

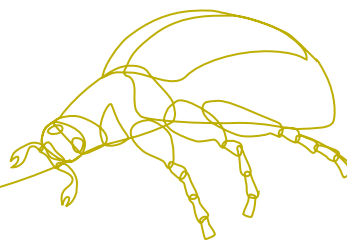





# BioFirst Sustainability Report 2023



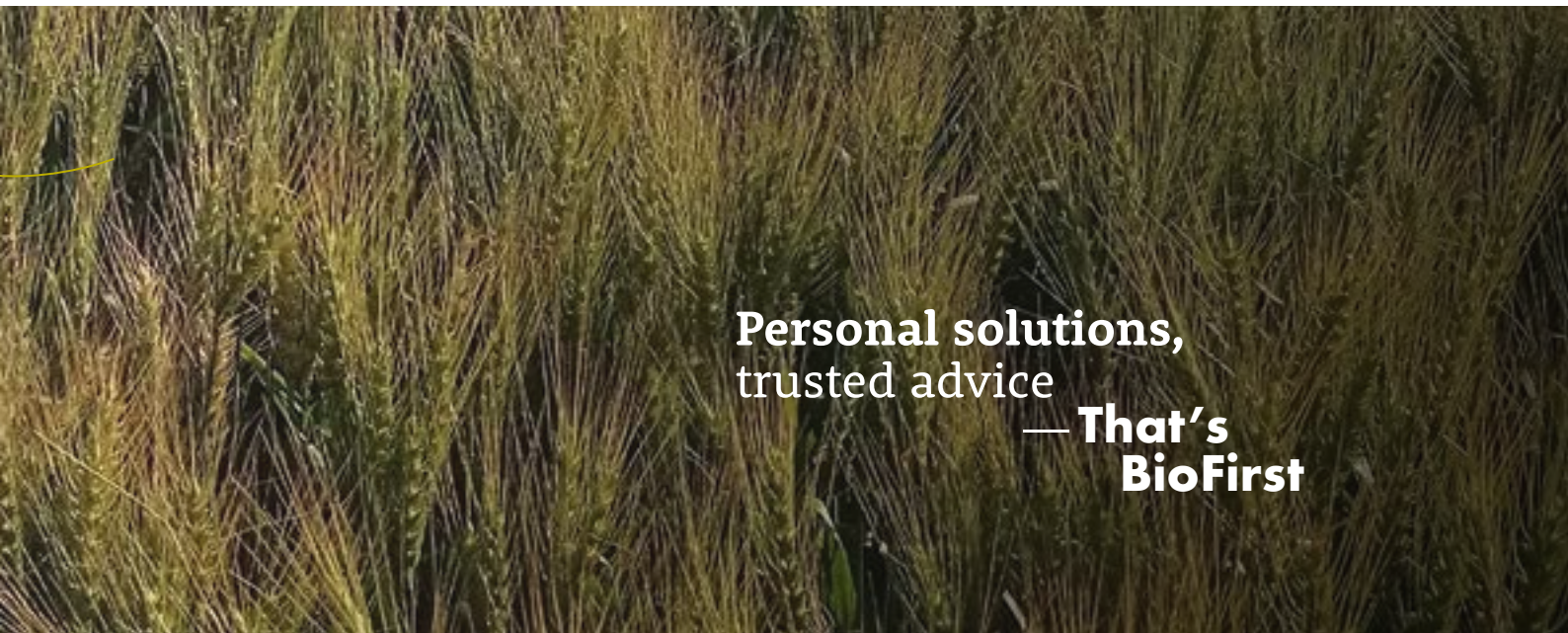
**BioFirst**  
GROUP

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Personal solutions,  
trusted advice  
— **That's  
BioFirst**

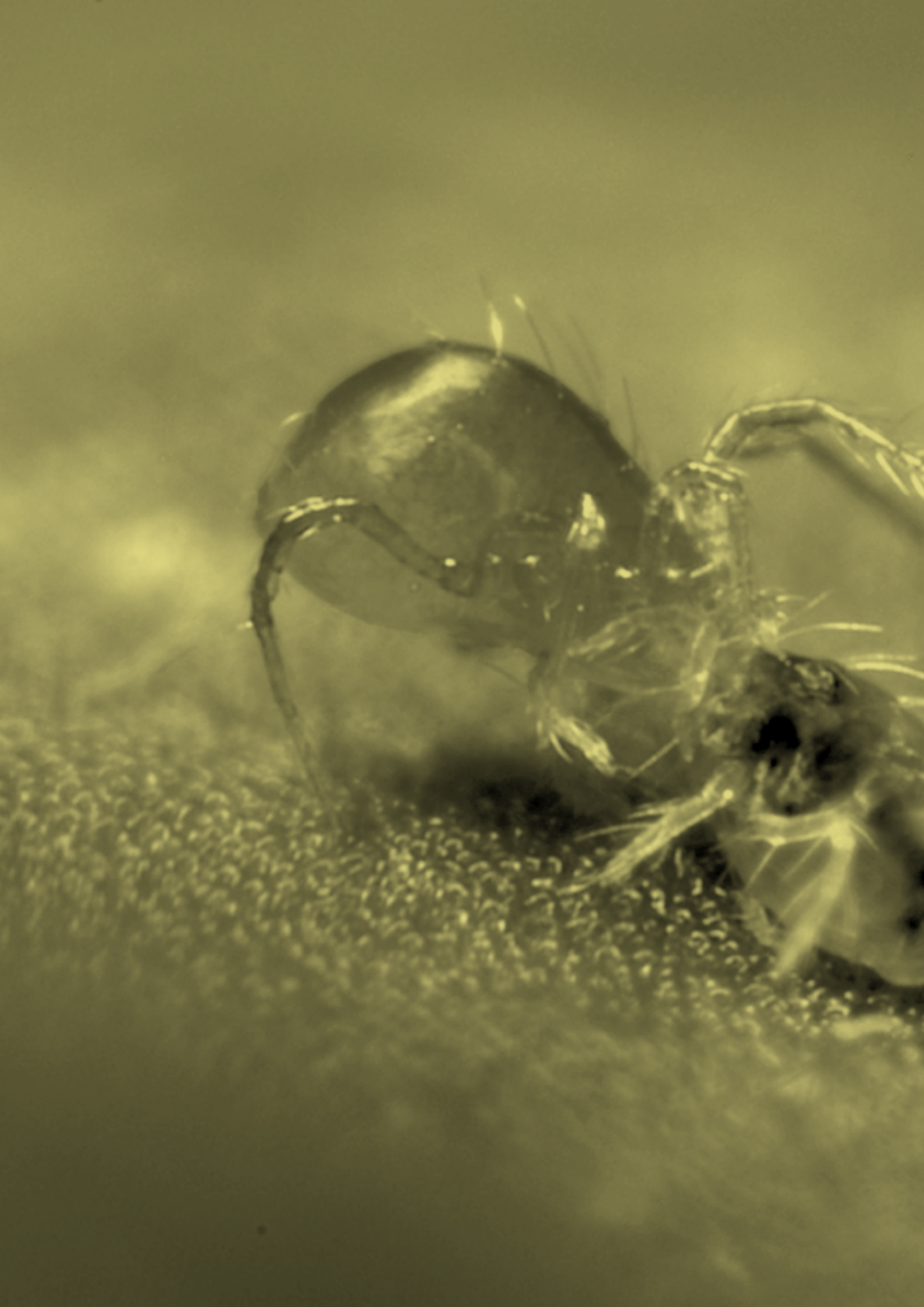
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# General

*Phytoseiulus* predatory mite

# Message from our CEO

Our passion for sustainability is part of our core values. It is our mission to contribute to sustainable production of crops, by providing biological alternatives to pollination and crop protection. Sustainability has been part of our DNA and company culture since we were founded - 36 years ago.

Our passion has never been more important than it is today. We are living in 'moving times', in the midst of major transition. We are seeing shifts in social awareness, working methods, digitalisation, circular economy, a move from fossil fuels to renewable energy, changing diets, increased global food production, globalisation of food production, restrictions in the use of chemicals in our food chain, increased interdisciplinary cooperation, the need for social return on investment, to mention just a few of the topics impacting our business today. Over recent decades, we have seen the pace of change accelerate. Set against the backdrop of international political unrest, high inflation and natural disasters across the globe, it is safe to say that the last few years have been challenging for all of us.

I am extremely proud to say that, thanks to the passion and commitment of our employees worldwide, we were able to continue to grow our business, both through acquisition and organically. Once again I realise that I am extremely lucky to be surrounded by a team of driven experts and hard workers that enable BioFirst to grow, despite difficult circumstances. I am thankful to all of you who are using your dedication to set the standard in our growing industry.

Over the years our portfolio of natural crop protection solutions has grown tremendously. We have become the largest player in biological crop protection worldwide. We continue to do so by offering the best possible advice, while continuously developing novel crop protection solutions to help customers grow in a sustainable way. In 2023 we acquired Agrotech Gartenbautechnik in Austria, a valuable new player in our global distribution network. With the addition of BioWorks we have maximised our growth opportunities in biopesticides in

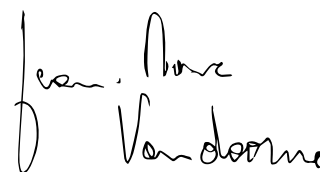
horticulture. And, with the latest addition of Biotrop, we have opened up the market in open field agriculture and added a range of inoculants and biostimulants to our IPM (Integrated Pest Management) toolbox. I am proud to say our products contribute to healthier global food production and improve people's lives.

The growth of the company has been a catalyst to change the organisational structure and the name of our group. BioFirst now operates in four divisions, each with a dedicated focus to best serve our customers in different segments. Together providing the same products and services you expect from us, with the same team of dedicated experts.

In a world where true sustainable value is appreciated by the public more than ever, we are driven to deliver the most sustainable products possible: high quality, with a positive social and environmental impact and minimal emissions. We not only want to deliver biological products, but aim to push the limits of our own production processes to produce these as sustainably as possible: trust is earned where actions meet words.

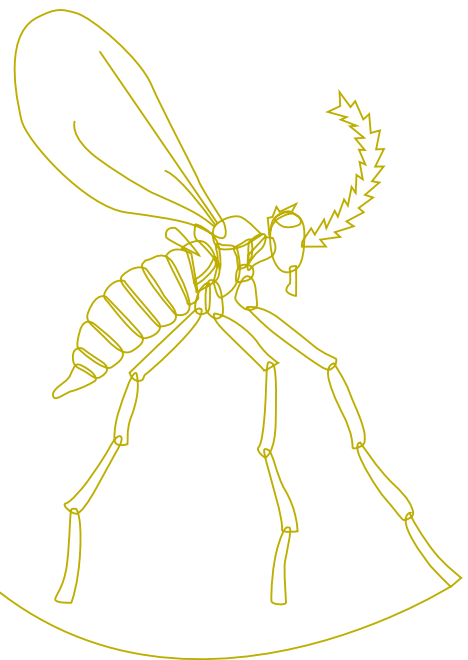
Working with living organisms puts high demand on climate conditions during production and transport. Today we focus on increasing our share of renewable energy and reducing the impact of transport and packaging materials, as these have the greatest impact on the global footprint of our products. This provides our team with exceptional challenges, as we ship products to over 75 countries worldwide.

I am especially proud to highlight our continued efforts to deliver the most sustainable product possible and how we aim to maintain the best team in the industry. I am happy to share our ongoing sustainability efforts and 2023 community projects with you in this report.

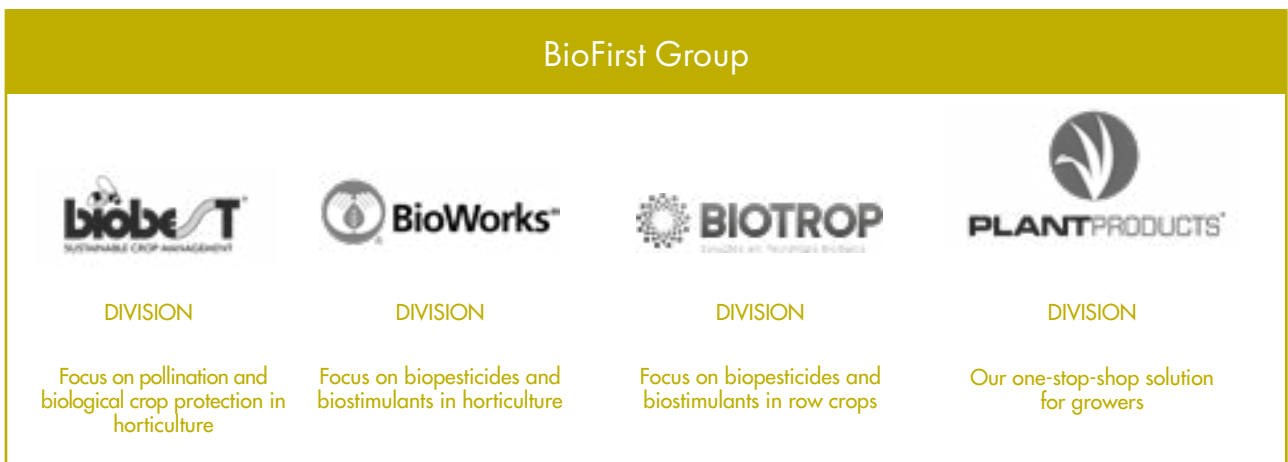


Jean-Marc Vandoorne-Feys





New BioFirst structure 2024





Proud to have the BioWorks team join us in 2023





# Sustainability is our core buzziness

BioFirst Group is a growing pioneer in biological crop protection and pollination

In 1987 Roland de Jonghe, a veterinarian from Westerlo, passionate about insects, developed a novel way to pollinate tomato crops using local bumblebees. By commercialising this highly effective and biological means to pollinate crops, Biobest was founded.

Thanks to labour savings for our growers and a giant leap in the yield and quality of bumblebee pollinated tomatoes, the market for biological control grew rapidly. The use of bumblebees for natural pollination quickly expanded to other crops and international markets. More importantly, with the use of bumblebees as valued guests in crops, growers soon became more aware of the adverse effects of using chemical pesticides in greenhouses.

As a result, the presence of our bumblebees quickly became a key factor driving the demand for biological and more natural ways of crop protection. This was exactly the cue Biobest was waiting for, to use our

existing knowledge and passion for insects and mites to develop novel and effective ways for modern growers to battle pests biologically.

Over the years, the array of BioFirst Group's biological crop protection solutions has grown rapidly and continues to expand under our new name, BioFirst Group. With a large part of our business invested in R&D and business development, we currently operate in 26 countries on all major continents, delivering a wide array of biological pest control for growers.

Today, while our extensive product range still includes bumblebee species, it has expanded significantly with the addition of dozens of beneficial insect and mite species for pest control, together with other natural pollinators, beneficial nematodes, biopesticides, biofungicides, plant vaccines, biostimulants, (bio)fertilisers, scouting and trapping products, application tools and hi-tech monitoring solutions.





