

A photograph of two scientists, a man and a woman, in a greenhouse. They are both wearing white lab coats with the Syngenta logo. The man is wearing safety glasses and is looking at a tablet. The woman is also wearing safety glasses and purple gloves, and is holding a pair of red forceps. They are surrounded by rows of green plants in a well-lit greenhouse with many overhead lights.

Syngenta Sustainable Business Report

2019

Accelerating innovation  
in a changing world

syngenta

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**Overview**

**Enhancing sustainability across our business**

2019 in numbers

\$13.6bn

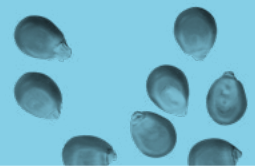
Global Sales

\$10.6bn

Crop Protection sales<sup>1</sup>

\$3.1bn

Seeds sales<sup>2</sup>



\$1.3bn

Investment in Research and Development<sup>3</sup>

0.34

Recordable injury and illness rate<sup>4</sup>

99.0%

Suppliers included in sustainability and fair labor programs

8.6m

People trained on safe use<sup>5</sup>

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"

# Highlights of 2019



## Accelerating innovation in a changing world

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.

# \$2bn

Commitment over five years

## Collaborating for sustainable agriculture

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.



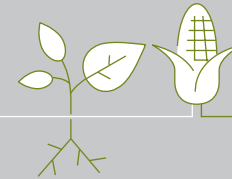
## Joining forces for more stewardship

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.

Responding to

# 150

listening sessions



## 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.



## 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.



## 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,



← With Sally Jewell discussing collaborating for more sustainable agriculture at the Bloomberg Sustainable Business Summit



→ Visiting a strawberry grower who is one of our MAP customers in China

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 gains 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



At the opening ceremony of Syngenta's Seedcare Institute in India



## Our business model

Creating  
value now  
and for the  
long term

**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.



See "Accelerating innovation in a changing world" on **pages 6-9**

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.

# 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

### 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

## Production

- Production of active ingredients and intermediate chemicals
- Formulation, fill and pack
- Production of seeds
- Production of flowers

### Who we work with

- Suppliers
- Toll manufacturers

## 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

# 3 What we create

## Products, services and solutions

### Crop protection

- Herbicides
- Insecticides
- Fungicides
- Seed treatment
- Biologicals
- Crop enhancement

