2019

Accelerating innovation in a changing world
2019 in numbers

$13.6bn
Global Sales

$10.6bn
Crop Protection sales\(^1\)

$3.1bn
Seeds sales\(^2\)

$1.3bn
Investment in Research and Development\(^3\)

0.34
Recordable injury and illness rate\(^4\)

99.0%
Suppliers included in sustainability and fair labor programs

8.6m
People trained on safe use\(^5\)

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1 Including sales to Seeds
2 Including Flowers
3 Before capitalized development
4 Per 200,000 hours, according to US OSHA definition
5 Includes smallholders reached through training reported under “Empower smallholders”
The Nature Conservancy (TNC) and Syngenta are working together on business practices aimed at improving soil health, resource efficiency and habitat protection in major agricultural regions worldwide. This multi-year collaboration focuses on incorporating sustainability science into Syngenta’s decision-making process and engaging with farmers in new ways.

**Collaborating for sustainable agriculture**

Syngenta is accelerating its innovation to address the increasing challenges faced by farmers around the world and the changing views of society. This commitment is the company’s response to more than 150 listening sessions worldwide, engaging a broad cross section of views.

By 2030, we’ll cut our carbon footprint by 50%.

Syngenta commits $2 billion over the next five years to help farmers tackle the increasing threats posed by climate change, and to reduce the carbon intensity of its entire operations by at least 50% by 2030.

**Joining forces for more stewardship**

Agricultural industry leaders joined forces to further improve the way crop protection products are handled in Europe by promoting the use of closed transfer system (CTS) technology. The companies are now each piloting the CTS “easyconnect” in selected countries to benefit operators, farmers and the environment.

**Introducing a novel seed treatment**

Syngenta introduced VAYANTIS®, a new fungicide seed treatment mode of action to control diseases such as Pythium and Phytophthora for crops with better germination, stronger stand establishment and higher yields. It also enables reduced- and no-tillage cropping systems to protect the soil.

**Protecting farmers’ livelihood**

In Africa and Asia, Syngenta is working with teams on the ground to respond quickly to the spreading infestation of the difficult-to-control and highly-destructive Fall Armyworm, by providing advice and integrated pest management solutions, including FORTENZA® Duo, BT traits and biologicals.

**Recultivating degraded land in Brazil**

Together with TNC and other partners, we are developing a scalable business offer to recultivate around 1 million hectares of degraded pastureland in the Cerrado. Farmers in the program will be able to increase the value of their land, reverse soil degradation and increase farm productivity.

**Responding to 150 listening sessions**

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**Highlights of 2019**

- **Accelerating innovation in a changing world**
- **Collaborating for sustainable agriculture**
- **Joining forces for more stewardship**
- **Introducing a novel seed treatment**
- **Protecting farmers’ livelihood**
- **Recultivating degraded land in Brazil**
- **Responding to 150 listening sessions**

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Chief Executive Officer’s statement

A year of climate extremes

As farmers around the world continue to face the increasing challenges of climate change, we must do all we can to help them deal with the impacts of extreme climates today, as well as find solutions to help reduce agriculture’s and the food value chain’s contribution to greenhouse gas emissions.

Farmers around the world continued to face the increasing challenges of climate change including extreme weather conditions in 2019. Historic floods in the US meant that only 68 percent of corn and 46 percent of soybean crops were in the ground by mid-June. Droughts in countries including Australia made it increasingly difficult for farmers to achieve even a modest yield with many having no viable crop at all. And according to the World Meteorological Office, the average temperatures for the ten-year period 2010–2019 are almost certain to be the highest on record. These warmer temperatures also aided the spread of pests such as the highly destructive fall armyworm.

Helping farmers, fighting climate change

As I speak with farmers and representatives of the food value chain around the world, it is clear that agriculture is now at the front line of global efforts to tackle climate change.

In the face of these challenges, I see Syngenta’s role as two-fold. Firstly, we must do all we can to help farmers deal with the impacts of extreme climates today. Secondly, we must find solutions to help reduce agriculture’s and the food value chain’s contribution to greenhouse gas emissions.

To this end, I was proud to announce in October, together with Sally Jewell, CEO of The Nature Conservancy, that Syngenta will dedicate $2 billion over five years towards innovation specifically targeted at delivering a step change in agricultural sustainability. We also committed to deliver two technological breakthroughs to market each year, and to reduce the carbon intensity of our operations by 50 percent, in support of the Paris Agreement on climate change.

These commitments are the first tangible results of our “Innovation for Nature” collaboration with The Nature Conservancy.
which we announced early in 2019. This truly
global collaboration promotes soil health,
resource efficiency and habitat protection in
major agricultural regions worldwide.

Business performance in
challenging conditions
In 2019, Syngenta teams around the world
responded to the impacts of extreme
weather conditions by quickly adjusting our
offerings to the immediate needs of farmers.
Total sales of $13.6 billion were 4 percent
higher at constant exchange rates (CER)
than in 2018. Crop Protection finished the
year at $10.6 billion, up 5 percent CER with
a strong performance in Brazil more than
compensating for a challenging US market.
Seeds sales of $3.1 billion were 1 percent
lower (CER) than 2018, with the impact of
flooding in the US offset by strong growth in
Asia Pacific.

Commitment to innovation
Helping farmers to grow healthy and
affordable food while taking care of the planet
remains our focus and we introduced a
number of new crop protection innovations
in 2019. New fungicides included MIRAVIS™
Ace in the US, which requires fewer sprays to
control Fusarium head blight; and MIRAVIS™
Triple Pack in Argentina where cereal growers
now have the leading solutions to control rusts
and leaf spots. Our new herbicide, TAVIUM®
Plus VaporGrip® Technology, launched in the
US and Canada for use in soybeans and
cotton, offers farmers an additional tool to
manage herbicide resistance.

Seed treatment introductions in the US
included SALTRO® fungicide with its first
global registration – providing reliable control
of blackleg in canola, bakanae in rice and
sudden death syndrome in soybeans – and
VAYANTIS® fungicide for control of diseases
in corn, soybeans, canola, oilseed rape
and cereal crops. VAYANTIS® also protects
the soil by enabling reduced- and no-till
cropping systems. And we opened the first
ever Syngenta Innovation and Learning
Center at Eluru, India, which includes a
Seedcare Institute.

There were a number of Seeds highlights in
2019 including the European Commission
approval of our AGRISURE DURACADE™
corn trait for import as food or feed.
Our innovative ENOGEN® feed corn for beef
and dairy cattle now delivers feed efficiency
benefits of around 5 percent meaning less feed
needs to be grown for the same outcome.
We also introduced E-LUMINATE®, a new
digital offering that enables our seed advisors
to quickly assess field characteristics and
make recommendations on a field-by-
field basis.

In 2019, we also expanded our farm
management system offering with the
acquisition of Cropio™ making us the only
agricultural company with access to leading
farm management platforms in the top four
agriculture markets: the US with AgriEdge®,
Brazil with Strider®, China with MAP (Modern
Agricultural Platform) and now Eastern
Europe with Cropio™.

The Good Growth Plan: a great result
We reached a milestone this year with our
Good Growth Plan. Launched in 2013, it
set measurable stretch targets to be met
by 2020. I am delighted to report that we
have achieved nearly all of our targets a year
ahead of schedule. We have also exceeded a
number of our targets, including bringing more
than 14 million hectares of farmland back
from the brink of degradation and enhancing
biodiversity on more than 8 million hectares
of farmland. I am particularly pleased that we
have now trained over 42 million people in
safe use – more than doubling our target.

I would like to thank all our teams around the
world, their implementation partners and the
many farmers who have helped deliver these
excellent results. Only by working together can
we deliver such great progress. But this is not
the end of The Good Growth Plan – we have
been working over the last year to develop
the next phase of the Plan to be launched
in 2020.

Looking to the future
Early in 2020, we announced the formation
of the new Syngenta Group. This is an
exciting time for our company and will further
strengthen our ability to provide millions of
farmers around the world with innovation for
more sustainable agriculture.

The fundamental drivers of our business
remain: the world’s population continues to
rise, people need nutritious and affordable
food, and the demand for evermore
sustainable practices to help combat climate
change is increasing. We are well placed
to help farmers and the world meet these
demands now and in the future.

J. Erik Fyrwald
Chief Executive Officer
Syngenta plays a vital role in enabling the food chain to feed the world safely and take care of our planet. Our ambition is to be the most collaborative and trusted team in agriculture, providing leading seeds and crop protection innovations to enhance the prosperity of farmers, wherever they are.

Our strategy is to grow through customer-focused innovation – not just in product research and development, but in every aspect of our business model. We seek new and more efficient ways to use resources, to develop and deliver better products and services to farmers, and to create value for our many stakeholders – including employees, the communities where they live and society at large.

All this innovation has one focus: a passion for our customers, the farmers who grow the world’s food. To make our business work, we have to understand their needs and deliver products and services that provide value beyond yield. And to make our business sustainable, we have to take the long view: ensuring that what we do today strengthens Syngenta and the food chain for tomorrow – economically, environmentally and socially.

That’s why we are accelerating our innovation to address the increasing challenges faced by farmers around the world including changing climates and societal preferences.

This marks a step change in agricultural sustainability and, together with our Good Growth Plan commitments, puts sustainability center stage in the way we do business and helps deliver the UN Sustainable Development Goals.

If we succeed, we will achieve not only growth for our business but also growth for all – creating value that benefits our employees, customers, communities and food chain partners. Our success will be measured through the benefits we bring to agriculture and the environment. But in a sector as challenging as agriculture, success is not a given. It will require determined execution. We constantly look to collaborate with many partners to achieve better outcomes and to earn trust by delivering on our commitments.

That trust depends not just on what we do: the “how” matters, too. So, transparency, ethics, safety and compliance are core to the way we work. In operating our business model, we’re determined to live by the values we have set ourselves – which are emboldened in the paragraphs above.

Our business model

Creating value now and for the long term

See “Accelerating innovation in a changing world” on pages 6-9
2. Our business model

1. Resources we use
- Financial capital
- People and the intellectual property they create
- Chemical, biological, genetic and computational sciences
- Natural resources
- Facilities and services
- Local communities
- Laws and regulations

2. What we do
- Research and development
  - Crop protection discovery and innovation
  - Advanced seed breeding
  - Addressing insect, disease, weed and environmental stress on crops
- Production
  - Production of active ingredients and intermediate chemicals
  - Formulation, fill and pack
  - Production of seeds
  - Production of flowers
- Who we work with
  - Research institutions and universities
  - Farmers and suppliers
  - Agricultural extension services
  - NGOs
- Commercial
  - Product management
  - Marketing and sales
  - Distribution
- Who we work with
  - Growers
  - Distributors
  - Demonstration farms
  - Processors and the food value chain
  - Agronomists
  - Agricultural extension services
  - Technology providers

3. What we create
- Products, services and solutions
  - Crop protection
    - Herbicides
  - Insecticides
  - Fungicides
  - Seed treatment
  - Biologicals
  - Crop enhancement
  - Seeds
    - Seeds
    - Traits
  - Grower programs
- Supporting activities
  - Product registration and stewardship
  - Health, safety and environment management
  - Employee engagement
  - Business integrity and upholding human rights
  - Multi-stakeholder dialogue
- Who we work with
  - Industry associations
  - Government and regulatory authorities
  - NGOs and IGOs
  - Communities

4. The value we provide
- Sustainable agriculture innovation for small- to large-scale farms
- Reliable availability and affordability of safe, nutritious food and feed
- Efficient, effective fiber and fuel
- Tools for grower empowerment and stronger food systems
- Sustainable production and supply practices
- Economic value shared with employees, suppliers, governments and communities
- Rural development and collective well-being of communities
- Development of our people and partners along the value chain
- Promotion of decent work and good governance
- Stimulating research, sharing data and knowledge

SUSTAINABLE DEVELOPMENT GOALS

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Decent work and economic growth
6. Industry, innovation and infrastructure
7. Affordable and clean energy
8. Clean water and sanitation
9. Life on land
10. Reduce inequality
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice, and strong institutions
17. Partnerships for the goals
Today, farmers need to manage climate change, soil erosion and biodiversity loss, as well as changing consumer expectations and views on agricultural technology. There is an urgent need for innovation and more action to address these challenges so that everybody wins – from growers to consumers and the environment.
Over the last six years, we have made a significant contribution to sustainable agriculture – and learned a great deal – through our Good Growth Plan. In late 2018, we further stepped up these efforts by holding over 150 listening sessions around the world with stakeholders who have influence in the food and agriculture value chain. Their combined feedback has given us a much better understanding of what society expects from Syngenta and our industry, as well as what sustainable agriculture really means to different groups. One thing is clear: there is an undeniable demand for change from all our stakeholders.

In April 2019, we responded by announcing that we will accelerate our innovation to address the increasing challenges faced by farmers around the world and society’s changing views on agricultural technology, marking a step change in agricultural sustainability.

We used feedback from the listening sessions to define the three focus areas: innovation guided by society and nature; striving for lowest residues in crops and the environment; and investing where it matters to farmers and nature.

We also announced a global collaboration with The Nature Conservancy (TNC) – a conservation organization dedicated to conserving the lands and waters on which all life depends. Our multi-year collaboration – Innovation for Nature – focuses on promoting soil health, resource efficiency and habitat protection in major agricultural regions worldwide. We have also committed to invest in solutions that reverse soil erosion and biodiversity decline, help farmers become resilient to changing climates, and adapt to changing consumer requirements such as cutting carbon emissions.

The driving factors

The key message that emerged from our listening sessions is that the sustainable agriculture debate has moved from food security and yield alone to factors such as loss of biodiversity; people’s changing expectations around the food they eat; and, importantly, climate change. We need to move with people’s changing priorities to stay relevant – and be part of the solution.

After all, our role as a global agricultural business places a responsibility on our shoulders – especially towards farmers and the communities in which they operate. Agriculture worldwide currently contributes 12 percent of all greenhouse gas emissions. And farmers are already feeling the effects of global warming first-hand, making their jobs ever more challenging. This places farmers front and center of the climate debate and firmly in the public spotlight.

As the environmental challenges facing our planet intensify, society expects companies to invest their resources where they matter most. To move forward together constructively, we must rebuild trust between science and society. If we get it right, our industry can be a net-positive player in the global climate challenge.

Alexandra Brand
Chief Sustainability Officer
Investing $2 billion in sustainable agriculture innovations

Our first target announced under Accelerating Innovation is to invest $2 billion over five years in innovations specifically aimed at advancing sustainable agriculture. We will use this investment to deliver two technological breakthroughs to market per year.

By sustainable agriculture, we mean agriculture that directly benefits farmers, society and nature today and in the future. This makes good sense for both the environment and our business. To ensure this investment delivers these benefits,

we collaborated with TNC to develop an investment model that directs resources to products, services, programs, partnerships and capital expenditures that offer a clearly differentiated sustainability benefit or are breakthrough technologies enabling a step change in sustainability.

**Ensuring our investment delivers**

Only investments that contribute to breakthrough outcomes will count towards our target of $2 billion. We define a technological breakthrough as innovations we bring to market that are designed to reduce agriculture’s contribution to climate change, mitigate its effect on the food supply and provide farmers with the tools they need to manage their land within planetary boundaries.

These investments will be distinct from those we make as part of good practice and will – wherever possible – benefit large-scale and smallholder farmers alike and contribute to meeting the United Nations Sustainable Development Goals. The investment model is backed by a five-step assessment process and those that pass the assessment stage are linked to specific practices and measurable outcomes.

**Priority practices for investment include:**
- Integrated pest management
- Nutrient management
- Continuous living cover systems
- Reduced tillage
- Multi-functional field margins
- Water-use efficiency and effectiveness
- Integrated crop-livestock systems.

**Sustainability investment criteria: Five-step assessment process**

1. **Define the opportunity**
   Investments associated with research and development products, mergers and acquisitions, partnerships, capital expenditures or programs can be evaluated using this process.

2. **Choose assessment path**
   Investments may contribute to the target via two paths:
   - Practice or outcomes-based investments contribute to or facilitate the adoption of the sustainability priorities in Step 3.
   - Operations-based investments help us produce sustainable products to reduce the net environmental footprint.

3. **Determine alignment with priorities**
   - Practices and outcomes-based investments deliver measurable benefit above and beyond business as usual, towards implementing or achieving significant sustainability outcomes.
   - Operational investments deliver measurable progress towards meeting Syngenta’s ambitious waste-generation, water-use, health-and-safety and greenhouse-gas targets.

4. **Define alternative (comparable)**
   Is there already a comparable product or program on the market?
   Investments that are not unique must be compared to existing products or programs in Step 5.

5. **Assess net benefit**
   All investments must demonstrate that they offer a significant net benefit compared with the current alternative.
Reducing our carbon intensity by at least 50%

Our second target announced under Accelerating Innovation is to reduce our own carbon footprint. In accordance with the global community’s climate targets signed at the Paris Agreement, we have committed to reduce the carbon intensity of our entire operations by at least 50 percent by 2030. Our commitment and the progress towards it are validated and endorsed by the Science Based Targets initiative. We will achieve our targets by undertaking a range of activities both within the business and in partnership with our suppliers.

Internally, our efforts to reduce carbon intensity in our operations will remain focused on our six manufacturing sites, which account for most of our direct energy use.