Biobest Belgium's adviser Bart in consultation with one of our valued customers



## Our core activities





Monitoring & scouting



Biopesticides



Monitoring & scouting



Spreading beneficials



Nematodes

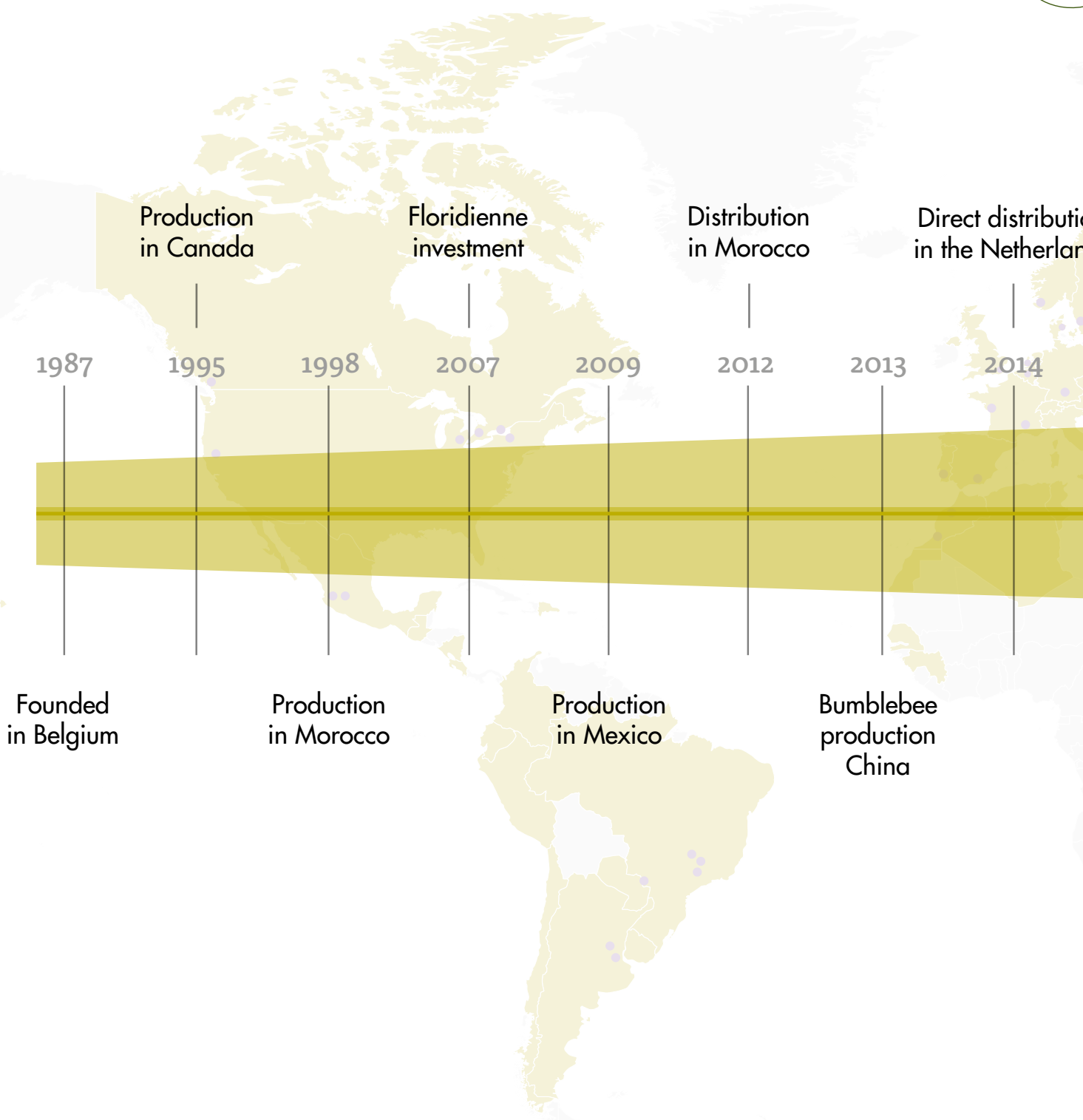


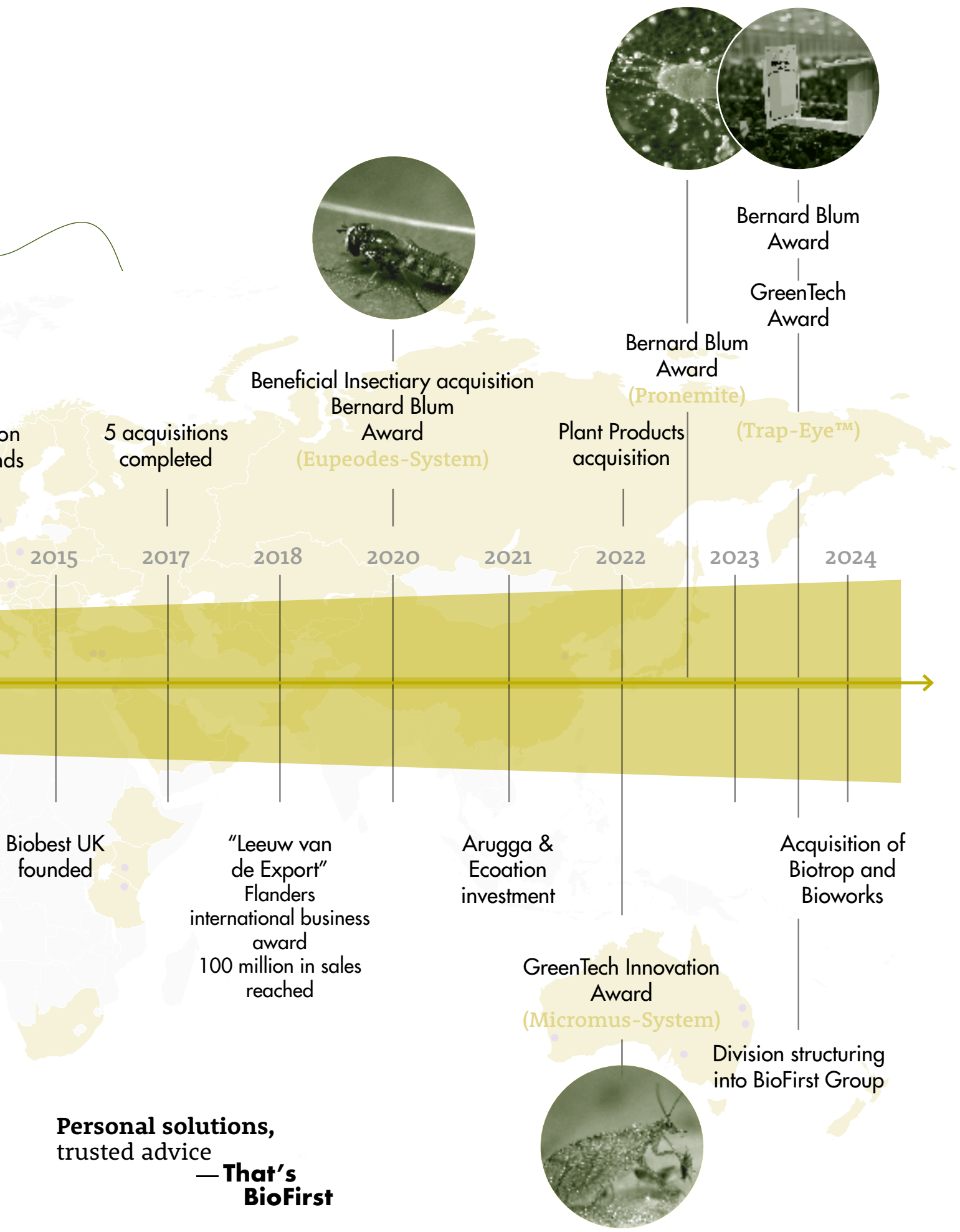
Biostimulants



# Development & milestones

## Timeline

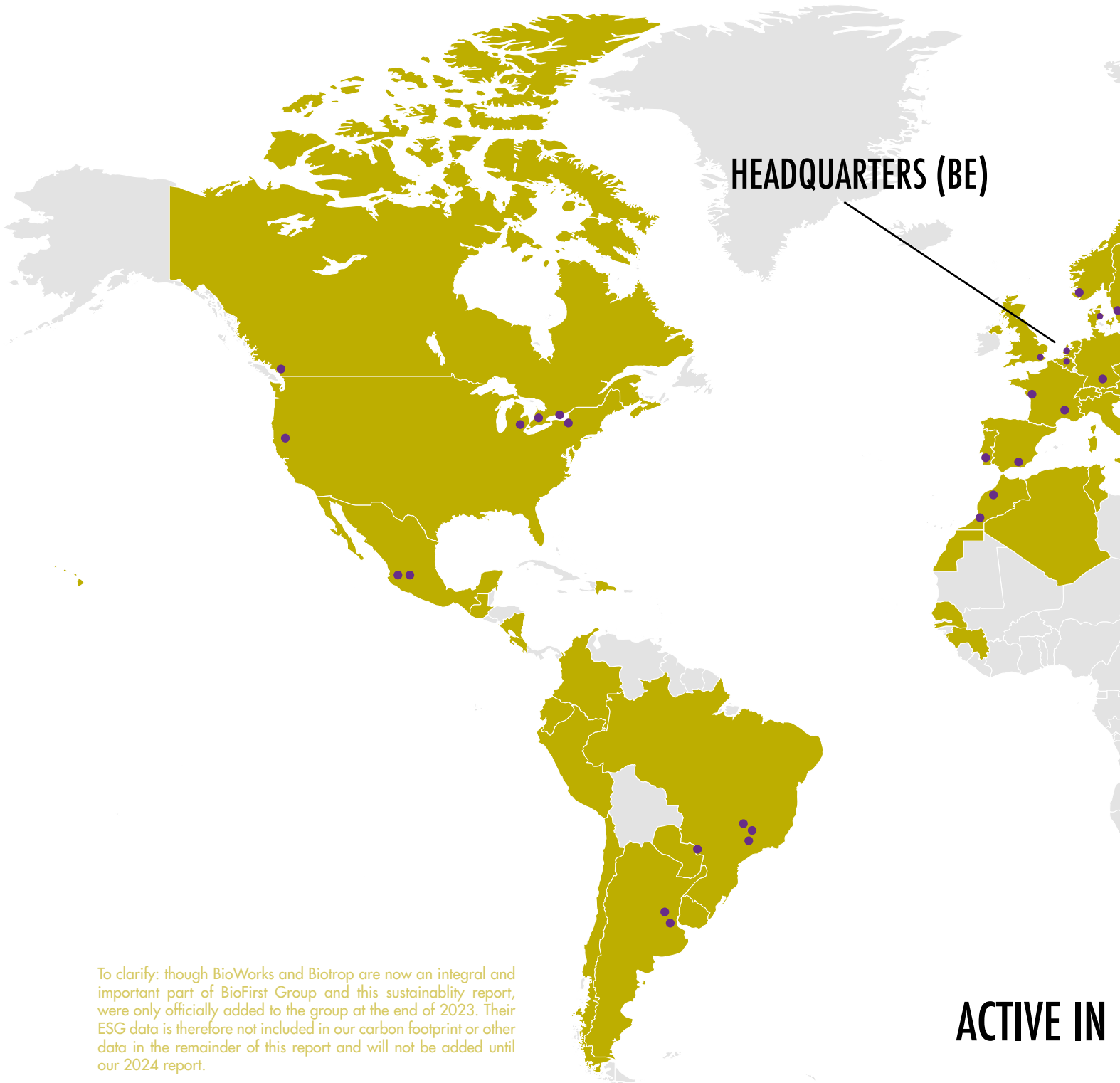




Personal solutions,  
trusted advice  
— **That's BioFirst**

# Strong global presence & local expert

Active on 6 continents with over 40 subsidiaries and 2800 employees



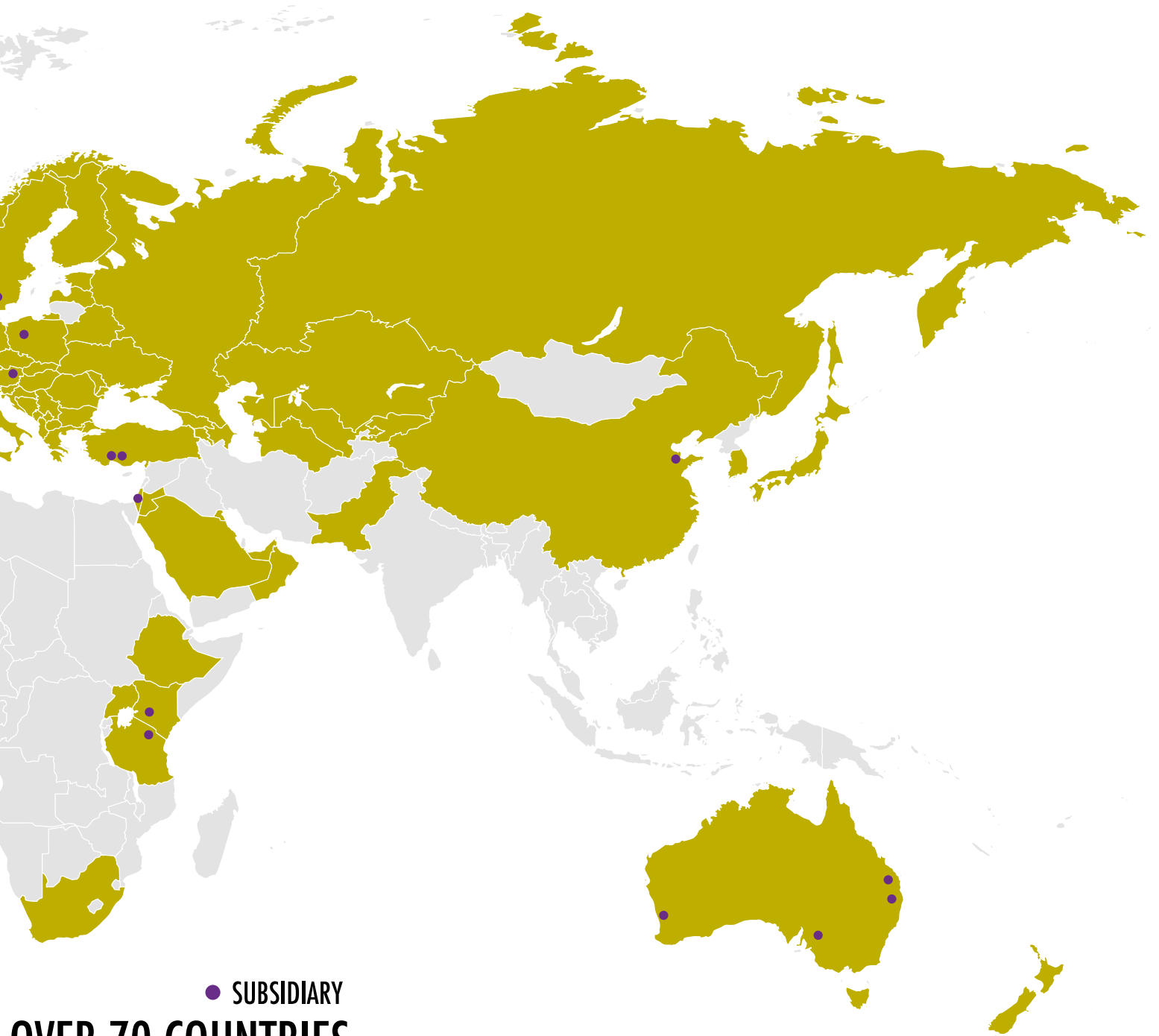
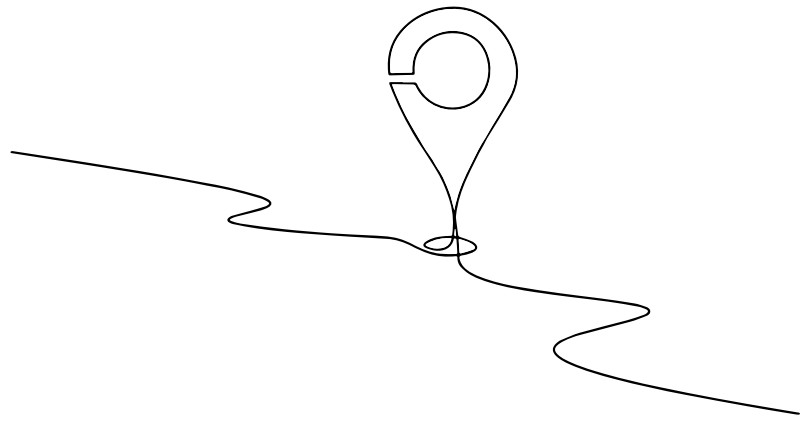
To clarify: though BioWorks and Biotrop are now an integral and important part of BioFirst Group and this sustainability report, were only officially added to the group at the end of 2023. Their ESG data is therefore not included in our carbon footprint or other data in the remainder of this report and will not be added until our 2024 report.

**ACTIVE IN**





ise



● SUBSIDIARY

**OVER 70 COUNTRIES**  
**>250 distribution partners**





# Governance

Group management review in Annecy, France, 2023



# BioFirst Code of Honour

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## At BioFirst, customers come first

- Delivering top-notch pollination and sustainable crop health & crop protection solutions, on time in full, is our commitment.
- Understanding and meeting customer needs guide our choices.
- Every decision we make is grounded in the goal of serving our customers better.

## Passion for sustainability

- Passionate about sustainable agriculture, we aim to change the world for the better.
- Our focus is on enabling safe, sustainable production while prioritising human health and the environment.
- We pursue innovative solutions to reshape agricultural practices, committed to the highest ethical standards in dealings with employees, customers, and suppliers.

## Collaboration

- We consistently consider the whole process, avoiding the pitfalls of focusing solely on optimising our individual contributions.
- As team players, we enjoy helping and sharing, recognising that shared information and knowledge empower us.
- We find joy in our work, celebrate successes, and create a positive atmosphere. "Speak in such a way that others love to listen to you. Listen in such a way that others love to speak to you."

## Wellbeing

- We focus on the physical and mental wellbeing of our employees, cultivating a positive and inclusive environment where everyone can flourish and succeed.
- Our commitment extends to the health, happiness, and overall welfare of our workforce, creating a supportive work environment that prioritises wellbeing and ensures safe working conditions for all.



## Execution

- We operate with speed, embodying a solution-orientated mindset that places accountability at the forefront of our work.
- Striving for continuous improvement, we optimise processes and deliver exceptional outcomes.
- These principles cultivate a proactive mindset driving us consistently towards maintaining and exceeding higher standards.



# Sustainability strategy and focus

Our strategy of being the most reliable partner in sustainable crop protection, and having a varied team of passionate people, has led BioFirst Group to be active on a very wide variety of sustainability projects. Our link to nature and biodiversity is evident. Since we came from and work for many family-owned businesses, we also have strong links to the communities we operate in.

We value the resourcefulness and passion of our staff and aim to nourish it. To move our sustainability strategy forward, we set out to:

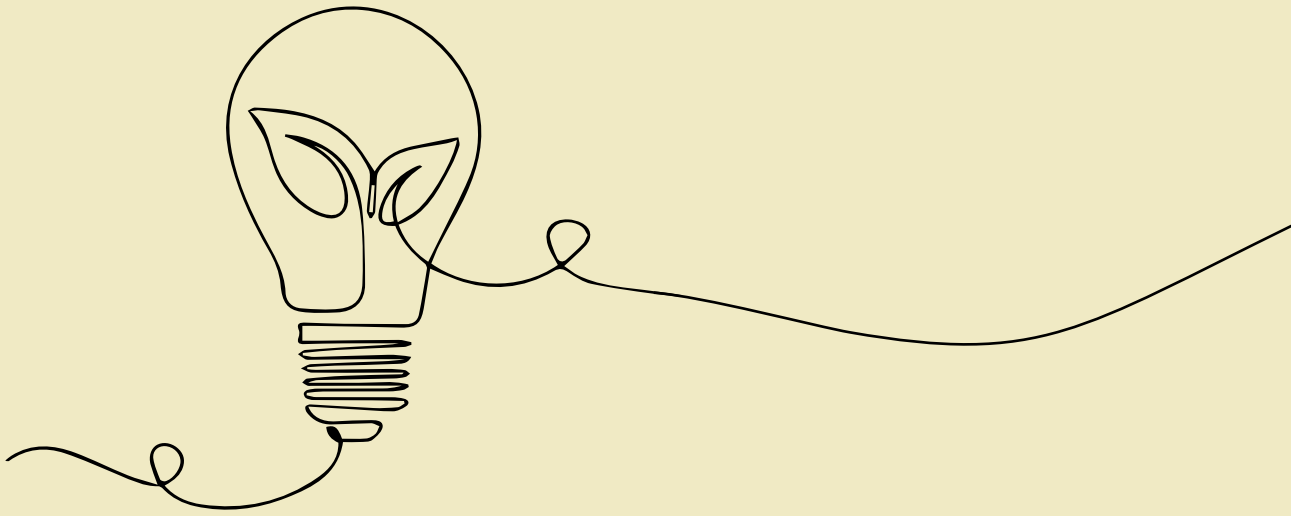
- 1) transparently communicate our initiatives externally, in a recognisable and comparable way;
- 2) structure and continuously improve our sustainability efforts by measuring current achievements; gaining insight into our impact; determining a clear focus; and setting targets towards a more sustainable future.

This is why we have chosen to adopt a reporting structure in line with the United Nations Sustainable Development Goals (SDGs). We are currently aligning our reporting with the EU Corporate Sustainability Reporting Directive (CSRD).

## Shared commitment towards a more sustainable world

With this widely recognised global standard, the UN and many participating countries set out clear priorities for a more sustainable world in 2030. We are committed to do our part in achieving these SDGs. Over many years we have taken the initiative on all of these goals and, more recently, they have helped us to focus our efforts on addressing these sustainability topics. Cooperating with our supply chain partners and local communities has always been an important part of our efforts.





**Peter van Leent**  
Sustainability manager

Born with a love for nature and trained as a biologist, Peter feels right at home working on sustainability in biological control for the ever-growing and changing BioFirst Group. His experience as a sustainability manager in different sectors has provided him with insight into various perspectives and methods for translating sustainability into a functional company strategy. Having worked in the field in research, construction and agriculture, he recognises the value of being pragmatic, gaining insight and focus quickly, and translating strategy into concrete actions.

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“At BioFirst I get to combine my knowledge and passions: working together with driven people on a sustainability strategy in biological control.

Together we strive to make our products and the world a little bit better every day, having a positive impact on people’s lives through healthy food. I aim to contribute to a future-proof group, by adding value for people and the planet to our overall strategy. A strategy-pushing beyond the mandatory sustainability targets and adding value for our customers.”

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### Continuously improving our sustainability strategy

In 2023 real progress was made in meeting our sustainability goals. Relative to our growth, our emission of greenhouse gases has dropped by over 30%, waste separation targets were met and scaled up, the incident frequency reached a record low and never did we have more initiatives focused on our local nature and local communities across the globe.

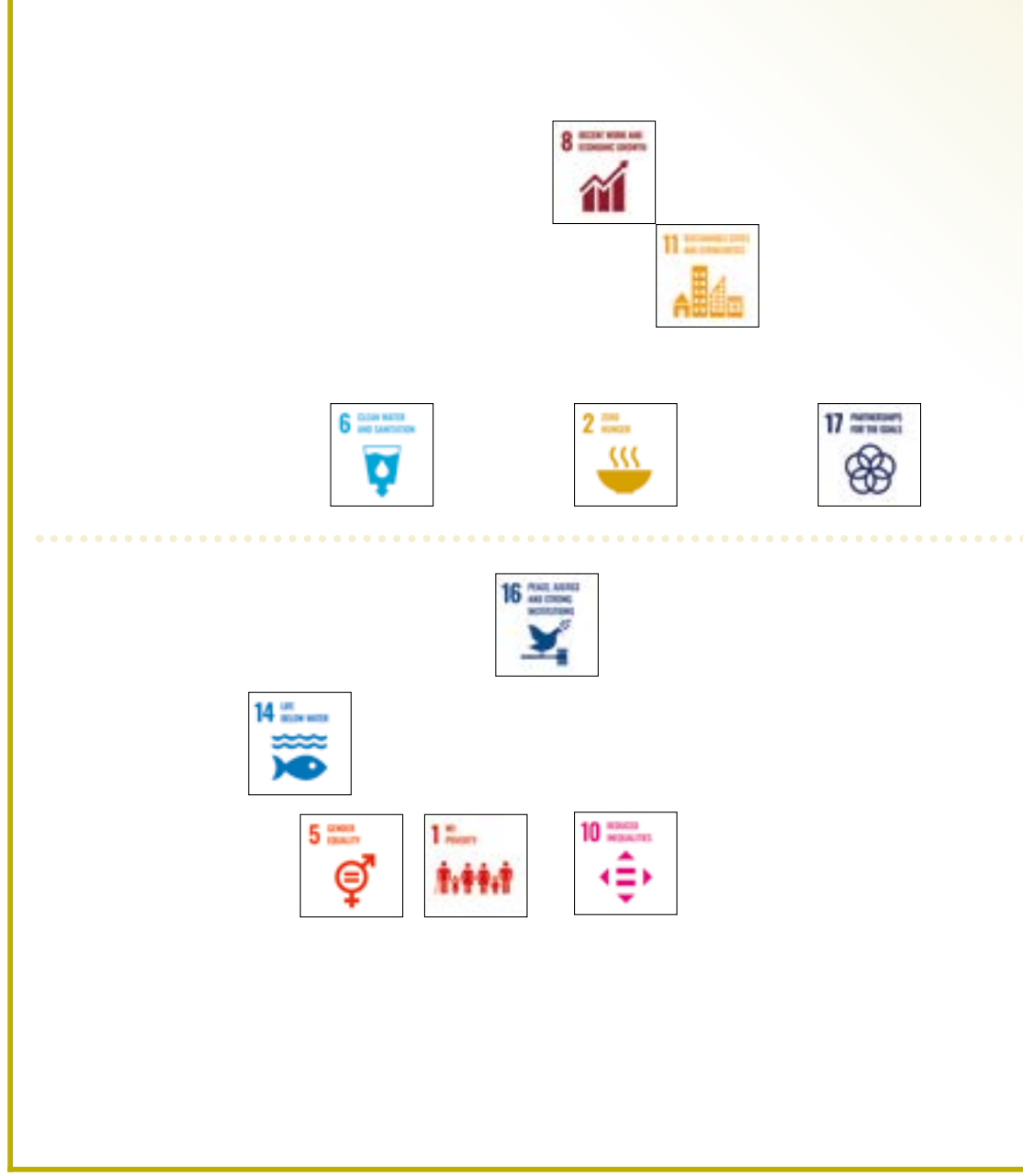
In addition, we made some major advances in succession planning, employee satisfaction and providing fair living wages.

All due to the hard work and dedication of the entire BioFirst team in adding true sustainable value.

We can be proud of what we accomplished this year and we have set a new baseline to further ‘up our game’. Because I know that we can!



IMPACT ON OUR BUSINESS



STAKEHOLDER IMPORTANCE







At the start of 2022, a stakeholder analysis was performed to determine the relevance of the different themes to our employees, customers, shareholders and investors.

In parallel we ascertained which topics are most relevant to our business. The impact of the different topics was assessed by our board and executive committee.



# Our sustainability goals



Achieve carbon neutrality for our own activities



Exceed 75% waste separation & increase our use of reused, recycled & biobased materials



Improve our safety awareness & communication



Each subsidiary implements at least 1 relevant initiative on (local) nature



Each subsidiary launches at least 1 initiative with & for the local community



Solar panels @Biobest Mexico



Solar panels @Biobest Turkey

# for 2026

We are pleased to see the topics that we are traditionally most active in worldwide are also those that are most relevant to our external stakeholders. There is a natural fit. In 2023 we increased our efforts for supply chain cooperation with suppliers. To better serve our customers: in 2024 we aim to understand individual sustainability issues and needs even better, as we double our efforts to add practical sustainable value for our customers.

In the coming chapters we are proud to show our sustainability strategy, targets and achievements for all of the SDGs: starting and focusing on the most material ones.

We are happy to share our activities with you in this report and will continue to commit ourselves to continuously striving to improve our efforts.





