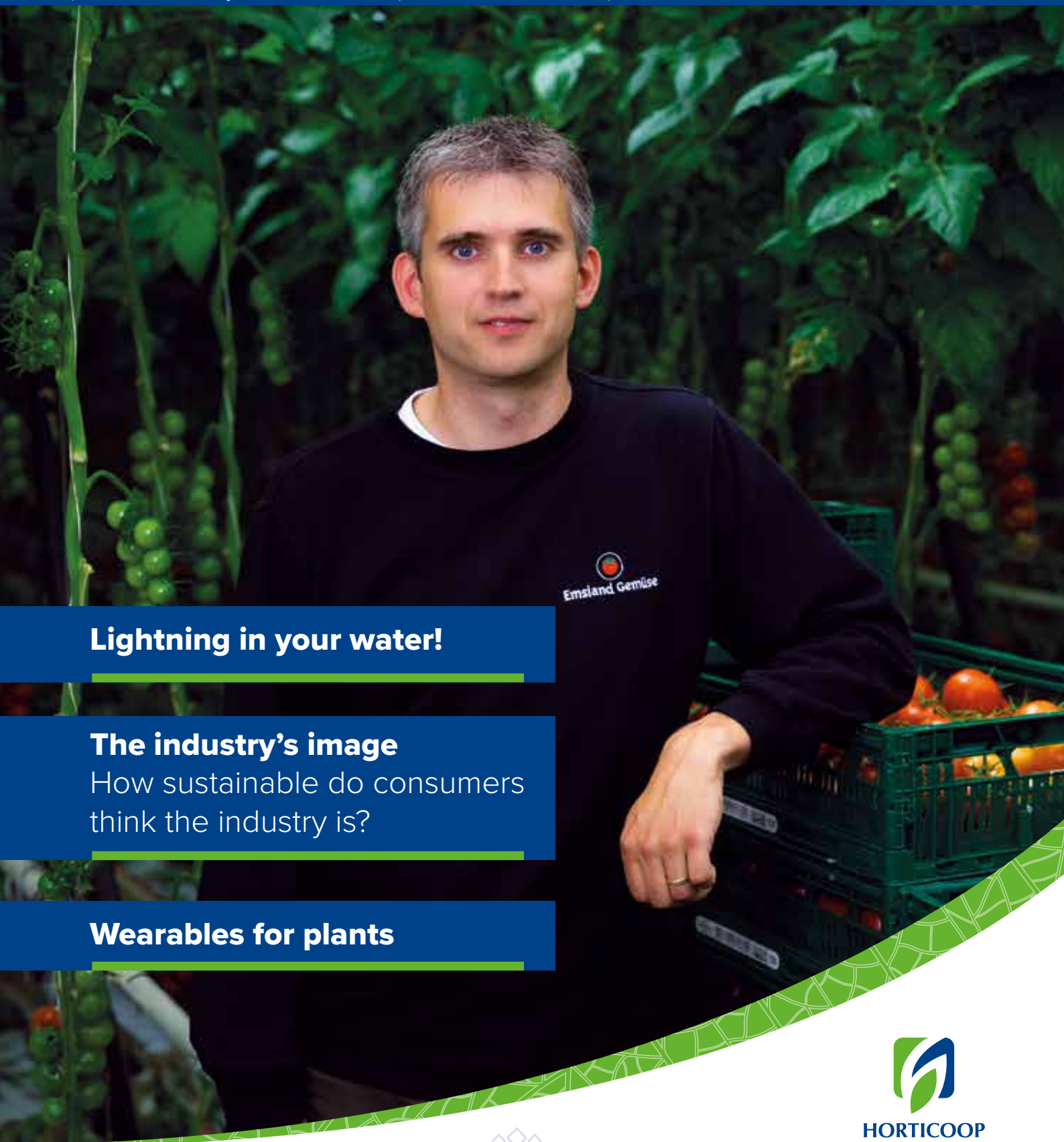


BLAD



A publication by the Horticoop investment cooperative Year 3 - **Issue 3**



Lightning in your water!

The industry's image

How sustainable do consumers think the industry is?

Wearables for plants



HORTICOOP
GROWING TOGETHER

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Cover photo: **Tom Kuipers** from Emsflower

Foreword

Horticoop is on the move. Following the transition period from purchasing cooperative to investment cooperative, Horticoop has started a new phase: making impact. Impact that contributes to a sustainable future for the horticulture industry, enabling continued industry growth and helping to meet the increasing demand for food production. That's why this BLAD issue is all about making impact.

Horticoop is doing this through investments, by activating the companies in our portfolio and by keeping a close eye on our own actions. To achieve this, Horticoop has introduced an Impact and ESG policy; a framework that helps us make responsible choices with people and planet in mind. You can read all about this in this issue of BLAD.

Vivent, VitalFluid and CE-Line, the companies recently added to our portfolio, most certainly operate in line with Horticoop's Impact and ESG policy. We're delighted with these investments and are keen to introduce these companies to you (page 20, page 26 and page 35). As we're a cooperative, Horticoop always seeks cooperation, which is why we partner with other investors when making investments. In this issue, these co-financiers discuss their intrinsic motivation to influence the industry. We also identified many other parties that are willing to share their insights with us. For instance, we discuss the industry's image with Bloemenbureau Holland, enthusiastic HortiHeroes explain where they think the opportunities lie to exert influence and Tuinbouw Jongeren Oostland explains how the younger generation is championing the industry. Finally, you can read in this issue how our members, Tom Kuipers and Jan van der Harg are making impact. The contributions from all these parties have resulted in a magazine that's brimming with inspiration and, as a new member of the Horticoop family, I'm incredibly proud of this!

I hope you enjoy reading this issue of BLAD!

Patrick Groeneveld

Horticoop Managing Director
since 1 November 2023



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Emsflower flourishes with horticulture innovations



One of Emsflower's greenhouses in Ethiopia



Tom Kuipers, Managing Director

Emsflower, one of Europe's biggest horticulture companies, is known for its continued quest for more sustainable methods. Their focus on innovation is not surprising, since Managing Director Tom Kuipers is convinced that innovations are the key to success. At Emsflower, this sustainability pioneer continuously challenges himself to develop innovative and environmentally-friendly solutions for his business, and to inspire others with these solutions.

With a history that dates back to 1954 when your grandfather founded Emsflower before later handing it over to your father, Emsflower appears to be a true family company. Was it a foregone conclusion for you to become active in the company?

'My mother always told us: "Don't go into horticulture. It means working incredibly hard for seven days a week. Just look at your father!". I initially followed her advice and chose another study. But in the end my passion for horticulture was stronger than I thought, and I joined the family company in 2003 after all. That was when we were expanding to Germany. The past 20 years have simply flown by and I love working for Emsflower. Not least because horticulture is such a wonderful industry.'

Emsflower derives its name from an amalgamation of 'flower' and 'Emsbüren', the place in Germany where a major part of your company is located. How boundary-pushing are you?

'My grandfather started the company in Twente, just two kilometres from the German border. The company grew and, under my father's management, it saw major expansions until eventually the space available in Twente wasn't enough. Zoning plans for greenhouse horticulture are strict in the Netherlands, while in Germany there's both more space and more flexible regulations for agricultural developments. So we moved our core operations to Emsbüren, which marked the first step towards international operations. And, as we were always taught at home to look across borders, around three years ago we started in Ethiopia. We acquired 43 hectares there, plus 10 hectares of greenhouses made from greenhouse film in which we grow geraniums and other cuttings. These cuttings are then planted in Emsbüren, where they can grow into full-sized plants. This enables us to control our plants' entire production chain. The local conditions in the African country give the cuttings a strong start. Although it may not initially seem sustainable to grow the cuttings at such a huge distance away, it actually is. By producing the cuttings in Ethiopia, we don't need artificial lighting and heat in the winter, which results in major carbon emission savings. Of course, we use energy to transport the cuttings

but as we transport them mainly in the baggage hold of passenger flights, we can reduce our footprint there too. All told, the energy used via our production in Ethiopia is only a fraction of the energy volume we would have needed to grow the cuttings in Emsbüren.

Keeping our plant breeding in-house, lays a good foundation for plants that have a natural, beautifully branched growth and also require less crop protection. That means we can produce in a more environmentally-friendly way, while at the same time safeguarding the quality of our plants, including our chrysanthemums and geraniums.'

You make the case for more environmentally-friendly production methods here in Europe, too. In fact, you're very busy experimenting, such as with hydroponic tomatoes. How is that going?

'That's certainly a fantastic project! We're experimenting with growing tomatoes in water, eliminating the need for substrates for cultivation. It's a more sustainable alternative since it requires less raw materials, which also reduces our carbon emissions. Cultivation is going well and we're already supplying four varieties of different - and tasty! - tomatoes to local supermarkets around Emsbüren. Now that tomato cultivation has proven successful, we're investigating whether we can also use alternative techniques for peppers and lettuce.'

That's a great example of a sustainable application in your company! Emsflower is known for being a pioneering organisation with respect to sustainable initiatives. How did you get such reputation?

'We like experimenting. For example, we have a system that enables us to convert green waste into electricity. The released residual heat is used to heat our nursery. When we started with this in 2010, it was so ground-breaking that even Angela Merkel came to view our system! We made major investments in a new system last year, which produces four times more green electricity than the initial system, as well as double the amount of heat. This bioplant has enabled us to disconnect entirely from the gas network. Both the heating as well as the electricity consumption are now entirely fossil fuel free. We even produce more energy than we need and supply the surplus to >



A closer look at the wood-burning plant

the grid, where it is distributed to households. Based on theoretical estimates, we supply around 10,000 households with renewable energy; something I'm really proud of!

That's certainly an impressive figure. What else do you do to further embed sustainability in your processes?

'We're currently working on a method to capture the CO₂ that's released from our bioplant when we incinerate pruning waste resulting from landscaping maintenance. Incineration releases the same CO₂ as composting, with the advantage that we can capture the carbon after incineration, filter it and convert it into liquid form. We want to market this liquid form as biogenic carbon. It can be used for various purposes, such as producing fizzy drinks. Carbon is something we're focusing on anyway. Another application we're looking into is a German project in which we're investigating the options of producing sustainable kerosene using synthetic fuel. This fuel is made from green hydrogen and green carbon. If this gets off the ground, it will make carbon neutral flights a possibility. Emsflower is delighted to contribute to this socially responsible development by supplying the required carbon.'