Externally, we will partner with our suppliers on a range of initiatives that include embedding sustainability criteria in supplier dashboards and in the strategy of our top suppliers; closely monitoring performance; communicating internally and externally with procurement teams and key suppliers so that they understand our requirements and targets.

Putting our commitment into action

We are already collaborating with various partners on a wide range of projects that align directly with Accelerating Innovation’s vision and objectives.

In Brazil, for example, we are working with TNC and other partners on the long-term Reverte program to reverse the degradation of around 1 million hectares of pastureland in the Cerrado by 2025. This involves implementing new, sustainable rotations on degraded pastures that involve farming cattle, soybean and corn in integrated crop-livestock systems. We are encouraging farmers to participate in a scalable business offer that will help to increase the value of their land, improve productivity and reverse soil degradation.

In the Netherlands, we are working to replace around 40 percent of gas we currently use to heat greenhouses in De Lier with geothermal energy which is estimated to reduce the carbon footprint of the site by around 20 percent. We will procure hot water from a geothermal well that is being set up by the Trias Westland Geothermal Project, a collaboration with Dutch Energy and local infrastructure suppliers.

Moving ahead together

We will continue our transparent approach to reporting as seen in our Good Growth Plan. From 2020, we will report on the progress and outcomes against these targets. As we have already achieved most of the commitments under the first phase of our Good Growth Plan, we are also working on its next evolution, incorporating and building on our learnings to date.

We understand that we cannot achieve a step change in sustainable agriculture alone. Partnership and collaboration will be critical to the program’s long-term success. With this in mind, we will continue to listen and respond to key stakeholders, including the public, governments and policy makers, and partner with farmers, food companies, academia and NGOs.

We are confident that, together, we will accelerate the delivery of innovations that have a positive, lasting impact on farming, the food value chain and nature. That’s good for our business – and good for our planet.

The Nature Conservancy’s collaboration with Syngenta is driven by a shared understanding that agricultural systems have the potential to address urgent sustainability priorities. In order to achieve our conservation goals, we need innovation and investment to deploy a host of new solutions. Syngenta’s commitments to innovate for nature are encouraging and groundbreaking. While our collaboration may be unconventional, it is necessary for us to work together to develop practical solutions.

Michael Doane
Global Managing Director for Sustainable Food and Water
The Nature Conservancy
Crop Protection

Syngenta is a world market leader in crop protection products, with broad coverage of an extremely diverse market. We develop and produce herbicides, insecticides, fungicides, seed treatments and biocontrols that promote strong and healthy plant growth. We complement our offer with digital management and agronomic solutions.

As well as protecting plants from insects and diseases, we provide crop enhancement products that help them tolerate environmental stresses such as heat, cold and drought. We also offer products that increase root mass, boosting crops’ nutrient and water uptake and increasing yields – improving sustainability by using inputs more efficiently.

While our principal customers are farmers and channel partners, our Syngenta Professional Solutions business adapts our agricultural technologies to serve professionals in turfgrass management, tree and landscape care, residential and commercial pest management, disease vector control, commercial flower production, and home garden care.

Meeting farmers’ needs, now and in the future

Farmers today operate in a challenging environment – addressing the needs and expectations of food processors and retailers, consumers, society and our planet, as well as dealing with increasingly volatile climatic conditions. As these needs and expectations become more complex, so do the challenges for farmers. Whether they are smallholders or a large farming business, farmers need to reconcile the imperatives of running a business with their societal responsibilities as stewards of the land.

At Syngenta, we apply science and technology to help them meet those complex needs consistently, safely and sustainably. Our products enable farmers to deliver food that is abundant, nutritious and affordable – without using more land or other inputs.
We recognize our responsibility to develop products that are safe and sustainable, and to steward them carefully. Some 30 percent of our investment in developing each new active ingredient is spent on product safety. And we also invest substantially in training farm workers to use our products safely, with some 42.4 million trained since 2013.

In 2019, we announced that we will accelerate our innovation to address the increasing challenges faced by farmers around the world and society’s changing views. Syngenta is at the forefront of delivering innovations that help farmers adapt to changing growing conditions, including reducing carbon emissions and sequestering carbon in the soil.

Expanding the farmers’ toolbox: innovations in 2019

We focus our innovation on helping farmers deal with the impacts of climate change, including unpredictable weather patterns and increasing pest pressure, and strive to provide farmers with the most comprehensive and flexible toolbox. This means designing “blockbuster” molecules, along with targeted active ingredients that meet specific needs for a range of crops and locations. In 2019, we filed a total of 118 patent applications (2018: 110) for crop protection innovations. We have a strong innovation pipeline across all our crop protection product lines. Here are some key examples from 2019.

Disease control

In 2019, use of products based on our broad-spectrum fungicide ADEPIDYN™ continued to spread as we brought new ADEPIDYN™ based solutions to market.

In the US, we introduced a new product to control Fusarium head blight in cereals with the launch of MIRAVIS™ Ace, containing our ADEPIDYN™ fungicide. MIRAVIS™ Ace delivers important benefits to the environment as there is a reduction in the number of sprays required to manage disease, which results in fewer tractor passes over the field and reduces soil compaction. It also has a wider application window giving more flexibility to growers.

With the first launch of ELATUS™ Ace and the innovative MIRAVIS™ Triple Pack, cereal growers in Argentina now have the leading new solutions to control rusts and leaf spots. MIRAVIS™ Triple Pack combines ELATUS™ Ace with ADEPIDYN™ fungicide. This technology brings benefits such as a greater greening effect, exceptional control of rust, and a superior control of yellow spot and Septoria in wheat. MIRAVIS™ Triple Pack delivers up to 400 kg yield increase per hectare compared to commercial standards. Additionally, this solution shows a longer lasting and higher level of control against foliar diseases in barley.
Seed treatment
The Syngenta Seedcare team continued to play a frontline role in international efforts to combat the devastating fall armyworm. Our FORTENZA® Duo seed treatment provides effective control against the pest. We are also working with local authorities in affected countries to ensure solutions to control fall armyworm are accessible to growers, transferring knowledge from our experts in LATAM, where the pest first emerged, to our technical teams in Africa and Asia. SALTRO® received its first global registration in the US in 2019. Based on our ADEPIDYN™ fungicide, the seed treatment provides robust, reliable control against blackleg in canola, bakanae in rice and sudden death syndrome (SDS) in soybeans. SDS is one of the most damaging and distressing diseases and can cause yield reductions of up to 50 percent.

Insect control
In 2019, Syngenta introduced a new insecticide, Spiropidion, for use in arable crops such as soybean as well as fruits and vegetables. Spiropidion is safe to beneficial insects and pollinators, and can be applied even when crops are flowering. It protects the whole plant, including new roots and shoots, and has shown excellent results against hard to control pests like aphids and whiteflies. First launches are scheduled for Paraguay and Bolivia in 2021, Brazil in 2022, with other countries to follow in the future. With a strong pipeline, we expect to launch a number of new insecticides over the next five years.

Weed control
In weed control, the rapid spread of herbicide resistance has required the development of new management options. We were proud to launch a new herbicide TAVIUM® Plus VaporGrip® Technology in the US and Canada for use in soybeans and cotton. TAVIUM® Plus VaporGrip® Technology is a premix that controls key broadleaf and grass weeds in Roundup Ready 2 Xtend® Soybeans and Bollgard II® XtendFlex® Cotton.

In-licensing allows us to offer an even broader portfolio to our customers. We obtained exclusive rights from Corteva to develop a new herbicide for early control of weeds as they emerge in rice by combining Florpyrauxifen-benzyl and Syngenta Pretilachlor herbicides. This solution gives growers a new tool to manage resistance issues, providing foliar contact and residual weed control capabilities with two distinct modes of action.

We launched the co-pack in China in early 2019, targeting those areas where resistance to commonly used herbicide chemistry has become a significant problem.

VAYANTIS® was also a key launch for Syngenta Seedcare in 2019. This new fungicide seed treatment provides outstanding control of diseases such as Pythium and Phytophthora in corn, soybeans, canola, oilseed rape and cereal crops. It provides better germination, stronger stand establishment and higher yields, and protects the soil by enabling reduced- and no-tillage cropping systems.
Syngenta Professional Solutions

For the second year, the Syngenta Professional Solutions business supported a highly successful malaria education course in Bagomoyo, Tanzania, organized by the Swiss Tropical and Public Health Institute in collaboration with the Ifakara Health Institute. The four-week course is designed to help malaria endemic countries build capacity and knowledge in the prevention and control of malaria. Syngenta also continues to be part of the ongoing reduction in malaria transmission across sub-Saharan Africa through the use of its long-lasting indoor spray, ACTELLIC® 300CS.

Advanced innovation capability

With a portfolio of some 200 active ingredients, we regularly revisit our portfolio to ensure we are providing the best solutions to farmers.

Our work on developing new chemistries is gaining unprecedented precision. Scientific insights generated in the field and throughout our R&D cycle inform precise product development. Increasingly, we can model and design molecules to address specific challenges facing farmers such as resistance management or those associated with the effects of climate change. An example of how these effects can be addressed is the development of a novel synthetic compound with biostimulant properties that is designed to mitigate abiotic stresses including cold, drought and heat stress. These variable climatic conditions are emerging as the largest unmet grower need, causing crop losses estimated at $200 billion annually.

Bringing new technologies to farmers

We are increasingly an agricultural technology business, bringing together chemistry, biology, digital technologies, new monitoring and application techniques, biologicals – and even new breeding technologies – to create novel solutions. We have committed to delivering at least two technological breakthroughs to market each year over the next five years, to reduce agriculture’s contribution to climate change, harness its mitigation capacity, and help the food system stay within planetary boundaries.

For many years, we have been complementing our chemistry portfolio with biocontrol products to add modes of action that enhance resistance management. We also offer a range of biostimulant products that protect plants in times of stress such as drought. This year, we took the step to establish a Biologicals business unit with the aim of expanding our portfolio and market reach in these rapidly expanding and increasingly important areas of technology.

We also launched a range of pheromone products combined with holistic crop management services to grape growers in Chile. Pheromones are natural signaling compounds that cause specific interactions within certain insect species. We are collaborating with key partners to extend our pheromone offer and complementary crop pest management services to other crops and geographies.

Our training helps build capacity and knowledge in malaria endemic countries

We’re expanding our biologicals portfolio, and this year launched a range of pheromones to manage insects in grapes.

See “Accelerating innovation in a changing world” on pages 6-9
Digital technology is giving us new ways to develop digital solutions to help farmers and their advisors to significantly increase their productivity, efficiency and profitability, while farming more sustainably.

In 2019, we expanded our farm management system offering with the acquisition of Cropio™ – a digital platform offering operational management solutions for farmers, incorporating imaging, record-keeping, and equipment tracking functions. Syngenta is now the only agricultural company to have access to leading farm management platforms in the top four agriculture markets: the US with AgriEdge®, Brazil with Strider®, China with MAP (Modern Agricultural Platform) and now Eastern Europe with Cropio™.

We are currently developing a new agronomic digital platform, FieldCompass™, that will equip farmers to evaluate the short- and long-term impact of weed control decisions on a field by field basis. FieldCompass™ will integrate data from several agricultural practices such as tillage practices, crop rotation, herbicide programs and cover crop usage.

The application of crop protection products by drone has grown significantly in some markets such as China. We are working with partners to develop effective solutions with protocols and applications tailored to different crops and geographies.

We formed a partnership with Sony that means we can now offer its Smart Agricultural Solution to select retailers and agronomists through FarmShots™. The offering uses a drone-mounted camera to generate whole-field maps, allowing growers to detect crop damage even without an internet connection.

We are also looking at new digital ways to reinforce the efficiency, integrity and security of our distribution and supply chain. We are piloting an ambitious track and trace program that will implement a global, standardized approach to digitizing product identification. This will help us to meet future compliance obligations and combat counterfeiting.

Precision agriculture allows farmers to use crop protection with unprecedented efficiency and economy. Advances in sensor technology, satellite and drone imaging, as well as data science provide increasingly sophisticated information to help growers manage their crops sustainably. Our R&D teams collaborate with external partners to evaluate emerging technologies and develop products that bring greater value to customers.
Investing in sustainable agriculture

Syngenta Ventures has a diverse, global portfolio of more than 25 companies across the agriculture technology landscape, including biologicals, digital, precision application and seed technologies. 2019 saw new investments across the ag-tech investment landscape and regions. These investments are enabling partnerships and collaborations to help Syngenta access existing technologies or jointly develop new products and solutions.

Syngenta has joined forces with ADAMA, BASF, Corteva Agriscience, Nufarm to further improve the way crop protection products are handled in Europe by promoting the use of closed transfer system (CTS) technology. The companies are now each piloting the CTS “easyconnect” in selected countries to benefit operators, farmers and the environment.

The easyconnect system comprises a unique pre-fitted screw cap and a coupler, which together allow crop protection products to be directly transferred from their original container to the spray tank, reducing operator exposure and environmental risks from splashing or spilling. Feedback from pilot farms has been positive. By 2021/2022, a broad range of compatible containers will be offered to farmers in a number of European countries.

In Brazil, we brought the best innovation and technology closer to farmers when we opened our first Syngenta own-store – Atua Agro. Located in Iaju, the store stocks the full range of Syngenta products and is staffed by specialists who have the first-hand knowledge to advise farmers on how to sustainably increase their production. In addition to providing products, we want to establish a partnership with our customers to help drive the entire agricultural sector forward towards the future of sustainable agriculture.

We strategically invest in our facilities to support our ambitious innovation program and ability to supply around the world. In Switzerland, we will increase our manufacturing capabilities with the purchase of a Novartis manufacturing plant near Basel. This multi-purpose plant will support the early launch phase of new active ingredients coming through the R&D pipeline. We expect to complete the ownership transfer towards the end of 2020.

Our key crop protection production site at Grangemouth in the UK celebrated its centenary during 2019. The site employs over 350 staff in various areas, including manufacturing, engineering, scientific and production support. It has four plants dedicated to manufacturing active ingredients, as well as a finished product formulation and packaging plant.
Syngenta is one of the world’s largest developers and producers of seed for farmers, commercial growers, retailers and small seed companies. We offer a broad portfolio of crops with particular strengths in corn, soybean, sunflower, cereals and vegetables. Syngenta Flowers, one of the few global players, is a market leader in most key market segments.

Seeds

The global seed market was estimated at around $46 billion in 2019, with 3 percent forecast annual growth during the next five years. Over half its value comes from corn and soybean, and over 60 percent of sales are made in Brazil, China, Europe and North America. Growth over the next few years is expected to be driven by Brazil, China and India.

In 2019, the seeds market faced unprecedented challenges on multiple fronts. These included trade issues, historically low commodity prices and the increasingly extreme impacts of climate change, such as floods in the US and severe droughts in Australia. Farmers need support more than ever to enable them to sustainably provide sufficient, nutritious food – and they need choice, high performing products, data to make informed decisions, and deep agronomic advice.

Delivering what farmers need

In response, we tailor our seeds offering as precisely as possible to help farmers use seeds more effectively in the face of increasingly complex challenges. We develop products and services that enable growers to be more productive, to secure their livelihoods, to manage risks and to grow crops more sustainably. To do this, we strive to know and understand not only growers but also the customers they serve.
We lead in developing and delivering innovations that equip farmers with technologies to fight potentially devastating insect threats. For example, corn rootworm (CRW) is estimated to cost US farmers more than $1 billion annually in yield losses and control measures. AGRISURE DURACADE™ features a unique mode of action that controls corn rootworm differently from other traits on the market. It gives farmers a new trait rotational option for CRW management for a healthier corn crop and higher yield potential.

In 2019, the European Commission approved our AGRISURE DURACADE™ corn trait for import as food or feed.

For beef and dairy farmers, our innovative ENOGEN® feed corn delivers feed efficiency gains of around 5 percent, as a result of improved starch and organic matter digestibility. Along with improved farm profitability, ENOGEN® feed corn has the potential to contribute to sustainability in animal production systems. Improved feed efficiency means less feed is needed to achieve the same outcome with associated benefits in improved water use efficiency, reduced land, labor and energy involved in producing feed, and reduced emissions from crop production operations.

In collaboration with universities, we are conducting larger-scale feeding trials with the aim of bridging the gap between small-scale trials and farm-scale settings. We are also testing ENOGEN® feed corn in swine and poultry diets.

We continue to answer consumer demands for a year-round supply of convenient, fresh, healthy, high-quality vegetables. In 2019, we launched the distinctive, purple-skinned YOOM™ cocktail tomato. Developed through a natural-selection breeding program, YOOM™ tomatoes not only have a unique umami flavor but also perform well in terms of yield and shelf life. The product immediately attracted major interest from growing markets across Europe, and we subsequently extended the brand to North America and Australasia.
We are also developing vegetables that help to reduce food loss and waste – an area of increasing concern as food loss and waste contribute significantly to the world’s greenhouse gas emissions. Following field trials in 2018, for example, we brought to market a true white cauliflower variety that produces 100 percent marketable heads compared to around 65 percent in other commercial cauliflower varieties.

As consumers demand uniform vegetables, this variety helps to reduce food waste across the food supply chain – from grower to processor to retail and consumer – while ensuring the sustainable use of resources such as land, water, fertilizer and labor.