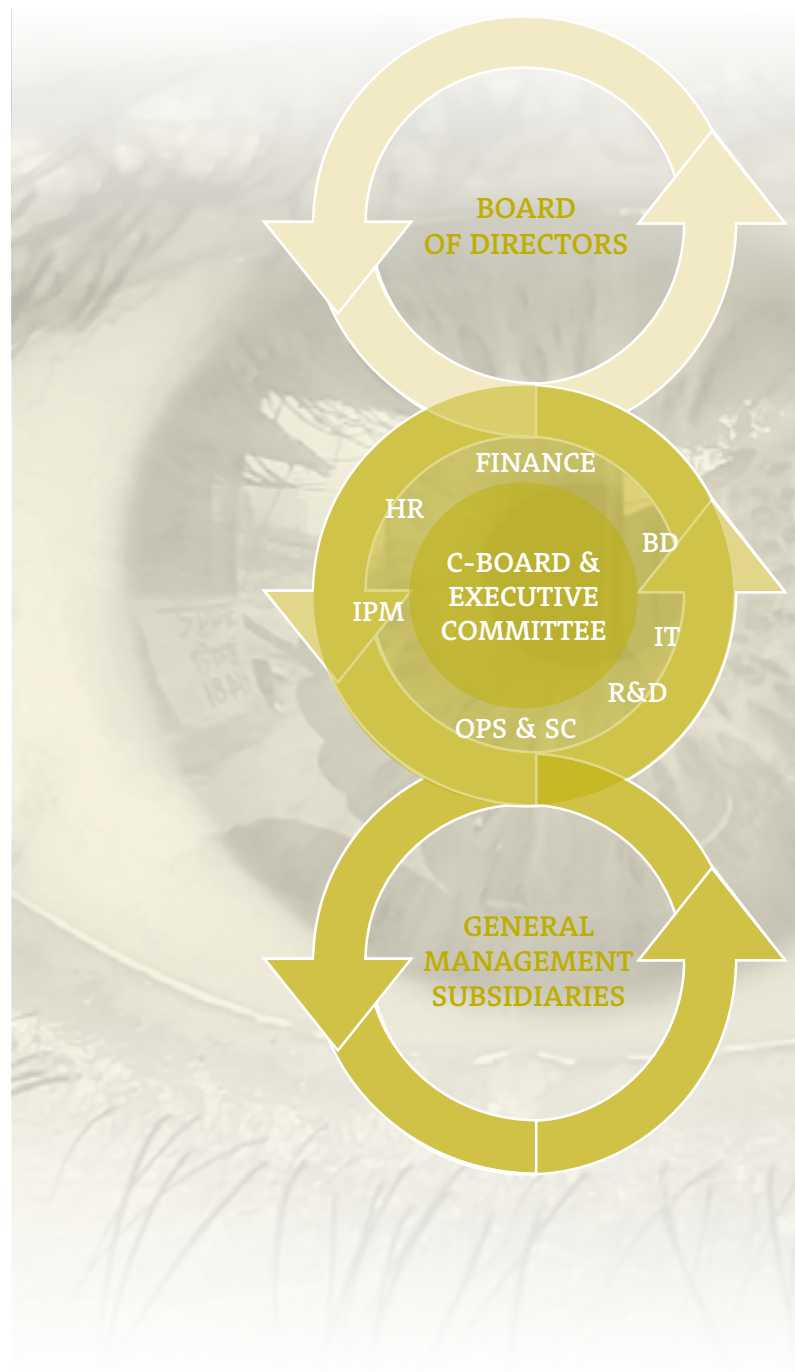
# Governance structure

BioFirst Group has a clear mission statement that is seconded by our Code of Honour. Within our group we maintain close contact with each of our subsidiaries through different channels. Since we operate in a matrix structure, there are different central group functions and departments in contact with their local counterparts. Information is shared centrally through different cross-departmental meetings such as C-Board, the executive committee, department meetings, steering committees and project meetings on specific topics, stage gate meetings, etc.

This leads to a good understanding of the state of affairs of the different subsidiaries and with limited formal procedures, we reach a satisfactory level of internal controls.

We also ensure that local objectives are aligned with group objectives. This way we are able to focus the information shared on our goals and aspirations, as well as our risks and how to mitigate them. Goals are cascaded through the organisation with so-called OGAMs (Objectives Goals Actions and Measures), a system through which high-level goals are operationalised as concrete actions and measures fitting the function of the employee in question. Progress is monitored by the employee and direct manager. Our remuneration system is linked to the most important objectives in the OGAM. As sustainability is one of our core values, it is a fixed element of our remuneration scheme.

Other ruling principles within the group are the 4-eyes principle and the grandfather principle. This is clearly stated in an authorisation matrix that is well-known within BioFirst Group.





Steering committee

Strategy & monitoring

implementation





**Jean-Marc Vandoorne**  
BioFirst Group

**Karel Bolckmans**  
BioFirst Group

**Erik Vanderhaegen**  
BioFirst Group

**CEO**

- First experience in audit & consulting at Arthur Andersen
- COO then president of Laundry Systems Group (acquired by U.S. based alliance in 2006)
- Graduated from Solvay Business School

**CSTO**

- Started at Biobest in product & business development
- Spent 16 years at our competitors, growing from R&D manager to director of production and R&D
- Rejoined Biobest in 2016
- Board member for multiple agritech companies

**CFO**

- First experience in audit & consulting at Arthur Andersen
- Specialised in M&A at Bekaert and Univeg, then joined Jensen as CFO
- Country managing director for NIBC
- Honed experience in management, M&A and company integration





**Kristof  
Truyens**  
*BioFirst Group*

**CHRO**

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- Started as HR consultant and joined deSter (Duni Group) as HR Executive Europe
- Former Vice President HR EMEA and Commercial Area Lead Benelux and MENAA at Monsanto
- HR Director Benelux for Alfa Laval
- Serves as judge at the Labour Court of Appeal



**Gerry  
Huygens**  
*Biobest*

**President**

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- Started as financial controller at Mars, responsible for supply chain before becoming sales director
- Joined AB Inbev, then Arvesta as logistics director
- Experienced in complex operations & supply chain



**Marc  
Mertens**  
*Biobest*

**Senior Vice-President**

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- Started at Biobest in the sales team
- Founded many Biobest businesses around the world in becoming sales director of EMEA
- Became Chief Sales Officer in 2018





**Lara Ramaekers**

*BioWorks*

**Vice-President**

- PhD in microbial inoculants and plant genetics, executive MBA
- Started as field development manager at Agriphar. Specialised in towards biofungicides as Global Marketing manager for Arysta
- Global Portfolio lead Biocontrol & Alliances for NPP (UPL) from 2021
- Was Chairman of the Global Natural Substances Professional Group for IBMA

**Antonio Zem**

*Biotrop*

**President**

- PhD in Agronomy
- Started EMBRAPA and continued at FMC for 38 years in R&D, as Director of Marketing & Sales, Product Manager, Area Director, President of the Agricultural Division and finally Corporate Vice President
- Was outstanding business professional of the year, president of Croplife, Sindag and Member of the Agribusiness Council of FIESP
- Agribusiness entrepreneur: owns two farms and founded Biotrop in 2018

**TBD**

*Plant Products*





# Implementation

The sustainability strategy and resulting targets are determined by the CEO and executive committee, with information from our subsidiaries. The strategy is fixed with the guidance of our Board of Directors and other shareholders.

Our company strategy is customer focused: everything we do is aimed at adding value for growers and consumers. Our sales representatives and IPM specialists in the field are a valuable source of information and feedback.

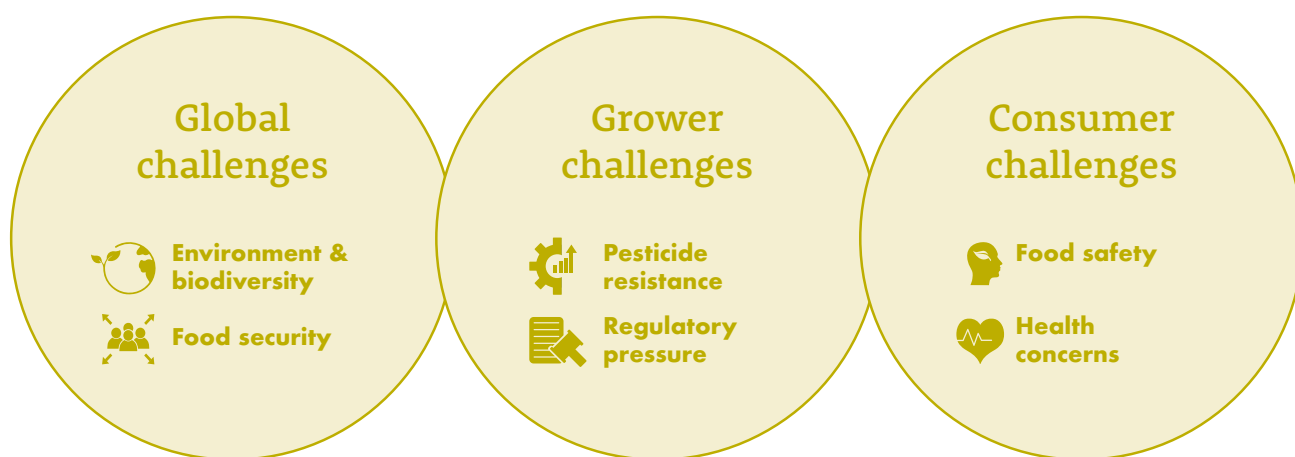
The strategy is implemented at each location by the general manager for each subsidiary, drafting their own roadmap with measures to reach the

required targets for 2026. Quarterly reporting is performed on target KPI to keep track of progress. Matching progress to the roadmap is performed via quarterly reviews between the CEO and executive committee and the general managers. Adjustments to the plans are made where necessary, either when measures turn out to have less or more than the planned effect.

The sustainability roadmaps are linked to finance in two important ways. Firstly, all roadmap measures are incorporated into the subsidiary budgets through operational expenditure (OPEX) forecasts and capital investments (CAPEX). Sustainability is also a fixed part of the management objectives, cascaded down from the

CEO to all general managers. These objectives are linked to remuneration of general management. Apart from quarterly progress meetings, they are regularly consulted to find possible improvements for the strategy and to share best practices in measures for implementation.

Overall progress with respect to the targets and budget is reported back to all subsidiaries monthly in an online "town hall" meeting.



Driving a shift towards sustainable,  
healthy & effective agriculture



Starting up new bumblebee hives @Biobest Belgium

## CAPEX investments & the EU taxonomy

In 2022 our business activities were unfortunately not included in the EU Taxonomy for sustainable activities under the EU Green Deal, as we are operating in a niche market. Our patience was rewarded, as in June 2023 most of our activities were included in the list and became new tools for the EU scheme. We are currently aligning our reporting process to periodically report on eligibility and alignment of our activities with the taxonomy.

*"In fact, in the process we have found that our products may serve as a solution for other companies, in agriculture and forestry, to meet the criteria for aligning with the taxonomy"*

In previous years we invested in the generation of our own solar power. CAPEX investments in 2023 focused on some additional solar projects, new hi-tech rearing facilities in Belgium

and Kenya and, most importantly, in biogas reactors for Biobest Maroc. These reactors are planned to replace the current fuel oil installations. Additional OPEX investments in renewable energy were made in 2023. In the coming years we plan to invest substantially in both the onsite generation (CAPEX) and purchase (OPEX) of fully renewable energy.



## Code of conduct & whistleblowing

In 2022 we prepared a code of conduct that adheres to our core values. The code outlines the ethical standards and behaviour we expect from our employees, to live up to our core values. We expect everyone to live up to the values we stand for, which is why our core values were integrated into the performance management cycle (OGAM) and are evaluated with all employees annually. The code also deals with the necessary legal aspects, the use of personal and company data and fair business conduct. All rules and company policies are explained within the code. As for all cultural aspects,

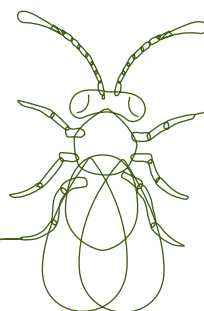
we expect people to keep an open dialogue about adhering to the code. We promote open communication on our values and code of conduct. In any case of doubt, we ask people to discuss this with their manager. And should they feel uncertain to do so, we have several confidants within the company that people may feel safe to speak to about any personal or business-related issue.

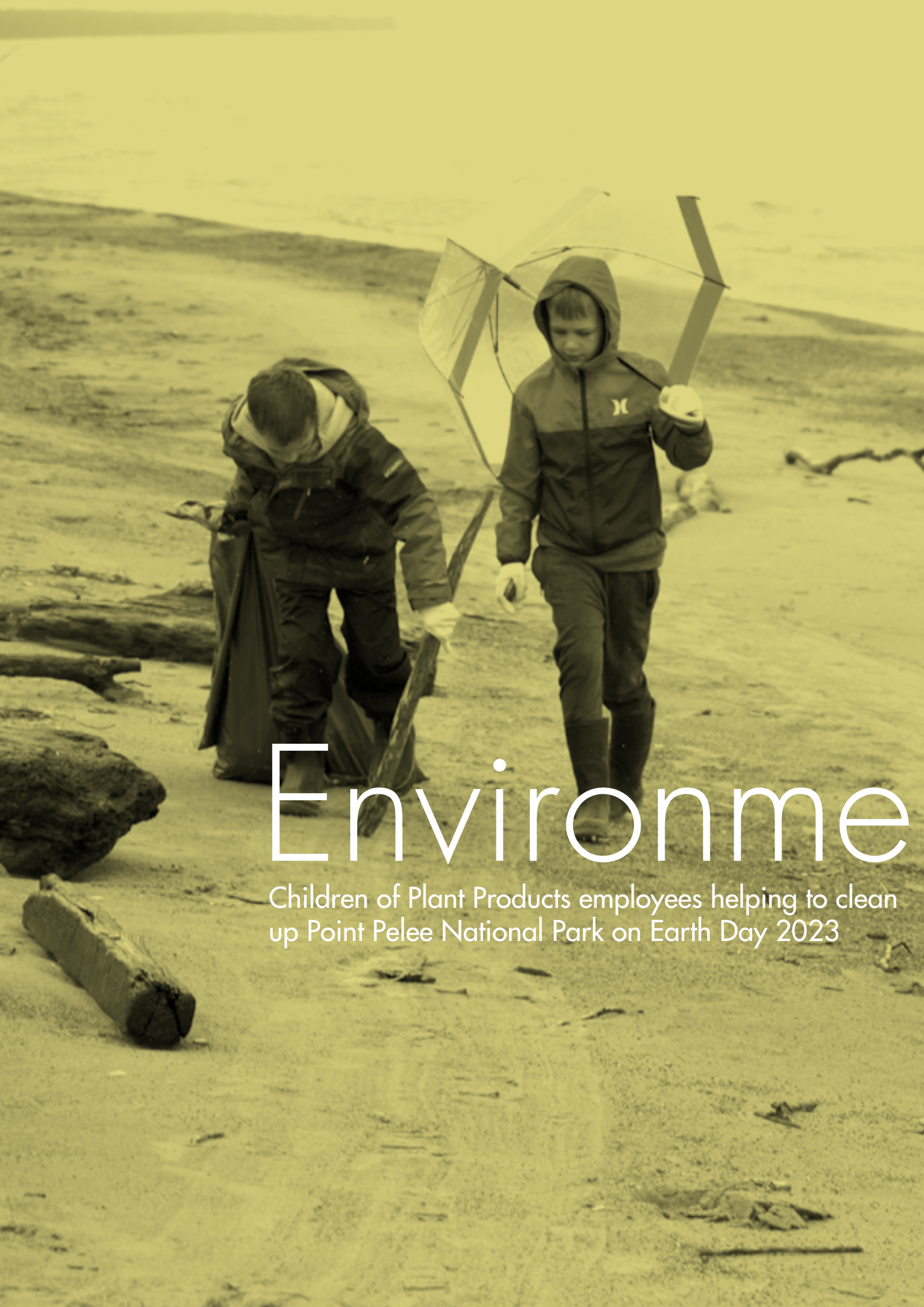
In 2023 the code of conduct was implemented within the group. We plan to develop practical training to highlight the most important and

relevant parts of the code, based on an employee's function. Along with the implementation of our code of conduct, we will also introduce a whistleblowing line for the reporting of any suspicions of illegal or unethical business conduct. This contact will be available online and will give so-called whistleblowers the opportunity to report these issues anonymously, when they do not feel safe discussing the issue with their supervisor. Issuing a report is open to anyone at any time and you may file a report via [this page](#).



Biobest Belgium employees in an active listening training





# Environme

Children of Plant Products employees helping to clean up Point Pelee National Park on Earth Day 2023

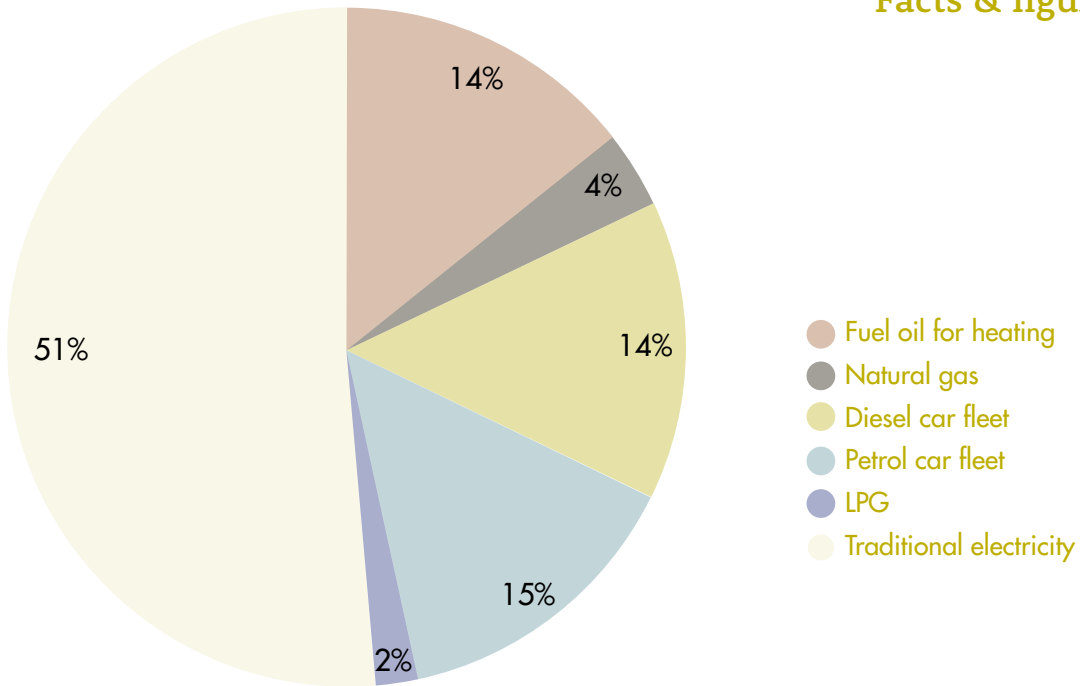


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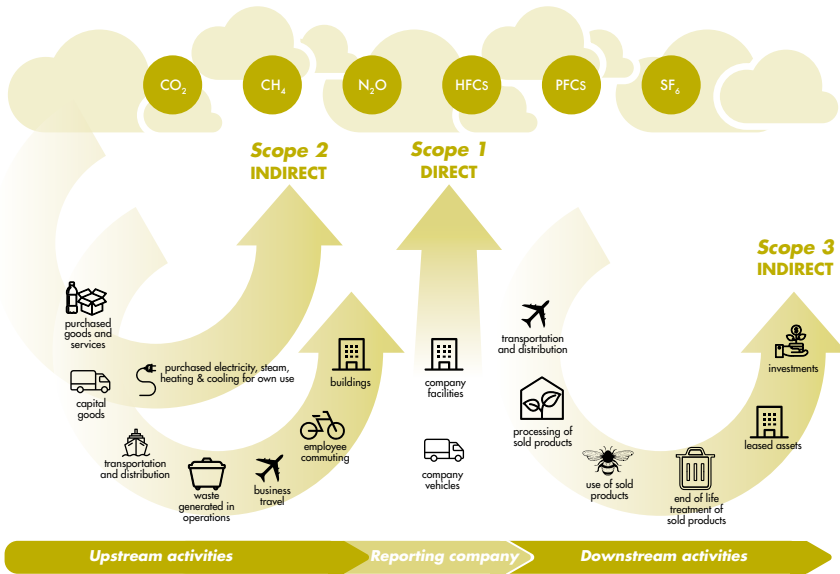
# Towards net-zero carbon emissions in 2026

Facts & figures



BioFirst carbon footprint 2023 - scopes 1 & 2





The Greenhouse Gas Protocol distinguishes 3 types of emissions as depicted on the left.

**Scope 1:** direct emissions from burning (fossil) fuels in our operations. Examples: using natural gas to heat our production building, diesel used in one of our vehicles.

**Scope 2:** indirect emissions from the use of energy in our operations. Examples: using electricity generated on coal or biomass elsewhere, or using a district heating system.

**Scope 3:** indirect emissions by other parties involved in our supply chain. Examples: by air freight, for the production of our packaging, by recycling and waste processing.

In 2023 BioFirst Group emitted a total of almost 20 kilotons of CO<sub>2</sub> (own emissions in scope 1 and 2). The bulk of these emissions were generated by our production facilities through electricity usage (52%) and the use of fuel oil for heating (15%). Most of this energy goes towards creating optimal climate conditions for our insects and mites. Natural gas makes up a minor share and is used for heating several small office buildings and for air humidification in our production facilities. Another significant source of emissions (29% for diesel and petrol) is caused by our car fleet, with our sales representatives visiting many remote areas worldwide. For more technical background on our carbon emissions, please refer to “About this report” on page 92. For **scope 3**, we currently structurally report on our additional transport of personnel: by personal car, public transport, (electric) bike and flights. We aim to expand our reporting and efforts in our value chain in the coming years, as further explained on page 42.

it means the relative impact of our use of electricity is decreasing. This is due to a steady increase in the use of renewable energy by our production sites.

Between 2019 and 2023 our emissions per turnover have decreased by over 30% on average for all scopes. This is due to the continued investment in new and more efficient facilities and through generating our own renewable energy on site. We have also started to invest in renewable energy through third parties, where own generation is not feasible due to a lack of space.

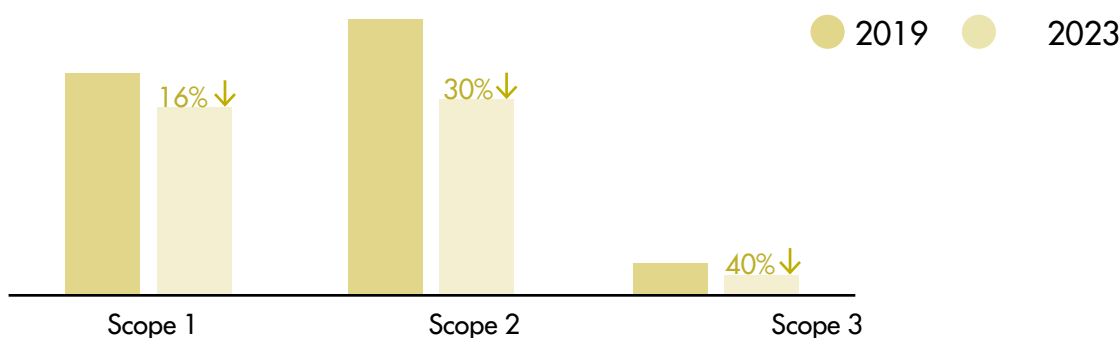
Secondly, we continued to acquire new subsidiaries that already have relatively low emissions compared to their revenue. All new subsidiaries are subject to our ambitious group targets. Taking into account our current growth and focus on actual carbon reduction, we will be putting forward a transitional plan for new entities next year. As we need to allow them time to transition to carbon neutral.