Corporate social responsibility goes much further than sustainability alone; there's also a social aspect to it. How do you see this?

'As an entrepreneur, you have a responsibility for the well-being of your environment and employees. Emsflower has invested in a company hotel for our seasonal workers so they have good accommodation when they're working at Emsflower. The hotel is close to our

location in Emsbüren. We used to struggle to find accommodation for seasonal workers. As the hotel has 150 modern apartments and space for 300 employees, we can rest assured that they have comfortable accommodation and can get to their work easily, either walking or by bike.'

'Our system was so ground-breaking that even Angela Merkel came to view it'

Tom



Emsflower offers accommodation to seasonal workers



Emsflower is at the forefront in terms of introducing innovations. That must put you in a privileged position in helping you stay informed of the latest developments. Do parties know how to find you or do you actively approach innovative chain partners?

'It's often a combination of the two. The advantage of being a big company is that people are more likely to come to you with new products, and people do present a relatively large number of innovations to us. Of course, we're also always busy thinking about how we can achieve certain changes ourselves. We have a department dedicated to breeding and developing new plant varieties, and we have a workshop where we design new machinery and produce prototypes for them. We also often enlist the help of others to realise an idea. For instance, we developed a multi-purpose water system together with a local company. This system doesn't only water and protect the crops, it also makes it easier to load and unload plants in the greenhouse. Such a system didn't exist before, but it does now! The result is that we can now water our plants and apply crop protection via one system, as well as move the plants easily. Ideal! When other large horticulture companies heard about this, they also contacted this local company to purchase similar water systems and internal logistics solutions. That's a positive development. In fact, this partnership is an example of the collaboration we're also pursuing with Horticoop. There too, the goal is to create a win-win situation.'

Talking about Horticoop: what does the cooperative mean for you?

'Emsflower has been connected with Horticoop for a long time now. Its transition to an investment cooperative resulted in various changes. I joined the member council so I could remain in close contact and stay well-informed. It enables me to see the direction the cooperative is moving towards and how it's developing. Take, for example, efforts to promote contact with and between growers. For me, this contact can be intensified! I hope the new innovations, expanding the community and investments in promising companies will help enhance Horticoop's strong position. If all this cooperation results in innovations and new products that benefit growers, we'll have achieved our goal.'

Like Emsflower, the horticulture industry is in continuous development. What expectations do you have for the future of the horticulture industry?

'It's a challenging period, and it's a particularly difficult time for smaller companies that struggle to make sustainable investments. But, among all these challenges there are plenty of opportunities for change. The increased focus on issues such as crop protection, energy consumption and working conditions means you're almost forced to keep innovating. We're continuing our commitment to improvement and I'm convinced we're on the right track. I predict a promising future for the horticulture industry.' ■



The bioplant in which pruning waste is incinerated for conversion into liquid carbon

Green growing

Horticoop's deep roots in the sustainability transition

Horticoop invests in a sustainable future for the horticulture industry, with investments driven by its Impact and ESG policy; a framework for making responsible decisions with people and environment in mind. David Brand, Horticoop's Communication & Community Manager explains why sustainability is needed and the opportunities it offers to grow together.

David: 'As horticulture industry we have major global impact. Horticulturists make an important contribution to solving the world's food problem and, with ornamental horticulture, to the happiness of millions of people. However, the industry is also currently facing a various major challenges including fossil fuel use, which is associated with both carbon emissions and financial dependence for horticulturists. And as residual and waste materials are not always processed in a circular way, this can sometimes cause soil and groundwater contamination.'

Pioneering role

The challenges facing the industry demand a sustainable transition. David: 'To prepare the industry for the future, we need to develop and introduce production methods that enable our industry to reduce its ecological footprint. There are so many promising companies that can offer fantastic solutions for the challenges currently facing the entire horticulture industry. These companies can rely on the industry knowledge, reputation, capital and network of Horticoop and its members. At Horticoop, we view the transition as an opportunity for the entire industry, and it's up to us as a cooperative to play a pioneering role in this.'

David Brand, Horticoop's Communication & Community Manager

Impact and ESG policy

Horticoop has set out its sustainability ambitions in its Impact and ESG Policy, a framework for making responsible decisions based on awareness of the industry's impact on people and the environment. ESG stands for "Environment", "Social" and "Governance". These factors also form the starting point in making new investment choices. The positive impact of potential partners is mapped out during the investment process. The sustainability of companies in the portfolio is also checked against ESG criteria - criteria that measure a company's positive contribution to people, the environment and good governance.

The Horticoop sustainability policy also contributes to four United Nations Sustainable Development Goals that aim to address pressing social, economic and environmental issues. Horticoop is focusing on the SDG goals of "zero hunger" and "good health and well-being", by optimising high-quality vegetable production and making healthy food more accessible. We're also pursuing the "responsible consumption and production" and "climate action" goals by minimising the negative impact of crop production.

Mission: future-proof growing

Horticoop records its goals and activities in its Impact and ESG policy. David: 'Horticoop invests in innovations that promote the necessary transition in greenhouse horticulture or contribute to food security and consumer welfare, while ensuring financial returns for our members. This mission emphasises our goal: a healthy future for the entire horticulture industry.'

Growing together

Horticoop pursues its mission by increasing the cooperative's direct and indirect positive impact. David: 'Horticoop's investments contribute to the steps that growers can take to make their production more sustainable and future proof. Our members' expertise and the access they provide to a potential sales market, enables these companies to further develop their innovative products. This benefits members as their needs are met and they can receive returns if a decision is taken to pay dividends.'

Added value

The investment cooperative's efforts are bearing fruit for the entire horticulture industry and for society. Sustainable technologies enable crops to be grown in a more environmentally-friendly way, which helps tackle climate change and contributes to a biodiverse and healthy living environment. Sustainable alternatives to fossil fuels also increase the security of supply of raw materials, and innovative robotisation technology helps resolve labour shortages.

High-impact investments

Horticoop is already investing in various promising companies that are developing technological solutions to make the industry more sustainable and efficient. This includes VitalFluid, Horticoop's latest acquisition, which produces plasma water to offer a sustainable alternative to artificial fertilisers. Or Vivent, another recent Horticoop investment, which develops digital crop diagnostics that measure a plant's real-time responses to disturbances in the balance between the plant and its environment. Other examples include Skytree, a company developing technology to provide fossil fuel-free CO₂ to greenhouses, and Blue Radix, which uses AI to help growers optimise the growing process for higher yields using less raw materials.

Cross-pollination

David: 'Greenhouse horticulture is currently one of the most sustainable ways to grow food and ornamentals. Yet by no means everyone is aware of this. As well as the sustainability transition, the industry is also facing a different type of challenge: how to bring across our story. If anyone studies our industry in depth it's clear that our positive impact is immense. The horticulture industry is the future and we'll continue becoming more sustainable!'

You can read how Horticoop translates its sustainability policy into investments on page 14.



Is buying greenery actually green?

A survey shows what consumers think about sustainability

Sustainability is becoming a decisive issue for consumers in an increasing number of sectors. The story behind the product increasingly determines which car, pair of jeans or bar of chocolate they buy. But what about flowers and plants? Bloemenbureau Holland conducted a survey on this and discusses the outcomes with Glastuinbouw Nederland, the interest organisation that represents around 70% of Dutch greenhouse horticulture.



Anne van der Wal, Sustainability Project Manager at Bloemenbureau Holland



Quincy von Banniseht, Sustainability Specialist at Glastuinbouw Nederland

Last summer Bloemenbureau Holland surveyed how consumers value sustainability in ornamental horticulture. Anne van der Wal, Sustainability Project Manager at Bloemenbureau Holland and Quincy von Banniseht, Sustainability Specialist at Glastuinbouw Nederland discuss the results.

Anne, let's start with the focus. What did Bloemenbureau Holland investigate?

Anne: 'At Bloemenbureau Holland, we want to better understand how consumers view sustainability in ornamental horticulture. Do they consider flowers and plants to be sustainable products? What do they know about sustainability measures in greenhouses? What role does sustainability play in their buying patterns? To answer these and other questions, we asked almost five thousand flower and plant buyers in the Netherlands, Germany, France and England questions about sustainability. We shared insights from the survey with industry players and we're also using the insights ourselves to better inform consumers about what is happening.'

Quincy, as industry representative how does Glastuinbouw Nederland view the survey?

Quincy: 'Very positively! The results reveal the concerns that consumers of ornamental products have. This helps raise ornamental growers' awareness of the image of their products and offers opportunities to improve this where necessary. That's why I'm delighted that Bloemenbureau Holland shared the results widely with industry players.'

And what image do people have of the industry?

Anne: 'A little over 40% of those asked indicated that the ornamental horticulture industry is taking its responsibility by becoming more sustainable. At the same time, around half of the consumers asked consider the industry to be rather cautious in this. German and English flower and plant buyers are more optimistic than those in the Netherlands and France. So the results are mixed.'

What does the survey show about buying patterns?

Anne: 'Many consumers still seem to find it difficult to translate sustainable intentions into sustainable buying patterns. Some 89% of those asked would opt for locally-produced products, while only 36% actually do that. The same more or less applies to their willingness to pay a premium price for more sustainable products. We also asked what barriers prevent consumers from making sustainable choices. Besides higher prices, they mainly mentioned a lack of knowledge about the impact of products.'

What about the image of flowers and plants as a product?

Anne: 'We asked several participants to explain their associations with flowers and plants. This showed that consumers can respond both very positively as well as negatively about these products. For instance, they mention that flowers and plants are good for the climate, biodiversity and people's mental and physical health, and >



some even say that they couldn't live without flowers or plants. But many negative associations were also mentioned, including the short lifespan of flowers, pesticides, packaging, water consumption and energy use.'

Back to the survey results for a moment. 40% of consumers has the impression that greenhouse horticulture is becoming more sustainable. Is that justified?

Quincy: 'That impression reflects reality. After all, the industry is working hard to become more sustainable and aims to be climate neutral by 2040. The question is more whether consumers have a complete picture of everything that growers are doing in this respect. They often only see the end product, packaged in wrapping or in a pot. But do they also know which sustainable measures were taken before that flower or plant reached the shop?'

So in which ways is the industry becoming more sustainable?