Looking ahead, our ambition is to transform wheat production, delivering both more efficient and environmentally sustainable wheat through hybridization. Although wheat is among the world’s most important food and feed crops, it is the only major crop that has never been successfully hybridized at scale. Wheat yields are plateauing in many regions in the world, and there is increasing chemical resistance in pests, weeds and diseases. With climate change and other factors putting crop sustainability under increased pressure, it has never been more vital to ensure consistent crop productivity.

In 2019, we entered hybrid wheat candidates into official pre-commercial registration trials in France and in Denmark.

**Unlocking the power of digital**

Agriculture is arguably the last big industry to maximize the potential of digital technology. Syngenta is investing in new digital tools and platforms to enable farmers to manage risk and maximize their investment. A good example of this is E-LUMINATE®, an exclusive digital offering that draws upon extensive agronomic data to help farmers make more informed seed selection decisions. E-LUMINATE® enables our seed advisors to quickly assess field characteristics and choose the best products and management practices on a field-by-field basis.

The technology uses GIS-based mapping for immediate assessment of soil characteristics and provides details specific to weed, disease and insect pressures to generate recommendations for seed that performs consistently for each field condition. These seed recommendations reflect actual performance comparisons across varieties, by year and region.

Digital tools can also help farmers when facing complex growing conditions, such as the extreme floods in the US this year. We issued field guidance on how to use FarmShots™, an innovator in high-resolution satellite imagery we acquired in 2018, to look for bare ground as flood water recedes, identifying replant zones and providing tools for spotting nitrogen deficiencies.

Our new true white cauliflower variety produces 100% marketable heads compared to a typical 60 to 65% yield from current commercial varieties, reducing waste.

**Acquisitions and strategic collaborations to meet market needs**

Our ambition is to be the most collaborative team in the industry. We continue to make acquisitions and form strategic collaborations that enhance our portfolio and strengthen our pipeline to give farmers the products, innovation, advice and services they need.

Germplasm diversity is fundamental to breeding stronger hybrids. Today, as a result of several collaborations, we have one of the broadest germplasm pools in the industry. This will enable us to bring growers stronger hybrids and offer more choice in existing and new markets.
We expanded our Flowers offering with the acquisition of Varinova’s cyclamen business, combining Varinova’s technical strengths and innovative varieties with our global market access and world-class science that will allow Syngenta Flowers to reinforce its position in the cyclamen market.

**Investing for growth**

In the US, our biggest market, we opened a new Global and North America Seeds office in Downers Grove, Illinois in 2019. Located in the heart of the Corn Belt, the new facility brings us closer to corn and soybean customers in the US, in a market that is demanding more innovation and choice more quickly.

To bring innovation faster to farmers, in 2019 we also opened our new $30 million Trait Conversion Accelerator at our Nampa R&D and seed production facility in Idaho, US.

This highly-automated corn breeding facility will help us speed up the flow of new elite corn hybrids through our R&D pipeline.

In Enkhuizen, The Netherlands, we opened a new seed innovation center with the aim of accelerating sustainable vegetable breeding. The center – covering more than two hectares with greenhouses, climate cells and laboratories – makes it possible to double the speed at which we breed new vegetable varieties. The opening was part of a phased investment program at the Enkhuizen site that will equip us to accelerate the delivery of innovations in global markets for brassica, spinach, peas and beans.

**Transformative technologies for the future**

One of the most serious concerns facing humanity is how to safely and sustainably feed our growing population. To meet this challenge, we need to engage the best minds we can find, and collaboration is critical to innovation. Across the company, Syngenta has over 400 collaborations with universities, research institutes as well as private companies. Thanks to our Chinese ownership, we also have the unique opportunity to partner with world-leading researchers at a number of Chinese universities and institutes. In addition to collaborations, we also operate an external open innovation model using crowd sourcing platforms to attract external thinkers across multiple disciplines.

We are building pioneering capabilities in data science. Plant breeding is increasingly design-driven: using quality data and advanced analytics through each stage of the R&D process, we can understand challenges better, determine optimum solutions and create products to match those specifications. We can also use mathematical modeling to determine how products are likely to perform in specific environmental conditions and to identify the right seeds for specific fields.

Genome editing is another exciting technology where we have been active for over a decade. Genome editing is a more rapid and precise process for achieving outcomes essentially the same as those produced over time by conventional breeding. Unlike genetically modified organisms, most forms of gene-editing do not involve inserting foreign DNA. We are applying this technology to accelerate the rate of innovation in major crops including corn, soybean and vegetables.

Seeds are fundamental to all life on our planet. At Syngenta, we are working with the latest technologies and partners from many disciplines to bring farmers around the world the seed products they need today and tomorrow, to safely and sustainably feed our growing population.
The Good Growth Plan is a core element of our strategies for both our Crop Protection and Seeds businesses to ensure their success and long-term viability. It defines six commitments in areas where improvement is essential to secure the future of agriculture and our planet’s ecosystems.
When we launched The Good Growth Plan in 2013, we set hard, stretch targets to be met by 2020. By 2019, we have already reached most of our goals – a year earlier than scheduled.

Since embarking on this journey, we have learned some very important lessons that will now shape the next evolution of The Good Growth Plan, which we plan to announce in 2020.

When we started our Good Growth Plan journey, we did not anticipate how much the world would change within this timeframe: political and societal trends, technologies in agriculture and even our own business strategy look very different six years on.

So, when it comes to setting future commitments, experience has taught us that flexibility is essential and five-year targets are often the most pragmatic option.

Capturing the power of partnership

One of the most important lessons we have learned is the true power of partnership. We would never have achieved so much through The Good Growth Plan without the support and buy-in of our partners. We are truly excited by the global “Innovation for Nature” collaboration we announced together with The Nature Conservancy (TNC) in 2019. The multi-year collaboration aims to help farmers comply with the Brazilian Forest Code, a policy framework that protects native forest areas and reforest parts of agricultural lands. Only by working together can neighboring farmers improve the connectivity of their land for wildlife species and help build more suitable corridors for animals.

In Hungary, our CONTIVO® solution continues to help farmers to reduce erosion and maintain soil health.

In China, Eastern Europe and Latin America, we have seen that real positive change – and scale – is possible when we close the gaps between factors such as science and technology, policy and commercial issues, notably financing mechanisms and markets.

For example, in Matto Grosso, Brazil, our Soja-Verde project is an environmental partnership involving Syngenta, NGOs including TNC, as well as the local government. It aims to help farmers comply with the Brazilian Forest Code, a policy framework that protects native forest areas and reforest parts of agricultural lands. Only by working together can neighboring farmers improve the connectivity of their land for wildlife species and help build more suitable corridors for animals.

In Hungary, our CONTIVO® solution continues to help farmers to reduce erosion and maintain soil health.

In 2019, we also started training farmers in safe practices when using drones.

The Good Growth Plan has contributed towards winning the trust of credible and influential partners such as GLOBALG.A.P., which sets voluntary standards for the certification of safe, sustainable agricultural products worldwide.

Through the Plan, we have proved that we can access and train farmers – with impact. GLOBALG.A.P. recognizes this and now entrusts us with training farmers in Argentina, Costa Rica, India, Mexico, and the US who are seeking GLOBALG.A.P. certification. This gives us a valuable opportunity to embed a sustainability-first mindset among growers.

Turning data into knowledge

Digital technology is having a transformative impact on agriculture. Since we launched The Good Growth Plan, the use of digital technology in agriculture has increased exponentially, and it will continue to do so. Expanding the use of digital tools when measuring our progress will be important to ensuring our next Plan keeps delivering benefits to growers and stakeholders alike.

As the first agricultural company to advocate an open data approach, we have worked with the Open Data Institute (ODI) over several years to apply best practice standards to our data, making them more usable by other stakeholders. Making it easier to share and access the unprecedented volumes of data we collect through The Good Growth Plan enables academics and other partners to produce richer, more informed and useful insights.

Flavio Alzueta
Vice President & Chief Marketing Officer
GLOBALG.A.P.
Our engagement with the Global Open Data for Agriculture and Nutrition (GODAN) is designed to achieve a common metric that allows researchers to further sharpen their insights by standardizing the way we combine and exchange data.

Further simplifying and standardizing the way we source, share and analyze data will provide farmers with the insight generated and tailored agronomic advice in good time for the current growing season.

Building trust, credibility and pride

Thanks to The Good Growth Plan, farmers trust us as a credible and reliable source of information on how to implement the principles of sustainable farming. The productivity data generated at farm level allow them to hold more informed conversations with their customers further down the food value chain. This has contributed significantly towards optimizing sustainable food production. One example in the US is where Kellogg’s, The Nature Conservancy and Syngenta have been working to create a more sustainable supply chain by helping farmers document and demonstrate how conservation practices enhance natural resource management and support water quality both in Saginaw Bay and the larger Great Lakes watershed.

At the same time, Good Growth Plan projects have also enabled farmers to hold different, more informed conversations within their communities.

For example, the largest potato grower in the US, R.D. Offutt, planted non-productive corners of its potato fields in Minnesota with our Operation Pollinator regionally-tailored seed mixes to create environmentally diverse wildflower habitats and increase the number of pollinating insects. As well as substantially increasing biodiversity, it also enabled conversations with the community about encouraging pollinators in their local area.

Not only has The Good Growth Plan proved beneficial to farmers and other stakeholders, but it has also fostered a sense of pride among employees and, crucially, attracted interest from potential recruits. Making a meaningful contribution to society in the workplace has become more and more important to people. An employer with demonstrable sustainability credentials is more likely to win the race for their talent and commitment.

The Good Growth Plan continues to be a key factor in recruiting and retaining the brightest people in our industry to keep accelerating the breakthrough innovations that drive sustainable agriculture.

Looking to the future

Since its launch, The Good Growth Plan’s principles and priorities have become deeply embedded in the way we do business. It has enabled us to enhance our commercial offer, deliver real and measurable benefits to farmers, rural communities and the environment. The next step is to build on the progress we have made and the lessons we have learned.

Moving ahead will also involve acting on the feedback from the listening sessions we held with a wide variety of stakeholders in 2018. These sessions were crucial to giving us a better understanding of what society expects from Syngenta and our industry, and what sustainable agriculture really means to different groups.

The commitment we made following the listening sessions – to accelerate our innovation and invest $2 billion over five years into technological breakthroughs specifically aimed at advancing sustainable agriculture – will be integral to the next evolution of The Good Growth Plan.

As this first stage of The Good Growth Plan draws to a close, we would like to thank all those who have accompanied us along this journey to date. They include, among many others, farmers, employees, national and local authorities, food value chain partners, NGOs and academics. Their expertise, insight and energy continue to help us to turn our commitments into real, measurable benefits for farmers, the people they feed and the planet we all share. We invite everyone to join us as we continue into the next exciting phase of The Good Growth Plan.
### Progress and key achievements 2014–2019

<table>
<thead>
<tr>
<th>Make crops more efficient</th>
<th>Rescue more farmland</th>
<th>Help biodiversity flourish</th>
<th>Empower smallholders</th>
<th>Help people stay safe</th>
<th>Look after every worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the average productivity of the world’s major crops by <strong>20 percent</strong> without using more land, water or inputs</td>
<td>Improve the fertility of <strong>10 million</strong> hectares of farmland on the brink of degradation</td>
<td>Enhance biodiversity on <strong>5 million</strong> hectares of farmland</td>
<td>Reach <strong>20 million</strong> smallholders and enable them to increase productivity by <strong>50 percent</strong></td>
<td>Train <strong>20 million</strong> farm workers on labor safety, especially in developing countries</td>
<td>Strive for fair labor conditions throughout our entire supply chain network</td>
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<table>
<thead>
<tr>
<th>Land productivity increase</th>
<th>Hectares of benefited farmland</th>
<th>Hectares of benefited farmland</th>
<th>Smallholders reached through training and sales</th>
<th>People trained on safe use</th>
<th>Suppliers included in sustainability and fair labor programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>18.8%</strong></td>
<td><strong>14.1m</strong></td>
<td><strong>8.2m</strong></td>
<td><strong>26.5m</strong></td>
<td><strong>42.4m</strong></td>
<td><strong>99.0%</strong></td>
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</table>

| We have increased reference farm yields ahead of their benchmarks and recorded efficiency improvements of more than 20 percent for nutrients and pesticide field application | We’ve already exceeded our 2020 target by almost 5 million hectares – and we’re continuing to raise awareness for the importance of soil health |Our biodiversity projects around the world continued to deliver measurable benefits to farmers and their wider communities | We have reached over 20 million smallholders and substantially increased their productivity, but there is still a way to go | We have trained unprecedented numbers, exceeding our 2020 target of 20 million by reaching 42.4 million people | We’ve covered 99 percent of our supply chain, and we’re leading the industry to increase wages in the seed supply chain in India |

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1. On reference farms compared to baseline 2014
2. Cumulative since baseline 2014
3. In 2019
4. On smallholder reference farms compared to baseline 2014
5. Cumulative since baseline 2014. Includes smallholders reached through training reported under “Empower smallholders”
6. In 2019

Additional progress information online at [www.data.syngenta.com](http://www.data.syngenta.com)
Make crops more efficient

UN Sustainable Development Goals
2, 12, 17

To ensure sustainable food security, within planetary boundaries, the world needs a step change in crop productivity. We are committed to boost productivity of the world’s most important crops in partnership with growers without using more inputs like land or water.

We report the percentage increase achieved in land productivity, nutrient efficiency, pesticide field application efficiency and greenhouse gas (GHG) emission efficiency across a farm network. In 2019, the network comprised 1,659 reference and 1,928 benchmark farms. The farms are grouped in clusters of uniform agro-climatic conditions and grower characteristics, and between them grow 19 crops in 39 countries. Reference farms are selected by Syngenta and recommended to use Syngenta products and to follow optimized protocols. Benchmark farms are randomly selected by a third-party research agency and represent typical grower practice for each cluster. Aggregated and anonymized data generated on the farms in the network is publicly available on our website as open data to enable others to use it, for example, in their own research.

**Farm network**

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of reference farms</td>
<td>1,659</td>
<td>1,443</td>
<td>1,459</td>
</tr>
<tr>
<td>No. of benchmark farms</td>
<td>1,928</td>
<td>2,316</td>
<td>2,630</td>
</tr>
</tbody>
</table>

Reference farms continue to outperform

Crop yields, input use and GHG emissions depend on environmental and market conditions and vary widely from country to country and year to year. However, with six years of data now available, we are in a position to report robust positive trends.

We achieved significant improvements against our 2014 baseline when it came to GHG emission efficiency (36.7 percent), nutrient efficiency (46.8 percent) and pesticide field application efficiency (33.4 percent). Although we recorded an 18.8 percent improvement in land productivity, this was 1.2 percentage point short of our ambitious 20 percent target by 2020.

**Land productivity increase**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land productivity increase (%)</td>
<td>20.0</td>
<td>18.8</td>
<td>13.0</td>
<td>10.9</td>
</tr>
</tbody>
</table>

1. On reference farms compared to baseline 2014

Reference farms continued to outperform the benchmark farms for GHG emission and nutrient efficiencies over the six-year monitoring period. Land productivity on reference farms was better than the average 12.4 percent increase on benchmark farms.

Overall, the improvements we saw on reference farms were a strong validation of our sustained and continuing efforts to improve crop efficiency. The use of modern crop protection and seeds technologies has had the biggest impact on increasing productivity. This has been particularly noticeable among corn growers across the globe and tomato growers in South America and Europe.

Measuring sustainability

Sustainability increasingly matters to consumers, so food processors and retailers are looking for ways to track their footprint and be transparent about it. For more than five years, Rita Herford, a wheat farmer in Michigan, US, has participated in the Great Lakes Origin Project with Kellogg’s, Syngenta and a milling company. She tracks the inputs on her farm using Syngenta’s farm management software Land.db and shares the data with Kellogg’s. The data enables Rita to apply inputs very specifically, which improves her resource efficiency. Kellogg’s, in turn, uses the data to inform its customers – retailers – of the sustainability of its products such as the carbon footprint.
Today, over 50 percent of farmland is affected by soil degradation. Our response involves actively working with farmers to promote conservation agriculture. As a core element in climate-smart farming, it helps sequester carbon in soil, prevent land degradation, improve food security, reinforce farm and community resilience, enhance soil health and fertility, and deliver better crops to the value chain.

As well as working with farmers, we are also raising awareness of soil conservation among value chain partners, academics, government institutions and others. For example, Syngenta has been the private-sector partner of the UN Convention to Combat Desertification (UNCCD) for six years, alongside the World Business Council for Sustainable Development (WBCSD).

In 2019, we co-sponsored the WBCSD Business Day on Soil, Land and Agriculture at the UNCCD COP 14 in India. This event brought together business representatives and key stakeholders with a collective interest in combating land degradation worldwide. The day’s main outcome was the UNCCD Delhi Declaration from Business on focusing perspectives, commitments and policy priorities towards achieving this shared goal.

### Benefiting more farmland

Under our Good Growth Plan, we report on the hectares of land positively impacted by sustainable soil management using practices such as conservation tillage, crop rotation and permanent ground cover.

Since 2014, we have implemented 261 projects in 44 countries and have benefited a total of 14.1 million hectares of farmland – surpassing the overall 2020 target of improving the fertility of 10 million hectares of farmland on the brink of degradation. In 2019, our projects benefited 3.3 million hectares of farmland.