So what does carbon neutral by 2026 mean for BioFirst Group?

## Decreasing our emissions

Though the share of fuel oil on our carbon footprint has increased since last year, this is actually positive news:

### Emission per revenue

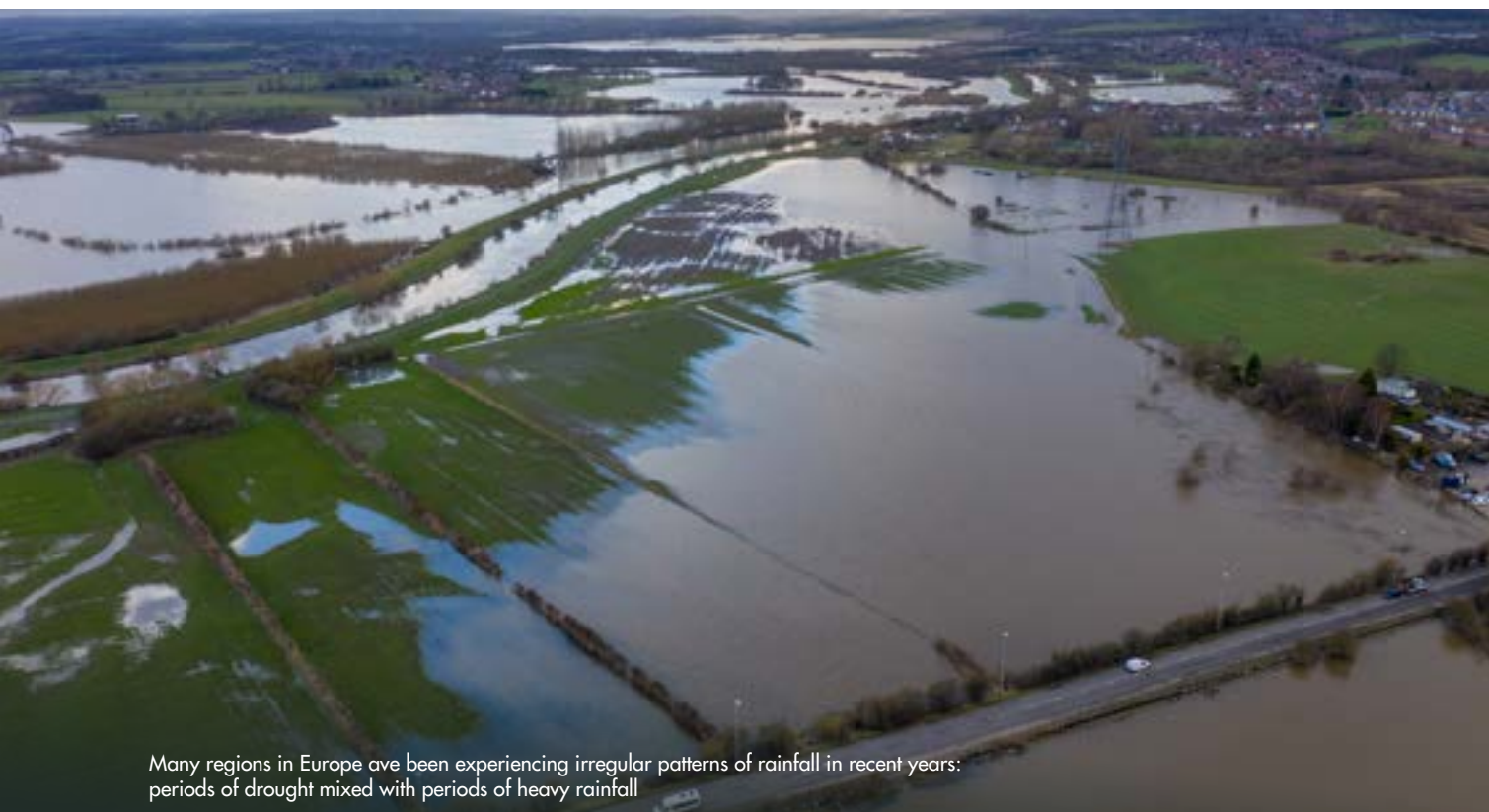


# Climate related risks and opportunities

While climate change will impact all of us in the short term, in some regions it is already having a profound effect on our sector. Local temperatures and rainfall patterns are changing. These changes will cause some arid environments to become even drier by lowering ground water levels, while causing flooding in other areas. The societal and global impact of climate change is our main concern.

It may also have profound effects on our customers and our business. Some changes might impact us directly, such as reduced water availability at certain production sites, changing temperature and direct sunlight levels impacting open field production, or the amount of cooling needed in our facilities. Indirectly, it may even influence labour availability, due to people moving

away from impacted areas. However, the most profound effects are likely to be felt by our customers, as they are even more dependent on environmental conditions for growing their crops. Growers are heavily impacted by water scarcity in certain regions and by changes in temperature and climate in others. The global impact may be severe, with the risk of synchronised low yields by multiple large growers.



Many regions in Europe have been experiencing irregular patterns of rainfall in recent years: periods of drought mixed with periods of heavy rainfall

BioFirst's indoor production is controlled and quite well protected from rapid environmental changes. Should it prove necessary, our sales may move geographically, or to other species, fitting the changing conditions. In contrast, our customers are generally more fixed to a certain location. So, changing local temperatures could result in changes in pest pressure,

or a significant increase in costs to heat (or cool) their greenhouses. This would impact operational cost, especially with the steep rise in energy prices in some parts of the world. Increased energy use by growers reliant on fossil fuel sources may in turn cause an increase in carbon emissions for global crop production. This is why we have linked our mission towards

net zero to using clean and renewable energy. We will focus our efforts on our own energy consumption and work to become net zero in scope 1 and 2. We feel the urgency of slowing climate change and therefore aim to achieve carbon neutrality by 2026 - well ahead of the EU target of 2050.





## Next steps

Most importantly, becoming carbon neutral means a reduction in our energy usage. The first step is to build and maintain well-insulated, low-maintenance production units. We are investing in cleaner and more efficient machinery and climate facilities to create a reduction in our emissions. In our strategy we focus on the most relevant sources of emissions.

The second step is to invest in renewable energy sources where possible. In 2019, about half of our emissions were caused by the use of electricity. In 2023 our global share of renewable electricity increased to 21%. We prefer to generate the renewable energy we need ourselves. On smaller sites, or where this generation is not possible, we invest

through third parties. In the coming years, we will gradually move to the use of 100% renewable energy. Where possible, we will substitute the use of fossil fuel for heating with more sustainable alternatives as well. When the bulk of our emissions (65 – 90%) is reduced, we plan to compensate for our remaining emissions by carbon offsetting.

## Our carbon reduction strategy in practice

At most sites, we will install the renewable energy sources we need to operate our facilities. Where this is not feasible, we will purchase renewable electricity with certificates of origin to push local production of renewable energy.

While we use only a limited amount of natural gas worldwide, two of our largest production sites - in Belgium and Morocco - are still dependent on fuel oil for heating.

**“In 2022 our main office in Belgium adopted a car policy that only allows the purchase of electric vehicles.”**



For both sites we have devised a roadmap to renewable alternatives and plan to phase out fossil fuels before the end of 2024. Last year we replaced one of our buildings in Belgium and installed heat pump technology, making half of fuel oil heating obsolete. At Biobest Maroc biomass boilers are being installed, due to become operational in 2024.

Our car fleet is another significant source of emissions. The bulk of our worldwide fleet is still fueled by diesel or petrol. While we strive to have a low carbon fleet by 2026, in most countries we are struggling to switch to feasible alternatives. This is due to several factors, including the availability of affordable electric vehicles and other alternatives in some regions.

There are also practical reasons, such as the need for larger 4x4 vehicles in remote parts of the world, such as Mexico. Our sales force is growing worldwide, which is great news, as our market in biological control and pollination is expanding. However, our sales representatives are also responsible for the bulk of our driven kilometres. Visiting customers in



remote areas can prove challenging with public transport and, in some regions, options to charge or purchase affordable electrical vehicles remain very limited.

Though our positive impact is many times greater than the emissions we cause, we are pushing for low emissions transport where possible.

In 2022 our main office in Belgium adopted a car policy that only allows the purchase of electric vehicles. With the additional switch to renewable energy procurement, we are already starting to see large differences in emissions from personal transport. By experiencing the advantages of electric vehicles and the relative ease of charging in Belgium,

we see that sales representatives needing to cover large distances have voluntarily switched to electrical alternatives as well. We are experiencing some difficulties with delivery times for these vehicles, but the Belgium office is confident it will have a fully electrical car fleet by 2028.

## Scope 3 & supply chain

Scope 3 CO <sub>2</sub> emissions in tonnes	2019	2023
Flights staff <700 km	44,6	24,6
Flights staff 700 - 2.500 km	77,1	122,0
Flights staff >2.500	531,0	510,7
Bike and electric bike	0,5	0,8
Public transport	17,1	24,5
Privately owned cars: staff: business	299,1	157,1
Privately owned cars: staff: commute	140,0	140,4

Measured scope 3 emissions from the transport of personnel



In 2022 our headquarters in Belgium adopted an all-electric car policy

### Supply chain emissions study

For our supply chain (scope 3) emissions, we currently measure our water usage, waste and transport of personnel, which includes flights, commuting, business travel with personal car and public transport. These transport emissions are incorporated into our management report but are not yet part of our 2026 targets. As in the previous two years, our absolute emissions due to flights have slightly decreased compared to 2019 and, for the first time, our emissions from commuting and business travel by car have decreased as well. This is against the backdrop of an increasing global staff and sales revenue.

In order to set meaningful targets for our scope 3 emissions and supply chain, we conducted a study into our most material emissions in this category. Most material means the amount of emissions caused by a certain activity, the level of influence Biobest Group has on these activities and the impact our partners and Biobest group have on these emissions through feasible actions.

This study included two important factors: the resources we purchase and use for production (upstream emissions) as well as the effect our services and products have on our customers during and after

use (downstream emissions). We have found product use is the most material by far, having a profound positive effect on carbon emissions compared to more traditional methods of pollination, pest control and fertiliser use. A study has been started to accurately quantify the effects. The results of this study will also be used to further reduce the scope 3 impact of our products.

The most material emissions in scope 3 have proven to be:

1. Purchased goods / resources;
2. Transport and distribution;
3. Waste generated downstream.



Encouragingly, we already have several initiatives in place covering these topics. We continuously work on optimising rearing methods, finding alternative resources used and new uses for our waste products, optimising the amount of product per shipment

and developing sustainable packaging alternatives. As next steps for our scope 3 strategy, we will formulate practical and feasible actions for further reduction in these three categories. Actions that we may take as a Group, together with our stakeholders. And of course, actions that

add value to our customers and suppliers. We will measure the effects, to make sure our actions have the desired effect to reduce our scope 3 emissions. The 2023 study has shown transport of personnel to be the group's least material emissions in scope 3.



## Capital expenditure emissions

In 2022 we undertook a study into our scope 3 emissions via capital expenditures. The results were used to show CO<sub>2</sub> emission values for each investment proposal. A threshold was introduced for each type of investment, requiring additional information on investments with a high carbon impact. Investment in buildings was shown to have the highest impact. Yet global solutions are not straightforward, with a large variety of building types and local conditions between subsidiaries. For all investments in new buildings and structural renovations, a steering committee was formed and included sustainability as a major criteria.

With the help of the committee, several plans were updated in 2023, resulting in a more sustainable design. In several designs the use of space and energy were reduced and workflow optimised, for example, while in other cases, the use of more sustainable materials and the generation of renewable energy were incorporated. In our new facilities for IMEX in Mexico, for example, inside climate and working conditions were seriously improved by increasing air replacement and adding natural cooling by material use and plants. Where needed, climate technology was installed to regulate heating and

cooling. All water heating and stoves operate on electricity, while the entire facility is powered by solar energy. A big water collector was installed and grey water is used wherever possible. Waste water is treated on site and treated in biodigesters.



# Circu



# lar economy

Packaging expert Geert Geboers showcasing one of our hives at the Smurfit Kappa Benelux customer event

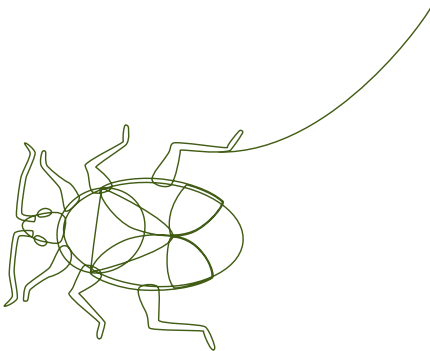
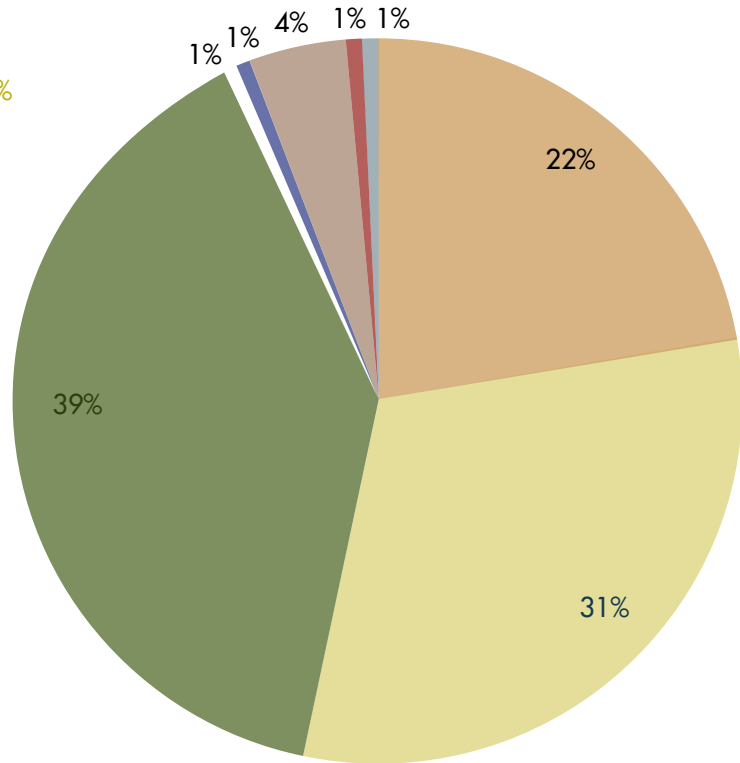




# Towards a circular economy

Turning waste into a resource

- Septic waste 39%
- Organic waste 31%
- Industrial waste 22%
- Cardboard 4%
- PMD (Plastic, Metal & Drink cartons) 1%
- Plastics 1%
- Wood 1%
- Sugar water 1%



As part of our strategy towards a circular economy, we are also working hard to reuse and reduce our waste products.

**“We aim to increase our waste separation to at least 75% by 2026”**

The majority of our waste worldwide is already separated at our production facilities. Today we separate 77,7% of all our waste at source. This is enabling well over half of our waste flows to be reused or recycled internally, or by

a professional waste company. As for our emissions, we remain focused on the most material flows: these may be the largest, or the ones with the largest potential for effective reuse.

Our aim was to increase our waste separation to at least 75% by 2026. As we reached this target in 2023, we will investigate if it is feasible to further increase our waste separation, or the direct reuse of waste flows in the coming years. Apart from the significant steps taken in waste flows for packaging, we are making major progress in reusing organic waste.

In Beneficial Insectary in the US, for example, organic waste from rearing is reworked and reused as a biological fertiliser. Products are now shipped with cool packs filled with a nitrogen based coolant, which is both a plant fertiliser and an eco-friendly drain cleaner. The fluid used to be a large component of residual waste for our customers, but may now be used in their production. At our Belgian facilities, the bulk of fluids in production, used sugar water, is collected and used as highly effective fuel for a third party bioreactor.



# Our packaging is our business card

Each year, we ship tens of thousands of packages with billions of insects and other beneficials, from our main office alone – to over 70 countries worldwide. Every day we aim to deliver the best quality products in the best quality packaging. This means providing our insects and mites with optimal temperature, air quality and nutrients fit to their needs. Many of our products have a highly limited shelf life, which is why we often rely on air freight. To keep environmental and shipping costs low, we aim to minimise weight and volume. Additionally, we want to use packaging

that is easily recycled, or reused, by our customers and preferably made from a renewable and biobased material. By 2030 we aim to be rid of all fossil-based packaging, such as Styrofoam and plastics.

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**“By 2030 we aim to be rid of all fossil-based packaging, such as Styrofoam and plastics”**

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These are all logical and sensible choices for the Biobest Group, but quite a challenge for our team. It is a combined effort of our packaging and logistics

experts, business development team, sales representatives in the field, quality control and R&D experts, to come up with the best tailor-made solutions. Biobest is greatly invested in coming up with innovative packaging solutions, as they have a major impact on our total use of resources. The Styrofoam and plastics traditionally used have a large environmental impact, including on the user friendliness of our product and the waste generated for our customers. Our packaging is the first and last thing customers see of our products: it is our ‘business card’.



The team that co-created the cardboard Multi-Hive, receiving the 2023 Sustainability gold medal and audience award from Smurfit Kappa

## The new Multi-Hive

In 2023 we launched our new cardboard alternative to our (last remaining) Styrofoam boxes: a fully recyclable cardboard Multi-Hive! This was a very special project for several reasons. Technically it is quite a challenge, as Multi-Hive is the box we use to house bumblebees outdoors.

The new box was put to the test during a very wet spring in Belgium and a very hot summer that followed. And in very cold conditions in Finland. The cardboard box retained its shape perfectly for several months, while providing the perfect conditions for our bumblebees to thrive. And the box was a true co-creation between the Biobest Group and our supplier, Smurfit Kappa.

Getting this amazing result required close cooperation between several departments of Smurfit Kappa and our packaging expert, product development and R&D departments. And what a result: an eco-friendly, weather-resistant, durable and fully recyclable Multi-Hive at the same competitive pricing.



## Expanding the use of our recyclable containers

The first product to receive brand new sustainable packaging was the beneficial insect Macrolophus. The 100% recyclable cardboard container with removable lid was launched in 2021 as an alternative to the traditional plastic bottle. The application has been expanded to several other products, such as Orius, Feltiella, Micromus in 2022 and Cryptolaemus and Propylea in 2023.

Our customers are very happy to use the cardboard cup to spread the beneficials more easily and successfully. Thanks to its success, the biodegradable cardboard container has become a platform technology.

We have received a wave of positive feedback from customers worldwide regarding the new packaging, stating the Macrolophus adults emerge faster

and more energetically and spread more quickly throughout the greenhouse - helping deliver good control.

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**“Thank to its success, the biodegradable cardboard container has become a platform technology.”**

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We have received a wave of positive feedback from customers worldwide, stating Macrolophus adults emerge faster and more energetically and spread more quickly throughout the greenhouse. Also, that the adults can build a steady population much faster, delivering more effective control in the greenhouse. With the new packaging, growers report taking less time to introduce the adults throughout the greenhouse. Meanwhile, it is helping to reduce the amount of waste

streams, therefore reducing waste management costs.

As the graph on the next page shows, we have already halved our use of plastic bottles over the last three years. Next to the reduction in plastics, the new packaging has also led to a lower shipping weight and an increase in the amount of beneficial insects shipped per pallet.

We are experiencing a steady ‘pull’ from the marketplace to extend these innovations to all of our products. Our team is continuing to research additional packaging innovations for products where the carton is not applicable. However, the introduction of this new biodegradable carton has made a significant contribution to reducing the use of fossil-based materials in our supply chain.



The new cardboard Multihive



Our 100% biodegradable cardboard container

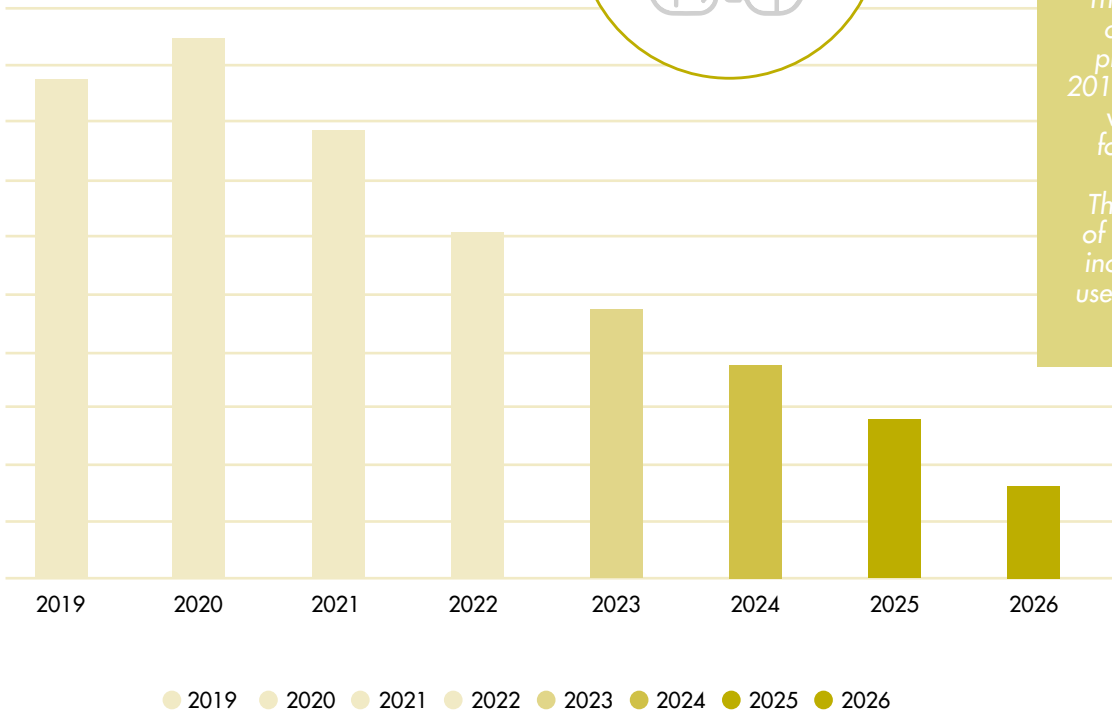
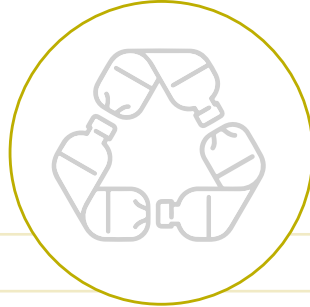






Sterilising our bottles for direct reuse in Kenya

## Plastic bottle usage



Since 2019 we have reduced the amount of plastic bottles used by over 45% and aim to reduce this to over 50% before the end of 2024.