Quincy: 'What the consumer probably doesn't know, is that greenhouse horticulture companies are increasingly using geothermal heat instead of natural gas to heat their greenhouses, which results in major carbon emission reductions. Many nurseries also store heat from the sun in underground aquifers in summer and use it to heat their greenhouses in winter. And we've not even mentioned water reuse, the use of biological

control - using natural enemies to control diseases and pests - and the collection of rainwater during downpours, which prevents flooding in residential areas. These are all sustainable developments that are part of the story behind a flower or plant.'

And yet many consumers consider the industry too cautious. What's the reason for that?

Quincy: 'That's down to the modesty of many greenhouse horticulturists. Many growers aren't aware that the sustainability measures that they've taken are worth their weight in gold. For example, if they were to tell their story about geothermal heating or the use of biological control when selling their product, consumers would have a much better picture of the industry.'

Anne: 'The image people have of the industry's sustainability is currently rather neutral. This means that there are opportunities, but we do need to grasp these as an industry. Because neutral can be positive or negative. It's up to us as an industry to correct this and bring across greenhouse horticulture's sustainability story to buyers.'

What can the industry do to improve its image?

Anne: 'Improving our image starts with communication. As an industry we can take sustainable measures but if we don't tell anyone, it has no impact on our image. Bloemenbureau Holland represents the ornamental horticulture

industry in this. The survey results help us better understand consumer concerns so we can tailor our communications accordingly. For example, we recently published several articles in Margriet, Libelle, Flair and Volkskrant Magazine to highlight the positive aspects of greenery and we featured a grower talking about his efforts to grow more sustainably.'

What is more important? Being more sustainable or appearing more sustainable?

Quincy: 'Being more sustainable! If you only want to appear sustainable you're just greenwashing and that's not the intention. What's more, companies that are just greenwashing fall by the wayside sooner or later. Growers should be aware of this because their behaviour is determining for the industry's image. Fortunately, most of the sustainability ambitions I see are genuine. The greenhouse horticulture that we represent aims to grow flowers and plants in a responsible way and to be climate neutral by 2040.'

Anne: 'Continuing to improve sustainability is certainly the most effective way growers can improve the industry's image. As in any industry, there's a group that's leading, a group that follows and a group that's lagging behind. But we can only continue to tell consumers a positive story if the entire industry eventually becomes sustainable. Also because almost half of consumers don't want to worry about the sustainability of flowers and plants.'

Are consumers then putting the onus on the industry?

Anne: 'Consumers are aware of their responsibility, but mainly want the buying process to remain an enjoyable one. Consumers who want to make sustainable choices also often experience various obstacles. For example, most can't judge which product has been produced in a responsible way and which hasn't.'

That's why they expect the production chain - and every link in it - to take responsibility so consumers can continue to shop with peace of mind.'

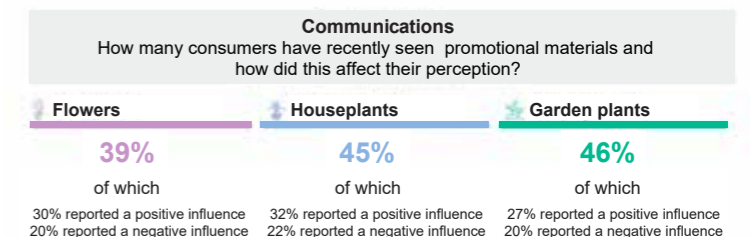
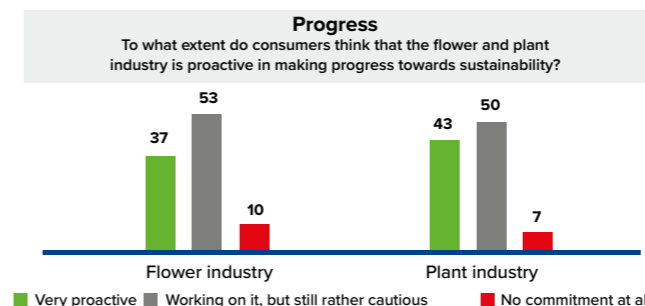
Quincy: 'If we remain committed to sustainability as an industry, enjoyability and sustainability don't need to be in conflict. And another factor that's really important is the significance of flowers and plants to society. And that's huge! Scientific studies show that plants have a positive impact on people's welfare. People working in a green environment are happier and work more productively. Plants also have a positive impact on patient recovery in hospitals and they improve air quality. That makes buying flowers and plants even nicer, doesn't it?'

How does Bloemenbureau Holland monitor what's happening?

Anne: 'Last summer's survey was a snapshot. We conducted a similar survey last year, which gave us some insight into long-term trends. We've also started a fortnightly monitor so we can also monitor trends in the short term. This involves regularly presenting our questionnaire to a small group of consumers to keep an eye on how current events affect them. And we're also carefully monitoring what consumers say about flower and plant sustainability on social media, for example. We expect to be able to draw initial conclusions about short-term trend developments in a few months. I'm curious as to what we'll learn from this!'

i

Curious about the survey? View the summary here!



Green investments

Horticoop's investment strategy for a flourishing horticulture industry

Horticoop is continuously searching for possibilities to add innovative companies to its portfolio, as well as supporting the companies in its portfolio. The investment cooperative uses a strategy for this that integrates sustainability ambitions in the investment process. How does this work exactly? We're happy to explain!

A lot goes on before making a new investment. The potential investment is assessed in various stages before Horticoop invests in a company. This includes aspects such as technology, team, market size, size of the financing requirement and alignment with our Impact and ESG policy. So it's an in-depth process that typically takes nine months between the initial meeting and the point at which the investment is made.

Best solutions

Companies that are searching for capital know how to find Horticoop. Not only because of its financial investments, but also because of Horticoop's industry knowledge, reputation and network. But that doesn't mean that we just sit back and wait to see who arrives asking for investment. Horticoop also searches proactively for innovative companies that can enrich its portfolio, to ensure it has a balanced portfolio of investments with a good representation of various risk and return profiles and impact themes. Horticoop looks for companies that offer the best solutions to the challenges currently facing the entire horticulture industry and invests in new, promising and growing companies as well as mature companies.

Impact themes

In cooperation with its member council, Horticoop selected four impact themes that are important in assessing potential investments: reducing the industry's ecological footprint (sustainability); more efficient use of raw materials including water, light and fertilisers (raw material management); improving crop specifications for higher-quality, healthier and more sustainable products (crop management); and addressing labour shortages and reducing workload by using machines and smart systems (robotisation).

Impact mapping

Horticoop uses an Impact Quick Scan to evaluate whether a company contributes to one or more of the four impact themes. During this stage, a potential investment is assessed on the match between the company and Horticoop's mission. In other words: does this company contribute to the vital greenhouse horticulture transition, and can it also provide financial returns for our members?

If the answer is 'yes', an Impact Assessment is carried out to map out the anticipated impact per theme. We also consider how the anticipated impact could contribute positively to other portfolio companies, and whether we need to take any risk factors into account.

Capitalising on opportunities

If a company is successful in going through the investment process, it becomes part of the portfolio. The management phase then starts, in which Horticoop helps the company capitalise on the opportunities. We aim for an 'exit' after several years, which involves selling shares. The desired result is a solution to a greenhouse horticulture challenge and good financial returns.

ESG criteria

After a company has gone through the Impact Assessment, Horticoop uses ESG criteria to monitor whether it realises the intended sustainable impact. ESG criteria are also used to measure the sustainable progress of companies within the portfolio. ESG stands for 'Environment', 'Social' and 'Governance'. Horticoop's focus is here on reducing the industry's ecological footprint, creating a safe, healthy and inclusive working environment, and good governance and leadership.



If you have any questions about the Horticoop investment strategy, Wilco Schoonderbeek, Horticoop's Director Investments will be delighted to answer them via w.schoonderbeek@horticoop.nl

Five FAQs about Horticoop's participations

Horticoop is has become an investment cooperative. This means the cooperative's assets are registered officially in the names of the members in the form of participations, which have now been awarded. It's a new structure that could, of course, raise questions. That's why we've produced these five FAQs about Horticoop's participations.

1. What are participations?

Participations represent a Horticoop member's stake in Horticoop's assets. As a member, these participations enable you to benefit from asset growth via payments that the cooperative can make to its members from time to time.

2. What do I gain from the participations?

The participations represent a stake in Horticoop's assets. Horticoop's assets are invested in companies that offer solutions for horticulture. This includes innovations or techniques that make horticulture companies more sustainable, efficient and profitable. With participations, members can benefit directly from the investments made in these companies because in addition to meeting their needs, members also share in the growth of Horticoop's assets. Participations can also offer an entitlement to dividends, when a decision is taken to pay them, and the amount of participations determines the level of voting rights within the cooperative. In simple terms, the more participations, the more voting rights and the more dividends.

3. Am I liable in the event of Horticoop losses?

Horticoop is a cooperative UA, or a cooperative with excluded liability for its members. This means that members are not liable for any of the cooperative's debts or deficits. Members are also excluded from liability in the event of bankruptcy.

4. From when can participations be bought/sold?

An amendment to the Articles of Association dated 21 March 2023 states that participations may be made traded in the future. The aim is to have a fully-developed proposal on share trading two years after the Articles of Association amendment. If the member council approves the amendment, the participations could become tradable in 2025. The regulation initially applies to current members; only they can buy or sell participations among themselves. At a later stage, a decision will be taken as to whether to accept new members who can buy those participations.

5. Where can I find out how many participations I have?

Members can view the number of participations they have been awarded after logging onto the Horticoop Community Platform. The total number of outstanding participations on the date this page was last updated is also shown. This gives members a picture of their share in the members' capital reserve.