<table>
<thead>
<tr>
<th>Year</th>
<th>Hectares of benefited farmland (m)</th>
</tr>
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<tbody>
<tr>
<td>2020</td>
<td>10.0</td>
</tr>
<tr>
<td>2019</td>
<td>3.3</td>
</tr>
<tr>
<td>2018</td>
<td>10.8</td>
</tr>
<tr>
<td>2017</td>
<td>7.5</td>
</tr>
</tbody>
</table>

1 Cumulative since baseline 2014

Demand for digital solutions is growing strongly worldwide. For the third consecutive year, the SmartBio initiative in sugarcane in Brazil was our largest project in the country. Benefitting 1.9 million hectares, it exemplifies how the combination of digital agriculture and integrated pest management is helping growers. SmartBio is a third-party platform developed in partnership with Syngenta that allows sugarcane mill companies to map areas susceptible to different stress factors and select the best crop management mix for each of them.

We also continue to develop sustainable soil and digital solutions across Asia, EAME and North America. In China, we have seen a positive trend in the last two years, thanks to projects such as soil health training in Dingxi and straw incorporation in Qihe.

Soil health is crucial to the longevity of any farm – something that Péter Szabadka pays close attention to on his family farm in Hungary. Péter has been using our CONTIVO® solution since 2015, helping improve the vitality of his soil and prevent it washing away in heavy rain. Now an advocate of conservation agriculture, he has been investing in new machinery for cover cropping on his farm – further protecting the soil – as well as sharing these experiences with other farmers. As a sign of healthier soil, Péter is finding more and more earthworms in soil samples across his farm.
Help biodiversity flourish

UN Sustainable Development Goals
2, 15, 17

Making Bornholm a haven for pollinators

The Danish island of Bornholm is in full bloom. Beginning in 2018, Syngenta, volunteer farmers, and local partner organizations, have been planting flower strips around the island’s farms and fields through the Bornholm Blomstrer (“to bloom”) project – part of our Operation Pollinator™. Now in its second year, we have planted 8 hectares of flowers to provide habitat and resources for a variety of insect and animal species. Participating farms are now seeing more abundant resident wild bee and honey bee populations inside the flower strips than in their unmanaged ditch and fallow spaces.

The sustainability of agriculture relies on biodiversity — for plant breeding, pollination and food diversity. We are promoting and enabling action to increase and connect habitats that support healthy and diverse wildlife populations.

A key strategy involves managing less-productive farmland alongside fields and waterways to provide corridors connecting wildlife habitats. These multi-functional field margins support sustainable intensification on more productive land and help reintroducing local species while providing buffers for soil and water. Other examples of biodiversity enhancement practices include restoration and maintenance of managed forests and agro-forestry.

Exceeding our biodiversity targets

Since 2014, we have implemented 366 projects in 41 countries and benefited a total of 8.2 million hectares of farmland, exceeding our overall 2020 target of 5 million. In 2019, our projects benefited 1.8 million hectares of farmland – more than double last year’s contribution. This increase was primarily driven by improvements made through the Syngenta Sustainable Solutions program in North America.

<table>
<thead>
<tr>
<th>Hectares of benefited farmland</th>
<th>8.2m</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>5.0</td>
</tr>
<tr>
<td>2019</td>
<td>1.8</td>
</tr>
<tr>
<td>2018</td>
<td>6.4</td>
</tr>
<tr>
<td>2017</td>
<td>5.6</td>
</tr>
</tbody>
</table>

1 Cumulative since baseline 2014

EAME and China have also seen increases. In EAME, multi-functional field margins – including riparian forests – are now the most frequently adopted biodiversity measures in our portfolio. In China, the increase was driven mainly by the expansion of our Operation Pollinator™ and Hives on Farm projects.

The biodiversity projects we invest in worldwide continue to benefit farmers and their wider communities. For farmers, the positives include better soil nutrient cycling, crop pollination, pest control and water quality regulation. Social gains include enhanced genetic diversity, carbon sequestration and flood attenuation.

UN Sustainable Development Goals
2, 15, 17
Empower smallholders

UN Sustainable Development Goals
1, 2, 17

Smallholders produce more than 80 percent of the food consumed in much of the developing world. Their crop productivity lags well behind that of larger producers, so closing the gap significantly improves food security and reduces poverty.

Over half of our sales are made in growing economies where smallholder farmers predominate. Our contact with these customers is generally indirect: they buy through local distributors and retailers.

We work with partners to provide smallholders with tools and training that make agriculture more productive, efficient and profitable. Training on new technology and farming practices helps smallholders improve their yield and access to market. Through our reach, we help restore and maintain vibrant rural communities and enable farmers to progress beyond subsistence agriculture.

Expanding our reach through sales and training

We report on the number of smallholder farmers we reached through sales as well as through training. In 2019, we reached a combined total of 26.5 million smallholders through both channels. This represents an increase of 36 percent on the previous year and exceeds our 2020 target of reaching 20 million smallholders.

Through sales, we reached 20.3 million, an increase of 52 percent on the year before. In China alone, we reached 13.9 million smallholders, 82 percent up on 2018, mainly due to increased sales of our seed treatment products MAXIM® and the new product MAXIM® Advance.

Through training activities, we reached 6.2 million smallholders in 2019. This represents 73 percent of the total 8.6 million people we trained globally in 2019 – which is reported under the “Help people stay safe” commitment. About 90 percent of the smallholders we trained are in Asia Pacific.

We also report on the average land productivity increase for smallholders. In 2019, the average increase in land productivity for smallholder reference farms compared to the 2014 baseline was 28.5 percent – almost three times better than the average increase for smallholder benchmark farms. However, we fell short of our ambitious target of 50 percent productivity increase on smallholder farms by 2020.

We found this is because smallholder reference farmers that work with Syngenta for many years are already well advanced, with above-average baseline productivity. This is important since their farms also serve as demonstration farms for other farmers in their clusters.
Having an impact as a smallholder farmer

When Noah Naisali Kadima started farming, he knew little about it and sought advice and recommendations from various sources. Since becoming a reference farmer in Syngenta’s Good Growth Plan in 2015, he has seen growing success on his small farm outside Nairobi, Kenya. After receiving training on how to use crop protection products safely and more effectively, Noah managed to cut his costs significantly while still improving his yields and profits. Noah also encourages other growers in his community to apply good agricultural practices and trains them during demonstration days on his farm.

Noah Kadima grows onions, peppers and tomatoes in Kenya
Help people stay safe

We are committed to helping improve occupational safety and health in agriculture. Ensuring that our products are used correctly is integral to our business model – to protect not only the health and safety of farm workers and the public, but also the environment.

This is particularly important for smallholders, especially those in developing countries, where using crop protection efficiently, responsibly and safely has a big impact on rural welfare.

The benefit for customers comes both from using our products safely and using no more than is necessary, so that they minimize environmental impact and maximize their return on investment.

Expanding our safe-use training activities

We report on the number of people who may be exposed to crop protection products – such as farm workers, farm owners, smallholders, product distributors and employees – who attended safe-use training activities on the responsible handling and safe use of crop protection products.

In 2019, we trained 8.6 million people, bringing the cumulative total since 2014 to 42.4 million – exceeding our overall 2020 target of 20 million.

This year’s figure represents a slight increase compared to 2018, driven mainly by a significant increase in Asia Pacific that was offset by a slight decrease in Latin America.

<table>
<thead>
<tr>
<th>Year</th>
<th>People trained on safe use (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>20.0</td>
</tr>
<tr>
<td>2019</td>
<td>8.6</td>
</tr>
<tr>
<td>2018</td>
<td>33.8</td>
</tr>
<tr>
<td>2017</td>
<td>25.5</td>
</tr>
</tbody>
</table>

1 Cumulative since baseline 2014. Includes smallholders reached through training reported under “Empower smallholders”

Asia Pacific accounts for a large part of the people we train worldwide. In 2019, we implemented new partnerships with sugarcane, corn and cassava value chains in Thailand.

Latin America reported an overall decrease: although Brazil trained significantly more people, this increase was offset in Latin America North when we shifted to delivering training directly through Syngenta and less through partners.

Safe farming with drone technology

As application technology for crop protection products becomes more advanced, farmers need to stay on top of how to safely use these new systems. One of the latest developments is the use of drones to apply crop protection. Shi Lijie is a Syngenta Safe Use Training Ambassador and leader of the Agriculture Extension Service operating out of Daluitun town in the Liaoning province, China. She has helped us train farmers in the safe and effective use of pesticides since 2006. Now, Shi Lijie includes safe-use practices for drone application in her training sessions for local growers. In 2019, she has helped train more than 3,000 farmers through both online telecasts and face-to-face demonstrations.
Look after every worker

UN Sustainable Development Goals 2, 8, 17

We are committed to ensuring fair labor conditions across our supply chain, and we recognize our responsibility to ensure our suppliers meet the highest ethical standards. We report on the coverage of fair labor and sustainability programs in our main direct procurement activities: seed, chemical and flowers supply chains.

In 2019, 99 percent of all our suppliers were covered by these programs. We recognize that we cannot achieve 100 percent coverage because of constant changes in our supply chains, but we continuously strive to include our entire supply chain.

<table>
<thead>
<tr>
<th>Suppliers included in sustainability and fair labor programs¹ (%)</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.0%</td>
<td>100.0</td>
<td>99.0</td>
<td>96.8</td>
<td>86.0</td>
</tr>
</tbody>
</table>

1. The seed supply chain represents about 98% of the suppliers targeted by our sustainability and fair labor programs.

Ensuring fair labor on seed supply farms

Comprising some 42,000 farms, our seed supply chain accounts for about 98 percent of the suppliers targeted by our fair labor and sustainability programs.

The areas we report on include the percentage of Syngenta seed producing countries and seed supply farms included in the Syngenta Fair Labor Program.

Since 2004, we have worked with the Fair Labor Association (FLA) to develop and roll out our Fair Labor Program tailored specifically for this complex supply chain. The program assesses labor practices on farms including: health and safety; child labor; awareness of workers’ rights; wages and benefits; working hours; harassment and abuse; and discrimination.

In 2019, our program covered 99.3 percent of all our seed supply farms (2018: 99.2 percent). This represents 29 out of our current 33 seed-producing countries. We still need to implement our Fair Labor Program on 303 farms in the four remaining countries.

The Fair Labor Association accredited our Syngenta Fair Labor Program in India in 2015. We were the first agricultural company to earn this status, which confirms that a company’s systems and procedures have been shown to successfully uphold fair labor standards throughout its supply chain.

Also at this time, recognizing that minimum wage issues affect entire communities of Indian farmworkers, the FLA and Syngenta sought to raise awareness among peer companies and began a collective effort to address minimum wages. Together with the FLA, we convened a multi-stakeholder consultation in Hyderabad which, though it did not lead to consensus among the companies, helped Syngenta to develop a six-step action plan to address wage issues and begin pilots in two regions and crops. The results of the pilots are encouraging, and the FLA has published an independent report complete with key learnings on their website at www.fairlabor.org.

We continue to implement our global program in line with FLA requirements and are working to obtain FLA accreditation on a country-by-country basis.

**Assessing and improving sustainability performance of our chemical supply chain**

We engage with our chemical suppliers to assess and drive improvements in their health, safety, environmental and social standards through our Supplier Sustainability Program.

This comprises on-site audits by our own auditors, and audits or assessments conducted through the chemical industry’s Together for Sustainability (TfS) initiative. This program assesses suppliers’ performance against our standards, identifying potential gaps and supporting suppliers to make the required improvements.

In 2019, 94 percent of our chemical suppliers were included in our Supplier Sustainability Program. Coverage remained stable during the year due to natural fluctuations of the supplier base. For instance, we have added new supplier sites in China after the relocation of manufacturing sites as a result of production suspensions in certain provinces; and in LATAM following the reprioritization of our supplier base. There were also some suppliers that we will no longer audit as they are phased out.

The percentage of formulation, fill and pack tollers in the program decreased slightly to 83 percent (2018: 86 percent), while the percentage of packaging manufacturers increased to 63 percent (2018: 50 percent).

As well as auditing and assessing performance, our experts support our suppliers to identify and make the right improvements. We also run safety and environmental training programs to help address gaps in areas from risk assessment to emergency management.

Through the TfS initiative, we work collectively with other chemical companies to drive improvements in the sustainability of our supply chains. Our membership enables us to access supplier data from audits and assessments covering all areas of sustainability.

**Flowers: meeting growing demand for Fairtrade products**

Reporting areas here include the percentage of Syngenta and third-party commercial flower farms that hold a valid GlobalG.A.P certificate. In 2019, 98 percent of all farms held this certification (2018: 96 percent). The decrease was due to an increase in the overall number of commercial flowers farms that are now in the process of completing certification.

This year, our Kenya Pollen farm achieved Fairtrade accreditation – our second under this scheme after our Kenya Cuttings farm was accredited in June 2018. We sought accreditation in response to growing demand in the value chain for Fairtrade products.
New opportunities for rural women in Argentina

After an audit by the Fair Labor Association (FLA), one of the potential areas for improvement we identified in our seed supply chain in Argentina was the employment of more women. We held pilots in 2018, adapting our recruitment to attract more women applicants for roles as field workers and supervisors, and were met with keen interest. In 2019, we expanded this campaign to another seed multiplication site. These developments build on the success of our Argentine seed supply chain, which has consistently maintained excellent levels of compliance with the FLA Code of Conduct.
The Syngenta Foundation for Sustainable Agriculture (SFSA) concentrates on three thematic areas: Access to Seeds, Risk Management and Agriservices. We support these workstreams with partnerships in Research and Development (R&D) and on Policy. Focusing on a dozen countries in Africa and Asia, we collaborate with a wide range of organizations from the public, private and non-profit sectors.

Smallholders’ yields are typically far lower than they could be. Improving this situation requires both the development of better crop varieties and other innovations, and their widespread use in the field. In 2019, we made significant progress with corn, tef and cassava.

Accelarating smallholders’ ability to benefit from technology does not involve free hand-outs. In agriculture, properly functioning markets are the only way to ensure sustainable improvements.

Simon Winter
Director, Syngenta Foundation

Raising staple crop yields in developing countries

One important aim for crop breeders is to develop varieties that cope well with weather extremes. Climate change and increasing weather volatility make this task more crucial than ever. Modern drought-tolerant crop varieties help farmers achieve good yields even in dry years.

However, they are often out of the financial reach of smallholders. Our partnership on AAA Maize aims to solve this problem. It brings us together with Syngenta and the international R&D organization CIMMYT.

Together, they developed drought-tolerant corn that has been available to Indian smallholders through local seed suppliers since 2017. Several such companies began producing and selling AAA Maize in 2019, greatly increasing its availability. The corn enables farmers in drought-prone areas to maintain good yields despite low rainfall.

“Importantly, accelerating smallholders’ ability to benefit from such technology does not involve free hand-outs”, comments SFSA Director Simon Winter. “In agriculture, properly functioning markets are the only way to ensure sustainable improvements.”

Tef, the national cereal of Ethiopia, is an orphan crop. Unlike corn, it has received very little attention from the international scientific community. As a result, productivity of this vital food for the Horn of Africa lags far behind that of many other cereals.
Healthier soil brings numerous benefits

Good-quality seeds play a central role in sustainable agriculture. Increasing smallholders’ harvests and profits, however, also requires progress in other areas.

In late 2018, SFSA extended its activities into the area of soil health, initially in Kenya. Here we are collaborating with The Nature Conservancy (TNC) in a densely populated region near Nairobi.

"An important goal is to help smallholders combine rainwater storage for irrigation with appropriate agronomic advice so they can earn money with off-season vegetable-growing", explains George Osure, our Regional Director for East Africa. "The work here also reduces erosion, which benefits yields and water quality."

The initiative further includes improvements in soil testing, plant nutrition and Integrated Pest Management. We are now investigating additional soil health work in China, as part of the global Syngenta partnership with TNC.

Local entrepreneurs and international digital tools

Over recent years, SFSA has also pioneered innovations in Risk Management and Agriservices. The latter include the establishment of Agri-Entrepreneurs (AE’s) in India.

Our program enables young rural people to build up a business, each serving about 200 local farmers. The number of AE’s rose rapidly in 2019, to about 3,000. The program is now set for much larger expansion through the joint creation with Tata Trusts of the Agri-Entrepreneur Growth Foundation.

We are also promoting the role of AE’s in specific forms of technology transfer. Over the last 18 months, the entrepreneurs have helped several agricultural breakthroughs from abroad to reach much larger numbers of Indian farmers than was typical in the past.

"We look for possibilities in countries with highly innovative agriculture", explains Baskar Reddy, our Country Director for India. "One major area for improvement in Indian farming is water-use efficiency, and there are numerous other examples. We are delighted to improve our growers’ access to the best technological solutions."

SFSA is also investigating digital options for facilitating technology transfer. Using the Swiss digital platform Global Agri-Technology Evaluation (G.A.T.E.) makes it much easier to test, validate and market agri-tech innovations. Smallholders can therefore access the innovations faster, thus improving their productivity and income, and reducing their risks.

G.A.T.E. also improves data quality, reporting, feedback and project management, and keeps partners in touch throughout the process. A technology library connects ideas and partners with local needs and agencies.