The graph shows all centrally ordered plastic bottles from 2019 to 2023, together with our forecast for 2024 to 2026.

The number of sales of these products are increasing, while the use of plastic bottles is decreasing.



# Designing for circularity

All our waste and packaging strategies are part of our efforts to work towards a circular economy. Circular products and coming up with suitable alternatives for traditional pest control has been in our DNA for years. Our colleagues in business development and supporting departments continuously strive to improve our products and processes. We adopted the R-ladder as we strive towards more circular production. Applying this Dutch methodology adopted by the European Union, we aim to make more efficient use of resources in three easy steps:

1. Trying to avoid the use of materials, or using less of them, when we design new products. Find multiple or alternative uses for our products;
2. Extending the lifetime of our products, or reusing their parts;
3. Recovering materials or energy after use and increasing the use of recycled materials.



Some resources are becoming more scarce and more expensive, while the use of others has a significant impact on emissions, pollution and land use in our supply chain. So, by making better use of our resources, we are able to offer, a more sustainable product at an equal, or more competitive price.

In addition to the previous examples relating to our outer packaging, we have also found alternatives for traditional ice packs. Our colleagues at Beneficial Insectary in the U.S. started using environmentally friendly drainable ice packs. As our products need to keep at a constant cool temperature during transit, multiple ice packs may be needed for each box of pollinators and beneficial insects. These packs have a serious impact on our total shipping weight, the energy needed to transport our goods and on the total weight of the waste generated by our customers. And of course it is not the packs

themselves that generate a lot of waste, but the cooling fluids inside. The packs used by Beneficial Insectary are easy to open and contain gel that can be safely flushed down any drain. In fact, you can dilute the gel and use it as a plant fertiliser. So this cooling gel may help to clean your drain pipes, or grow your plants, instead of creating a lot of landfill waste.

We also love to reuse materials in our (re)construction projects. In 2023 the production facility in Belgium renovated a large part of the current facilities and created a brand new rearing facility for beneficial mites and feed mites. To create room for the new hi-tech rearing facility, an old greenhouse had to be removed. Instead of demolishing the large greenhouse, effort was taken to disassemble the building piece by piece and put it on transport. This way the entire greenhouse could be reused by a third party. Besides offering the greenhouse for reuse,



Beneficial Insectary packs with Enviro Ice

efforts were taken to use as much of the soil and foundation as possible and, perhaps more importantly, to generate a material passport for the new building. A full digital copy of the building was generated in a Building Information Model (BIM). This model now serves as a library of information on the main materials used, which may be consulted and altered at any time. The information is therefore a great tool for efficient maintenance and provides all the right information on the materials used for future reuse, providing the building with a residual value, instead of a demolition cost at the end of life.

In another 2023 example, our new colleagues in Biotrop received the green IT certificate for the implementation of sustainable solutions in its processes of technology production and consumption. “(for example, through working with a supplier that could provide biobased cabling).” This cable housing is not made from traditional plastics,





Circular bicycle path from the roots to the crown of the forest (Bosland Belgium)

© Luc Daelemans

but from sugar cane. This is a great fit, seeing that they provide biological products to enhance the sustainable production of sugar cane by their customers! This is besides their efforts to reduce the use of energy for their IT systems that are powered by solar energy. The choice of biobased cabling prevented the use of 136 kilograms of fossil-based plastics and 200 kilograms of carbon emissions. Projects like these are important

in Biotrop's mission to spread awareness of the critical role of technology and innovation in mitigating environmental impact.

And, as you may read in our chapter on hi-tech business development on page 81, new technologies are a standard in our current business development process, to minimise the use of natural resources in our products and services.





Our core business is sustainable by nature, offering alternatives for the use of traditional fertilisers, pesticides, fungicides and improving plant performance and stress resistance with biostimulants. We are always on the lookout to find new applications and to rethink our own approach and product range.

**“Our newest mite product is unique, the first macrobial (predatory mite) to target both a key pest, the russet mite, and powdery mildew, a fungal plant disease.”**

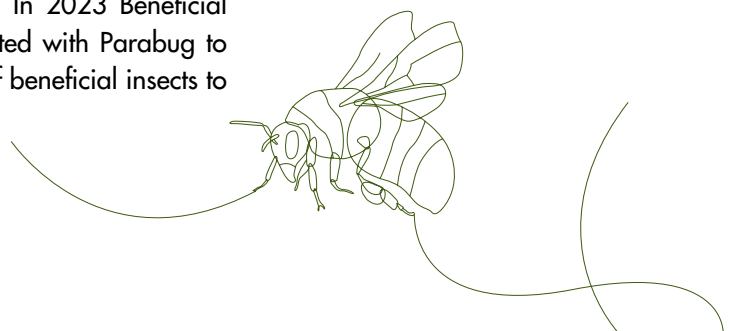
We are currently calculating the positive effects our products have on the environment compared to traditional methods. A 2022 award innovation

falling into the “R1 Rethink” category is pronemite. BioFirst was the first to discover that this macrobial (predatory mite) is effective in battling both a key pest, the russet mite, and powdery mildew, a widespread fungal plant disease. Battling both the pest and a plant disease with a single product has proven valuable for many customers. It is the result of very strong teamwork between BioFirst subsidiaries and departments - we are extremely proud of everyone involved.

Besides that, we are keen to engage in external cooperation to improve our services. One such example is the delivery of our beneficial insect to the crops by airdrop! In 2023 Beneficial Insectary cooperated with Parabug to deliver an army of beneficial insects to

our customers crops by drone delivery. Parabug uses drones to deliver insects, allowing us to deliver a bulk product and preventing unnecessary packaging – delivering our product efficiently, where it is most effective. Preventing the need for large machinery or manual labour in the field in the process. The delivery of our insects by Parabug was found to be highly effective and growers found more lacewings and nymphs on their crop.

Designing for circularity is a key component of our continuous effort to remain the most reliable and innovative partner in biological crop protection.



# Expressing our passion for nature & biodiversity



People with passion can change the world for the better! And most BioFirst employees are very passionate about nature and biodiversity.

Over a quarter of our 2023 sustainable initiatives worldwide focused on nature and biodiversity.

In 2023 we conducted a study into our biodiversity impact. And though our negative impact on local biodiversity was minimal for most topics, we have taken many insights and concrete actions from these studies.

Because we love to act! We:

- are taking measures at our own offices to improve local biodiversity;
- aim to build only on existing land and not convert any terrain;
- are devising a list with general measures for (re) construction;
- share our knowledge on species and local biodiversity with growers and local communities;
- adopted a site specific approach for sites emitting NOx;
- focus on water usage from other sources in dry areas.

We have a large global team rearing

different types of mites and insects; teams producing and selling bio-stimulants biopesticides, biofungicides and fertiliser to replace traditional methods; a large team of trained professionals offering advice in biological control; and a substantial research & development team – conducting commercial and fundamental research in biology every day. But the best way to demonstrate our drive for nature is by highlighting a few of the projects our teams have supported worldwide.



Tree planting - local high school Mexico



## Tree planting in Mexico with the local community



Tree planting project by Biobest Mexico

This year our colleagues in Mexico embarked on a planting project at a local technical secondary schools in San Isidro. The project is part of a larger initiative together with the local government, to plant endemic trees in

all schools in the community of San Isidro.

The project serves many different goals. One of the main goals, of course, is to boost local nature and biodiversity. The trees themselves will

grow and sequester carbon and they will in turn provide conditions for other plants to grow and for small wildlife to find a home.

Apart from that, it is a social project that helps to create awareness among local youngsters and brings people together to work towards a common goal. The trees will in turn also provide natural and social services to the schools. Having trees on school and company grounds has proven to improve wellbeing and productivity, naturally lowers temperatures on school grounds, improves the air quality and improves soil health and water infiltration. There are many benefits to a greener school ground, which is why Biobest Mexico and the municipal government of Tala do not plan to stop after this first project.



## Preserving biodiversity in Kenya

One of our larger forestation projects was undertaken by Real IPM Kenya in 2022, to reduce carbon emissions, promote biodiversity and so much more. The project was continued in 2023 to plant and nurture trees in different areas around our Thika and Embu sites: the plan is to stay “rooted” in the area for the years to come.



Real IPM has also been sponsoring another very interesting activity to preserve biodiversity in Kenya: the Rhino Charge. Deforestation and the loss of water catchment areas are a major global challenge and Samburu county in Kenya is no exception.

The Rhino Charge is an annual one-day fundraising event, organised by volunteers. In local spirits, it is a

challenging 4x4 off-road competition, that challenges the competing drivers to complete a 13-check point course in the shortest distance (not time). A crazy but highly successful idea: driving massive 4x4 cars in rugged terrain to promote sustainability.

In 2023 a remarkable total of 173 million Shillings was raised for the Rhino Ark charitable trust. The charity

aims is to conserve and protect Kenya's mountain range ecosystems, the so-called "Water Towers" of the area, through fencing and maintaining them. During periods of drought, the protection of these areas is needed more than ever and is essential to the future of agriculture and the livelihood of our customers and Real IPM's business in Kenya. This year as in previous years, Real IPM sponsored car number 48, the overall winner in 2023.



Winning team of the 2023 Rhino Charge

## Improving local biodiversity with research

In 2023 several global biodiversity initiatives were started from our central R&D department. R&D director Felix Wäckers actively promotes research into biodiversity: "Research is essential to identify the drivers for the dramatic biodiversity loss we are currently experiencing," he says. "Research can help in developing strategies to counter biodiversity loss."

At BioFirst we are continuously performing research on a wide variety of organisms, including insects, mites,

nematodes and fungi and especially on the ways they interact. The projects we love most are those out in the field and in cooperation with our customers. Last year we finished an important project in sharing our biocontrol expertise in a non-commercial collaboration with farmers in the EU. The project helped to attract natural pollinators and beneficials and has created attractive flower borders in several European countries in the process. More details are shared on page 76

on community engagement. Another project that started with our colleagues in R&D is participation in a voluntary species identification programme for BINCO (Biodiversity Inventory for Conservation).

BINCO focuses on gathering more information on lesser-studied areas and species. BINCO serves as a platform where, under the guidance of seasoned scientists, young and eager individuals can develop biodiversity projects or hone their skills. BINCO



is organised into taxonomic working groups that concentrate on enhancing identification skills, sharing knowledge, and collaborating towards a broader goal. This approach is particularly vital in the current era, marked by a decline in museum resources and taxonomic expertise. So, during the weekend, colleague Jonas collaborates on voluntary identification projects.

The goal is to identify as many different species of insects and mites as possible. Amongst a lot of important

fundamental research, he noted two important achievements in 2023. Firstly, with the MiteFind workgroup, Jonas discovered a species new to science in Belgium: *Thyreophagus berxi*.

He located the species in both his favourite search areas in Gentbrugge and Heverlee. Once the team knew where to look, the species was subsequently identified in Germany and France, under birch tree bark. Fun fact: *Thyreophagus berxi* was not named

after the 'berk', the Dutch word for birch tree. It was named after Peter Berx, a Belgian entomologist. Peter has a great love for the little critters "that run the world", as stated in his interview in [our 2022 Sustainability Report](#). Proud of the find, Peter introduced the newly found species in the popular Flemish 'Nerdland podcast'.

Together with other newly found *Thyreophagus* species, berxi was described in a [scientific publication](#).







In a separate project project, Jonas travelled to Kratie, Cambodia. In cooperation with WWF (World Wildlife Fund), he helped carry out comprehensive biodiversity surveys and habitat studies, in the wildlife sanctuaries of Prek Prasab and

Sambor. The biodiversity surveys included birds, amphibians, reptiles and selected insects of course, such as butterflies, moths, ants and beetles. To assess the abundance of hog deer, drone surveys were carried out, using thermal drones at night, to map a 3,800

hectare habitat. Through the project, critical information was collected for the conservation of these species. And perhaps more importantly, knowledge and experience were shared with local colleagues and conservationists.



Colleague Jonas scouting for insects and other species in Kratie, Cambodia

# Preventing the introduction of invasive species

Preventing new species becoming invasive is a top priority for BioFirst Group and our sector. In the past, significant damage has been done to local flora and fauna by introducing invasive species.

Australia, for example, has very strict regulations in place, which is highly justified, when we look at the history books. As soon as the first European settlers arrived, they brought invasive species. Rabbits are an iconic example, as they destroyed a lot of local habitats pushing out other native mammals and ground nesting birds. Meanwhile, the introduced domestic cat hunted the same indigenous animals. About a century later, the cane toad was introduced as a biological control agent to protect crops from cane beetles. Unfortunately, the toads' toxin killed most local predators and the cane toad population grew unchecked.

Over the last century, with globalisation and a huge increase in global trade, many parts of the world have unfortunately encountered at least several examples of invasive species becoming a plague or pushing out indigenous species. Preventing the introduction of possibly invasive species is an important concern and part of our business.

## Restoring balance through natural enemies

Introducing new species to an area should not proceed without proper thought and thorough research.

Yet the introduction of an exotic species to control another invasive species has been a part of classical biocontrol for over 120 years. In other words: restoring balance in crops by introducing natural enemies.

BioFirst Group has over three decades of experience in this field. While we have had no reported incidents of organisms escaping a greenhouse and becoming invasive, it remains a key concern for us, especially when shipping new products or working in new areas. We also take every possible precaution to protect customers from the introduction of unwanted species.

**“We use local species and produce locally, wherever we can”**

We therefore operate according to strict protocols and safety regulations within our facilities. It is also a prime reason why we use local species and produce locally, wherever we can. While, of course, also welcoming the additional benefits that come from producing locally - such as CO<sub>2</sub> reduction,

supporting the local economy & community, and more affordable & timely deliveries.

We invest a lot of time and effort in working protocols, according to local laws, and organising the correct paperwork for all our global shipments.

*We strongly support the presence of local laws and regulations, to protect nature and society from the unwanted spreading of organisms, and offer our knowledge where needed. These regulations create a level playing field for our business.*

*There are also some downsides to strict regulations, for example, where it becomes impossible to collect, or introduce a natural predator in certain countries, or where registration procedures are very laborious or lengthy. This may prevent us from finding or marketing the best new biocontrol solutions.*

*So good and proper research and knowledge sharing is key to finding the right balance in preventing the spread of organisms and promoting biological control over traditional measures. We have several colleagues and significant research time invested to gain the necessary knowledge and to share this with policy makers through several platforms and consultations. Sharing the right information in a timely manner is key, as it takes a lot of time to approve new biocontrol products and applications.*



# Our impact on life below water

While most of our work and projects focus on life on land, our business also has a profound positive impact on life below water.

Between the two World Wars, the world discovered the use of chemical pesticides. A major step forward in controlling pests and plant diseases, they significantly increased the yield of commercial crops. On the other hand, these pesticides also had serious negative effects on human health - both directly and through accumulation in our food chain. The pesticides also negatively impacted biodiversity in the areas where they were used. They caused indirect effects that were not foreseen at the time, creating resistant pests, or pests that had lost their predators - both leading to unexpected outbreaks.

Pesticides can make their way into groundwater and larger waterways, where they can kill off many types of organisms: plankton, crustaceans, aquatic insects and other marine invertebrates - such as fish, amphibians, shellfish and waterfowl. Pesticide use

has been a leading contributor to the decline of many fish populations and has affected some endangered species. The effects are mostly found where pesticides are used within close proximity to wetlands, lakes, ponds, rivers and streams. An example is the collapse of the freshwater ecosystem of Lake Shinji, in Japan, in 1993.

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“Pesticides can make their way into groundwater and larger waterways”

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The same is true for animal health. Not all pesticide poisonings result in immediate death; small sublethal doses of some pesticides can lead to weight loss, changes in behaviour, impaired reproduction, inability to avoid predators and lowered tolerance to extreme temperatures. If this pressure continues, this may lead to serious population decline. Fish in streams flowing through croplands and orchards are most likely to receive repeated low doses of pesticides.

## Full ecosystem approach to crop protection

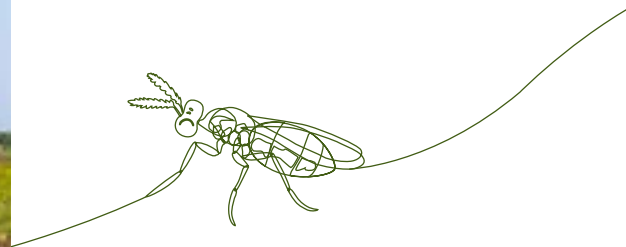
In our IPM advice we focus on many different solutions, only resorting to the use of chemical pesticides to save a crop when other options fall short.

Offering the best possible IPM advice is a core part of our strategy and truly adds value for our customers. Through our advice, we set out to offer the best possible solutions for the most biological, efficient and cost-effective means to battle pests.

Our advice is an ecosystem approach to crop protection, combining different management strategies and practices to grow high yielding, healthy crops in the most natural way possible. Rather than focusing on a cure, we prefer a proactive approach that focuses on improving crop health and pest prevention. Of course, biological control is our preferred option, but we also promote various other methods of pest control where needed.



Traditionally, pesticides have found their way to ecosystems via groundwater and waterways: together with our customers, we aim to prevent this where possible, by applying IPM



# Our new green Brazilian gem

It was announced in 2023 and, as of January 2024 we are proud to say that Biotrop is now officially part of the BioFirst family. With the Brazilian market for biocontrol and biologicals currently estimated at over one billion US dollars, Biotrop managed to rocket itself to head of this dynamic market. Biotrop has an annual growth rate of 43%. All thanks to its dedicated and passionate team and outstanding

management, which will continue to drive the company's growth and become part of BioFirst Group's global leadership.

"As a member of BioFirst, we will be able to globally leverage our ambitious growth agenda by providing sound biological crop protection alternatives to chemical pesticides, contributing directly to mitigating climate change by

reducing CO<sub>2</sub> emissions and restoring healthy soils" says Antonio Zem, CEO of Biotrop. "Providing farmers with effective biological products and expert advice will create a cycle of trust, benefiting our mutual businesses, enabling enhanced food security, and more resilient and sustainable agriculture."



Proud to have the Biotrop team join us in 2024

Due to increased tolerance for traditional pesticides, the required doses for pest control in Brazil have increased rapidly over the past years. Currently the price per hectare for biological control methods from Biotrop is equal to the pricing per hectare for traditional treatments. Next to that, crop health and yields have been shown to

increase due to increased soil and plant health by the use of biostimulants and biofertilisers, replacing the repetitive treatments with traditional pesticides. They optimise plant growth and uptake of water and nutrients, thereby boosting the natural resilience of the plant. An improved uptake of water and nutrients also means that less

water and fertiliser are needed for the crops to grow. This is why more and more Brazilian farmers are eager to switch to biological solutions, without requiring a push from legislation. In 2021 the first calculations were performed to determine the positive impact of Biotrop on the environment, as shown on page 62. A total of





over 31 kilotons of positive impact was calculated from our activities in innoculants, biostimulants and biopesticides. Biotrop issued green bonds for these prevented emissions, at the same time working hard to reduce Biotrop's own scope 1 and 2 emissions and purchasing carbon credits for the remainder - just under 2 kilotons at that time. Though Biotrop continues to reduce their own emissions, the company has been carbon neutral since 2022. In 2022 an investment was made in a UNFCCC reforestation in Brazil. In 2023 a renewable energy project was chosen to purchase carbon credits. With the purchase of these credits, we aim to push the global market of carbon reduction where this push is needed - giving back, in part, for the trust that was once invested in us.

As for BioFirst Group, Biotrop is not only sustainable from a business point of view, but sustainable by heart. And our Brazilian colleagues have

heart! Sustainability is as much a company mission, as it is a personal drive for most of our colleagues. Every month several sustainability initiatives are supported by a dedicated team. These may vary from environmental projects, waste reduction, circular use of waste, and renewable energy, to clothes collection and food donations, donations to children in need of medical treatment, and to fundamental research, to give just a few examples. A big and positive local impact is what they have in common: bringing a smile to those around them.

A few long-term projects were initiated as well, such as a cooperation with Eureciclo to compensate for all packaging generated by the sales of our products. Through this so-called reverse logistics programme, recycling cooperatives are supported, to recycle the same amount of products that were set on the market in the previous year. In 2023 this was done for all 308 tons of materials sent

out, in different major components of packaging: paper, plastics, glass and metals. In this process, over 400 biopesticide containers were collected and properly cleaned and recycled as well. By this indirect recycling, we aim to push the market for proper waste disposal and recycling in Brazil. The reverse logistics programme is a part of our effort towards a circular economy. Besides recycling, we also incorporated waste reduction in our design process and work with suppliers to reduce waste in our supply chain. For their efforts, Biotrop received the zero waste certification in 2023, preventing 92% of the usual waste from going to landfill.

In 2023 Biotrop's overall achievements were awarded with an Ecovadis gold medal (following bronze in 2021 and silver in 2022). This means Ecovadis ranks Biotrop among the top 5% most sustainable companies in the world.



Training and celebrating our accomplishments is part of the job at Biotrop

To clarify: though Bioworks and Biotrop are now an integral and important part of the BioFirst Group and this sustainability report, they have only been officially added to the group at the end of 2023. Their ESG data is therefore not included in our carbon footprint or other data in this report and will not be added until our 2024 report.