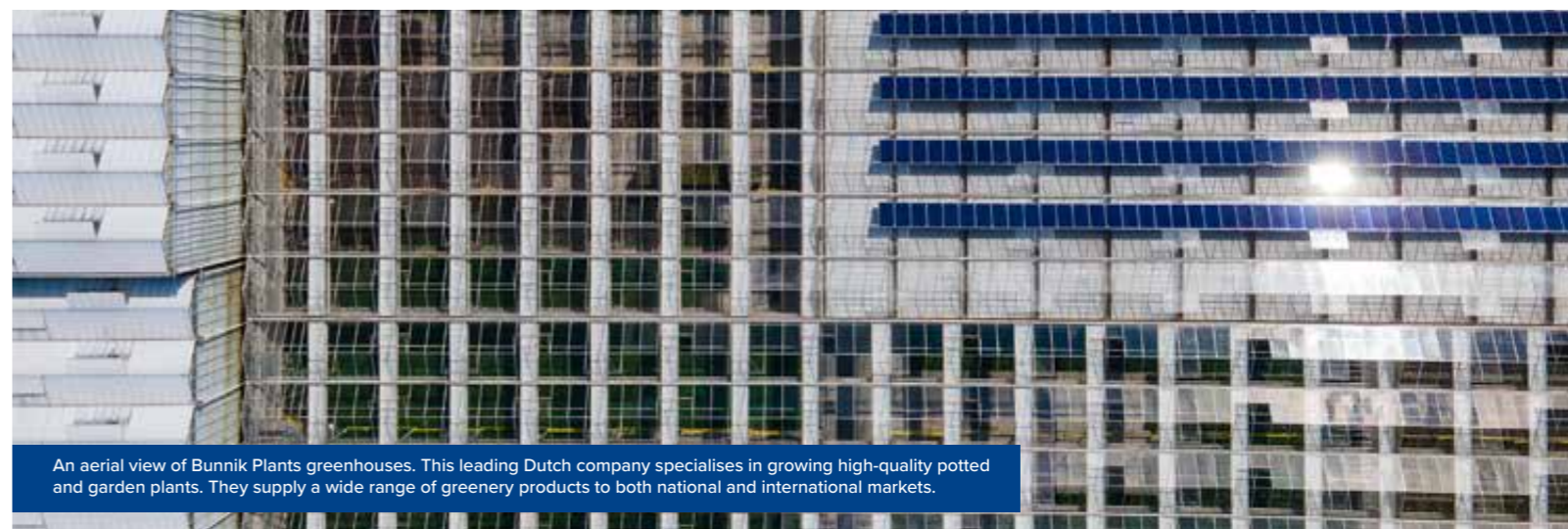
If your question wasn't answered here, feel free to send it to David Brand, Horticoop's Communication & Community Manager via cooperatie@horticoop.nl

Members: a bird's-eye view

If you view the Netherlands from above you'll see the greenhouses that characterise the Dutch landscape. As these greenhouse panoramas are simply extraordinary, this Horticoop in Pictures section presents a bird's-eye view of members, with their greenhouses shining in the leading role!



An almost magical image of 20 hectares of cutting-edge greenhouses in which bell pepper grower Carlo Zwinkels has been growing yellow bell peppers for generations. This high-flyer in Wervershoof combines state-of-the-art glass units with the latest technology, enabling sustainable growing for national and international markets.



An aerial view of Bunnik Plants greenhouses. This leading Dutch company specialises in growing high-quality potted and garden plants. They supply a wide range of greenery products to both national and international markets.



These greenhouses are part of Maarel Orchids. With 9.5 hectares of glass, their greenhouses create the ideal conditions for the over 115,000 pot orchids grown there every week. And they're successful too, as Maarel Orchids has had close relationships with Europe's leading retailers for some 40 years.

HortiHeroes: the development platform where heroes flourish and grow



Fabienne van der Klugt-Gram,
Community & Startup Lead

Puck van Holsteijn,
Director

HortiHeroes works to attract, connect and develop talent both in and outside the Food & Flower industry. From students and startups to enterprising young professionals and entrepreneurs. Director Puck van Holsteijn and Community & Startup Lead Fabienne van der Klugt-Gram talk about their opinions of the Food & Flower industry, what they think the Netherlands lacks and what's needed to achieve success.

HortiHeroes is an innovation, startup and talent development platform for the Food & Flower industry. The mission? Attract, connect and stimulate talent development to drive innovation within the Food & Flower industry. The innovation platform does this partly by connecting new technologies from startups and scale-ups with established companies, helping startups to access markets in the industry, and helping Food &

Flower industry talents to grow by offering talent development and entrepreneurship programmes. HortiHeroes is located in World Horti Center, Naaldwijk. And not without reason. Puck: 'World Horti Center is the international horticulture industry's knowledge and innovation centre and has ten thousand national and international visitors each year. They focus every day on inspiring people, sharing knowledge and co-creating.

The combination of this stunning location where entrepreneurs, educators, researchers and government agencies cooperate, and the HortiHeroes team's positive energy and fresh outlook is unique. We can be very proud of this!

Hand in hand

The support that HortiHeroes offers in accessing industry markets, helps startups flourish and grow. A good example of this is Skytree: the company that focuses on an innovative technology to capture atmospheric CO₂. Skytree took part in the HortiHeroes startup programme and is now one of the companies in which Horticoop recently invested. So it's a true success story! And there are many other startups that HortiHeroes has helped develop since its establishment in 2018. 'We believe in the power of startups', stated Fabienne. 'Every company can innovate, but the advantages of startups is that they're not yet on that proverbial train that just keeps chugging along. Companies that have been active for a long time and have fixed processes don't always put innovation first. Startups, on the other hand, are established with the goal of resolving a specific problem. This means they can immerse themselves entirely in innovation and develop a solution. At the same time, startups really need established companies so they can test their product, find their first customer and ultimately scale up. Conversely, established companies have so much to gain from startups, as they often don't have the space to innovate themselves. It's important that the established order and the pioneers join forces and help each other progress.'

Actions speak louder than words

Joining forces enables the Dutch horticulture industry to make an effective contribution to global issues, including going green and feeding the world sustainably. Puck: 'We don't only export products from the Netherlands. Our knowledge and technology is also spread across the world. A fantastic development that enables people in other parts of the world to learn about local sustainable cultivation.' Even though the Netherlands is very progressive, there are still various shortcomings preventing the Food & Flower industry from flourishing optimally. What's the reason for that? 'There's not always space for investment in new technologies', stated Fabienne. 'As an entrepreneur, you need to take legislation and regulations into account and, of course, we're talking about fresh

products here, which makes experimentation more complex than in many other industries. Crops can be affected by disease or plagues of insects, for example, and you also need to take into account that a crop's growth cycle can take a year. That hinders experimentation. And it poses a challenge for startups because, for real development, they need to peak in the first or second year.' Yet the horticulture industry also has various advantages over other industries. Fabienne: 'The horticulture industry is incredibly entrepreneurial and has an "actions speak louder than words" mentality. Horticulturists speak plain language, get into action mode quickly and are happy to support each other. You notice that entrepreneurs enjoy helping each other move on to the next level. And of course, that's a real help if you want to progress as an industry!'

Outward-looking

HortiHeroes doesn't only focus on bringing people from the horticulture industry together, it also looks outwards. That's something Puck thinks isn't yet particularly common in this industry. 'There are so many connections within the horticulture industry. Most horticulturists know how to find each other and they often seek partnerships and solutions within their own network. But particularly in the current economy, it's hugely beneficial to also look at startups and, for example, recent graduates from other sectors, including the energy sector or maritime industry. As Food & Flower industry, we can learn a lot from them. That's why we also regularly invite speakers who you wouldn't immediately associate with the horticulture industry. Tony Chocolonely or Dopper are great examples of this. These are companies that have creative impact both in a commercial sense as well as for people and planet. The horticulture industry can gain inspiration from these. We have a partnership with Lely, for example, a supplier of agricultural machinery including milking robots. Not necessarily horticulture-oriented, but definitely interesting because Lely is involved in nutrition and robotics. This is how we keep looking beyond our industry. After all, innovation often occurs where you don't expect it, and occurs more often if you connect different disciplines. That's something we firmly believe in at HortiHeroes.'





Wilco Schoonderbeek, Horticoop's Director Investments

Wearables for plants

Horticoop invests in smart Vivent technology

Horticoop actively invests in companies that are committed to a sustainable greenhouse horticulture industry. Vivent, world leader in digital crop diagnostics, has been added to the portfolio. The technology developed by Vivent gives growers more insight into plant health during the cultivation cycle. Wilco Schoonderbeek, Investments Director at Horticoop, talks to Carrol Plummer, CEO and co-founder of Vivent, about what the technology can offer the industry.



Carrol Plummer, Vivent CEO

Wilco: 'Carrol, at Horticoop we believe that Vivent can be an important building block in data-driven control of greenhouse horticulture cultivation. There has always been a lot of emphasis on measuring and controlling factors that affect crops, but your technology is one of the few that enables us to make adjustments based on the response from the crop itself. Can you tell us more about this?'

Carrol: 'That's right! Vivent is a scale-up involved in continuous monitoring of plant health. We record naturally occurring electrophysiological signals that plants generate in response to environmental changes. At the start of the cultivation cycle, we attach a small sensor to the plant, which is removed just before the plant leaves the greenhouse. We use a plant's electrophysiology. This entails the sensor picking up on the plant's internal electrical signals. Plants use these biological signals to regulate their internal growth and development and to monitor drought issues or defence mechanisms. This enables the grower to monitor plant health throughout the cultivation cycle. Such sensors can be seen as wearables for plants.'

Wilco: 'That's incredibly useful, as it allows growers to intervene more quickly if it looks like things are going wrong. Previously, they could only take measures when the effects of poor conditions became visible on the plants. Vivent technology enables them to obtain direct feedback about a plant's internal conditions.'

Carrol: 'We can warn growers before visual symptoms, if the plant is attacked by pests, if it has a fungal disease or if there's a shortage of certain nutrients. We transmit notifications and the grower receives interim reports so they can stay informed of developments.'

Wilco: 'A promising technology that will contribute to improved greenhouse horticulture quality and sustainability. That's why I believe that Vivent can have a huge impact in the industry. Horticoop's current portfolio mainly comprises companies that are already somewhat bigger. The investment strategy has led to the inclusion of companies that are at an earlier stage and of which we have high expectations. Vivent is one such company.'

Carrol: 'We also see a lot of potential in this cooperation. Of course, we welcome investments from every investor that can contribute to Vivent, but Horticoop's investment received a particularly warm welcome. It increases our opportunities for scaling up. We can also use your expertise to improve the product and market it effectively. It's also a cooperative of growers of many different types of crops and has a lot of experience, outside the Netherlands too. So there are huge advantages for us in having Horticoop as an investor.'