“We are already in discussion with a number of potential users”, says SFSA project lead Andrea Balmer. “The platform is available to anybody exploring agri-tech ideas. By solving many of the current bottlenecks in technology transfer and adoption, G.A.T.E. will help smallholders to access the technologies they need and deserve.”

Our partnership with researchers in Ethiopia and Switzerland has led to the development of new tef varieties. The first of these began to reach significant numbers of Ethiopian farmers in 2019, while further varieties received registration from the authorities. We are now working to accelerate the adoption of improved tef across the country.

Cassava is a key staple in several African countries. The usual planting material is bulky, however, and vulnerable to disease and pests. Lack of a formal market deters local companies from supplying smallholders with better material.

We are partnering with researchers in Uganda and Brazil to tackle this challenge. In 2019, our MandiPlus initiative proved the benefits of planting much shorter pieces of cassava than in conventional practice, and of protecting them against soil-borne pests and diseases.

The new technology’s good performance has also attracted interest from other countries, notably Thailand. SFSA is now focusing on turning the concept into an attractive commercial proposition for local companies and their smallholder customers. The MandiPlus initiative is supported by the Bill & Melinda Gates Foundation.

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syngenta foundation for sustainable agriculture

→ A Swiss non-profit, founded in 1981
→ More than 200 employees in 10 countries, initiatives in 15
→ Partners with dozens of organizations around the world
→ 2019 Syngenta funding $17 million

Additional information online at www.syngentafoundation.org
In 2019, we completed a major piece of work that will have a significant long-term impact on how we operate as we prepare to make a step-change in agricultural sustainability. We undertook a comprehensive assessment of our environmental footprint. This equipped us to establish a baseline upon which we have now set hard targets to reduce the carbon, water and waste intensity of our operations.

Since most of our operational impacts come from our supply chain, achieving our sustainability targets will mean working hand-in-hand with our suppliers to achieve the targets we have set for ourselves. After all: we can only be truly sustainable if our suppliers are as well.

Our people remain the source of our competitive advantage, and their attitudes and actions are fundamental to achieving our targets. Engaging and developing our people while fostering an empowering working culture that inspires them to make the best of their talents remains a top priority. With the safety and wellbeing of all our stakeholders in mind, we remain fully committed to achieving our Goal Zero vision of zero harm to people and zero safety incidents.

We continuously strive to maintain the highest levels of ethical behavior and compliance, and apply equally rigorous standards to how we manage our relationships with the communities in which we work. By fostering a culture of doing the right thing, we aim to manage risk and earn recognition as a trustworthy and collaborative partner at every level – from suppliers and customers to NGOs, policymakers and society at large.

To us, doing the right thing also means playing our part in achieving the UN Sustainable Development Goals (SDGs). In each area of our operations, we look at how we can best support the SDGs as part of our contribution to leaving a better planet for future generations.
People

Building a more diverse and inclusive workforce – more agile and customer centric

Total staff numbers increased slightly to 28,265 in 2019. The attrition rate, representing only voluntary leavers, increased to 6.4 percent compared to 5.8 percent in the previous year. During 2019, we insourced recruitment to strengthen our capability to attract and retain talent.

We are committed to increasing diversity in our workforce and made great strides towards delivering our five-year diversity and inclusion (D&I) strategy.

Our most recent Pulse employee survey in 2018 told us that our female employees, who constitute about 30 percent of the workforce, have lower levels of engagement than men.

In 2019, we took steps to address this issue by, among other measures, celebrating International Women’s Day on March 8 and dedicating the whole month to highlighting the role of women in the workplace and in society.

In addition to gender diversity, we focused on other key D&I themes: flexible working arrangements, LGBTI, mental health and disabilities. We celebrated Pride month and announced our commitment to the UN LGBTI Standards of Conduct for Business. With our mental health campaign, we started the conversation about mental health in the workplace – raising awareness of individuals’ experiences and signposting employees and line managers to further avenues of support available through our employee assistance program.

We also became the first agriculture company to join the Valuable 500 – the world’s leading companies who are putting disability front and center of corporate agendas.

Underpinning our work, in 2019, half of our most senior leaders participated in D&I training to understand the impact of unconscious bias and tactics to eliminate it.

A core theme of our 2019 Global Leadership Conference was customer centricity, and it became a focus of our cultural shift.

Our approach to addressing some of our more pressing business issues has also evolved, utilizing agile capabilities and leveraging sprints. This approach has benefited many projects throughout the year, starting with pilots in marketing, APAC, and our Brazil commercial and supply chains.

Engaging, developing and recognizing our people

Our focus on leadership and talent development activities intensified and so did our investment in this area. In 2019, we invested $6.9 million in developing leaders and talent, up 6 percent on the previous year. By extending our talent development program portfolio, we increased the number of people participating in leadership trainings and accelerated the development of emerging leaders.

We continue to build employee engagement, and during 2019 made new channels available to reduce the need to travel and continue to foster collaboration. Our new myVideos platform enables employees across the globe to create and share their own video content, direct from their mobile devices.

We also made significant progress in addressing the top two issues highlighted in our Pulse surveys – IT and performance management. We have invested in IT and, for example, introduced IT Walk-In Centers in key sites, provided easier and more secure ways to access our network through single sign-on, and increased our internet bandwidth in many places.

Relating to performance management, this year, we invited employees from across Syngenta to help us reshape our performance management process by crowdsourcing ideas. After employees voted on a short list of proposals, we introduced a few changes in 2019, and a team is now exploring new solutions for 2020.

The private sector has a crucial role to play in respecting and supporting the human rights of LGBTI people. The support of Syngenta sends a powerful signal to the farming and agricultural innovation sectors and beyond.

Fabrice Houdart
Co-author of the UN LGBTI Standards of Conduct for Business

The UN Sustainable Development Goal 8

Our people’s development is a priority; they are our competitive strength. We continue to build a diverse and inclusive culture, where people feel they can be the best version of themselves.
We continue to foster a culture of ongoing dialogue between employees and line managers. Pause2Talk was introduced last year to encourage every employee to discuss their contribution, engagement and growth with their manager.

A recent survey of our employees confirmed that more than two thirds of them are benefiting from such conversations.

Val-You, our peer-to-peer recognition program, allows employees to thank colleagues at any level across the organization. Since its launch in 2017, colleagues have used Val-You to make almost 80,000 awards recognizing 67 percent of our workforce. Award nominations are aligned with our company values and “Determined execution” remains the most recognized core value.

For the tenth year running, our employment policies and performance earned us external recognition in Science magazine’s annual Top 20 Employers Survey. In 2019, our ranking as one of the world’s leading biotech employers improved from 14th to 10th, and we are the only agricultural company on the list.

Keeping our people safe

We continuously aim to maintain the highest standards of health and safety in line with our Goal Zero vision of zero harm to people and zero safety incidents. In 2019, our illness and injury rate remained low at 0.34 recordable incidents per 200,000 hours (2018: 0.32). The overall number of motor vehicle incidents per million kilometers remained stable at 1.6 (2018: 1.6). Across all regions, 145 of our production and research and development sites reported a year without a single recordable incident. This was 19 more than the total of incident-free sites in 2018.

<table>
<thead>
<tr>
<th>Year</th>
<th>Recordable illness and injury rate (IIR) per 200,000 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>0.34</td>
</tr>
<tr>
<td>2018</td>
<td>0.32</td>
</tr>
<tr>
<td>2017</td>
<td>0.37</td>
</tr>
</tbody>
</table>

1 According to US OSHA definition for injuries and illness

Sadly, there were three fatalities in 2019. One involved a fatal allergic reaction due to multiple bee stings in Ethiopia. The other two involved motorbike accidents in India.

Driving remains our principal employee risk category. We continue to raise awareness around this and other safety issues in regular safety and ethics shares in team meetings and townhalls. In addition, we held a global Safety Pause in 2019 that focused specifically on safe driving. At regional level, Brazil and Argentina introduced a Driver Safety Behavior Policy that recognizes individuals for their safe driving performance while applying a warning and disciplinary mechanism for at-risk behaviors.

As well as influencing people’s behavior and improving their driving skills through training, we are also using advanced technology and improved vehicle design to reduce driving risks. In Thailand, for example, we installed a state-of-the-art telematics system in employee vehicles that helped to reduce overall driver risk levels by 40 percent in its first month. In North America, we are combining standard safety features – such as reverse sensing systems and blind spot information systems – with advanced in-vehicle ergonomics.

In 2019, we completed rolling out the HSE Management System launched in 2018 across all Syngenta sites. The system aims to improve health, safety and environmental (HSE) performance by further empowering and equipping leaders to take ownership of HSE in their areas of responsibility.

While HSE is led by leaders, it is delivered by all Syngenta employees, every day. To ensure they fully understand their individual HSE responsibilities and accountabilities, we updated our HSE Policy and Standards eLearning. In 2019, 96 percent of employees completed this refresher training.

Turning data into knowledge

Dr. Laura Potter is our Global Head of Analytics and Data Science, leading a team of mathematicians, geneticists and genomics. Her team analyzes environmental and biological data to help breeders make better decisions throughout the seed research and development process. Using algorithms, they recommend plant genetics that are better suited to varied grower needs, as well as identifying where to conduct field trials to best match real growing conditions. Laura and her team are now working to develop the analytical models that will design the plant genetics of the future, serving the needs of tomorrow’s growers.
Sustainable operations

UN Sustainable Development Goals
3, 6, 8, 12, 13, 17

We have a vital part to play in making agriculture more sustainable. Accordingly, we strive to use resources more efficiently in our operations while reducing potential environmental impacts. We recognize that improving our environmental performance and sustainability delivers far-reaching benefits across the organization. These include greater operational efficiency, lower costs, better risk management, safer and healthier working conditions, a responsible and trusted partner in the communities we operate, and enhanced employee engagement.

Operating sustainably requires working together

In 2019, we concluded a major piece of work aimed at assessing and measuring our environmental footprint. This involved analyzing data collected in 2016 to give us a baseline upon which we have now set targets. This analysis also provided a detailed understanding of the environmental impact of our own operations and those of our supply chain.

Most of our environmental impact comes from our suppliers. For example, our supply chain accounts for about 90 percent of our carbon footprint, approximately 95 percent of our water usage and up to 80 percent of our waste. Clearly, managing our environmental performance means working closely with our suppliers to help them manage their impacts.

Hard targets for our operations

In 2019, we committed to reducing the carbon intensity of our entire operations by at least 50 percent by 2030 to support the ambitious goals of the Paris Agreement on climate change. This commitment aligns with our Accelerating Innovation commitment to invest $2 billion in innovations that help farmers prepare for and tackle the increasing threats posed by climate change.

We also committed to a 20 percent reduction in water intensity and waste intensity; and carrying out biodiversity and soil conservation practices to the highest standards across our seeds supply chain. We aim to achieve these targets by 2030.

In addition, we affirmed our commitment to ensuring fair labor conditions, including health and safety standards, throughout our seeds and crop protection supply chain networks.

Leadership from the agribusiness sector is vital in the fight against climate change, and by setting these targets, Syngenta is putting themselves on a pathway to future-proof growth.

Cynthia Cummis
Director of Private Sector Climate Mitigation
World Resources Institute

All sustainable operations performance indicators reported are for our own operations only.
To achieve our 2030 carbon intensity reduction target, we will focus on improving the efficiency of our manufacturing processes, design and implement site-based energy-saving programs, increase the share of renewable sources of energy, and partner with our crop protection and seeds suppliers to reduce their carbon footprint. In addition, we will further optimize our business travel and our logistics network.

CO₂e emissions intensity
g/$ sales

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120</td>
<td>117</td>
<td>120</td>
</tr>
</tbody>
</table>

In 2019, intensity-based and absolute CO₂e emissions from our operations – often referred to as Scope 1 and Scope 2 emissions – both increased by 3 percent, mainly due to increased emissions from our own operations and from purchased energy.

The increase in emissions from own operations was mainly due to an increase of GHG process emissions from our site in Huddersfield, UK, and an isolated leak in one of our production units in Green Bayou Bioscience, US.

The increase in emissions from purchased energy was mainly due to increased activity at our Swiss sites purchasing steam and the implementation of a new methodology to calculate the greenhouse gases generated by electricity consumption. This methodology uses more accurate market-based emission factors, where available.

In 2019, we carried out several projects looking into energy consumption. These projects involved key sites for active ingredient manufacturing, formulation, fill and pack processing, and seeds research and development. Through these projects, we established detailed, real time measurement and analytical data and we are using this analysis to initiate improvement projects. We plan to carry out such projects on more sites in 2020.

A good example of what can be achieved is our site at Paulínia, Brazil, which is upgrading its existing system of lighting to LEDs and solar LEDs. This will save 394 MWh of electricity per year and avoided the emission of 25.2 tonnes of CO₂e per year – the equivalent of the annual electricity consumption of 213 Brazilian families.

In 2019, we extended our long-term collaboration with Maersk, a fourth-party logistics (4PL) provider. An important focus of the partnership is on sustainable logistics, eliminating fossil fuels in container shipping and supply chains to reduce CO₂ emissions.

Preserving water

We are targeting a 20 percent reduction in water intensity by 2030. We will focus on water use and water stress – especially for irrigation – and will form partnerships to develop more effective processes or redesign our supply chain.

Water usage intensity
liters/$ sales

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.3</td>
<td>2.3</td>
<td>2.5</td>
</tr>
</tbody>
</table>

In 2019, our intensity-based and absolute water usage both decreased by 2 percent. The increase in cooling water driven by increased production was more than offset by decreases in water used for irrigation and for processing and washing. Cooling water represents 59 percent of our total water usage, excluding the supply chain, and is mainly used at our active ingredient site in Monthey, Switzerland. Irrigation, which is mainly from underground sources, is impacted by weather – hence fluctuations from year to year are normal.

During 2019, we focused on initiating and driving water resources assessments and improvement plans at our key sites. We also conducted an environmental impact assessment of our seeds supply chain. We are now working on developing improvement plans to address those areas of our supply chain where we can make further progress.

An example of improving water use comes from our site in Omaha, US. They identified that cleaning machinery at changeovers between formulations used a significant proportion of the site’s water. Through analysis of how much water was being used – and is actually necessary – at critical washing stages to achieve the required cleanout level, the site was able to pinpoint where they could reduce their water use. This allowed them to reduce the volumes of water used for cleaning by over 50 percent.

Avoiding waste

We are targeting a 20 percent reduction in waste intensity by 2030. To reduce our waste footprint, we will focus our efforts on improving process efficiency. This is particularly important when introducing new products and designing the manufacturing processes at the product development stage, before large-scale production starts. And we will significantly reduce the volume of waste packaging, improve the overall environmental footprint of our packing, and aim to use recyclable packaging, with the focus on reducing plastics.

In 2019, intensity-based and absolute hazardous waste both increased by 6 percent, mainly due to contaminated construction waste generated in an expansion project at our site in Monthey, Switzerland, and disposal of obsolete equipment and stored waste in Huddersfield, UK, as well as increased production activities compared to 2018.

Intensity-based and absolute non-hazardous waste both decreased by 11 percent. The decrease was mainly due to a return to normal values after one-off events in 2018, which included disposal of remaining seeds inventory and generation of inert waste due to construction work.

In 2019, we focused our efforts on understanding the waste footprint of some of our key products. This analysis included a full lifecycle assessment across our own operations and our supply chain. We also continued to address waste generation at a site-specific level and through improved inventory management.

For example, in Monthey, Switzerland, our active ingredient manufacturing site completed the installation of a new bromine recovery and recycling system in 2019 that saved approximately 3,500 tonnes of bromine waste per year.
Biodiversity and soil health

We strive to minimize soil erosion and enhance biodiversity at the farms in our seeds supply chain. So we have set ourselves a target to ensure that 100 percent of our seeds supply chain is carrying out biodiversity and soil conservation practices by 2030. To help achieve this target, we will deploy measures such as field margins, forests and beehives to enhance biodiversity, while addressing soil erosion by, for example, promoting farming practices that minimize soil disturbance and provide continuous soil coverage.

To date, we have focused on achieving biodiversity and soil health improvements through our Good Growth Plan. In 2019, we completed an assessment of our seeds supply farms to identify opportunities for introducing best practices in soil conservation and biodiversity enhancement. In addition, we introduced biodiversity measures at several of our facilities, such as Uberlandia in Brazil and Research Triangle Park in the US.

People: health and safety, and human rights

We strive for fair labor and safe working conditions throughout our own operations and our supply chain network. We aim to have all our suppliers included in our sustainability and fair labor programs.

To help achieve this target, we will continue to enhance our assurance programs and partner with our Crop Protection and Seeds suppliers. We will also focus on human rights and adapt our assurance procedures to ensure suppliers adopt our standards.

In 2019, we updated our Seeds supplier Code of Conduct to better address our standards on issues including child labor, working hours and forced labor. In India, we are collaborating with other Seeds companies to develop a roadmap towards progressing wages in the seeds supply chain. This collaboration is based on the understanding that long-term solutions in this area require collective action from stakeholders such as industry partners, farmers and governments.

Through Together for Sustainability audits and assessments, we assess the health, safety, labor, human rights, environmental and ethical performance of our chemical and packaging supplier base. For suppliers with significant safety or environmental risks, we conduct our own in-depth audits using our own auditors. Where gaps are identified during these assessments and audits, we follow up and support our suppliers to make improvements. In 2019, we updated our audit to strengthen the focus on process safety management, one of the critical risk areas for chemical manufacturers.