### Seeds

- Seeds
- Traits

### Grower programs

### Digital agriculture



# 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





Our offer

# Accelerating innovation in a changing world

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,

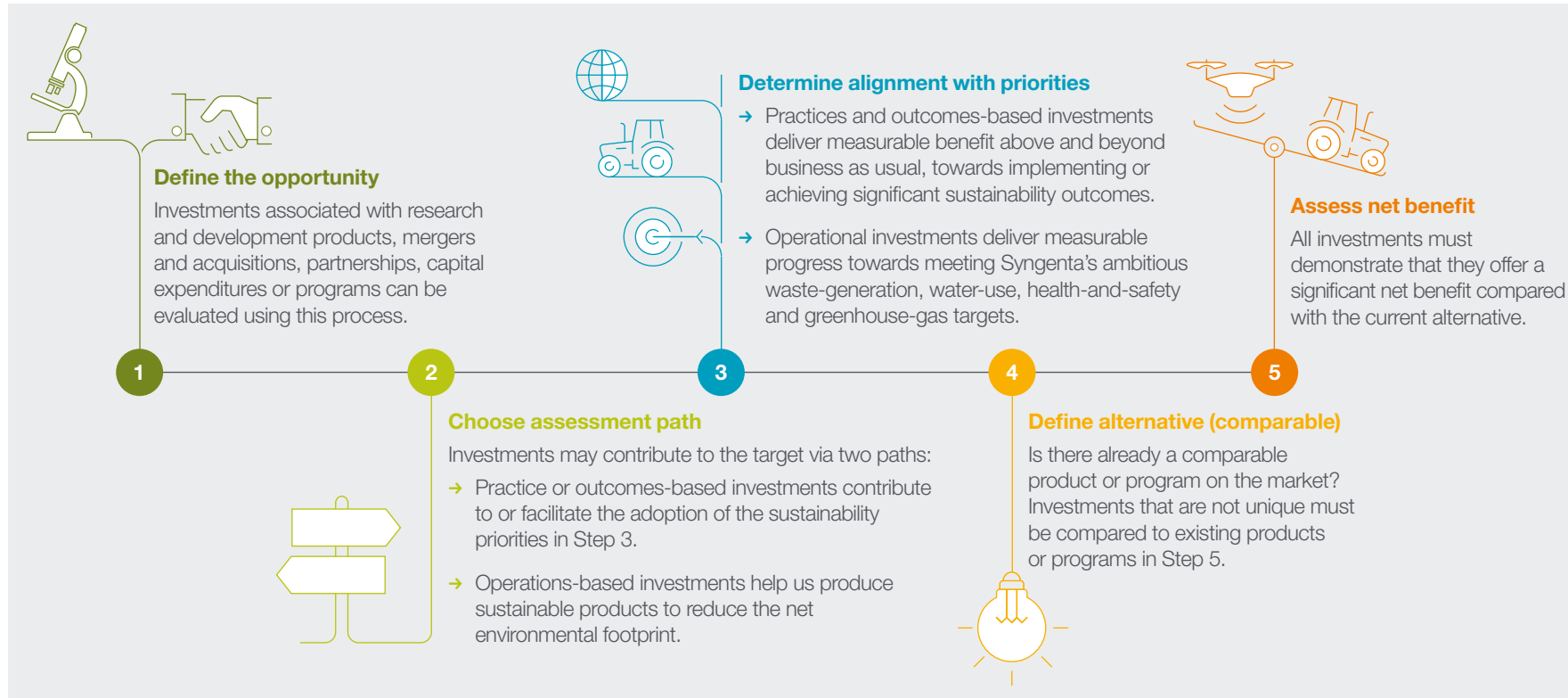
mitigate its effect on the food supply and provide farmers with the tools they need to manage their land within planetary boundaries.

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**



### 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.



Products containing ADEPIDYN™ fungicide control diseases with fewer sprays, which also reduces soil compaction from tractors



When wheat is infected with Septoria, up to 40% of yield can be lost

### 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®<sup>1</sup> Technology in the US and Canada for use in soybeans and cotton. TAVIUM® Plus VaporGrip®<sup>1</sup> Technology is a premix that controls key broadleaf and grass weeds in Roundup Ready 2 Xtend®<sup>1</sup> Soybeans and Bollgard II®<sup>1</sup> XtendFlex®<sup>1</sup> 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.

### 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.

### 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.

The disease is particularly difficult for growers to manage as it only appears late in the season once the crop is close to harvest, putting the whole harvest at risk.

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.

<sup>1</sup> Registered trademarks of Bayer Group



Our new Spiropidion insecticide, which is safe to beneficial insects, can be safely applied even during flowering



Fall armyworm, seen here in corn, causes devastating crop damage

### 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



See “Accelerating innovation in a changing world” on [pages 6-9](#)

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

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.



We now offer farm management systems across the US, Brazil, China and Eastern Europe, helping farmers optimize their crop management



Drone use for spraying continues to spread, particularly in China, and we are tailoring application advice by crop and geography



### 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 Ijuí, 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.



Our first Syngenta-own store in Brazil offers farmers a range of products and advice on how to increase production sustainably



We celebrated the centenary of our manufacturing site at Grangemouth, UK, this year

# Seeds

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.

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.