# Positive impact of Biotrop products

In 2021 a baseline calculation was performed to calculate Biotrop's positive impact on the reduction of chemicals, reduction of emissions and reduction of land use through improved yields per hectare. We are planning to do a recalculation in 2024, as our sales in biological crop protection, and thereby our positive impact on the environment, have increased significantly over the last years.



Carbon emissions avoided 31.800 tons



Chemical reduction 8.800 tons



Applied area 15.500 ha



Quantity equivalent to more than 223.000 trees

## Productivity increase data:

By using our products, the same level of productivity could be maintained, using over 1.300 ha less land.

**Inoculant Brady**



- Increase in productivity:
  - 7.8%
- Possible land use avoided:
  - 687 ha

**Biopesticides**



- Increase in productivity:
  - 9.2%
- Possible land use avoided:
  - 325 ha

**Biopesticides**



- Increase in productivity:
  - 10.7%
- Possible land use avoided:
  - 340 ha



# The value of water



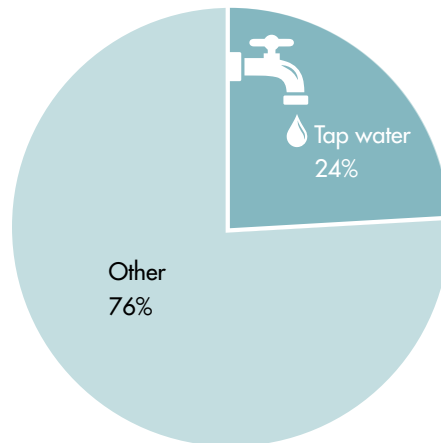
Water is life. People have always been dependent on water for their livelihood, both directly, as a source of clean drinking water, and indirectly for our food production. The use of water differs greatly per region, but globally almost 70% of all fresh water is used for agriculture.

As the use of water differs greatly per region so does water availability. This may be a climate related issue in arid regions, like the Sahel region in North Africa. Where low rainfall is unable to keep up with usage, groundwater levels may drop. But even in wetland regions, where water scarcity has never previously been considered an issue, ground water levels are dwindling and rainfall patterns have become more erratic.

The availability of sufficient water is a serious global threat. It poses a threat to our business and that of our growers. That is why we believe that the availability of uncontaminated, healthy fresh water is in everyone's interest and should be our shared responsibility.

This is why BioFirst Group has a general strategy to reuse water where possible and to find alternatives to prevent the use of tap water in our daily operations. At our large production sites in Belgium and Morocco, we trap rain water and reuse large volumes of water from production – operating our own water treatment facilities.

We have also pinpointed some locations that deserve specific



attention due to possible stresses on the local ecosystem and biodiversity. For example, in the Agadir region in Morocco, annual rainfall is very low. To alleviate stress on local groundwater levels we have started to use more desalinated water instead of water from a local wellpoint.

In Brazil we manufacture hi-tech biological products such as biopesticides and biostimulants. A deep well is in use to ensure high water quality while not depleting water in the upper soil layers. Water efficiency is key in production. The bulk of the water used becomes our finished product. Targets on the use of water per volume of product help avoid unnecessary water usage and reduce the necessary treatment of effluents. And more importantly, one of the products we are producing works on preventing water stress in crops! Water has become a limiting factor for crop production in Brazil and longer periods of drought pose a serious risk to business. With the product Bioasis, Biotrop has found a successful

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“Products we are producing work on preventing water stress in crops!”

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biostimulant that improves root growth and boosts tolerance to water stress. In Kenya, we are situated in a catchment area with ample rainfall and pump most of the water needed from our own boreholes. This avoids use of tap water, while also making this high quality drinking water available to the local community. Currently about 24% of the water we use worldwide is purified tap water.



Irrigation in sugar cane









# Social

Beneficial Insectary participated in the annual Nash Ranch  
Mud Mash



# Promoting good health and wellbeing

Our tailored advice and biological products offer growers an array of safe and sustainable solutions to combat pests and diseases in their crops. By offering biological solutions, as alternatives to traditional pesticides and fertilisers, our customers can deliver fruit, vegetables, ornamental plants, flowers and other crops to the world with few to no chemical residues.

We actively advise growers in over 70 countries and on six continents. Our team of IPM advisors (Integrated Pest Management) has a very strong practical and local knowledge base. We are continuously investing in broadening and deepening our expertise, to ensure we provide best-in-class advice to our growers to produce healthy crops and optimal yields. In doing so, we are playing our part in helping provide high quality, healthy food to the world.

## Health and safety strategy

While striving to help customers provide healthy and sustainable crops, we believe in taking good care of our employees. We are convinced our customers can only love our brands and services if our employees believe in them and love them first of all. In that sense, our employees are our first and foremost customers. We are happy in creating all our products together with our team of experts. Their wellbeing, sense of belonging and ultimately motivation, drive and passion are key to our success. That is why, within our operations and supply chain, people are at the core of everything we do. Safety, health and environment are the foundation of our strategy.

We will stop any activity if it endangers or risks our people or our planet. After

a hard day's work, we want our people to be able to return home as they arrived: healthy, happy, motivated and inspired, hopefully to a world that has become a bit better than the day before. For the health and safety of our staff, we measure several KPIs (key performance indicators) on accident frequency, incident severity and absenteeism. More importantly though, we have a proactive strategy towards health and safety.

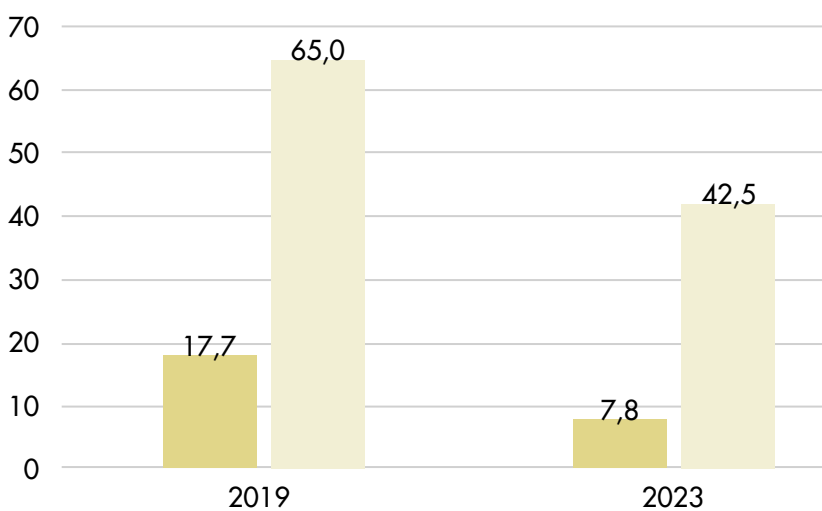
We aim to work on our safety culture through bottom-up improvements, rather than just reacting to specific incidents or trends. By openly discussing incidents and near misses we can learn from them and we actively promote being respectful in speaking and listening to others.

*“Speak in such a way that others love to listen. Listen in such a way, that others love to speak to you”*

We believe a safe and healthy working environment is something you grow and maintain together. Our safety figures for 2023 are on the left and compared to 2019. While our efforts have improved significantly over the last four years, we are actively driving safety awareness at all our large operational sites as a top priority.

Since 2019, the incident frequency (IF) has decreased by over 55%, while incident severity has dropped by 35%. To further decrease the number of incidents, we are currently working to create an open safety culture - increasing awareness; creating a shared responsibility. Safe and healthy colleagues should be the result of our shared efforts. As an organisation, we will also focus on site-specific risks that become evident from incident investigations and near miss reports.

BioFirst Group IF rate (LTIFR) & incident severity



- Incident frequency
- Incident severity



In Belgium for example, our colleague and health & safety coordinator Evi was responsible for the launch of our new safety campaign. This is focused around changing the safety culture: improving safety awareness and communication and ensuring relevant and practical health and safety improvements start with our employees. "It is a true joy to work on safety together with our team of safety champions," Evi concludes.

The safety campaign fits into several initiatives for the Belgian production site to improve communication and wellbeing. Evi is actively involved in creating a safety culture in line with the 'safety culture ladder' methodology. Safety is now an integral part of the monthly town hall meetings, organised by plant manager Davy Luyten. In the town hall Davy gathers all employees to update them on the latest news and developments. Recurring safety topics include learning from unsafe situations or incidents, the new safety theme and our safety values, such as addressing each other and stopping any activity that may not be performed safely. We work with a stop – think – act approach, prompting people to think about and take responsibility for their own actions and working conditions.

In 2023, there were two additional initiatives, working on communication and mental wellbeing. The BEEWELL team was formed to transform workplace wellbeing, simply using the power of communication.

A wellbeing questionnaire highlighted communication as a weak point on site, so the HR department took proactive steps to form a team of 14 volunteers, all committed to enhancing communication practices, recognising the pivotal role effective communication plays in a healthy work environment. By addressing this crucial aspect, we aim to cultivate a workplace culture that values clarity, transparency, and collaboration.



**2023 SAFETY CHAMPIONS @BIOBEST**

## Veiligheidsschoenen

MAANDTHEMA

**WELKOM BIJ HET THEMA VAN DEZE MAAND**

- ✓ Lees verder voor alle FAQ over dit belangrijke onderwerp. Leer o.a. waarom ze essentieel zijn, waar te dragen, welk type te kiezen en hoe te bestellen. Samen streven we naar een veilige werkomgeving!

Protecting yourself at work — That's BioFirst

www.biobestgroup.com

First monthly theme poster by the Biobest Belgium safety champions

Through collaborative efforts, the workgroup is not only tackling immediate communication challenges but also laying the foundation for sustained improvements. It signifies our dedication to creating a workplace where effective communication is a cornerstone of a thriving and harmonious professional community, ultimately contributing to the overall wellbeing of our employees. It is another practical example of putting our core values into action.

**AWEL - boosting employee engagement through corporate social responsibility: a win-win approach.**

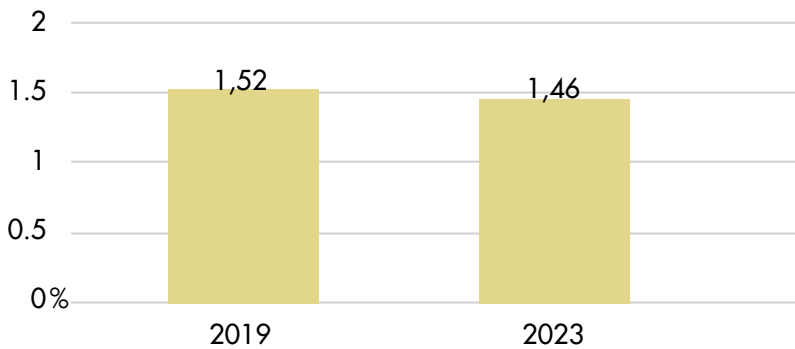
Turning to our corporate social respon-

sibility, Biobest Belgium recently donated to 'Awel' – an organisation offering a listening ear to children and young people who want to talk about their concerns and problems or just need to talk. With this new funding, Awel was able to train twenty-five new volunteers.

Awel was not chosen at random. Investment in the wellbeing of Belgian youngsters is perfectly in line with our investment in the overall wellbeing and engagement of our employees. To help encourage employees to get actively involved, Awel was invited to Biobest.



BioFirst Group absenteeism percentage



“Care for our staff’s wellbeing is reflected in our low worldwide absenteeism rate.”

and a selection was supported on a smaller scale from the proceeds of the Biobest Belgium Christmas market. This brought people together for active support of their selected charities.

With the additional focus on wellbeing and safety on sites that were performing below the group average, such as Belgium and France, absenteeism on these sites has decreased steadily. We will continue and gradually improve our efforts in the coming years.

Other subsidiaries are also providing proactive care for our staff in other ways, for example, by providing healthy residue-free fruit, vegetables and soup from our customers directly to our employees. It is too early to call it a trend, but the number of safety incidents on site has decreased by 25%.

Care for our staff’s wellbeing is reflected in our low worldwide absenteeism rate. While our total worldwide absenteeism has slightly increased since 2019, it remains historically low – well below 2%.

These personal meetings were a remarkable success. Not only did Awel teach us about their mission and what they stand for, they presented several interesting workshops on the topic of active listening.

BioFirst’s core values align seamlessly with Awel’s, spreading good health and wellbeing. We believe in the power of collaboration. The cooperation with Awel has also boosted the visibility of BioFirst’s mission towards youth, who are the future and potential employees of our organisation. In essence, our donation to a charity supporting children and young adults not only reflects our commitment to social responsibility and it also serves as a catalyst for elevating the

overall engagement of our employees, reinforcing a workplace culture that values compassion, purpose and unity.

Important to note is that the cooperation with Awel was broadly supported by our Belgian employees. In 2022, all employees were given the opportunity to propose their preferred charities to support at the end of 2022. All nominated charities were listed and showcased to the workforce for a company-wide vote. ‘Awel’ was selected by our employees as the initiative to support, creating more involvement and commitment from the very start of the project. Charities that were not selected were showcased



Communication board for all employees set up by the BEEWELL team

# Community engagement & collaboration



BioWorks colleague Alena working on improved biocontrol for our customers

We impact society daily and, by living up to our core values, aim to have a positive impact on everyone around us. This generates a net positive impact on our planet, staff, customers, business and especially the society we operate in.

Like many of our customers, most of our subsidiaries originate from family-owned businesses rooted in their community. Many of our employees around the globe live near to our offices and production sites and we strive to be an integral part of these local communities.

Working in biological control, we believe in caring for our roots: to keep growing together with our environment and to remain grounded.

## Good neighbours

We set out to optimise our activities while preventing inconvenience to our neighbours, for example, by minimising emissions, reducing noise levels and nighttime activities and by optimising our transport routes and frequency.

Where business is conducted, there will always be some nuisance. However, we take every necessary precaution to be good neighbours. And more importantly, we work hard to have a positive local impact. Some examples of our efforts are shared in this report, such as improving soil and water quality, reducing waste with our customers, making healthy fruit and vegetables available locally, (re)forestation and wellbeing projects with the local community. The vast majority of the projects are for and in close



General manager Jordi Portoles receiving the Almería 'Environmental commitment Award'

collaboration with the local community. All subsidiaries united to offer their support to the colleagues in Turkey and donating to humanitarian aid after the Turkey-Syria earthquake for example. In 2023, our colleagues in Spain and

Mexico received awards from local governments for contributions they are making to society and more sustainable agriculture.



## Supporting community projects

Where possible we try to work with local employees and support community projects.

We are involved in many local sports initiatives, for example, with the local Spanish basketball team CB La Mojonera – which competed nationally in 2023. Jordi Portales Peramo, general manager of Biobest Spain, is proud of the team and our sponsorship. “We fortify our sustainability strategy, embodying a steadfast commitment to robust values.

Our alliance with the sports club reflects shared principles from our code of honour, fostering a positive impact on the local environment. Through basketball, we actively promote teamwork and a healthy lifestyle.” Notably, one of their players has been called up to the Spanish national

under-17 team. This accomplishment vividly mirrors ambition and an exceptional capacity for growth. Such milestones reinforce our dedication to nurturing talent and embodying success, contributing to a flourishing community and a brighter future.



Other examples of our local activities include several major local clean-up activities carried out annually. In 2023, by our Plant Products colleagues in Point Pelee National Park for example.

As part of Earth Day (April 22), cold and rainy weather did little to deter Plant Products employees from gathering at Point Pelee National Park for their second annual beach cleanup. In all, 75 colleagues and family members participated, twice as many as last year. Even colleagues from Ancaster, a two and a half hour drive away, joined in to clean the

local beaches. After refreshments, snacks, and catching up, everyone got to work. Together, we cleaned up a total of 160 kg of small plastics and garbage along the shores of Lake Erie. Everyone had a great time working together - making a visible difference for nature in our local national park was truly rewarding.



Biobest Belgium participating in the Brussels Ekiden Run

## Sports in Belgium

The team in Belgium is very active in a literal sense. Apart from sponsoring two very local sports associations, our Belgian colleagues prefer to go out and break into a sweat themselves. Committed to promoting the physical and mental wellbeing of our employees, Biobest Belgium has created opportunities to integrate various sports activities 'into employees' daily routines. During breaks at work, or after working

hours, exercise is encouraged with activities such as walking, running, padel tennis, and stretching. These activities not only contribute to keeping the mind fresh and the body healthy, but also to promoting team building and a positive company culture.

In line with our commitment to corporate social responsibility, a padel tennis tournament was organised as part of 'the warmest week', a well-known

Flemish social campaign, organised annually the week before Christmas. Profits from all activities are donated to local charities.

Biobest Belgium also participates with several teams in the annual Ekiden Run in Brussels, supporting a different charity each year. In 2023 the money raised was donated to help protect the natural reserve 'Rietveld Kallo'.



Biobest Belgium 2023 padel tournament



## Running for charity in America

Our colleagues in Mexico and California love to run for charity as well. During the annual Berries Congress in Guadalajara Mexico, a team ran together with customers and growers raising money for a local orphanage. Meanwhile, our colleagues from Beneficial Insectary rolled up their sleeves and got more than their hands dirty in the 2023 Nash Ranch Mud Mash. By participating in this obstacle-course fund raiser, they helped to raise funding and awareness for High School Scholarships, Summer Camps, Special Olympics, and several other community outreach programmes. Beneficial Insectary also took the opportunity to build a stand to inform the public of the benefits of biological control. Meanwhile, their new colleagues from Sierra Biological in New York state participated in the

Turkey Trot, a long-distance footrace held around Thanksgiving. Many of these field running events, ranging between 5 km to a half marathon, are organised nationwide. Sierra Biological participated in the oldest

documented Turkey Trot, a still-ongoing annual event in Buffalo, New York, dating back to 1896. The sponsorship funds raised were donated to the local YMCA charity.



Turkey trots - Casey, Greg, Tyler, Bridget, Nina, EJ, Michelle & Michael



Beneficial Insectary team participating in the 2023 Nash Ranch Mud Mash



## Improving lives in our local Moroccan community

In Morocco, our colleagues are working in close cooperation with, and for, the local community. Biobest Maroc is situated in a rural region, a few dozen kilometres south of Agadir. As part of an initiative called 'Mains dans les mains', 'Hands in hands', employees are encouraged to put forward ideas for projects to improve the lives of the local community.

"In 2023, two projects have again been completed, with links to education, which is not generally well funded in rural regions," explains Biobest Maroc human resources manager, Abdelmoghith Sijilmassi. "In

2023 we completed renovation works upgrading one of the local schools, and equipped a children's nursery with the necessary furniture." In addition, a local village was provided with the necessary equipment to have their own access to drinking water. "This 'Mains dans les mains' initiative is ongoing with BioFirst Group providing 50% of the funding. We hope to continue our work with a range of local organisations in the years to come", Abdelmoghith concludes.

Laila Khouimi, now general manager for Biobest Maroc, has been working to promote a musical project for several years. The project provides local youngsters, including many children of our local employees, with the opportunity to learn to play a musical

instrument, an unaffordable luxury for many in the region. The program is part of the worldwide EL SISTEMA music education programme, giving children between the ages of 7 and 14 access to music lessons and instruments. The children are all provided with their own personal instruments, to take home and practise with. And of course, to use to play together! A gathering of the El Sistema group of 2023 was organised to stay true to the vision of the project, to use music as an agent of social development in the highest sense, to transmit the highest values – solidarity, harmony, mutual compassion and the power to unite communities. All children that applied for the project now enjoy several hours of music lessons a week, bringing them music, joy and a chance to develop their skills.





## Clothes and toys donation for the local community in Mexico

Together with the local community, Biobest employees donated clothes and toys for a local bazaar.

While giving these items a second life in the local community at affordable prices it helped raise money for the local community centre Hermano Javier.







# Sustainable crops for all

It is not only our mission to contribute to the sustainable production of crops, but our desire for healthy food to be available to everyone.

The world population is currently nearing 8.1 billion people. Providing high quality food for everyone is as relevant an issue as ever, especially against a background of worldwide inflation and increased poverty. UNICEF estimates over 300 million children are living in extreme poverty. These are huge global issues that we cannot even hope to tackle alone, but we are driven to play our part and to try and make a difference where we can.

Wherever production is located, there is the need to optimise yields to meet high demand. And in several markets, the demand for healthier, vegetable-based is growing as well.

It is our business to help growers around the world optimise yields and prevent the use of pesticides where possible. Our mission is to be the most reliable partner in producing healthier crops and maintaining healthy, more productive soils. Traditionally Biobest has focused on indoor production, which is more resilient to external influences and the risks of climate change. With the addition of Biotrop to our group, we aim to expand our impact to traditional agriculture as well.

Alongside the sustainable business we are in, we have also supported some highly practical projects in our local communities over the last years.

With the FABulous Farmers project, our R&D department in Northwestern Europe was able to help improve the ecosystem services of the fields of local growers. The project was designed to support farmers in the transition to more agro-ecological practices and to reduce their reliance on chemical fertilisers and pesticides by increasing Functional AgroBiodiversity (FAB). Although open field agriculture in the region was definitely not our core business, our colleagues felt compelled to contribute their experience to the project.

By looking at the natural biodiversity in and around agricultural fields, the FABulous Farmers project has yielded some very positive results, naturally improving crop yields. At the same time it has helped boost local biodiversity, improve soil and water quality, productivity and create a more colourful countryside filled with flowers. Our part of the project was completed in 2023 and resulted in several policy papers, leaving practical tools for farmers and regional partners to work out their

FAB-landscape integration plan. Real IPM, in Kenya, set up their own NGO to share their knowledge on biological control and functional agrobiodiversity with local farmers. Real Impact aims to provide advice to increase food security and improve nutritional health in East Africa. To reach their goal Real Impact educates institutions, small holder farmers, other NGOs, extension workers and community leaders. This training is not only limited to biological control, but includes growing crops and nutritious cooking techniques. This is why Real IPM's facilities at Kichozi Farm in Thika include a training kitchen and a 2.5 ha demonstration farm.

The fresh vegetables grown on the farm are donated to people in need and public organisations. The staple 'vertical vegetable bags' are also produced at the demonstration farm as well as the majority of food for the Real IPM staff canteen. Real IPM aims to distribute fresh products to their staff and those in the local community, who need them most.