In addition to our audit programs, we have started broadening our engagement with chemical suppliers to measure and improve their carbon, water and waste impacts. We also further developed and formalized our sustainable sourcing process in 2019, giving training to all our procurement teams who work with chemical and packaging suppliers. The training provides them with an understanding of our corporate objectives, the risks associated with purchasing in those categories and the requirements for conducting due diligence and driving improvement.

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From day to night, temperatures at our flower-cuttings farm in Koka, Ethiopia, drop so significantly that it is necessary to keep our greenhouses heated against the low temperatures. Historically, we used kerosene, derived from non-renewable fossil fuels; however, in 2005: we switched to geothermal energy – utilizing the site’s unique situation in a volcanically active region. Using renewable geothermal energy reduces the site’s footprint significantly, saving up to 32 tonnes of carbon dioxide each month compared to historical rates. Likewise, with its remaining electrical demand being met through hydroelectric sources, the site has managed to become largely carbon-neutral.
Business integrity

Integrity is crucial to growing a sustainably successful business. By fostering a culture of doing the right thing, we aim to earn recognition as a trustworthy and collaborative partner at every level in the business chain. We strive to preserve the security and integrity of our organization, operations and products, and to engage actively with the communities in which we operate, building mutual understanding and benefit.

Embedding a culture of doing the right thing

All our stakeholders – from farmers, governments and research bodies to our partners, suppliers and broader society – expect our leaders and employees to act ethically. Earning their trust by doing the right thing is fundamental to achieving our goals.

The importance we attach to ethical business practices is reflected in the prominence we give to ethical compliance. Our Ethics Board, formed in 2018, oversees policies and standards and the implementation of our compliance framework, decides on material non-compliance cases and monitors stubborn or systemic compliance risk areas. The compliance dashboard, issued half-yearly, gives all leaders a transparent overview of the state of compliance throughout the organization.

Our line managers play an instrumental role in fostering a culture where ethics and safety are highly and visibly valued. During 2019, we equipped our line managers with the tools and resources to help them fulfil their compliance responsibilities effectively.

Throughout the organization, line managers include frequent safety or ethics shares in team meetings or townhalls. The aim is to embed safety and ethics awareness into our working lives while encouraging people to speak up. Leaders also have regular in-depth discussion with their teams, about both a safety and an ethical compliance issue. Team members discuss actual events, consider their safety or ethical compliance implications, then determine the best approach to tackling similar dilemmas. In 2019, 3,113 leaders were engaged in compliance sessions (2018: 3,108).

Leaders engaged in leader-led compliance sessions

<table>
<thead>
<tr>
<th>Year</th>
<th>Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>3,113</td>
</tr>
<tr>
<td>2018</td>
<td>3,108</td>
</tr>
<tr>
<td>2017</td>
<td>2,263</td>
</tr>
</tbody>
</table>

We actively encourage our employees to raise their compliance concerns with their manager directly or by using our confidential compliance helpline. In 2019, the number of reported cases was 251 (2018: 299).

What we do is as important to us as the way we do it. “How matters” is one of our values – and it applies to everyone who works for Syngenta. In 2019, we asked employees to confirm their commitment to our Code of Conduct; 99 percent of employees in scope had signed the code. In addition, we also require our suppliers to sign up to our Code of Conduct and meet its standards – as well as relevant external regulations on issues such as health and safety, the environment, fair labor practices and animal welfare.

Protecting our people, products, and sites

Our security team works to protect our assets, products, and – above all – our people, especially in countries with high security risks.

We proactively provide all Syngenta employees traveling on business with up-to-date information on travel risks and ensure support if they are exposed to an unexpected security incident on their journey. During the year, the team contacted 176 travelers in relation to 28 separate incidents.

Counterfeit products can harm users, the public, and the environment – and also our reputation. In 2019, we intensified efforts to prevent illegal products ending up in regional markets, which resulted in the seizure of 1,782 tonnes (2018: 1,657 tonnes) and 1,817 tonnes (2018: 196 tonnes) of illicit crop protection and seed products respectively.
On the one hand, this increase reflects rising levels of organized criminal activity across our sector. On the other hand, it is also down to the strength of our local and global partnerships with law enforcement agencies such as the US Department of Justice, Interpol and Europol, and to a growing awareness amongst our sales force. This year, we particularly focused on engaging and training our Seeds sales teams.

The threat posed by illegal products is likely to grow as the volume offered for sale online proliferates. In response, we have developed our own machine learning tool that enables us to accurately detect illegal online offers in more than 30 countries, with more to follow in 2020. Cyber criminals are also launching fake Syngenta websites, apps and social media groups. In 2019, we took down 71 websites, 107 apps and 21 social media groups.

The threats we face are not only online. Our Security 360° program supports strategic site managers to evaluate and improve site security. With our increased focus on our Seeds sites, the program now covers 148 sites (2018: 131).

Building understanding and trust with our neighbors

We recognize that we have a part to play in community life. After all, our sites are an active member of their local communities. Engaging with them means we can contribute to local needs while also building mutual understanding and trust.

Syngenta expects every site manager to be visible, available and responsive to local concerns – whether these relate to the impact of our operations or to community needs that we can help address.

In 2019, we invested $24 million (2018: $24 million) in corporate community projects and through the Syngenta Foundation for Sustainable Agriculture. We engage with communities worldwide in many different ways. Common themes include contributing to livelihoods through employment and education, sharing our practical skills and expertise in improving farming practices, keeping communities and schools free from disease-spreading insects, and managing waste.

Recent examples include partially funding houses for farmers in Vietnam, helping housewives in a community in Indonesia to set up a community business and partnering with a youth development organization in Canada on an outreach program that teaches youngsters about the vital role pollinators play in creating a sustainable food supply.

We also support employees’ own humanitarian fundraising through matching programs and donations. In 2019, these focused on providing natural disaster relief in Africa and Asia.

<table>
<thead>
<tr>
<th>Corporate community investment $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2017</td>
</tr>
</tbody>
</table>

Children can grow their own produce at school.

Growing isn’t just for farmers. Following Argentina’s financial crisis in 2001, employees from Syngenta Argentina came together to form Cultivando Solidaridad (Growing Solidarity) to collect toys, clothing and food for children in struggling rural communities. Their efforts expanded in 2005, when they began restoring school facilities, providing learning materials and improving school vegetable gardens for children to take home their produce. The program supported 12 schools in 2019 – representing around 1,050 pupils in total – and has prompted higher school attendance and lower dropout rates, with a reward system for students registering fewer absences.
6 Our leadership

Board of Directors at December 31, 2019

Syngenta is led by a strong and experienced Board of Directors. The Board includes representatives with six nationalities, drawn from broad international business and scientific backgrounds. Its members bring diversity in expertise and perspective to the leadership of a complex, highly-regulated global business.

Frank Ning
Chairman of the Board
Non-executive Director
Born: 1958
Nationality: Chinese
Initial appointment: 2018

Professional background
Frank Ning was appointed as Chairman of China National Chemical Corporation Limited (ChemChina) in 2018. He has also served as Chairman of the Sinochem Group Co., Ltd. since 2015. Prior to that, Frank Ning was Chairman of COFCO Corporation (COFCO) from 2004 to 2015 and Vice Chairman and President of China Resources (Holdings) Co., Ltd. from 1998 to 2004. He also worked at China Resources in top management positions for 18 years. In addition to his functions in Syngenta, Frank Ning holds the following board memberships:

- Listed companies: Chairman of Far East Horizon Ltd., Chairman of China Jimmiao Holdings Group Ltd., Chairman of Sinochem Hong Kong (Group) Co., Ltd.
- Non-listed companies: Chairman of Sinochem Group Co., Ltd., Chairman of China National Chemical Corporation Ltd.

Frank Ning ranks among China’s most influential business leaders and is Co-chair of APEC Business Advisory Council (ABAC), Chairman of APEC China Business Council, and an Executive Director of the International Chamber of Commerce (ICC).

Frank Ning earned an MBA degree from the Business School of the University of Pittsburgh in the United States and a Bachelor’s Degree in Economics from Shandong University in China. He is a certified Senior International Business Engineer.

Jürg Witmer
Non-executive Director and Lead Independent Director
Chairperson of the Committee of Independent Directors and Member of the Compensation Committee
Born: 1948
Nationality: Swiss
Initial appointment: 2006

Professional background
Jürg Witmer joined Hoffmann-La Roche in Basel in 1978 and subsequently held a number of positions including Legal Counsel, Assistant to the CEO, General Manager and China Project Manager of Roche Far East based in Hong Kong, Head of Corporate Communications and Public Affairs at Roche headquarters in Basel, Switzerland, and General Manager of Roche Austria. From 1999 to 2005, he acted as Chief Executive Officer and from 2006 to 2017 as Chairman of the Givaudan Group in Vernier/Geneva. From 2008 to 2012, he was also Chairman of Clariant AG, Basel. Apart from his functions in Syngenta, Jürg Witmer currently holds the following board memberships:

- Non-listed companies: Non-executive Director of A. Menarini IFR, Florence, Italy; and Chairman of Montcaud Holding SA, Geneva, Switzerland.

He holds a Doctorate in Law from the University of Zurich, as well as a Degree in International Studies from the Graduate Institute of the University of Geneva.

Carl M. Casale
Non-executive Director and Independent Director
Chairperson of the Audit Committee and Member of the Committee of Independent Directors
Born: 1961
Nationality: American
Initial appointment: 2018

Professional background
Carl Casale spent 26 years working for Monsanto Company, starting as a sales representative in 1984 and after several sales, marketing, business development, and business leadership roles concluded his tenure as Chief Financial Officer. In 2011, he left Monsanto to become CEO of CHS, Inc. which is the largest farmer-owned cooperative in the United States and is a Fortune 100 Company.

Mr. Casale is a Senior Agricultural Partner at Ospraie Management, LLC, which is engaged in ag-tech venture capital and private equity investing. He is also a co-owner with his wife Kim of Casale AG, LLC, which is a commercial blueberry farming operation in Oregon, US.

He holds a Bachelor’s Degree in Agricultural Economics from Oregon State University and an Executive MBA from the Olin School of Business at Washington University in Saint Louis, Missouri, US.

Hongbo Chen
Non-executive Director
Born: 1973
Nationality: Chinese
Initial appointment: 2017

Professional background
Hongbo Chen is Executive Director of China National Agrochemical Company Limited (CNAC) since 2017.


He holds a Bachelor’s Degree in Fine Chemicals and Engineering Management from Tianjin University and an MBA from Tsinghua University in China.
Louise O. Fresco  
Non-executive Director and Independent Director  
Member of the Audit Committee and of the Committee of Independent Directors  
Born: 1952  
Nationality: Dutch  
Initial appointment: 2019  

Professional background  
Prof. Louise O. Fresco is currently the President of the Wageningen University & Research Executive Board. She combines a long academic career as a professor at both Wageningen and Amsterdam universities, with extensive involvement in policy and development in Africa, Asia and Latin America. Louise Fresco spent 10 years of her career as Assistant Director-General of Rabobank and Unilever.  

Dr. Sophie Kornowski  
Non-executive Director  
Member of the Compensation Committee and of the Committee of Independent Directors  
Born: 1963  
Nationality: French  
Initial appointment: 2018  

Professional background  
Dr. Sophie Kornowski is currently Senior Partner at Gunnet Point Capital, an investment fund based in Boston, Massachusetts, US, a wholly owned subsidiary of Waypoint Capital Group which is the investment fund associated with the Bertarelli family. In her role, she provides investment advisory services in the health-care and life-science sector.  

Pedro Pullen Parente  
Non-executive Director  
Member of the Audit Committee  
Born: 1953  
Nationality: Brazilian  
Initial appointment: 2019  

Professional background  
Pedro Parente is currently Chairman of BRF, a leading global food company. He is also Chairman of General Atlantic in Brazil, a global private equity company, and a partner in EB Capital, a Brazilian private equity company. He is a fellow of the George Washington University – the Center for Latin American Studies, in Washington DC.  

Paul Fribourg  
Non-executive Director  
Chairperson of the Compensation Committee  
Born: 1954  
Nationality: American  
Initial appointment: 2018  

Professional background  
Paul Fribourg is Chairman and Chief Executive Officer of Continental Grain Company. He has held his current role at Continental Grain since 1997. Prior to that, he held senior management, commercial and commodity trading roles with the company in the United States and Europe beginning in 1976. Apart from his function in Syngenta, Paul Fribourg currently holds the following board memberships:  
- Non-listed companies: Continental Grain Company, Wayne Farms LLC, Restaurant Technologies and Castleton Commodities International LLC.  

J. Erik Fyrwald  
Chief Executive Officer  
Chairman of the Syngenta Foundation for Sustainable Agriculture  
Born: 1959  
Nationality: American  
Initial appointment: 2018  

Professional background  
J. Erik Fyrwald was previously President and Chief Executive Officer of Univar, a leading distributor of chemistry and related services (2012–2016); President of Ecolab, a cleaning and sanitation, water treatment, and oil and gas products and services company (2006–2011). He was Group Vice President of the Agriculture and Nutrition Division of the DuPont Company (2003–2008). He currently serves on the Board of Directors for CropLife International and the Swiss-American Chamber of Commerce.  

Pedro Parente is currently Chairman of Syngenta, with extensive involvement in policy and development in Africa, Asia and Latin America. Louise Fresco spent 10 years of her career as Assistant Director-General of Rabobank and Unilever.  

Louise Fresco obtained her Doctoral Degree specializing in tropical agriculture. She has published both in academic journals and in the popular media, her book “Hamburgers in Paradise, the stories behind the food we eat” has been translated into three languages.
Executive Team

at December 31, 2019

Under the leadership of the Chief Executive Officer, the Executive Team is responsible for the active leadership and operational management of the Company, and defining and implementing business strategy.

J. Erik Fyrwald
Chief Executive Officer
Executive Director
Chairman of the Syngenta Foundation for Sustainable Agriculture

Born: 1959
Nationality: American
Initial appointment: 2016

Professional background
J. Erik Fyrwald was previously President and Chief Executive Officer of Univar, a leading distributor of chemistry and related services (2012–2016); President of Ecolab, a cleaning and sanitation, water treatment, and oil and gas products and services provider (2011–2012); and Chairman, President and Chief Executive Officer of Nalco, a water treatment and oil and gas products and services company (2008–2011). He was Group Vice President of the Agriculture and Nutrition Division of the DuPont Company (2003–2008). He currently serves on the Board of Directors for CropLife International and the Swiss-American Chamber of Commerce. Apart from his functions in Syngenta, J. Erik Fyrwald currently holds the following board memberships:

- Listed companies: Bunge Limited, Eli Lilly and Company.

He holds a Bachelor’s Degree in Chemical Engineering from the University of Delaware and completed the Advanced Management Program at Harvard Business School.

Stephen Landsman
Group General Counsel

Born: 1959
Nationality: American
Initial appointment: 2018

Professional background
Prior to his appointment as Group General Counsel, Stephen Landsman was Global Head of Mergers, Acquisitions and Integration at Syngenta (2017–2018). Before joining Syngenta, he was Executive Vice President, General Counsel and Corporate Secretary at Univar Inc. (2013–2017), and Vice President, General Counsel and Corporate Secretary at Nalco Company (2003–2013). Mr. Landsman’s previous positions in Nalco company were Deputy General Counsel and Division VP Mergers and Acquisitions (2000–2003), and Director of Acquisitions and Senior Attorney (1997–2000). Apart from his function in Syngenta, Steve Landsman holds no other mandates in the supreme executive bodies of listed or non-listed companies.

He holds a Juris Doctorate from the University of Illinois College of Law, an AB (Artium Baccalaureatus) Degree from the University of Illinois and is a Certified Public Accountant.

Jonathan Parr
President Global Crop Protection

Born: 1961
Nationality: British
Initial appointment: 2015

Professional background

He is a Chartered Engineer and also holds a Bachelor’s Degree with Honors in Civil Engineering from the University of Southampton, as well as a Master’s Degree in Management from the University of McGill, Canada, and a Diploma in International Management from the INSEAD Institute.
6. Our leadership

Mark Patrick
Chief Financial Officer
Born: 1969
Nationality: British
Initial appointment: 2016

Professional background
Prior to his appointment as Chief Financial Officer, Mark Patrick was Head Commercial Finance at Syngenta (2011–2016). Prior to that, he was Head Crop Protection Finance (2008–2011 and 2005–2006), Head Finance North America Crop Protection (2006–2008), Head Business Reporting (2003–2005), and APAC Regional Supply Finance Head Syngenta in Hong Kong. He joined AstraZeneca in 1993. Apart from his function in Syngenta, Mark Patrick holds no other mandates in the supreme executive bodies of listed or non-listed companies. He is a Chartered Management Accountant and also holds an honors degree in Quantity Surveying and a Post Graduate degree in Economics.

Laure Roberts
Head Human Resources
Born: 1963
Nationality: French
Initial appointment: 2016

Professional background
Prior to her appointment as Head Human Resources, Laure Roberts was Head Global HR Business Partners (2013–2016) and Head Human Resources for the region EAME (2011–2013). Before joining Syngenta, she held a number of different HR leadership functions at Air Products and Chemicals, Inc., a worldwide industrial gases company where her last role was Vice President, Human Resources, Europe and Middle East (2004–2010). Laure Roberts started her career in 1988 with Valeo, a leading automotive supplier. Apart from her function in Syngenta, Laure Roberts holds no other mandates in the supreme executive bodies of listed or non-listed companies. She holds a Master’s Degree from the Ecole Supérieure de Commerce de Paris and an MBA from the University of Aston in Birmingham.