Wilco: 'I hope this cooperation enables us to surprise growers in a positive way. Naturally, growers rely on their experience. It's an approach that has paid off for years. So it's a major step to switch to data-driven cultivation. As a grower, you need to have faith in the technology.'

Carrol: 'That's right! I think it's fantastic when I hear that growers have followed recommendations from our plant scientists. As soon as they trust us and see clearly better results, the ideas often start to flow. Then growers come to us with other ideas so we can collect even more data. And we then give them the opportunity to test those ideas. The insights from collaborating are valuable for both parties. Growers are already experts, but many are seeking to learn a little more. In my opinion, the Netherlands has the best growers in the world and I'm looking forward to working with the best in the business.' >



Wilco: 'That benefits both growers and Vivent. But you do need to convince growers of this. New technologies result in a different way of working. Working practices are sometimes passed on from generation to generation, so they're very personal.'

'Plant-driven cultivation enables you to intervene in the cultivation process based on information that comes directly from the plants'

Carrol



Carrol: 'Indeed, our work is really at the core of what the grower does. So I always think beforehand about whether our advice makes things less or more risky for the grower. Growers are very good risk managers. They take major decisions at the start of the cultivation cycle - which crop will I plant and how should I approach the cultivation - and they then need to adhere to that until the end of the cycle. We hope we can achieve cost savings and better

yields by helping them consider all the risks. Doing this helps us make growers' livelihoods more secure. As growers take a long-term view, we can work with them to measure the impact of our technology on crop sustainability.'

Wilco: 'That sounds like a great mission. I always find it encouraging to see companies searching for new innovations and a new market. Joining forces can also really pay off. In that respect, Horticoop offers Vivent a large network of companies where there are many opportunities.'

Carrol: 'Certainly! We see so many opportunities for cooperation with the companies in which Horticoop has already invested. Take Blue Radix, for example, which is involved in AI controlled cultivation in greenhouses. We can offer them an additional information source, which adds value to the information they already collect. Growers are the ultimate beneficiaries of this.'

Wilco: 'Indeed, groundbreaking innovations can emerge from such partnerships. Not only in greenhouse horticulture but for agriculture in its broadest sense. That's what makes it so interesting! If you've developed a technology that can also be used in other industries, it's a huge plus point from an investor's point of view.'

Carrol: 'Certainly! Various companies are already rather advanced in this. Growers that operate high-tech greenhouses are taking the lead in data-driven control of their processes. We can take them to an even higher level by giving them more information that comes directly from the plants themselves. Then cultivation becomes plant-driven. Combining our technology with other innovative technologies enables us to develop concepts that can be used in more than one industry, which increases our impact.'

Wilco: 'Pymwymic, our co-investor, can also support you in this. As a pioneering impact investor, Pymwymic has a wealth of experience. A truly fantastic cooperation from which both Horticoop and Vivent can benefit.'

Carrol: 'Pymwymic and Horticoop had already given us so much, long before the investment was completed. We measured the impact of our technology together. It was great to see how the teams readily came together and were willing to put a lot of time into Vivent in advance. Truly remarkable! The combined knowledge of Pymwymic and Horticoop will increase our opportunity to impact sustainability in the greenhouse horticulture industry.'

Wilco: 'It's certainly a great partnership and I'm so pleased that this trio was established! I'm looking forward to building towards a sustainable greenhouse horticulture industry and I'm convinced that the future will offer us so much!' ■



Vivent's management, from left to right: Carl Rentes, Commercial Director; Carrol Plummer, co-founder and CEO, Nigel Wallbridge, co-founder and Executive Chairman, Andrzej Kurenda, Chief Scientific Officer



From paper to practice

Skytree's pioneer programme

Rob van Straten, Skytree CEO

Skytree aims to improve sustainability in greenhouse horticulture by capturing atmospheric CO₂. Horticoop invested in this promising technology in 2023 and as it's now so much further in its development it's time for the next phase: tests in practice! The pioneer programme was created for this purpose. This offers horticulturists the opportunity to be among the first in the world to test the advanced DDAC technology in their companies. It's a unique opportunity that Rob van Straten, Skytree CEO, is very enthusiastic to explain.

Rob, in a nutshell, what does Skytree do?

'Skytree is the developer and manufacturer of DDAC units ('Decentralised Direct Air Capture'). This technology focuses on filtering atmospheric CO₂, creating a circular system. Our technology enables us to supply atmospheric CO₂ to greenhouses, stimulating plant growth in the greenhouse. The CO₂ in current use mainly comes from fossil fuels, which will disappear in the longer term. If we want to continue growing food sustainably in

the future, we'll need to switch to sustainable CO₂ production. Skytree's technology offers such a sustainable alternative.'

Skytree is committed to reducing and offsetting CO₂ emissions. How does the pioneer programme contribute to this?

'We produce the technology but, of course, this needs to be tested. For that, we need a group of reference customers; users at which we can test

our technology and where we can collect data about our systems in practice. To gather as much data as possible, we're seeking a wide variety of crops including tomatoes, cucumbers, peppers and flowers. The use of different heat sources is also interesting. This enables us to test the available energy systems - geothermal, electric boiler, a CHP system, biomass or a combination of these - in all their forms. The more data we can collect in this phase, the better we can align the technology to end user requirements. A second reason to introduce the pioneer programme is that it helps us to be included in the 'SDE++' subsidy programme. To be eligible for this, in 2024, Skytree needs to demonstrate that there is market demand so we can potentially be included in the subsidy programme as of 1 January 2025. If we succeed in this, and of course we're going to do our utmost for this, our customers will also benefit as it will reduce the cost price of a DDAC unit.'

Which data are you collecting during the pioneer programme?

'The pioneer programme allows us to examine our systems: how do our models work once installed at the grower? Of course, we've already done a lot of research, but it's vital that we conduct tests in various situations in practice. Our technology is new, there's no other organisation in the world using this technology. That's really cool but it's also challenging! Together with a group of innovative Dutch greenhouse horticulturists, we aim to use this pioneer programme to show the world market that it's possible to introduce CO₂ in a sustainable way to increase crop productivity. Skytree also aims to contribute in other ways to data collection for the industry. That's why we helped Glastuinbouw Nederland to establish a test environment for WUR (Wageningen University & Research). They'll be investigating whether CO₂ can be dispensed more efficiently. They're doing this by testing whether the plants' experience of atmospheric CO₂ filtered by Skytree is different compared with CO₂ from the fossil fuel industry. Another interesting perspective!'

Is there a lot of interest in the programme?

'There's certainly a lot of interest. People see how important this programme is for the industry, and that's very gratifying! Fortunately, the pioneer programme participants understand that the technology is in constant development. There's still a lot of work to be done, for example, with respect

to how to integrate their energy systems and the software that will control their energy. We're looking for a diverse group of pioneers who want to help us fine-tune this. It's expected that the systems can be installed in 2024 so any interested parties can still contact us! ■

Would you like to be a pioneer in Skytree's technological revolution?

Contact their Business Development Director Fred van Veldhoven on +31 (0)634642742 fred.vanveldhoven@skytree.eu



Horticoop member, Jan van der Harg, is talking to Skytree about taking part in the pioneer programme.

*Owner of Van der Harg CV, De Linge Paprika and De Linge Aubergine
Member of the Horticoop Supervisory Board*

'Skytree's technology offers a good alternative for the increasing CO₂ problem. As growers, we need CO₂ but the number of sources is decreasing. Reducing fossil fuel use is good for sustainability but on the other hand results in a reduction in the availability of CO₂. In other words, sustainability is reducing the availability of CO₂. This will impact greenhouse horticulture. I'm delighted to be involved in the pioneer programme. This enables Skytree to gain knowledge that they can use to make their technology even more useful and we can map out its potential for us as a company. We're looking forward to it, as it's a step in the right direction. Such

optimisation will ensure that we also have enough CO₂ to stimulate plant growth in the future, while simultaneously reducing our energy needs. I believe this is the direction we need to take as an industry and hope we can make great progress in this, together with Skytree.'



Jan van der Harg

Two birds with one... strike

VitalFluid brings lightning power to the greenhouse

Lightning is an impressive natural phenomenon but is also a vital power source for crops. VitalFluid – a new Horticoop investment – uses this in an ingenious way. The Dutch startup is a world leader in using plasma-activated water; a sustainable alternative for fertilisers and pesticides. Horticoop's Investments Director, Wilco Schoonderbeek talks with Erik Hertel, VitalFluid's CEO about the potential of this striking technology.



Wilco: 'Erik, not everyone is familiar with the terms 'plasma' and 'plasma-activated water'. Can you explain what this entails and the role lightning plays in this?'

Erik: 'Certainly! Plasma is also known as the fourth aggregation state of a material or the fourth observable state of matter, besides solid, liquid and gas. Matter enters the plasma phase when energy is added to a gas. Plasma plays a more important role in our daily lives than you'd imagine. The sun is comprised of extremely hot plasma, plasma is used in most TV screens and lightning is also a plasma. When lightning strikes, nitrogen and oxygen molecules in the air come into contact with water, causing these molecules to dissolve in the water. This is what we call "plasma-activated water" or "lightning water".'

Wilco: 'That's clear. And what does plasma have to do with crop growth?'

Erik: 'The combination of air, water and electricity creates the ideal situation for plants to grow. Plasma-activated water actually has two properties that are vital to crop growth. First of all, this water has a temporary disinfecting effect, which makes plants more resilient to pathogens such as fungal and bacterial diseases. This water's other property is that nitrogen remains permanently in the water, which the plants can then absorb. This makes the water more fertile. Nitrogen is, after all, the most important plant nutrient. In nature, lightning water rains from the sky on plants during thunderstorms, protecting them and providing nutrients.'

Wilco: 'In what ingenious way does VitalFluid use the principle of this natural phenomenon in greenhouse horticulture?'

Erik: 'The disinfecting and nourishing role of lightning water is particularly relevant to greenhouse horticulture. Due to its cleansing effect, this water can be used as an alternative to chemical pesticides. Nitrogen in the water also provides a sustainable alternative to fertilisers. VitalFluid develops systems that imitate the effect of lightning. The advanced machines transform standard water into lightning water by combining air, water and electricity. Unlike lightning, our products are completely safe and can be used in the greenhouse at just the touch of a button. But just like in nature, this creates the ideal conditions for plants to grow.'

Wilco: 'It's important that the industry invests in sustainable alternatives for both crop protection and fertiliser. With these systems, VitalFluid is striking two birds with one stone.'