Instructions at a local school on how to use our vertical growing bags



## Shared lunch at BioFirst Maroc

Biobest Maroc continues to offer a shared free lunch to all its employees – a policy that is not common practice in the region. Local management is committed to providing a healthy, freshly prepared meal to all employees during a hard day of work. And at the same time, to unite everyone within the company on daily basis.

Local employees without access to their own transport are picked up in shared transport by Biobest Maroc daily. Benefits like these play an important role for our employees.

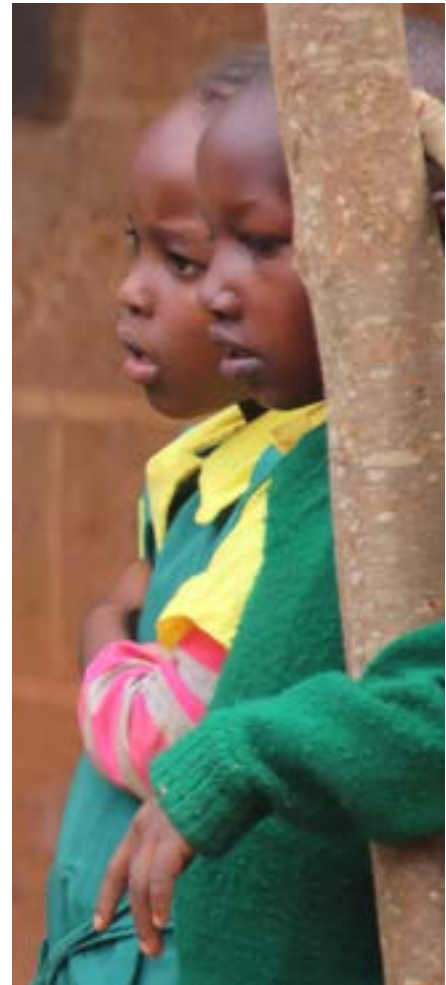
## Fair standard of living

We strive to be a good employer to all our people. So, besides to personal wellbeing and growth, we want to offer a fair standard of living to all. In the current economic climate, we found in some regions the legal minimum wage may no longer meet our desired benchmark - to meet actual employee needs. So, we went beyond the current global standards and investigated what we believe is needed to afford a decent standard of living. We started our study, the BioFirst Living Wages Analysis, in four countries where we operate.

In this study, we investigated whether our wages and remuneration package at a particular site are sufficient to afford a decent standard of living. In our view this includes food, water, housing, education, healthcare, transportation, clothing and other essential needs – such as provision for unexpected events. For this analysis, we use widespread industry standards. More specifically, we work with a salary

matrix tool developed and provided by IDH (The Sustainable Trade Initiative). This tool helps us evaluate how the total remuneration received – including wage, bonuses and in-kind benefits – compares to the relevant living wage benchmarks for the region.

The guiding principles behind our study are drawn from the Anker Methodology for calculating a living wage. This widely used methodology is used to estimate living wages around the world. It has been applied and championed by the Global Living Wage Coalition. The data we received from The Wage Indicator Foundation allowed us to compare minimum wages, living wages, actual wages and wages in Collective Agreements (CBA). Partly due to high inflation rates, we needed to update our benchmark data in 2023 and are currently in the process of renewing our calculations for Kenya and Morocco, to ensure we still meet a fair standard of living worldwide.



### Background & purpose of the BioFirst Fair Living Wages analysis:

- To pursue our BioFirst code of Honour: we are passionate about contributing to sustainable agriculture and supporting our workers happiness and excellence.
- ‘Walk the walk’ in our sustainability strategy: we want to further integrate Corporate Social Responsibility into our unique culture and protect and build our brand & corporate reputation. Actions speak louder than words.
- Further align with the UN Sustainable Development Goals: we want to contribute to the achievement of these global goals (no poverty, zero hunger, decent work, quality education, wellbeing and good health, etc.
- Be in line with our compensation and benefits strategy: fairness is one of our critical keys to develop relevant, high impact compensation programmes.



A brief history on the Real Impact vertical bag gardening & schooling project:



In 2009 Real IPM Kenya launches its vertical bag gardening initiative, to impart vegetable growing knowledge and skills to the local community, including schools. It was a case of one good initiative leading to another. During the course of working with a local school for pupils with visual challenges, Real IPM Kenya came up with the idea for the Real IPM School Project.

A fund was created and during the past 14 years it has played a role helping to support education for local children in need, helping them build promising futures for themselves. After this first step schooling support, some have gone on to work hard for their Master's Degrees and many have built promising careers, even coming back to work for Real IPM.

Every year the fund supports children in their schooling needs and Real IPM is immensely proud of the achievements of all the children supported by this project.

This year, Real Impact received an official letter of thanks from the headteacher of the local Muthuri Primary School. Special thanks were given for the "tremendous results for the entire school community", as the project has:

- Helped boost the health standard of our learners through improved diet.
- Improved the relationship between the school and parents, due to support given to some families in need.
- Created a sense of responsibility, as learners own the project.
- Taught learners new skills.

We fully return their appreciation, as it brings joy to our hearts, hearing all this support has helped to achieve.





# Learning & innovating with world's brightest

## Partnering for high quality research

BioFirst Group has been successfully pioneering and innovating in biological control for decades. Having our roots in biological protection and ecosystem functioning, the continuous growth, change and development of our business are a fact of life for us. We are well used to dealing with change and thinking ahead.

We have a dedicated business development department and are invested to provide best-in-class advice to our customers with our global IPM team. At the foundation of all our good advice and developments is solid scientific research. BioFirst Group has a growing global R&D team exceeding 40 people. In addition we have visiting scientists and are continuously mentoring new groups of students on site. This 40-strong team and all its 2023 achievements are impressive in their own right. However, we are eager

to tell you more about our new 2024 team, strengthened with the addition of the R&D departments in our Biotrop and BioWorks divisions.

BioFirst frequently hosts students carrying out their bachelor, masters, or PhD research. This provides opportunities for students to gain unique experience - performing innovative research within a company leading the field of biological control and pollination. In 2023 we hosted 18 students on their way to promising careers in research and applied science. Our highly specialised R&D department maintains an extensive network of academic institutions and research stations worldwide. There are many collaborations, most of which have proven to be exceptionally fruitful for all parties involved. Through collaboration, BioFirst Group stays up to date with the latest developments from fundamental and applied research and gains some fresh insights from students

eager to work with us. Through BioFirst Group, external research groups have access to our products and research facilities and gain insight into the current market developments for biological control. This allows them access to innovations and solutions developed within BioFirst R&D.

And through all this research and cooperation, we are able to continuously drive forward our knowledge, product quality and innovations. We are always challenging ourselves to improve and take the next step. In addition to important product innovations that benefit our customers first and foremost, BioFirst researchers (co)author scientific publications, often in high-ranking journals. In 2023 alone, we published 27 scientific papers, underlining the extent of our novel research.

## Best in class IPM advice

Delivering the best possible advice in Integrated Pest Management is the cornerstone of our customer-oriented strategy. By delivering the best possible advice to growers and helping to optimise their yields, we build strategic alliances. And by showing the results of our successful approach to the rest of the world, we help to spread the love and motivation to adopt biological crop protection. Martin Zuiderwijk, director of Technical Support Services, explains his vision: "IPM is the foundation of a sustainable approach towards managing pests and diseases

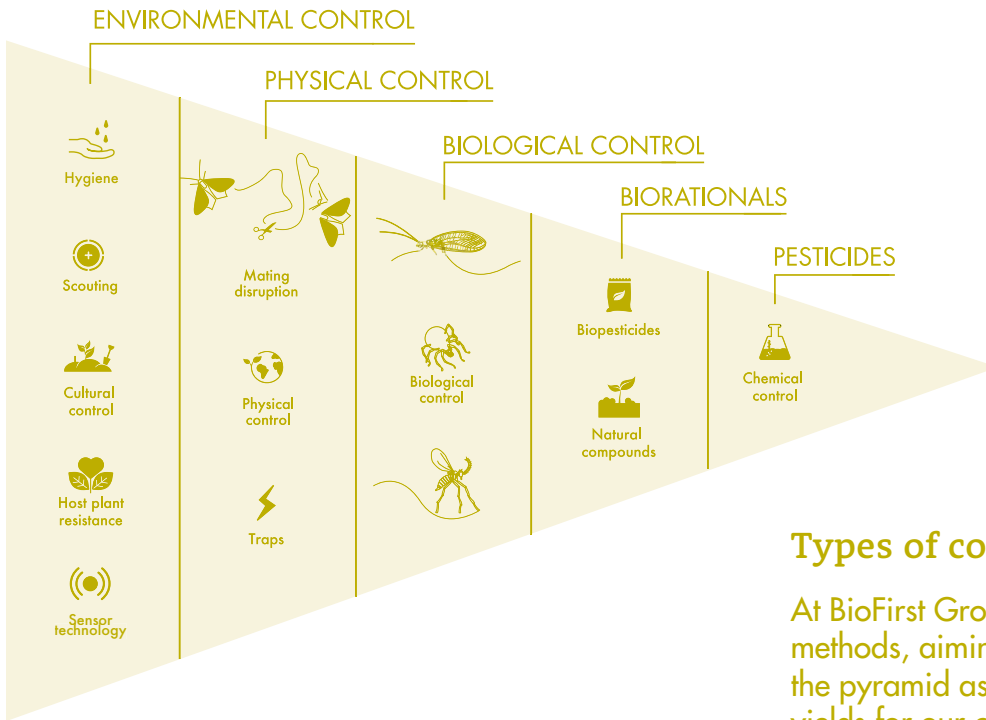
in high value crops. The 'Farm to Fork' strategy of the European Union was a green deal, adopted to develop a fair, healthy and environmentally friendly food system. The strategy encourages the use of alternative control techniques, reducing the use of, and dependency on, chemical pesticides in general, and the use of more hazardous pesticides in particular. To us this means combining all possible solutions - anything from working on natural plant and soil health, to applying pesticides - to create the best possible strategy for a successful pest

and disease control and optimising yields."

"This may sound simple, but it is not a one-size-fits-all exercise," Martin continues. "Dealing with living products and plants that are grown in different climates by growers, each with their own unique crop growing strategy, creates a unique set of conditions and circumstances. This means there is a great need to adapt specialist expertise to customer-specific needs, to be able to implement the best-suited IPM strategy. Finding

27 scientific papers in 2023





## Types of control in IPM

At BioFirst Group we advise on all possible methods, aiming to stay as far to the left of the pyramid as possible, while optimising yields for our customers

the right strategy is not always evident to a grower. Since our global BioFirst team has experience from visiting many growers worldwide, we are in the best position to collect, develop and share our knowledge and expertise with our customers. This is why we continue to invest in a large team of field experts, supporting our customers worldwide.”

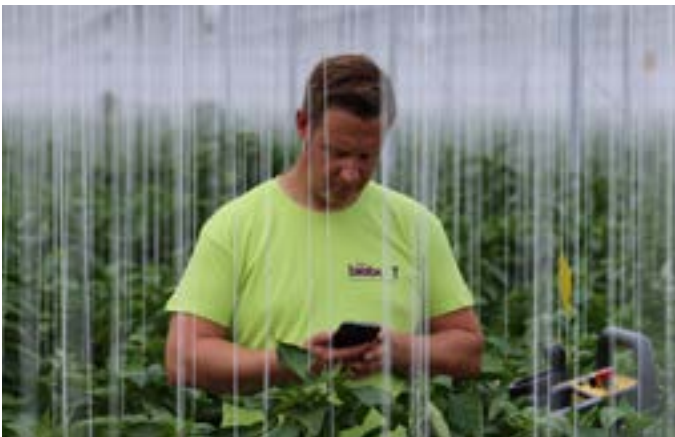
### How to build a successful IPM strategy?

“We start at the foundation: creating the right crop conditions to minimise the risk of pest and disease outbreaks.

We make sure no pests and diseases are present in the greenhouse that may infect a new crop rotation. Afterwards, it is crucial to understand what possible threats are present in the crop. Proper scouting is the cornerstone of a good IPM strategy. By combining our experience with these monitoring results, we can advise growers on the best possible IPM approaches, fitting the current situation. Sometimes it is possible to adopt a preventive approach and build a population of beneficial insects and mites that can immediately battle a pest once it emerges. Sometimes it is ‘all hands on deck’ to find the right tools to battle

an outbreak. Our team in the field will examine all available possibilities. This might also mean taking biopesticides and traditional pesticides into account as a last resort to save a crop rotation, when this is absolutely necessary.”

“We take our field knowledge back to the office so we can continue to develop the best products and services, suited to our customers’ needs. Combining the full product range into customised technical advice creates a powerhouse in securing the highest yield for our customers, in the most sustainable way,” Martin concludes with a smile.





## High-tech business development

In the field of biological control, innovations do not necessarily need to be high tech. On the contrary, in 2022 Biobest received several innovation awards after research and the commercial development of a naturally occurring beneficial species. However, over the last years we have also been adding more and more high-tech innovations to our IPM toolbox as well. For example to make scouting and monitoring a whole lot easier, while at the same time improving the forecast accuracy for pest outbreaks. To minimise the use of unsustainable chemical pesticide practices, it is vital that growers have a good understanding of pest development within their greenhouse. Additionally, in 2023 we launched several innovations to catch pests and to spread our beneficials.

Serving customers better is at the heart of all our decisions, as we strive for excellence in everything we do. In our strategy for happy customers, we aim to pinpoint key challenges facing growers and design new workable solutions.

“Knowledge is the key to making well-informed crop management decisions, amplifying the need for accurate data,” according to Sam Gui, our market development manager for high-tech IPM. “Many growers face a ‘knowledge-gap’, by which I mean that the regular rotation of personnel and traditional scouting methods can lead to insufficient data and knowledge of the current state of their greenhouses.” Sam continues: “The consequences may be irreversible, as pest hotspots may only be detected in a later phase of the development, when preventive measures are no longer enough to battle a pest outbreak. At that point the curative treatments are mostly chemical.” Our current high-tech portfolio is created to guide growers

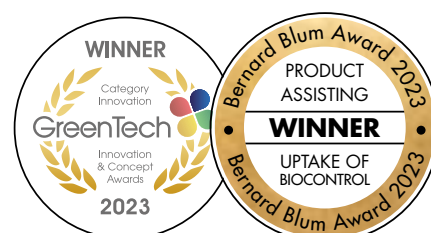
in their scouting and monitoring process - to increase the range of possible treatments and their efficiency. PATS-C is our automated, real-time video-based scouting product for the detection of flying insects. The device has a video camera and, with the help of infrared lights, captures insect flights during the night. The data collected is then visualised in a web portal, to enable growers to follow up on any new flying insects and possible manifestations of outbreaks within the greenhouse. Pats-C’s biggest trump card is the fact that growers get information about moth activity during the night, which would not be detected by regular scouters.

In July 2023, Trap-Eye™ was launched at GreenTech Amsterdam, winning the Greentech Innovation award. Trap-Eye™ is an automated sticky trap monitoring tool. A solar-powered Trap-Eye™ unit consists of a camera taking pictures of a mounted sticky trap at programmed time intervals. “The tool uses a Deep Learning AI to identify and count pests on sticky traps and aids informed IPM decision making,” explains Sam. “About forty Trap-Eye™ units are used per hectare, with all information sent to a cloud system database. The processed data is then displayed in the same web portal as for Pats-C, generating accurate heat maps pinpointing pest hotspots.

“As a result, introductions of beneficials can be concentrated appropriately, greatly improving IPM performance. Later in 2023, Trap-Eye™ also received the prestigious Bernard Blum award for the ‘best innovative product assisting in the uptake of biocontrol’. Receiving this prize at ABIM - the Annual Biocontrol Industry Meeting - was an important step, signifying the recognition of our new products from both our peers and our customers,” Sam proudly concludes. Marcel, one of our crop protection

specialists at Biobest Netherlands, was happy to test Trap-Eye™ in a hectare of one of our customers’ lit crops. “Impressed by its monitoring accuracy and labour-saving potential, within two months the grower extended this to three hectares,” says Marcel. “The team has found it easy to install, simple to use and the detailed heat maps extremely useful for making informed IPM decisions – with data easily shared amongst team members and with Biobest advisors remotely.” The possibility to access data remotely has proven to be a great saving on travel time and resulting carbon emissions. “In 2023 we also worked on improving Crop-Scanner™,” says Sam.

“This innovative app and web dashboard was also designed to help growers to quickly scout crops and collect data with a high predictive accuracy. Growers enter their scouting data in the app, which is then sent through the Crop-Scanner Cloud for processing and later visualisation in the web dashboard. The dashboard allows for remote advice, when pest developments are increasing between visits or, for instance, when visits are not feasible due to virus manifestations. Crop-Scanner™ also includes a Trap-Scanner™ function, which is an automatic sticky trap counting function. You can simply take a picture of a sticky trap with your smartphone, or tablet, and the counts are instantly displayed in the web dashboard.” With these products, BioFirst is moving forward with its mission to provide new technologies that provide automation and enable fast scouting with high reliability data.



# Building the best team in the industry - Our HR strategy

At BioFirst Group we are focused on delivering the best possible products and solutions to our customers. And it is our firm belief that customers will only love our company when our employees love it first.

By building the best team in the industry, we position ourselves in the best possible way. BioFirst's Global HR team focuses on defining the path of the individual contribution of every employee to increase company value in a sustainable way. This philosophy of our Chief HR Officer (CHRO), Kristof Truyens, is embedded in all HR processes related to attracting, developing and retaining employees. At the core of Kristof's HR vision is

a strong belief in building on the strengths of our employees instead of their weaknesses. We therefore rolled out the StrengthsFinder methodology worldwide. The basic principle is that every employee is unique with his or her set of talents and strengths. By deploying talents in teams in a multidisciplinary way, BioFirst stretches the power that diversity and inclusion bring to us.

The basic idea is that the right talent, in the right roles, with the right managers drives employee engagement. BioFirst therefore invests heavily in developing its management. Within human resources, we are convinced that great managers make engaged employees. As 'customers will never

love a company until the employees love it', our engagement efforts are crucial. After all, engaged employees make loyal customers. Only through loyal customers will you get sustainable growth that paves the way to increased company value. At BioFirst, HR therefore plays a crucial role in this path from individual to company value, in numbers and in job satisfaction and wellbeing. To win - by building the best 'mixed' team - Kristof has focused our HR strategy on three major pillars: setting a solid foundation, behaviour & culture and leadership development & talent management.

## Setting a solid foundation

In this first pillar, 'setting a solid foundation', HR works on a consistent roll-out of a worldwide compensation and benefit philosophy. The target is a transparent pay culture with a clear rewards strategy and philosophy, based on five critical keys: clarity, differentiation, technology, fairness and transparency.

In this context, we also started a project on Living Wages in the countries where we do business.

The compensation and benefit philosophy is subject to clearly defined operating principles: determining the percentile at which we want to place employees in our different local markets with their compensation and benefits package, defining

the industry with which we want to benchmark ourselves, positioning the roles, installing local calibration meetings in line with the budgets. We are also strengthening our technological base with the start of the design, development and implementation of an HR Information System – SAP SuccessFactors. We are continuously improving our digital HR transformation to get people working on the right things, finding the right people and making them great, to ultimately run the business better.

## Behaviour and culture

Within the second pillar, 'behaviour and culture', we can look back at several solid Corporate Social Responsibility projects that were rolled out worldwide. Some of these exciting projects that also contribute

to the wellbeing of our employees are described in more detail in this report.

## Leadership development and talent management

In 2023 we started an internal programme of training and mentoring for management functions. We have also gained our first experiences in using 360° feedback, continued working on improving our onboarding system for newcomers, introduced a new method for succession planning, implemented a continuous non-violent communication programme, implemented methods to reduce absenteeism, implemented actions linked to the outcome of the 2022 wellbeing survey in HQ and have undertaken a global wellbeing survey in 2023 with a global 74% response rate.



## Chocolates that leave a great taste

Annually our colleagues in Belgium are visited by the Easter Bunny and 'Sinterklaas' (Saint Nicholas). Saint Nicholas is a legendary figure, based on the patron saint of children. With an age of over 1700 years, he still visits children annually on his birthday, December 6th. And everyone that has been good this year receives presents and, of course, chocolates.

Both the saint and the Easter Bunny have amazing help from the team of TWERK - "The Work" in local dialect. TWERK is a local non-profit organisation that provides people with an autism spectrum disorder, with a structured place to work. And a great place to work at that: producing amazing Belgian chocolates that bring an instant smile to customers' faces.

"It is TWERK's mission to bring more people with autism to the workplace, in a better way. At TWERK people with autism play the lead, while TWERK has a leading role in their lives. TWERK aims to provide a meaningful life, by providing meaningful work for a fair wage. It does so by producing, packaging and personalising Fairtrade chocolates. This makes TWERK the most heartily, unique and inclusive tiny chocolate factory in Belgium. By coming to TWERK people with autism receive structure, meaning, happiness and a lust for life."

Biobest Belgium is proud to work together with TWERK towards fulfilling their mission. And to annually reward the hard-working Biobest colleagues with high quality, Fairtrade chocolates.



Twerk is local dialect for 'the work'. It is a Belgian non-profit organisation, providing people with ASD with a pleasant place to work and producing great chocolates in the process. "Work that makes people (become) happy"





## Go to the Academy

The Biobest Academy is your one-stop knowledge shop for all things relating to Integrated Pest Management (IPM) training. Learn at your pace, from anywhere, anytime.

Join us today to empower your agriculture journey with IPM knowledge and practices, fostering a more sustainable future.

[Browse all the available courses](#)



## The Biobest Academy – sharing our IPM knowledge with the world

From the comfort of your own chair and without any airmiles.

Whether you are a highly skilled member of our technical team, or entirely new to the world of biological crop protection, our Biobest Academy has something to offer you.

“In 2020 we started creating a central learning hub for training our technical staff by adding IPM and pollination knowledge from our global team of experts. This soon became the foundation to create e-learning courses on our Biobest Academy,” explains Neal, IPM specialist and manager of the Biobest Academy. “In June 2023 we launched our

self-service webshop externally to share our knowledge with customers and others directly. Over 1.200 courses have been completed to date!” Neal is proud to add. “In 2023 over 1.500 full courses were completed in the Biobest Academy, with a total application for well over 2.200 courses”, says Neal. “With people spending at least one hour per course, this means we have a lot of daily activity on the platform. The number of external users is still increasing rapidly as well. In 2023 over a third of our courses were completed by distributors and customers.”