Jeff Rowe
President Global Seeds
Born: 1973
Nationality: American
Initial appointment: 2016

Professional background
Prior to his current function as President Global Seeds, Jeff Rowe was Vice President, Strategic Services and Planning at DuPont Pioneer (2015–2016) and also sat on the company’s Leadership Team (DPLT). Before, he was Regional Director for DuPont Pioneer Europe (2011–2015), Vice President Biotech Affairs and Regulatory (2008–2011), and Corporate Counsel (2001–2008). He started his career with Pioneer in 1995 in Supply Management. Apart from his function in Syngenta, Jeff Rowe currently holds the following board membership:

- Non-listed companies:
  - Wayne Farms LLC.
  - He has a Bachelor of Science in Agricultural Economics from Iowa State University, a Juris Doctorate from Drake Law School, and a Global Executive MBA from the NYU Stern School of Business and the London School of Economics.
7 Non-financial performance

Non-financial information
At Syngenta, non-financial information refers to quantitative and qualitative information on strategies, policies or activities pursued towards our business, environmental and social goals.

Sustainability
Sustainability is integral to our business. Our ambition is to play a vital role in the food chain to safely feed the world and take care of the planet. The Good Growth Plan sets specific, ambitious and measurable targets focused on boosting resource efficiency, rejuvenating ecosystems and strengthening rural communities. We are also committed to developing our people, reducing the environmental footprint of our operations and doing business responsibly.

The Chief Sustainability Officer, reporting to the CEO, and the Business Sustainability function assess, advise and execute our sustainability work, working closely and transparently with governments, NGOs and society to find solutions we collectively need.

Stakeholder engagement
We regularly assess stakeholder concerns and expectations. We engage with growers, employees, communities close to our operations, industry associations, NGOs, governments and investors.

In late 2018, we held 150 listening sessions with stakeholders from around the world in an effort to build a shared vision for the future of sustainable agriculture. Through continuous listening and dialogue, we aim to better understand the role we can play and the commitments needed from all sides to help make a shared vision reality.

We have a strategic collaboration with The Nature Conservancy that extends our stakeholder outreach and helps us increase the sustainability of our operations and the resilience of a sustainable agriculture system.

Material topics
Our materiality analysis helps us identify where we can provide the most value, drive our strategy, allocate effort and resources, and direct our external communication and reporting.

Material topics presented on page 47 were identified using three criteria:

- Importance to Syngenta: Matters that present the greatest risks and opportunities for Syngenta’s ability to create long-term value and achieve our ambition
- Importance to stakeholders: Concerns and expectations frequently raised by stakeholders about our company, our industry, agriculture and food systems

The most important issue identified in our materiality analysis is the global challenge of providing a growing population with healthy diets from sustainable food production.

We used stakeholder feedback to define three focus areas: innovation guided by society and nature; striving for lowest residues in crops and the environment; and investing where it matters to farmers and nature.

Recommendations of the TCFD
The Taskforce on Climate-related Financial Disclosures (TCFD) established recommendations for voluntary climate-related financial disclosures to help financial markets better understand the material climate-related risks and opportunities to which companies are exposed, and how companies oversee and manage them.

Syngenta supports the recommendations of the TCFD. In 2019, we conducted a gap assessment on internal practices and external disclosures, and work is currently underway to implement the actions identified. We also participated in the “TCFD Food, Agriculture and Forest Products Preparer Forum” convened by the World Business Council for Sustainable Development and TCFD to identify good practice, enhance disclosure effectiveness and help companies implement the TCFD’s recommendations.

Approach to non-financial reporting
The Non-financial performance summary on pages 48-51 presents data on our progress towards four goals:

- The Good Growth Plan: Help shape the future sustainability of agriculture, and deliver solutions that are better, more productive and more beneficial to rural economies
- People: Attract and retain talent while creating an environment that stimulates innovation and personal performance and development
- Sustainable operations: Manage our environmental footprint and maintain the highest standards in our operations
- Business integrity: Maintain the highest standards across our entire business and go beyond regulatory compliance, while benefitting the communities and economies wherever we operate

Our non-financial reporting covers the operations of Syngenta AG Group, including material interactions with selected third parties as reported in the Non-financial performance summary. Our non-financial reporting has been externally assured and prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core Option. The non-financial reporting period is October 1 to September 30.
Syngenta is a signatory to the United Nations Global Compact. Syngenta’s Sustainable Business Report serves as our Communication on Progress (COP) in implementing the 10 principles.

**Internal controls over non-financial reporting**

Syngenta’s internal controls over non-financial reporting were designed to provide assurance to Syngenta’s Board of Directors and management regarding the reliability of non-financial reporting and the preparation and fair presentation of the information published in the Non-financial performance summary. All internal controls, no matter how well designed, have inherent limitations and therefore may not prevent or detect misstatements. In designing internal controls over non-financial reporting, Syngenta used the criteria established in COSO’s Internal Control – Integrated Framework (2013).

Syngenta’s Board of Directors and management are responsible for establishing and maintaining adequate internal controls over non-financial information. The information in the Non-financial performance summary was approved by the Board of Directors on February 20, 2020.

PricewaterhouseCoopers AG, Switzerland, an independent registered public accounting firm, has issued an opinion on Syngenta’s Non-financial performance summary, which is included on page 52 in this Sustainable Business Report.

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**Materiality matrix**

<table>
<thead>
<tr>
<th>Importance to Syngenta</th>
<th>Relevance to sustainable development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to seeds</td>
<td>Medium (2)</td>
</tr>
<tr>
<td>Air pollution</td>
<td>Medium (3)</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>High (12)</td>
</tr>
<tr>
<td>Business integrity</td>
<td>High (16)</td>
</tr>
<tr>
<td>Climate change mitigation and adaptation</td>
<td>Medium (13)</td>
</tr>
<tr>
<td>Dialogue, transparency and partnerships</td>
<td>Medium (17)</td>
</tr>
<tr>
<td>Employee engagement</td>
<td>Medium (8)</td>
</tr>
<tr>
<td>Human rights and fair and safe labor</td>
<td>Medium (8)</td>
</tr>
<tr>
<td>Innovation in agriculture</td>
<td>Medium (2)</td>
</tr>
<tr>
<td>Land use changes and deforestation</td>
<td>Medium (2)</td>
</tr>
<tr>
<td>Product responsibility</td>
<td>Medium (3)</td>
</tr>
<tr>
<td>Resource efficiency</td>
<td>Medium (2)</td>
</tr>
<tr>
<td>Rural development and poverty alleviation</td>
<td>Medium (1)</td>
</tr>
<tr>
<td>Safe and nutritious food</td>
<td>Medium (2)</td>
</tr>
<tr>
<td>Soil health</td>
<td>Medium (13)</td>
</tr>
<tr>
<td>Water conservation</td>
<td>Medium (6)</td>
</tr>
</tbody>
</table>

---

**The UN Sustainable Development Goals**

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Clean water and sanitation
5. Decent work and economic growth
6. Responsible consumption and production
7. Climate action
8. Life on land
9. Peace, justice, and strong institutions
10. Partnerships for the goals

---

**Syngenta Sustainable Business Report 2019**

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## Non-financial performance summary

### The Good Growth Plan

<table>
<thead>
<tr>
<th>Reporting period October 1 – September 30</th>
<th>Cumulative since baseline 2014</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Make crops more efficient</strong>¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of reference farms</td>
<td>1,659</td>
<td>1,443</td>
<td>1,459</td>
<td></td>
</tr>
<tr>
<td>Total number of benchmark farms</td>
<td>1,928</td>
<td>2,316</td>
<td>2,630</td>
<td></td>
</tr>
<tr>
<td>Land productivity increase on reference farms</td>
<td>18.8%</td>
<td>13.0%</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Land productivity increase on benchmark farms</td>
<td>12.4%</td>
<td>7.0%</td>
<td>7.3%</td>
<td></td>
</tr>
<tr>
<td>Nutrient efficiency increase on reference farms</td>
<td>46.8%</td>
<td>30.2%</td>
<td>20.3%</td>
<td></td>
</tr>
<tr>
<td>Reference farms outperforming benchmark farms</td>
<td>57%</td>
<td>64%</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Pesticide field application efficiency increase on reference farms</td>
<td>33.4%</td>
<td>24.7%</td>
<td>14.2%</td>
<td></td>
</tr>
<tr>
<td>Reference farms outperforming benchmark farms</td>
<td>33%</td>
<td>38%</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Greenhouse gas emission efficiency increase on reference farms²</td>
<td>36.7%</td>
<td>8.8%</td>
<td>14.0%</td>
<td></td>
</tr>
<tr>
<td>Reference farms outperforming benchmark farms</td>
<td>65%</td>
<td>69%</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

### Help biodiversity flourish

<table>
<thead>
<tr>
<th></th>
<th>Hectares of benefited farmland (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rescue more farmland</strong></td>
<td>14.1</td>
</tr>
<tr>
<td><strong>Help biodiversity flourish</strong></td>
<td>8.2</td>
</tr>
</tbody>
</table>

### Empower smallholders

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land productivity increase on smallholder reference farms</strong>¹</td>
<td>28.5%</td>
<td>21.9%</td>
<td>21.6%</td>
</tr>
<tr>
<td><strong>Land productivity increase on smallholder benchmark farms</strong>¹</td>
<td>11.0%</td>
<td>6.3%</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>Smallholders reached through training (m)</strong></td>
<td>62</td>
<td>61</td>
<td>56</td>
</tr>
<tr>
<td><strong>Smallholders reached through sales (m)</strong></td>
<td>203</td>
<td>134</td>
<td>139</td>
</tr>
</tbody>
</table>

### Help people stay safe

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>**People trained on safe use (m)**³</td>
<td>42.4</td>
<td>8.6</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Countries with established Syngenta product toxicovigilance programs</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Crop Protection sales represented</strong></td>
<td>93%</td>
<td>93%</td>
<td>94%</td>
</tr>
</tbody>
</table>

### Look after every worker

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suppliers included in sustainability and fair labor programs</strong></td>
<td>99.0%</td>
<td>98.8%</td>
<td>86.0%</td>
</tr>
<tr>
<td><strong>Coverage of Syngenta Fair Labor Program</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syngenta seed producing countries</td>
<td>88%</td>
<td>88%</td>
<td>68%</td>
</tr>
<tr>
<td>Seed supply farms²</td>
<td>99.3%</td>
<td>99.2%</td>
<td>86.0%</td>
</tr>
<tr>
<td>Of which: farms in Fair Labor Association (FLA)’s audit scope</td>
<td>100%</td>
<td>100%</td>
<td>67%</td>
</tr>
<tr>
<td>Of which: farms monitored⁶</td>
<td>20%</td>
<td>n/a</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Coverage of Supplier Sustainability Program</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical suppliers²</td>
<td>94%</td>
<td>94%</td>
<td>90%</td>
</tr>
<tr>
<td>Formulation, fill and pack tollers²</td>
<td>83%</td>
<td>86%</td>
<td>–</td>
</tr>
<tr>
<td>Packaging manufacturers⁸</td>
<td>63%</td>
<td>50%</td>
<td>–</td>
</tr>
<tr>
<td>HSE audits at warehouse/logistics service providers</td>
<td>86</td>
<td>65</td>
<td>117</td>
</tr>
<tr>
<td>Commercial flowers farms with valid GlobalG.A.P. certification</td>
<td>88%</td>
<td>96%</td>
<td>90%</td>
</tr>
<tr>
<td>Commercial flowers farms with valid G.R.A.S.P. assessment⁹</td>
<td>100%</td>
<td>44%</td>
<td>32%</td>
</tr>
</tbody>
</table>

¹ Reference farms were selected by Syngenta and are recommended to use Syngenta products and follow optimized protocols. Benchmark farms were randomly selected by a third-party research agency and represent grower practice. Reference and benchmark farms are grouped in clusters. A cluster presents homogeneous agro-climatic conditions and contains reference and/or benchmark farms with similar grower characteristics. The aggregation of the farm data is aligned with harvest seasons. The latest available progress data is 2018 for clusters located in the Northern hemisphere and 2019 for clusters located in the Southern hemisphere. Evolutions are reported for clusters with an established baseline and at least one year of progress data. Figures represent global averages. Details on methodology can be found on www.data.syngenta.com

² Greenhouse gas emissions are calculated consistent with Cool Farm Tool methodology using available farm data and proxies where farm data was not available. For US farm data, calculation methodology is consistent with Field to Market: The Alliance for Sustainable Agriculture

³ Includes smallholders reached through training reported under “Empower smallholders”

⁴ The seed supply chain represents about 98% of the suppliers targeted by our sustainability and fair labor programs

⁵ 2018 values were restated due to a reporting error

⁶ The 2018 figure was not available due to the implementation of a new reporting tool

⁷ Includes only chemical suppliers or formulation, fill and pack tollers categorized as posing a high or medium sustainability risk

⁸ Includes all packaging manufacturers independently of their level of sustainability risk

⁹ Since 2019, the percentage of commercial flower farms with valid G.R.A.S.P. assessment include only our farms while in previous years, it also included third-party farms. The assessment proved to be too onerous for third-party farms. Other alternatives to measure performance are being evaluated

To find out more about our approach to open data or to access the files www.data.syngenta.com
### People

**Reporting period October 1 – September 30**

#### Employment

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees(^1)</td>
<td>28,265</td>
<td>27,732</td>
<td>27,669</td>
</tr>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>11,860</td>
<td>11,690</td>
<td>12,372</td>
</tr>
<tr>
<td>North America</td>
<td>4,091</td>
<td>4,120</td>
<td>4,092</td>
</tr>
<tr>
<td>Latin America</td>
<td>5,794</td>
<td>5,676</td>
<td>4,907</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>6,520</td>
<td>6,246</td>
<td>6,298</td>
</tr>
<tr>
<td>Part-time employees</td>
<td>914</td>
<td>912</td>
<td>927</td>
</tr>
</tbody>
</table>

#### Turnover rate\(^3\)

- of which: <35 years 34% 33% 42%
- 35-50 years 42% 41% 43%
- >50 years 24% 26% 15%

#### Attrition rate\(^4\)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior managers</td>
<td>6.4%</td>
<td>5.8%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>57%</td>
<td>55%</td>
<td>62%</td>
</tr>
<tr>
<td>North America</td>
<td>23%</td>
<td>24%</td>
<td>17%</td>
</tr>
<tr>
<td>Latin America</td>
<td>11%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>10%</td>
<td>12%</td>
<td>10%</td>
</tr>
</tbody>
</table>

#### Diversity

- Nationalities in senior management 37 36 33
- Female employees 31% 30% 30%
- Female employees in management roles 25% 24% 23%
- Female employees in senior management 18% 17% 17%

### Health, safety and well-being

**Reporting period October 1 – September 30**

#### Recordable injury and illness rate (IIR) per 200,000 hours\(^5\)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>0.34</td>
<td>0.32</td>
<td>0.37</td>
</tr>
<tr>
<td>North America</td>
<td>0.31</td>
<td>0.29</td>
<td>0.34</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.37</td>
<td>0.39</td>
<td>0.43</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>0.34</td>
<td>0.18</td>
<td>0.30</td>
</tr>
</tbody>
</table>

#### Recordable injury rate per 200,000 hours\(^5\)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>0.31</td>
<td>0.29</td>
<td>0.34</td>
</tr>
<tr>
<td>North America</td>
<td>0.54</td>
<td>0.54</td>
<td>0.64</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.34</td>
<td>0.18</td>
<td>0.30</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>0.29</td>
<td>0.14</td>
<td>0.16</td>
</tr>
</tbody>
</table>

#### Recordable occupational illness rate per 200,000 hours\(^5\)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>North America</td>
<td>0.04</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.07</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>0.00</td>
<td>0.02</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### First aid cases

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>404</td>
<td>378</td>
<td>382</td>
</tr>
<tr>
<td>North America</td>
<td>142</td>
<td>123</td>
<td>151</td>
</tr>
<tr>
<td>Latin America</td>
<td>12</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>14</td>
<td>11</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Cases of recordable injuries

- Bruise, strain, sprain and dislocation 39% 35% 36%
- Cut and abrasion 22% 28% 25%
- Bone fracture 9% 13% 15%
- Concussion and internal injury 1% 5% 3%
- Multiple injuries 5% 2% 6%
- Other 24% 17% 15%

#### Cases of recordable occupational illness

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe, Africa and Middle East(^2)</td>
<td>14</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>North America</td>
<td>12</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

---

\(^1\) Permanent full-time equivalent (FTE)

\(^2\) Includes headquarters (Switzerland)

\(^3\) Includes voluntary and involuntary leavers and restructuring

\(^4\) Includes only voluntary leavers

\(^5\) According to US OSHA definition for injuries and illness
### Sustainable operations