Erik: 'Controlled Environment Agriculture is a way to produce food and ornamentals more sustainably than alternative cultivation methods, but we think that various innovations can make the industry even more sustainable. Chemical pesticides are associated with health risks and can contaminate wastewater, groundwater and the soil. That's why >

'By watering crops in the greenhouses with plasma-activated water, we can reduce the use of pesticides'

Erik



Erik Hertel, VitalFluid CEO

we wanted to offer an alternative without negative side effects that would also keep horticulturists ahead of possible future regulations. Moreover, greenhouse horticulture uses a lot of fertiliser, which is made from fossil fuels such as natural gas, the environmental footprint of which is significant: no fewer than five per cent of global carbon emissions. As our process is a copy of lightning it is entirely electric. This means that no waste substances are released and if you use sustainably-generated electricity, the technology is entirely carbon neutral!

Wilco: 'Greenhouse horticulture plays a crucial role across the world and the importance of that role is only set to increase. That's why scaling up is becoming more important in the industry. When we scale up, we want to make sure that we don't also increase the problems caused by chemical pesticides and fossil fuel-based fertilisers, hence our total commitment to sustainable alternatives. The bigger companies become, the more they rely on support systems, such as those from VitalFluid,

which is why we're delighted with this investment, both from a sustainability viewpoint as well as a financial one.'

Erik: 'We're also extremely pleased with our cooperation with Horticoop. Plasma-activated water has the potential to achieve a lot of sustainable impact.'

Wilco: 'There are various applications for plasma technology and plasma-activated water, also outside the greenhouse horticulture industry. Why are you focusing your technology largely on "our" industry?'

Erik: 'We're doing that firstly because greenhouse horticulture is a good match for our sustainability ambitions. It's an industry in which maximum output can be achieved with minimum land use and in which raw materials such as water are recycled. Another important point for us is that horticulturists are open for new ideas, are progressive and

have a long-term vision. This puts this industry at the forefront of innovative and technologically-advanced production methods. Our high-tech systems are a perfect match for this.'

Wilco: 'As Horticoop, we are indeed always searching for more efficient and sustainable production methods and we apply these too. Unfortunately, like our positive impact, this is still not yet fully recognised by the general public. That's a shame, because food security is increasingly coming under pressure and greenhouse horticulture offers solutions for this. Food production and the cultivation of ornamental plants also contribute to the welfare of millions of people.'

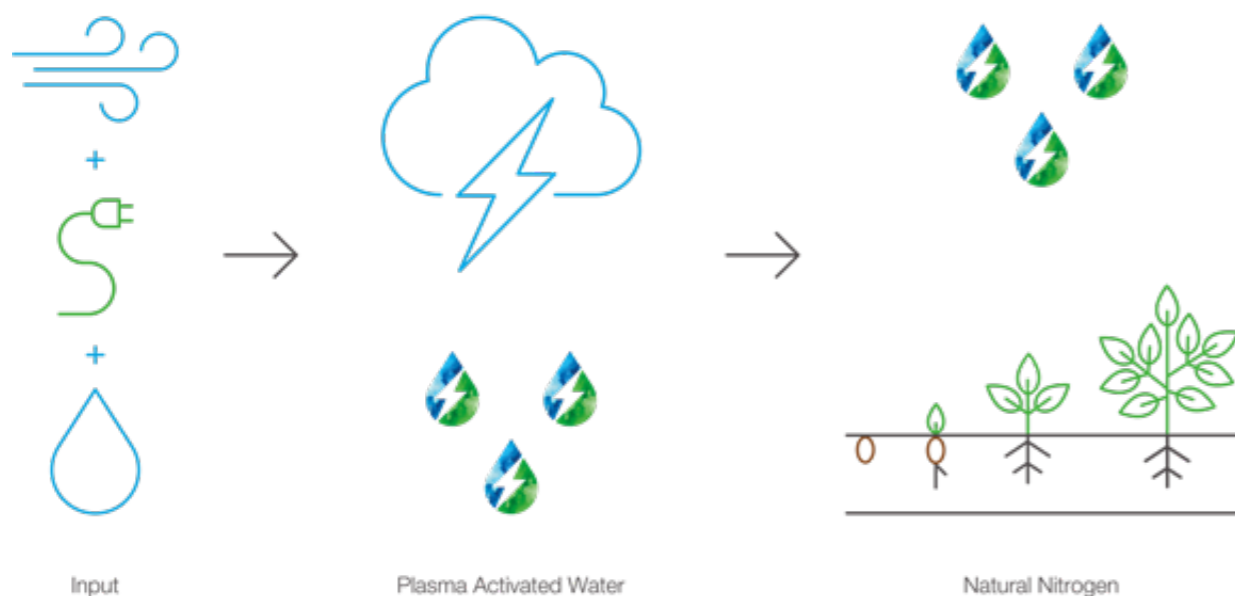
Erik: 'I agree entirely, Wilco. I'm delighted that we've found each other in this. We first came into contact with Horticoop in January 2023. There was an immediate click, both in terms of content and on a personal level. Horticoop is an investor with a long-term vision. We carry out many tests to develop our technology and we're confronted with complex cultivation processes. That takes time. Investors need to understand this, and Horticoop certainly does that!'

Wilco: 'With these kinds of technologies you're confronted with natural processes that can't easily be accelerated. A crop needs time to grow. Not every investor has the patience needed to invest in Controlled Environment Agriculture.'

Erik: 'We really appreciate that Horticoop is not only a financier but also supports us with extensive industry knowledge and access to the network of growers and other investors. That's because we're not only seeking financial resources, we're also seeking knowledge of our target market and expertise in expanding our company. With your experience, your colleagues and you are the perfect people to support us in this and guide our startup through the challenging early stages.'

Wilco: 'The early stages are certainly challenging. It's often all about the right timing and conditions to achieve success. But there are also ways to maximise the likelihood of success. You get further when you work together: at Horticoop we've believed in that for over a hundred years, which is why we're looking forward to the fruitful continuation of our cooperation with VitalFluid! ■

VitalFluid



Introducing: Patrick Groeneveld

Managing Director at Horticoop



As Managing Director, Patrick Groeneveld has been visiting Bleiswijk on a daily basis since 1 November 2023 to use his wealth of investment knowledge for Horticoop. He took over from Steven van Nieuwenhuijzen, who was at the helm of Horticoop's transition from a purchasing cooperative to an investment cooperative.

Patrick, it's a pleasure to meet you! Can you tell us something about yourself?

'I'm originally from The Hague but have been living with my wife in Amsterdam for some thirty years, where we brought up our two children (now age 20 and 17). I trained as a lawyer. After three years of practising law, I realised that this really wasn't for me. After a long trip around the world, I started working

at Shell where I helped operating companies with their strategy, HR and organisation. Ten years later, I made the switch to strategy consulting at KPMG. I came into contact with investment companies while conducting research on the KPMG strategic plan. At a certain point, I was asked to take a more comprehensive look at a family office investment. I was involved in the entire investment process,

including the growth and financial plan and the negotiations around the transaction. It was a truly special experience that I found hugely challenging. After this assignment, I was offered the opportunity to work there as an investment manager. It was an easy choice to make because it's fantastic and challenging to be able to guide companies in their further development and growth. That's now 16 years ago. I've been involved in investing every day since then and have worked at Rabo Capital and as Managing Partner at Nordian Capital and Victus Participaties.'

So, you're an investor through and through! Why did you make the switch to Horticoop?

'Approximately 80% of the investments I made were in the agrifood industry. So I'm very familiar with the industry. As co-founder of Victus Participaties, a private investment fund that invests growth capital in healthy and well-managed companies in the agrifood value chain, I regularly crossed paths with Horticoop. In fact, Victus and Horticoop at one point investigated the possibility of acting together on an investment. That's why I knew Horticoop so well. When the possibility came up to be a part of the investment cooperative, I immediately knew it was something I had to do. Horticoop is currently in a phase that's a good match for my experience with investment funds and my connection with the industry. There's no doubt in my mind that the entire horticulture industry, with all its challenges and opportunities, is an incredibly important industry for the world's future food production.'

Which lessons have you taken with you from previous roles?

'I have a lot of experience in designing company growth plans. This is an essential part of the investment business - mapping out the route and the relationships that you involve and build on; each investment requires a different approach. You invest other people's money so you it's a big responsibility. Sometimes you also have to be brave enough to intervene to make sure you protect the money you've invested. There are times when things go wrong: that comes with the job. You then work with the entrepreneur with whom you're implementing the plan to see if you can make adjustments. If you don't manage that, you then have to look after the investors' interests and be brave enough to make choices that are not to everyone's liking. The dynamics between building partnerships while also making decisions at the right time, make this an interesting and challenging business.'

That dynamic demands decisive action. How do you make sure this doesn't get in the way of having a good relationship with entrepreneurs?

'I aim to build a partnership with entrepreneurs. It's about more than just cooperation. Good partnerships are all about trust and being entirely transparent towards each other. I'm convinced that if you set a good example, you'll get in that in return. You build openness and trust if you're fully transparent towards entrepreneurs from the very beginning about the joint plan and approach. Then you know what you have in common and avoid unpleasant surprises. With my experience in both the investment business and in the agrifood market, I hope to make a valuable contribution towards Horticoop's investment strategy and look forward to taking the next step forwards with all those involved.'

The first step in the transition has been accomplished; Horticoop is now an investment cooperative. What is the next step?

'My priority is clarifying how various parties view the next phase. I like to talk to all those involved as this helps uncover slight differences in expectations. That's because we are a cooperative, and everyone's input counts. There are many options for our next step as an investment cooperative. It's essential that we don't go about this too hastily. I want to talk with the team in Bleiswijk, the Supervisory Board, the Member Council and the members themselves, so we can make well-considered choices.'

Can members approach you with suggestions, concerns or questions?

'Yes. Please do! Horticoop's strength lies in members' knowledge and experience. Member input is vital if we are to take good investment decisions. This ensures that we can work together for a healthy future for this wonderful industry. So, yes. Members can certainly approach me!'