The Biobest Academy offers basic, advanced and expert courses ensuring learners get the right experience. Each module includes an online

assessment, with a certificate on completion. We believe that our technical advice to our customers is the best in the IPM business and we want to keep it that way. The Biobest Academy means anyone who advises growers has an ever-expanding library of training and reference materials all in one place.

Its contribution to our sustainability goals is twofold:

- Firstly, with the best-in-class knowledge of our products, our advisers are better at giving growers the confidence to solve pest and disease problems; with our new web shop, we can reach an even wider



## Sharing knowledge on citrus in Benin

In the spirit of education and providing healthy and sustainable food for all, BioFirst Group is also supporting the TerraVivante project in Benin. There is a great potential for agriculture in the Za-Kpota region, but the right resources and knowledge are still lacking for many. In this region, which is mainly supported by agriculture, many children do not attend school. In fact, 70% of the workers in agriculture have not received any type of schooling. This is why we are supporting a schooling programme together with a European non-profit organisation working with the local government on three important goals:

- At least 50 out-of-school boys and girls should profit from an education, supported by this project;
- At least 1000 local growers should benefit from knowledge from this project;
- A minimum of 20% increase in production for participating growers.



audience and educate them in the benefits of Integrated Pest Management and pollination.

- Secondly, the ability to deliver structured e-learning means we can cut down the amount of face-to-face teaching that often requires us to travel. We still teach in the classroom from time to time, but now we can use that time to go in depth or train in an even more tailor-made fashion.

Martin Zuijderwijk, Director of Technical Support Services, underlines the importance of the Biobest Academy: "It is a key component of BioFirst's future strategy. It improves

the service of our technical sales teams around the globe. The Academy is designed to make their lives easier - efficiently training distributors, while helping provide a better service. And in the end, better trained distributors get better results in the greenhouse: spreading our knowledge leads to improved motivation and improved results from IPM strategies."

### The future of the Biobest Academy

Every year, new technical courses and reference materials are added to the Biobest Academy. In 2023 there was a focus on information on plant and insect pathology, as well as new

high-tech IPM products and bio-pesticides. The platform will also deliver many other types of training for our employees and customers in the future. In cooperation with HR a thorough onboarding process for new employees was developed in 2023.

In 2024 the Biobest Academy and IPS team will deliver a series of 'expert' webinars presenting the latest technical developments in the sector. "In the future we will be working in close cooperation with all other departments to deliver the content that they need," Neal concludes, as he looks forward to innovating and expanding on the current success of the Biobest Academy.





# Our talent management strategy

## Harnessing the power of diversity

In Human Resources we are confronted with several megatrends that are having an impact on the global workforce. For example, demographic shifts, aging workforce, global workforce crisis, shifts in global economic power, smart technologies, the inflation crisis, the 'great resignation'... Therefore, topics such as a proper work-life balance, reskilling & upskilling and digital transformation are more important than ever. Chief HR Officer Kristof Truyens and his team are continuously looking for suitable solutions that serve both our business, customers, and the current needs of our local teams.

"Against the background of these megatrends, we encourage our

employees to have not a fixed, but a growth mindset. We move our people in a consistent and goal-oriented manner. Financial and legal discipline, a goal-oriented focus, corporate house-keeping and high-quality processes and procedures are the foundation of the BioFirst performance management cycle we implemented."

"Wherever people are at work, their passion determines the results," Kristof continues. "By focusing on the strengths of our people and the stimulation of that passion for our business, we continue to buckle up together, for exponential growth."

By working on the strength of the diversity in our workforce, we are manage to grow this positive mindset

within the company. We aim to continuously increase our employees' abilities to find, and call on, each others' strengths - so we may cooperate better, both internally and with supply chain partners.

We greatly value the diversity within BioFirst Group worldwide. There is a high level of autonomy for each company within the group. We plan meetings on many different levels to learn from each others practical successes, situations, and approach.

**"We encourage our employees to have not a fixed but a growth mindset."**

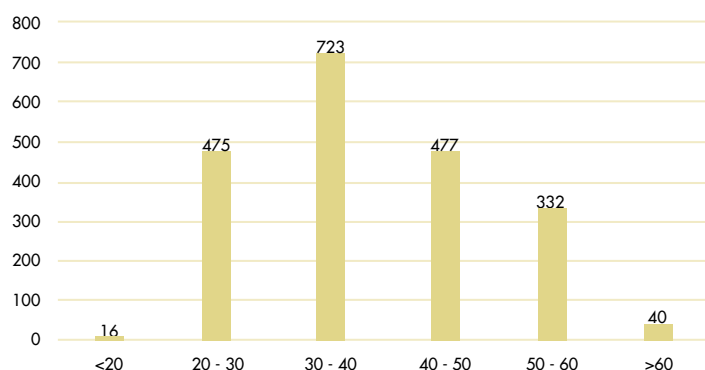


Colleagues at our communication training in Belgium

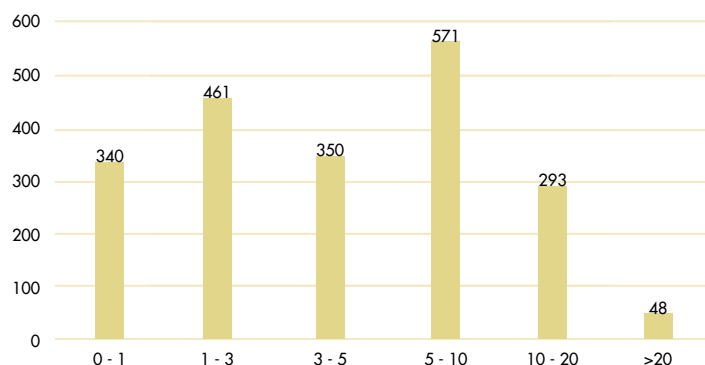


We believe in building the best team, relying on individual strengths and harnessing the power that diversity and inclusion provide us. Our huge diversity reflects that of the local communities we operate in. Both in local staff and management, we have a real spread in gender, age groups, and different educational levels. We have colleagues from 34 nationalities working for us. We focus on developing talent within teams, purely based on an individual's skills. At our experienced BioFirst Group management team level we are gradually adding more diversity to match.

### Employees by age



### Years of service



In 2023 we started to implement our code of conduct, outlining the behaviour we expect from employees, living up to our core values. We start from the positives we expect everyone to live up to and the values we stand for. The code also deals with the necessary legal aspects and fair business conduct. All rules and company policy are explained within the code. And, as for all cultural aspects, we expect people to keep an open dialogue about adhering to the code. We promote open communication on our values and code of conduct. In 2023, we started several initiatives and offered multiple training sessions to set the example, and worked on the culture of open communication that fits our core values. This centres on 'speak in such a way that others love to listen to you. Listen in such a way that others love to speak to you.' In any case of doubt, we ask people to discuss this with their manager. And should they feel uncertain doing so, we have several confidants within the company that people may feel comfortable speaking to about any personal or business-related issue.

In the policy we also describe our zero tolerance towards any types of discrimination, as we believe equally in the power of equality and diversity: each individual is unique, but deserves equal treatment based on the same amount of respect.

### Exploring the gender pay gap through the lens of the Sustainable Development Goals

With our steadfast commitment to sustainability, we naturally extend our focus to addressing gender disparities in our organisation. Not just as a workplace concern, but as a critical step towards advancing with the Sustainable Development Goals (SDG). With our gender pay gap analysis we made a start in aligning our intentions with key SDGs. More specifically we wanted to emphasise our dedication to:





Colleagues at our communication training in Belgium

**SDG 5: Gender equality:**

- Evaluating disparities in compensation to foster an equal work environment;
- Stressing our intention to empower women within our organisation and promoting their leadership.

**SDG 8: Decent work and economic growth:**

- As a part of our overall efforts in promoting fair wages and equal opportunities for all employees;
- Ensuring that our workplace supports economic wellbeing without discrimination.

**SDG 10: Reduced inequalities:**

- Identifying areas where pay gaps persist and taking targeted actions to narrow them;
- Creating an inclusive corporate culture that celebrates diversity and builds on it in equal respect for all individuals.

Through this analysis, we not only uncover direct opportunities for improvement but also demonstrate our unwavering commitment of continuous improvement towards these global goals. In our first comprehensive gender

pay gap analysis we examined the average gross monthly base salary for various jobs grades and classifications, including manual labour, several types of staff members and management. Our focus was solely on employees holding a formal employee status. In our current analysis, independent employees were not included.

We ensured anonymity in wage comparisons and abstained from comparisons if three or fewer employees of either gender were included in a grade. We provided explanations for current pay gaps of 5% or more per grade in all our subsidiaries.

The key finding of this first, basic analysis is an overall gender pay gap in BioFirst Group of less than 5% across all grades and classes. Some gaps in smaller subsidiaries remain hard to compare, due to the small number of employees per grade and our commitment to anonymity. We did identify some opportunities at a subsidiary level though. We have found that existing discrepancies in certain grades may arise from factors such as seniority or divergent median

market salaries in specific job families. A clear and tangible example is the overrepresentation of men in IT roles. Furthermore, we see that women currently hold one out of every five management positions, and three out of every ten higher-level staff roles. Having completed this first analysis, we recognise the importance of our continuous efforts. Looking ahead, we will focus on building up a framework to enhance our reporting. Because by addressing any possible pay gaps, we contribute to a more just, equitable, and sustainable future, both within our company and on a broader scale.

In 2023, our colleagues in Biobest Mexico and Imex Mexico received an award, from the local government in Jalisco in recognition of their zero tolerance policies on workplace differences between men and women. They received the 'El Distintivo Jalisco Sin Brechas' from the Minister of Labour, in recognition of their equal wages, benefits and workplace conditions.







Colleagues at our communication training in Belgium







General

# About this report

## Methodology

Our sustainability efforts and report were structured according to the United Nations SDG in order to align with recognisable international ESG topics and standards. The report has been prepared using the GRI principles for disclosure on the different topics.

We are in preparation of adding a link table, referring to the articles of the European Sustainability Reporting Standards (ESRS) as required for reporting under the Corporate Sustainability Reporting Directive of the European Union (CSRD –2022/2464/EU). Reporting according to this directive will become mandatory for BioFirst Group starting from the reporting year 2025.

Our management system for ESG reporting, measurement of KPI and tracking progress were designed according to the process of continuous improvement, as outlined in ISO standards and the CO<sub>2</sub> ladder. Emission factors were adopted from [www.co2emissiefactoren.nl](http://www.co2emissiefactoren.nl) to calculate our scope 1 CO<sub>2</sub> emissions. These factors were selected as they use a Well-to-Wheel approach and are close to, but slightly higher, than most other international standards. For scope 2, consisting of electricity for BioFirst Group, emissions factors have a high international variation.

The following emission factors were used for electricity:

- Australian National Greenhouse Accounts Factors nov. 2022
- IFI Default Grid Factors 2021 for Argentina, Canada, Israel, Kenya, Tanzania, Morocco, Mexico and Türkiye
- AIB European residual mixes for European sites
- EPA egrid data 2020 for the United States. For Beneficial Insectary in Redding supplier specific data was used
- National Inventory Report 1990 – 2021 for Canada

For the calculation of scope 3 emissions, data from [www.co2emissiefactoren.nl](http://www.co2emissiefactoren.nl) and the Ademe database were used. Total amount of worked hours were used to weigh absenteeism percentages.

Exclusions: Scope 1 and 2 emissions were reported according to the guidelines of the GHG protocol and CO<sub>2</sub> ladder. The principle of materiality was used per subsidiary and all own emissions were weighed structurally and reported where significant (>5%). The use of refrigerants is currently excluded from scope 1, as is the use of district heating in scope 2.

For HR data two systems are used: data for all employees from Foundations and detailed information from Employee Central (SAP). Data in Foundations

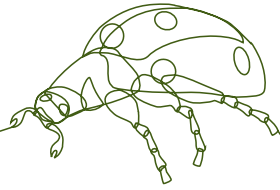
is present for all employees. For employee turnover and age intervals, information was used from Employee Central and recalculated as a representation for the entire population. We are in the process of registering all employees in Employee Central and currently have 51% of our staff registered here.

## Assurance

ESG data collection started in 2019 and data quality has improved to maturity over the past years. In 2022 and 2023 internal 'sanity checks' were performed on data for subsidiaries, with some subsidiaries selected for an internal audit regarding their data trail and their data collection process. For the sake of assurance, BioFirst Group had an external audit performed for Biobest Belgium and Biobest Maroc in 2023, as they have a significant impact on the ESG data for the group. The findings of this audit were used to improve the reporting manual and reporting process.

In 2022 our data reporting system was expanded to align with CSRD / NFRD reporting obligations. Data was collected and consolidated quarterly in dedicated software (SigmaConso). A quarterly management report was drafted to track progress. Our larger production entities report on a monthly basis.





## Scope

All data included in this report are for the full year of 2023 and in some cases our progress was reported compared to our base year, which is 2019. In line with carbon accounting, 2019 data is collected for newly acquired companies. For relative KPIs, their 2019 turnover is taken into account as well.

For consolidating our carbon footprint, as well as other ESG data, we used the operational control approach as outlined in the GHG protocol. 100% of the data was consolidated for all entities where BioFirst Group had operational control.

This includes: Beneficial Insectary, Biobest Antalya, Biobest Argentina, Biobest Belgium, Biobest China, Biobest France, Biobest Maroc, Biobetter, Biobest Mexico, IMEX, Biobest Nederland, Biobest Poland, Biobest Spain, Biobest UK, Biological Services, Borregaard Bioplant, Biobasiq Sweden, Pollinering Norway, Bugs for Bugs, Polyam, IVOG, BKS, Plant Products, Real IPM Kenya & Tanzania.

To clarify: though BioWorks and Biotrop are now an integral and important part of BioFirst Group and this report, they have only been officially added to the Group at the end of 2023. Their ESG data is therefore not included in our carbon footprint or other data in this report and will not be added until our 2024 report.



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Plant Products  
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BioWorks  
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Sierra Biological Inc.  
2825 Swett Road  
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# Glossary

## Beneficials.

Beneficial insects or other organisms. Organisms that feed on - or parasitise - pests of crops or ornamental plants.

## CO<sub>2</sub> ladder - CO<sub>2</sub> Prestatieladder.

An originally Dutch management system and certification standard that offers tooling and calculation standards to organisations to aid them in reducing their emissions and energy usage. It uses most of the management cycle and operationalises continuous improvement methods as outlined in the ISO standards (ISO 50001).

## CSR - Corporate Social Responsibility.

A self-regulating business model that helps companies to be socially accountable with respect to economic, social and environmental impact. A term used by companies along with ESG.

## CSRD - Corporate Responsibility Reporting Directive.

The EU directive concerning the social and environmental information that companies have to report.

## FTE - Full Time Equivalent.

Refers to the unit of measurement equivalent to one unit of a work year for an employee under a full-time contract.

## ESG - Environmental, Social & Governance.

ESG is an international framework that helps stakeholders understand how an organisation is managing risks and opportunities related to environmental, social, and governance criteria.

## ESRS - European Sustainability Reporting Standards.

Reporting standards to promote standardised reporting under the CSRD.

## GHG Protocol – Greenhouse Gas Protocol.

Is an international standards and tool to help organisations measure their greenhouse emissions and track progress toward climate goals.

## GRI - Global Reporting Initiative.

The most comprehensive set of global sustainability reporting standards.

## IF rate. Injury Frequency Rate (IFR).

Is a way of measuring how often injuries occur in the workplace in a comparable way. It is the number of incidents per million worked hours.

## IPM – Integrated Pest Management.

An effective and environmentally sensitive approach to pest management. IPM programmes use comprehensive information on the life cycles of pests and their interaction with the environment to manage pest outbreaks. Pest information, in combination with available pest control methods, is used to manage pest damage with the least possible hazard to people, property, and the environment and by the most economical means.

## ISO 50001.

An energy management system based on the model of continual improvement as set out in other widely-used ISO standards.

## LTI - Lost Time Injury.

A work-related injury that results in the loss of productive work time.

## SDGs - Sustainable Development Goals.

17 interlinked goals set out by the United Nations in 2015 and adopted by all member states as part of the 2030 agenda for sustainable development.

They provide “a shared blueprint for peace and prosperity for people and the planet, now and into the future”.

## Waste separation percentage.

Is the percentage of waste delivered as separated monostreams by BioFirst Group, that is readily reusable by other parties, such as waste companies.

## Worked hours.

Is the number of worked hours globally. Where the number of worked hours are not measured, they may be calculated according to contractual working hours multiplied by the number of active days. Active days do not include any days of leave or other lawful absence (non-working days in the weekend, (public) holidays, respite, sick leave, maternity or paternity leave, filial leave, etc.).

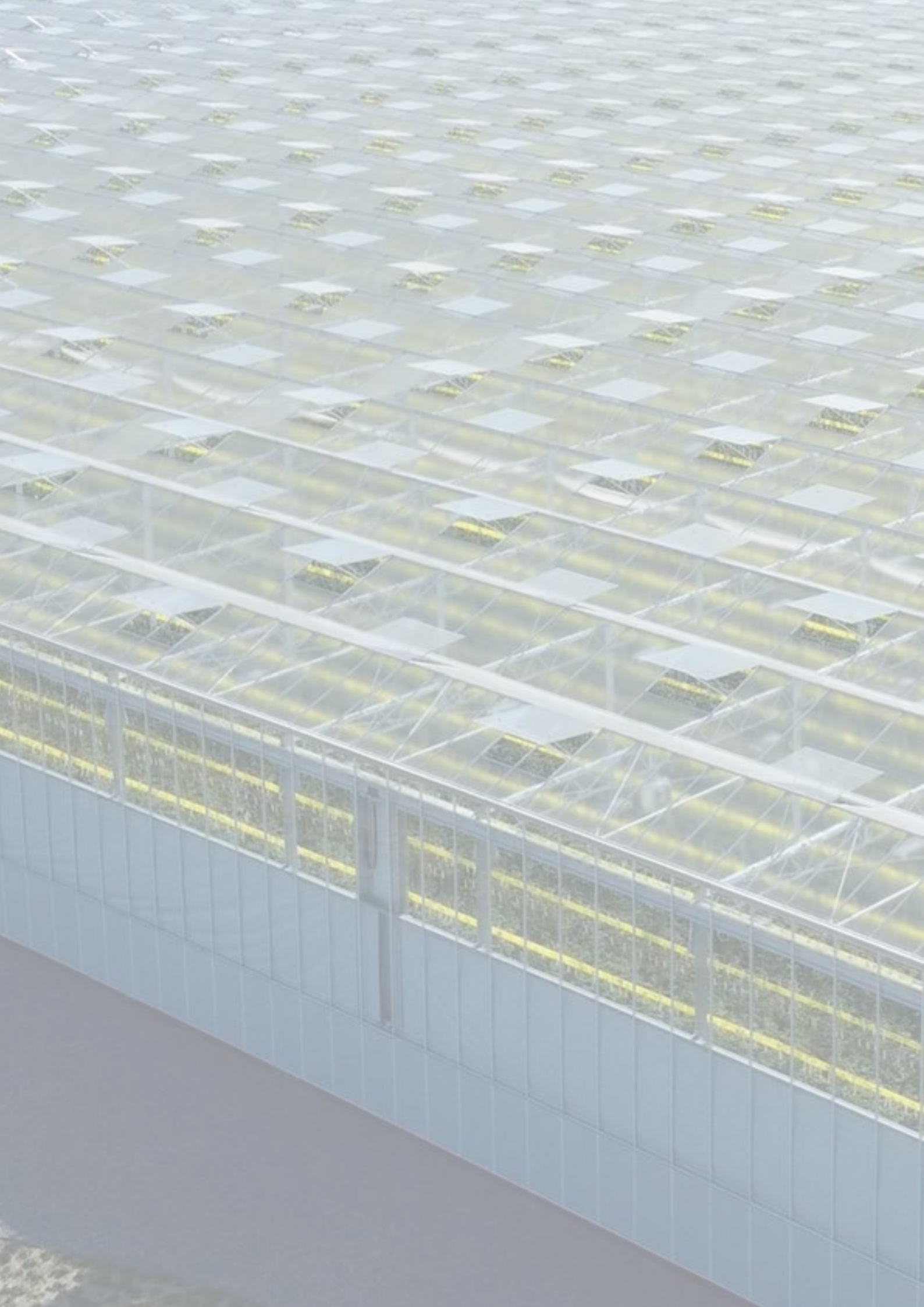




# Annex - BioFirst Group consolidated ESG data

	2019	2023
CO <sub>2</sub> emissions (scope 1 & 2 in tons)	18.336	19,982
CO <sub>2</sub> emissions from transport of personnel (scope 3)	1.109	980
Number of Lost Time Injuries	57	28
Incident Frequency rate	17,7	7,8
Absenteeism	1,46	1,52
Whistleblowers reports	-	0
Total amount of waste (tons)	16.720	23.236
Waste separation percentage	59,2%	77,7%
Tap water usage (m <sup>3</sup> )	207.336	123.920
Water usage from other sources (m <sup>3</sup> )	332.999	389.058
Number of research internships	16	18
Number of assessment centre assessments	11	22
Hours of internal training on the Biobest Academy	-	1600
Number of publications in scientific journals	13	27
Total number of employees in staff / production (31-12-2023)	1060 / 1003	
Total number of FTE	1990,7	
Full time / part time percentage	91,9% / 8,1%	
Percentage of men / women	64% / 36%	
Employees by age group		
< 20	16	
20 - 30	475	
30 - 40	723	
40 - 50	477	
50 - 60	332	
> 60	40	
Employees by years of service		
0 - 1	340	
1 - 3	461	
3 - 5	350	
5 - 10	571	
10 - 20	293	
> 20	48	
Inflow and outflow of personnel		
Outflow - employee turnover %	18,5 %	
Inflow - % new hires	21,7 %	
Number of nationalities employed	34	
Employees with detailed information in Employee Central	1050 / 2063	









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