**Reporting period October 1 – September 30**

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy intensity (MJ/$sales)</td>
<td>0.65</td>
<td>0.66</td>
<td>0.67</td>
</tr>
<tr>
<td>Energy (TJ)</td>
<td>8,833</td>
<td>8,966</td>
<td>8,484</td>
</tr>
<tr>
<td>Gas (TJ)</td>
<td>3,796</td>
<td>3,926</td>
<td>3,405</td>
</tr>
<tr>
<td>Electricity (TJ)</td>
<td>2,265</td>
<td>2,297</td>
<td>2,367</td>
</tr>
<tr>
<td>Steam (TJ)</td>
<td>1,445</td>
<td>1,318</td>
<td>1,450</td>
</tr>
<tr>
<td>Oil (TJ)</td>
<td>331</td>
<td>310</td>
<td>287</td>
</tr>
<tr>
<td>Other (TJ)</td>
<td>996</td>
<td>1,115</td>
<td>955</td>
</tr>
<tr>
<td><strong>Greenhouse gases</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total CO₂e emissions intensity (g/$sales)</td>
<td>120</td>
<td>117</td>
<td>120</td>
</tr>
<tr>
<td>Total CO₂e emissions (000s tonnes)</td>
<td>1,635</td>
<td>1,585</td>
<td>1,515</td>
</tr>
<tr>
<td>Within direct control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂e emissions from own operations (000s tonnes)</td>
<td>548</td>
<td>521</td>
<td>443</td>
</tr>
<tr>
<td>CO₂ emissions from company vehicles (000s tonnes)</td>
<td>67</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Within indirect control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂e emissions from purchased energy (000s tonnes)</td>
<td>355</td>
<td>330</td>
<td>353</td>
</tr>
<tr>
<td>CO₂e emissions from business trips (000s tonnes)</td>
<td>37</td>
<td>27</td>
<td>46</td>
</tr>
<tr>
<td>CO₂ emissions from distribution (000s tonnes)</td>
<td>628</td>
<td>639</td>
<td>603</td>
</tr>
<tr>
<td><strong>Other air emissions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other air emissions intensity (g/$sales)</td>
<td>0.066</td>
<td>0.066</td>
<td>0.070</td>
</tr>
<tr>
<td>Other air emissions (tonnes)</td>
<td>899</td>
<td>900</td>
<td>884</td>
</tr>
<tr>
<td>NOₓ (tonnes)</td>
<td>430</td>
<td>440</td>
<td>410</td>
</tr>
<tr>
<td>Non-halogenated VOCs (tonnes)</td>
<td>276</td>
<td>276</td>
<td>322</td>
</tr>
<tr>
<td>Halogenated VOCs (tonnes)</td>
<td>28</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td>Particulates (tonnes)</td>
<td>115</td>
<td>105</td>
<td>88</td>
</tr>
<tr>
<td>SO₂ (tonnes)</td>
<td>35</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>NH₃ (tonnes)</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HCl (tonnes)</td>
<td>11</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

---

1. 2018 environmental intensity values were restated due to the restatement of Syngenta AG consolidated sales of 2018
2. Since 2019, the value includes all greenhouse gases and is expressed in CO₂e. In previous years, only CO₂ emissions were reported.

### Water

**Reporting period October 1 – September 30**

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water usage intensity (liters/$sales)</strong></td>
<td>2.3</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Water usage (million cubic meters)</td>
<td>30.9</td>
<td>31.4</td>
<td>31.7</td>
</tr>
<tr>
<td>Cooling (million cubic meters)</td>
<td>18.3</td>
<td>17.9</td>
<td>19.1</td>
</tr>
<tr>
<td>Irrigation (million cubic meters)</td>
<td>5.0</td>
<td>5.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Processing and washing (million cubic meters)</td>
<td>5.7</td>
<td>6.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Product ingredient (million cubic meters)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Sewage and sanitary (million cubic meters)</td>
<td>0.9</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Other (million cubic meters)</td>
<td>0.8</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Origin of water</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface fresh water (million cubic meters)</td>
<td>20.4</td>
<td>19.7</td>
<td>21.3</td>
</tr>
<tr>
<td>Underground water (million cubic meters)</td>
<td>7.8</td>
<td>8.8</td>
<td>7.5</td>
</tr>
<tr>
<td>Drinking water from municipal network (million cubic meters)</td>
<td>2.6</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Recovered rain water (million cubic meters)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Wastewater effluents</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial wastewater discharge intensity (liters/$sales)</td>
<td>0.71</td>
<td>0.67</td>
<td>0.72</td>
</tr>
<tr>
<td>Industrial wastewater discharge (million cubic meters)</td>
<td>9.7</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Total organic carbon (TOC) (tonnes)</td>
<td>573</td>
<td>490</td>
<td>499</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD) (tonnes)</td>
<td>1,687</td>
<td>1,441</td>
<td>1,522</td>
</tr>
<tr>
<td>Biological oxygen demand (BOD) (tonnes)</td>
<td>194</td>
<td>162</td>
<td>154</td>
</tr>
<tr>
<td>Total suspended solids (tonnes)</td>
<td>277</td>
<td>451</td>
<td>252</td>
</tr>
<tr>
<td>Soluble salts discharged (000s tonnes)</td>
<td>130</td>
<td>146</td>
<td>122</td>
</tr>
<tr>
<td>Direct discharge of uncontaminated cooling water (million cubic meters)</td>
<td>18.3</td>
<td>17.9</td>
<td>19.1</td>
</tr>
</tbody>
</table>
### Non-financial performance

#### Sustainable operations continued

<table>
<thead>
<tr>
<th>Reporting period: October 1 – September 30</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waste</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous waste intensity (g/$sales)^1</td>
<td>14.7</td>
<td>13.9</td>
<td>14.3</td>
</tr>
<tr>
<td>Hazardous waste (000s tonnes)</td>
<td>200</td>
<td>189</td>
<td>181</td>
</tr>
<tr>
<td>Recycled and re-used (000s tonnes)</td>
<td>92</td>
<td>87</td>
<td>85</td>
</tr>
<tr>
<td>Incinerated (000s tonnes)</td>
<td>92</td>
<td>86</td>
<td>81</td>
</tr>
<tr>
<td>Landfill (000s tonnes)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other (000s tonnes)</td>
<td>15</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td><strong>Hazardous waste by type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical</td>
<td>57%</td>
<td>57%</td>
<td>58%</td>
</tr>
<tr>
<td>Solvents</td>
<td>37%</td>
<td>35%</td>
<td>36%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Non-hazardous waste intensity (g/$sales)^1</strong></td>
<td>9.7</td>
<td>11.0</td>
<td>9.4</td>
</tr>
<tr>
<td>Non-hazardous waste (000s tonnes)</td>
<td>132</td>
<td>149</td>
<td>119</td>
</tr>
<tr>
<td>Recycled and re-used (000s tonnes)</td>
<td>96</td>
<td>118</td>
<td>87</td>
</tr>
<tr>
<td>Incinerated (000s tonnes)</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Landfill (000s tonnes)</td>
<td>20</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>Other (000s tonnes)</td>
<td>10</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td><strong>Non-hazardous waste by type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant and seed waste from seed sites</td>
<td>65%</td>
<td>68%</td>
<td>63%</td>
</tr>
<tr>
<td>Inerts</td>
<td>4%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Packaging materials</td>
<td>5%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Household</td>
<td>4%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>22%</td>
<td>17%</td>
<td>22%</td>
</tr>
</tbody>
</table>

#### Environmental compliance

| Significant unplanned releases^2 | 5 | 0 | 0 |

---

### Business integrity

#### Corporate conduct

<table>
<thead>
<tr>
<th>Reporting period: October 1 – September 30</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compliance cases reported^1</strong></td>
<td>251</td>
<td>299</td>
<td>215</td>
</tr>
<tr>
<td>Leaders engaged in leader-led compliance sessions^2,^3</td>
<td>3,113</td>
<td>3,108</td>
<td>2,263</td>
</tr>
<tr>
<td>Completion rate^2,^3</td>
<td>92%</td>
<td>99%</td>
<td>95%</td>
</tr>
<tr>
<td>Employees in scope for Code of Conduct commitment^3,^4</td>
<td>21,887</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Completion rate^3,^4</td>
<td>99%</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

#### Security management

| Sites included in Syngenta Security 360º Program | 148 | 131 | 129 |
| Product Security cases | 981 | 880 | 723 |
| Suspect counterfeit Crop Protection product seized by authorities (tonnes) | 1,782 | 1,657 | 541 |
| Suspect counterfeit Seed product seized by authorities (tonnes) | 1,817 | 196 | 93 |

#### Animal testing compliance

| Management system audits performed in contract laboratories | 7 | 4 | 17 |
| Management system non-compliances found | 0 | 0 | 0 |

#### Biotechnology and regulatory compliance

| Employees completing field trial regulatory compliance training | 1,984 | 1,140 | 1,426 |
| Field trial locations planted under country regulatory compliance programs^5 | 475 | 434 | 299 |

#### Economic value shared

| Economic value shared ($m) | 13,210 | 16,298 | 12,095 |
| Payments to suppliers | 8,659 | 7,877 | 7,508 |
| Employee wages and benefits | 2,847 | 2,755 | 3,099 |
| Payments to governments (taxes)^6 | 292 | 168 | 241 |
| Payments to providers of capital | 787 | 4,819 | 593 |
| Capital expenditure | 601 | 655 | 631 |
| Corporate community investment^7 | 24 | 24 | 23 |

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1. Since 2018, the number of cases reported includes all cases managed by Group Compliance: cases reported through the compliance hotline, line management, directly to Group Compliance or other channels. In previous years, the value only included cases reported via the hotline.

2. 2018 values were restated to represent all 2018 sessions.


4. New KPIs introduced in 2019 to measure the commitment of leaders and employees to lead and represent Syngenta by our Code of Conduct.

5. Represents all trial locations covered by country specific regulatory compliance programs whether they require a permit or not.

6. Consists of income and other taxes paid, excluding VAT (included in Payments to suppliers) and employment-related taxes (included in Employee wages and benefits).

7. The PwC Independent Assurance Report includes in its scope only the Corporate community investment figure used in the calculation of Economic value shared.

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**Note:**

- Reporting period: October 1 – September 30
- Hazardous waste intensity (g/$sales): 2019, 14.7; 2018, 13.9; 2017, 14.3
- Non-hazardous waste intensity (g/$sales): 2019, 9.7; 2018, 11.0; 2017, 9.4
- Corporate conduct cases reported: 2019, 251; 2018, 299; 2017, 215
- Completion rate: 2019, 92%; 2018, 99%; 2017, 95%
- Animal testing compliance: Management system audits performed in contract laboratories: 2019, 7; 2018, 4; 2017, 17
- Biotechnology and regulatory compliance: Employees completing field trial regulatory compliance training: 2019, 1,984; 2018, 1,140; 2017, 1,426
- Field trial locations planted under country regulatory compliance programs: 2019, 475; 2018, 434; 2017, 299
- Economic value shared: 2019, 13,210; 2018, 16,298; 2017, 12,095
- Payments to suppliers: 2019, 8,659; 2018, 7,877; 2017, 7,508
- Employee wages and benefits: 2019, 2,847; 2018, 2,755; 2017, 3,099
- Payments to governments (taxes): 2019, 292; 2018, 168; 2017, 241
- Payments to providers of capital: 2019, 787; 2018, 4,819; 2017, 593
- Corporate community investment: 2019, 24; 2018, 24; 2017, 23

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**Note:**

- Hazardous waste in 2019: 200,000 tonnes
- Non-hazardous waste in 2019: 132,000 tonnes
- Recycled and re-used: 2019, 96,000 tonnes; 2018, 118,000 tonnes; 2017, 87,000 tonnes
- Incinerated: 2019, 6,000 tonnes; 2018, 6,000 tonnes; 2017, 4,000 tonnes
- Landfill: 2019, 20,000 tonnes; 2018, 17,000 tonnes; 2017, 19,000 tonnes
- Other: 2019, 10,000 tonnes; 2018, 8,000 tonnes; 2017, 9,000 tonnes

---

**Note:**

- Hazardous waste by type: Chemical: 2019, 57%; 2018, 57%; 2017, 58%
- Non-hazardous waste by type: Plant and seed waste from seed sites: 2019, 65%; 2018, 68%; 2017, 63%
- Inerts: 2019, 4%; 2018, 7%; 2017, 5%
- Packaging materials: 2019, 5%; 2018, 4%; 2017, 5%
- Household: 2019, 4%; 2018, 4%; 2017, 5%
- Other: 2019, 22%; 2018, 17%; 2017, 22%
Independent Assurance Report

on the non-financial reporting 2019 to the Board of Directors of Syngenta AG, Basel

We have been engaged to perform assurance procedures to provide limited assurance on the non-financial performance summary of Syngenta AG, Basel, and its consolidated subsidiaries (‘Syngenta’) included in the Sustainable Business Report 2019 (‘Report’).

Scope and subject matter

Our engagement focused on the following data and information for the year ended 31 December 2019 disclosed in the aggregated non-financial reporting of Syngenta:

- The application of the Syngenta reporting guidelines for the non-financial reporting published on The Good Growth Plan Progress Data website; and
- The internal reporting system and procedures to collect and aggregate The Good Growth Plan and other non-financial performance data on pages 48 to 51; and
- The data and information in the Non-financial performance summary, in all material aspects, on pages 48 to 51, of the Report.

Our assurance procedures do not cover the indicators on payments to suppliers, employee wages and benefits, payments to governments and providers of capital, and capital expenditure presented in the related non-financial performance summary on page 51 of the Report.

We have not carried out any work on data reported for prior reporting periods, nor have we performed work in respect of projections and targets.

Criteria

The reporting criteria used by Syngenta are described and disclosed on The Good Growth Plan Progress Data website and in the internal non-financial reporting guidelines. These define those procedures based on the Standards of the Global Reporting Initiative (GRI) published in 2016, by which the non-financial performance data are internally gathered, collated and aggregated.

Inherent limitations

The accuracy and completeness of non-financial indicators are subject to inherent limitations given their nature and methods for determining, calculating and estimating such data.

Our assurance report should therefore be read in connection with Syngenta’s reporting criteria (including guidelines, definitions and procedures on the reporting of its non-financial performance).

Syngenta’s responsibility

The Board of Directors of Syngenta AG is responsible for both the subject matter and the criteria as well as for selection, preparation and presentation of the selected information in accordance with the criteria. This responsibility includes the design, implementation and maintenance of related internal control relevant to this reporting process that is free from material misstatement, whether due to fraud or error.

Our responsibility

Our responsibility is to perform a limited assurance engagement to express a conclusion on positions in the related non-financial performance summary on pages 48 to 51.

We planned and performed our procedures in accordance with the International Standard on Assurance Engagements (ISAE 3000) (Revised) ‘Assurance engagements other than audits or reviews of historical financial information’. This standard requires that we plan and perform the assurance engagement to obtain limited assurance on the identified non-financial information prepared, in all material aspects, in accordance with Syngenta’s policies and procedures.

A limited assurance engagement under ISAE 3000 (Revised) is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. Consequently, the nature, timing and extent of procedures for gathering sufficient appropriate evidence are deliberately limited relative to a reasonable assurance engagement and therefore less assurance is obtained with a limited assurance engagement than for a reasonable assurance engagement. The procedures selected depend on the assurance practitioner’s judgement.

Our independence and quality controls

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Summary of the work performed

Our assurance procedures included, amongst others, the following work:

- Evaluation of the application of group guidelines;
- Visits of different sites and offices for various areas in UK, Hungary and Spain selected based on quantitative and qualitative criteria;
- Testing the specified performance indicators on a sample basis for evidence supporting the Non-financial performance summary relative to completeness, accuracy, adequacy and consistency;
- Reviewing the documentation supporting relevant data on a sample basis, including management and reporting structures and documentation;
- Reviewing the management and reporting processes. Assessing the consolidation process of data at the group level.

We have not conducted any work on data other than outlined in the subject matter as defined above. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusions.

Conclusion

Based on our work performed on the identified Syngenta non-financial reporting 2019 nothing has come to our attention causing us to believe that in all material respects:

- The Good Growth Plan guidelines as published on The Good Growth Plan Progress Data website are not applied;
- The internal reporting systems to collect and aggregate The Good Growth Plan and other non-financial performance data are not functioning as designed and do not provide an appropriate basis for the reporting on pages 48 to 51; and

PricewaterhouseCoopers AG

Gerd Tritschler      Konstantin Meier
Zurich, 25 February 2020
Syngenta supports the 10 principles of the United Nations Global Compact through an established commitment to sustainability and ongoing implementation of policies on human rights, fair labor, environmental protection and anti-corruption.

Through The Good Growth Plan, Syngenta supports the United Nations Sustainable Development Goals (SDGs). Collectively, the Plan’s six commitments contribute towards delivering the SDGs: all six commitments contribute directly to Goal 2 (zero hunger) and Goal 17 (partnerships for sustainability), as well as individually towards a number of other goals.

The Sustainable Business Report was originally published in English.

For the business year 2019, Syngenta has published the Sustainable Business Report 2019 which includes information about our non-financial performance. It includes quantitative and qualitative information on policies and actions taken regarding our business and sustainability goals. It also serves as our annual Communication on Progress (COP) for the United Nations Global Compact.

This publication is available on the Internet: www.syngenta.com

For further information and answers to many “Frequently Asked Questions”, visit our corporate website: www.syngenta.com

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