If you have ideas about Horticoop's direction that you'd like to share with the team in Bleiswijk, share them on the Horticoop Community Platform or send an e-mail to cooperatie@horticoop.nl

Horticoop Technical Services and Tuinbouw Jongeren Oostland A fruitful cooperation



Pieter Ammerlaan, Chair of Tuinbouw Jongeren Oostland

Tuinbouw Jongeren Oostland (TJ Oostland) visited Horticoop Technical Services (HCTS). It was an extremely instructive and above all fun gathering that resulted in an interesting exchange of information and insights. Tom Zwijzen, HCTS Director, talks with Pieter Ammerlaan, TJ Oostland Chair, about what they can do for each other and about the future of the horticulture industry.

Tom: 'Pieter, great to speak with you again! Perhaps it's good idea if you first explain what TJ Oostland actually does?'

Pieter: 'TJ Oostland is a network for young people aged between 16 and 35 who have a connection with any form of horticulture. The network comprises around 150 members including students, children of growers and breeders, and young people working in horticulture-related companies. We represent the interests of young people in the industry through partnerships and close contact with different parties, including a range of industry associations and municipalities. TJ Oostland brings its members together and informs them of the latest industry developments. As we don't have all the knowledge ourselves, we also organise regular themed evenings or excursions, together with leading companies and organisations.'

Tom: 'That includes the themed evening at HCTS that you organised! It was a really fruitful evening for both parties.'

Pieter: 'Certainly! We focus on a specific theme each year. Last year, we focused on the 'energy' theme and this year our focus is on 'water'. With this theme we're looking at such things as how we can ensure that surface water doesn't get contaminated by substances resulting from crop protection. The horticulture industry is confronted by many issues. If it's not the energy crisis or the pandemic, some other obstacle will arise. The key question here is: 'If you only see problems how do you ensure that you can still make the switch to finding solutions?' Students are given these kinds of questions at school and entrepreneurs are confronted by them in practice every day. At TJ Oostland, we pose these questions to our young people to get them thinking. We also support them by using our network to provide them with information about the latest developments and the latest innovations within the horticulture industry. During our visit to HCTS, we examined the latest water technology trends. The young people found this incredibly interesting!'

Tom: 'That's good to hear! At HCTS, we certainly look for the best technological solutions in electricity, lighting, climate and also water. We aim to use our technologies to make a real difference within greenhouse horticulture. For example, we make technical systems more efficient and use our technical knowledge to enhance the position of

Dutch greenhouse horticulture. I think that young people play an important role in this. After all, they're the future of horticulture. It's great to hear where young people's interests lie, how they work to find solutions and how, as HCTS, we can perhaps capitalise on this. That's why it's good to talk with each other about this and your visit to our location in Bleiswijk was so helpful - not to mention the good atmosphere.'

'Young people are the future of horticulture. It's great to hear where their interests lie'

Tom



Pieter: 'I completely agree. It's fortunate there was plenty time for discussion during the visit to HCTS. It was great to see people being so engaged in discussion during the networking event following the informative part of the evening. It's particularly the more experienced members, the entrepreneurs, who make contact easily at such a time. But the students really joined in too! I can imagine that a 19-year-old student maybe wouldn't feel comfortable asking a question in a crowded hall. But it's a lot easier over a glass of beer during an informal gathering. As students pose critical questions, they pick up so much information that they can later use in practice. The combination of one-and-a-half hours of briefing followed by a brief networking event proved very successful. This is how we create space for good discussions that are not always possible if you spend the entire evening just giving out information. Organisations and our members often tell us that they really appreciate this combination.'

Tom: 'It was definitely worthwhile! At the start of the event, I noticed that some TJ Oostland members were not entirely clear about what our organisation does. For instance, the difference between Horticoop and Horticoop Technical Services. There were young people who didn't know that Horticoop is now an investment cooperative and that Horticoop Technical Services is involved in supplying technical horticulture solutions. It's great that we were able to clarify this. And, as HCTS, we like to invest in >

young talent. Next time your members visit us, I'd like to explain our new strategic direction. We aim to focus on companies located in the vicinity of our Klazienaveen, Bleiswijk and Venlo locations.'

'Students absorb information by asking critical questions'

Pieter



Pieter: "So it's good that Tuinbouw Jongeren Oostland includes young people from the neighbouring Lansingerland, Pijnacker-Nootdorp and Zuidplas municipalities! We'll certainly pay another visit. I sincerely hope that Horticoop Technical Services continues to be one of our sponsors in the coming years. It's something we're

extremely pleased about. What I admire in you, Tom, is your commitment to the company. I can see that paying off, as HCTS is very service-oriented. With HCTS, you can rest assured that you're always there for the customer!'

Tom: 'That's great to hear, Peter. Thank you. I think that HCTS and TJ Oostland form a strong team together that can help keep Dutch horticulture healthy. Together we can safeguard the position of Dutch greenhouse horticulture and the survival of our industry. TJ Oostland does its utmost for this by bringing young people together and, in so doing, is extremely successful in creating an environment of opportunity. I really appreciate that!' ■



Tom Zwijzen, Director of Horticoop Technical Services



A perfect composition

Horticoop welcomes CE-Line

Besides Vivent and VitalFluid, in autumn 2023 Horticoop added yet another company to its portfolio. Together with Yield Lab Europe, Horticoop is investing in CE-Line, a scale-up that enables the implementation of real-time laboratory analyses on the level of nutrients in irrigation and drain water.

CE-Line's advanced technology offers growers complete control over the composition of nutrients in their greenhouse irrigation and drain water. The 'plug and play' measurement system analyses the nutrient composition accurately several times a day by taking samples from the various water flows. CE-Line's real-time analysis makes it easy for growers to optimise nutrient dosing: it enables them to control the ideal nutrient composition in all climate conditions and for each growth phase, and, if preferred, using automatic dosing systems to achieve autonomous cultivation. The CE-Line system is self-cleaning and calibrating, which means that the only human action required is the monthly change of the liquid reagents.

Wilco Schoonderbeek, Horticoop's Director Investments: 'This CE-Line solution for continuous and fully automated testing and control of water and nutrients gives growers more control of their crop growth. Savings on water and nutrients and the ability to create closed water systems, are in line with Horticoop's ambition to contribute to a sustainable and future-proof horticulture industry.'

The CE-Line possibilities extend beyond the horticulture industry alone. Simon Meijer, CEO of CE-Line will explain more about this in the next issue of BLAD. ■



Monique Meulemans, Partner at Pymwimic, and Vincent Kamphorst, Investment Director at Innovation Industries

Investment funds join forces with Horticoop

As 'new kid on the block', Horticoop doesn't yet have the same renown as an investor that the bigger investment funds have. On the other hand, the cooperative has specialist knowledge that's often lacking in the bigger investment funds. That makes Horticoop an interesting joint investment partner in greenhouse horticulture. Monique Meulemans, Partner at Pymwimic, and Vincent Kamphorst, Investment Director at Innovation Industries have experienced that. They joined forces with Horticoop to invest in Vivent and VitalFluid and they explain why they've decided to focus on greenhouse horticulture.

Vincent: 'Innovation Industries invests in "deep tech" innovation: companies that can have major impact with unique new technology. We focus on hardware companies in various industries, including the "agritech" market. Of course, we have the necessary knowledge in house, but we also like to work with network partners for more specific industry expertise. Take greenhouse horticulture, for instance. It's incredibly worthwhile for us to partner with Horticoop in our investment in VitalFluid.'

Monique: 'The same goes for us. Our investments specifically aim to support the transition to a more sustainable food system. We already have a fair amount of experience in this, but mainly on farmland. So it's really interesting that we can now apply our agricultural experience to greenhouse horticulture. Pymwimic generally invests in companies at an early stage. This means that a product has a certain degree of commercial value but still needs a lot of further development. Feedback from the market, in this case from Horticoop members, is absolutely vital in this. That's the only way we can determine whether a product is, for example, highly scalable.'

Vincent: 'You're absolutely right. We can, for example, assess whether something is well-engineered, can be patented and whether it has a good business case. But Horticoop's membership is better placed than anyone to assess whether the product actually meets end user needs. Just that fact alone shows the significant added value of joint investment projects. But apart from that, I was also positively surprised by growers' entrepreneurial mentality. They see the potential of technology for the future and are so aware of the need for change that their risk appetite is high.'

Monique: 'That's certainly important. And to stay on theme, you first need to sow before you can harvest. Growers understand that, as does Horticoop. Turnover is sometimes slow to emerge in startups and scale-ups and it can take a long time before this starts growing steadily. As an investor, you have to look for other measures of your product development. The feedback rounds from growers, in the case of our Vivent investment, are one of the measures to determine the maturity of the product.'

Vincent: 'You mentioned that you mainly have experience in agricultural companies. Vivent's technology is geared for greenhouse horticulture. What made you switch to this industry?'

Monique: 'Innovations in greenhouse horticulture can be an interesting step towards innovations in other industries, including agriculture. Ultimately, we want Vivent's technology to be available for agriculture too. From a food transition perspective, it's vital that we stimulate soil health. The potential to translate the Vivent technology to soil diversity is also a strong driver for us. The potential spin-offs of innovations in greenhouse horticulture are why we keep a close eye on developments in this industry. What about you, are you looking at niche markets?'

Vincent: 'As a fund, we only invest in companies that have major market potential. However, in some cases, it's not practical to go straight for the big market. Making a smart choice for a first customer or sub-segment can be a good stepping stone to demonstrate the product. Take VitalFluid for example: they were able to demonstrate the effect of plasma-activated water in crop protection, through targeted tests with an enthusiastic rose grower. This provided the foundation for rapid expansion to other crops. Initially within greenhouse horticulture - a billion-dollar global market - with further potential later for impact in agriculture. And talking about impact, I was informed that Pymwimic was one of the first investment funds in the Netherlands to use the term "impact investing"?''

Monique: 'That's right! And of course, this shouldn't just be a fancy term, it should be evident in everything you do. For us "impact investing" means that the product actually has a positive impact. Simply increasing production is not enough for Pymwimic. In the case of Vivent, the positive impact is reducing the food production footprint and reducing the use of chemical crop protection. How do you view that at Innovation Industries, Vincent?'

Vincent: 'We are a fund with sustainable investment objectives, which means that we don't only select according to good financial potential. Every company in which we invest should contribute to an environmental or social objective. We have produced an impact policy because we want to be pure of purpose and actually contribute to a better world. This incorporates concrete criteria that enable us to prevent greenwashing. We test new investments against our policy and even after investing, we monitor whether a company stays on the same path. We've appointed an external Impact Committee for this so we can stay on top of things and deliver our envisaged impact.' >

Monique: 'What works well is offering the founders financial incentives that are attached to the set targets. Of course, the impact does need to be measurable. In the run-up to an investment, we sit down with the management and agree on KPIs. That doesn't need to be so complicated. In that respect, we are investors with our feet firmly on the ground; it's about describing in simple words what we want to achieve in food production, how that aligns with the operation and how we can make it measurable. A financial reward is attached if they achieve better results than the set targets. This also makes it more

attractive to create impact and we can build a robust ecosystem together. I also see opportunities for more impact when we pool knowledge. For instance, coming back to your example of the rose grower, wouldn't it be great if we could immediately demonstrate that the impact of VitalFluid's plasma-activated water on rose resilience was due to Vivent's technology? I think we should sit down together a bit more often, Vincent, because there are plenty of opportunities to explore how we can strengthen each other. And there you have it. That's how Horticoop brings about fruitful partnerships.' ■

Pymwymic

'Put your money where your meaning is community'. The name of the organisation immediately clarifies what it's about: investing in companies that have meaning. Pymwymic was founded in 1994 and brings families and individual investors together to help sustainable companies obtain capital. Pymwymic transformed in recent years to become an investment cooperative with a focus on healthy food systems.

Together with Horticoop, Pymwymic is investing in Vivent technology that enables real-time crop data collection via wearables on the plant. **Read more about Vivent on page 20.**

Innovation Industries

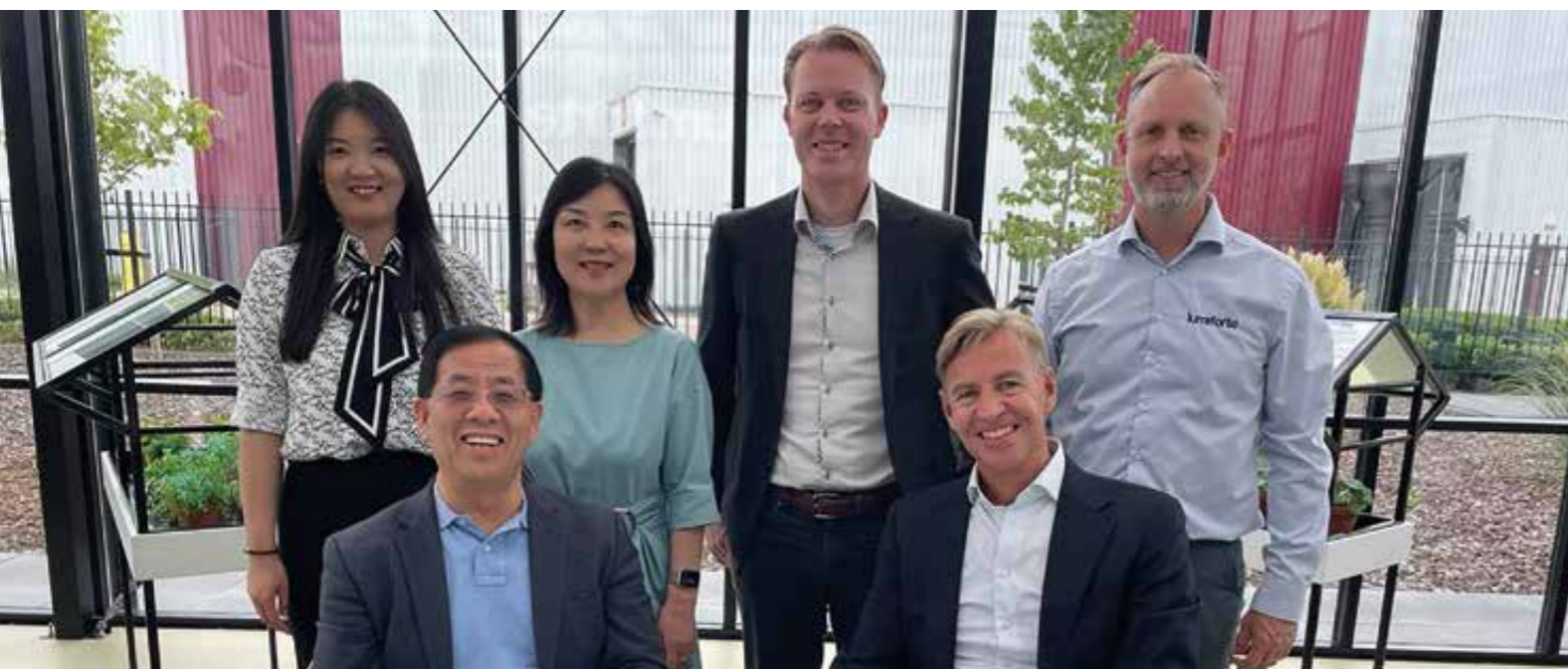
Innovation Industries is a 'deep tech' investment fund with a portfolio of 30+ companies in the Netherlands and beyond. The fund invests in companies with disruptive technology that can address today's major challenges. Safer and improved batteries, sensors for sleep monitoring and climate-proof, protein-rich crops are examples within the three focus areas: industrial technology, medical technology and agri-food technology. Innovation Industries supports both startup and scale-up companies.

Together with Horticoop, Innovation Industries is investing in VitalFluid, the company that uses plasma-activated water to stimulate plant growth and reduce chemical crop protection. **Read more about VitalFluid on page 26.**



Made in China?

Lumiforte and Rui Xue Global further expand partnership in China



The Rui Xue Global and Lumiforte teams with, from left to right, Marketing Manager Zi Ying Huang, President Ruiqing Huang and Vice-president Xueping Qu from Rui Xue Global and CFO Niels de Groot, CEO Guido Janssen and CCO Barry Zuidgeest from Lumiforte.

Lumiforte is a market leader in high-quality coatings in greenhouse horticulture and aims to start a joint venture with Chinese company Rui Xue Global. Together with this specialist in designing and building smart greenhouses, Lumiforte can become a leading platform for coatings in the Chinese market and - in the future - in other Asian countries. The joint venture offers production, storage, transport and delivery services aimed primarily at wholesalers and distributors.

Guido Janssen, CEO from Lumiforte, explains: 'The relationship between Rui Xue Global and Lumiforte goes back some twenty years. That's why we're delighted that we're now sealing this long-term partnership with a joint venture. By working together, we can deliver even better products and services to our customers. At the same time, we're investing and optimising our costs to achieve stronger financial returns and profitable growth.'

Dr. Ruiqing Huang, President of Rui Xue Global: 'Together with Lumiforte, we were the first to introduce coatings in China. This was a new product on the Chinese market at that time and people didn't really believe in it. After all those

years and efforts, we now see that the market has evolved. Our customers use our shading agents and demand is increasing. We're absolutely convinced that this joint venture will benefit both parties.'

Guido added: 'We're expanding the portfolio and increasing our capacity. And because our sources and markets are close by, the economies of scale in procurement, production savings, supply routes and costs are significant. Basically, pooling our expertise enables us to deliver even better and faster service and an improved customer experience.'



Horticoop sells Lensli

Horticoop sells its shares in Lensli to PECO Holding B.V. Although Lensli is getting a different shareholder, Lensli's customers won't notice any changes. In fact, the sale secures the long-term security of supply of high-quality substrates.

A market on the move

The substrate market is on the move. Transport and personnel costs are increasing, while the sales market isn't growing at the same rate. The same applies to the raw material costs. The substrate industry is facing the major challenge of finding new sustainable raw materials. However, there is insufficient availability and the prices are often high, partly due to increased demand from other industries. This makes it difficult for a relatively small company without its own raw material production locations to sustain itself in the longer term. We need to move with market changes to safeguard Lensli's continuity and security of supply. In an orientation phase, Horticoop investigated various options after which it appeared that the sale of Lensli would be the best option to safeguard Lensli's interests.

Strengthening Lensli

Lensli is known for its high-quality substrates, and that won't change. Even after the sale. Becoming part of PECO Holding B.V. strengthens Lensli's control over raw materials, enables it to benefit from product development and economies of scale, and makes it less vulnerable in relation to other suppliers. Lensli will also benefit from product development and knowledge transfer. This secures the long-term security of supply of high-quality substrates. So that's great news for Lensli customers! It means that, even in the future, they're assured of high-quality substrate supply as well as the professional and personal service that defines the Lensli team.

The Horticoop companies

An overview of the investment cooperative's varied portfolio

Horticoop manages a varied portfolio of companies, each of which plays a unique role in promoting a sustainable and future-oriented horticulture industry. You can find an overview of these companies below.



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 'Made in China?' on page 40*



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. *See also 'A fruitful cooperation' on page 32*



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.



Horticoop Scandinavia

Horticoop Scandinavia is the go-to place for growers in Denmark, 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.



Blue Radix

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



Skytree

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



Vivent

Vivent is a world leader in crop diagnostics and supplies 'wearables for plants' that provide growers with improved insight into crop health. Vivent's system makes ingenious use of plant electrophysiology for this. The advanced

biosensor measures and interprets a plant's real-time responses to disturbances in the balance between the plant and the environment (stressors), even before visible symptoms appear. Diseases, pests, and other stressors are therefore recognised earlier, allowing growers to take appropriate crop measures at an early stage. Horticoop welcomed Vivent to its company portfolio in 2023. *See also page 20*



VitalFluid

VitalFluid translates knowledge of plasma technology to Plasma Activated Water (PAW) applications in agriculture and horticulture. PAW can revolutionise the field by offering a more sustainable and environmentally-friendly approach to growing crops. PAW applications can be used as a sustainable source of nitrogen and a natural alternative for chemical crop protection. VitalFluid was added to the Horticoop portfolio in 2023. *See also page 26*



CE-Line

CE-Line is a high-tech company that develops unique analysis equipment to conduct all laboratory analyses of irrigation and drain water from within the greenhouse. This makes a lot of data available quickly. CE-Line has software, mechanical and chemical expertise in house and operates internationally. In addition to horticulture, the company is also taking initial steps in analysing such things as wastewater that is reused for the production of bioplastics. CE-Line was added to the Horticoop portfolio in December 2023. *See also page 35*

Find the 8 differences



Mustafa Celik from Huisman Chrysanten in Maasdijk



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