Seed selection is one of the biggest decisions a farmer makes every year. Our sales teams and agronomists in the field provide the deep specialist advice growers need, using digital seed placement tools to enable data-driven decisions. We also ensure our R&D teams connect closely with farmers, and we bring customers to our research facilities around the world to talk to our scientists and plant breeders. We have a strong pipeline and ongoing programs in plant breeding and biotech innovation to help farmers meet the increasingly complex challenges they face while also addressing the needs of nature and society. Our innovations go beyond seed technology to include supporting tools and solutions.

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.

Fall armyworm (FAW) is another devastating pest. In 2016, it spread to Africa where it presents a permanent agricultural challenge in 43 countries and has the potential to put food security and seed security at risk. Estimated yield losses in corn are between 20-50 percent. In 2018, FAW arrived in Asia and is now found in most major grain producing countries in the region.

Our AGRISURE VIPTERA® corn trait is now the only fully-functioning trait against FAW in Brazil and is the best above-ground insect control in the North American corn industry.

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.



Dairy producer Wally Eachus (center) in New Jersey, US, discussing the benefits of ENOGEN® feed corn with his son, Eric Eachus (left), and Brent Sutton (right), Syngenta



Our new YOOM™ cocktail tomatoes help growers differentiate their offer for retailers, and provide them with an attractive and tasty new vegetable for consumers

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.

**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.



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



E-LUMINATE® enables seed advisors and agronomists to make recommendations on seed products and management practices on a field-by-field basis

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.



↑ We offer flower growers a broad cyclamen portfolio for the latest consumer garden trends, with features including disease and weather tolerance



↑ The new Trait Conversion Accelerator at Nampa, Idaho, US, will deliver new elite corn hybrids much faster than previously done in open field or semi-controlled environments



# 4

## The Good Growth Plan

Delivering our  
commitments and  
looking to the future

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 promote soil health, resource efficiency and habitat protection in major agricultural regions worldwide, and brings together Syngenta’s research and development capabilities and TNC’s scientific and conservation expertise to scale up sustainable agricultural practices.

We know the rich value that derives from working with partners in pursuit of shared goals.

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.



See “More efficient practices make for a healthier farm” on [page 25](#)

We’ve also partnered with leading policy and decision makers, together with the United Nations Convention to Combat Desertification (UNCCD), providing farmers and policy makers with the support they need to take care of their land and their business.

In China, we have partnered with the National Agricultural Extension & Service Center (NATESC) and the Ministry of Agriculture and Rural Affairs (MARA) to train farmers on the safe use of pesticides and better farming practices. Since 2000, the trainings have taken place at farmers’ meetings all over China, organized by Syngenta and local partners. We train farmers how to protect themselves while handling and spraying pesticides, using techniques which conform to safety regulations.

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



See “Safe farming with drone technology” on [page 29](#)

The track record we have established through 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.



Year after year, Syngenta confirms its commitment to creating a positive impact in the agricultural sector not only through its technology but also via collaborations. Thanks to Syngenta’s commitment, different communities all around the world are able to get first-hand knowledge on safe and sustainable farming practices.

#### 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.



See “Accelerating innovation in a changing world” on [pages 6-9](#)

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.







**Make crops more efficient**

Increase the average productivity of the world's major crops by **20 percent** without using more land, water or inputs

**Progress and key achievements 2014–2019**

18.8%

Land productivity increase<sup>1</sup>



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



**Rescue more farmland**

Improve the fertility of **10 million** hectares of farmland on the brink of degradation

14.1m

Hectares of benefited farmland<sup>2</sup>

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



**Help biodiversity flourish**

Enhance biodiversity on **5 million** hectares of farmland

8.2m

Hectares of benefited farmland<sup>2</sup>



Our biodiversity projects around the world continued to deliver measurable benefits to farmers and their wider communities



**Empower smallholders**

Reach **20 million** smallholders and enable them to increase productivity by **50 percent**

26.5m

Smallholders reached through training and sales<sup>3</sup>

28.5%

Smallholder land productivity increase<sup>4</sup>

We have reached over 20 million smallholders and substantially increased their productivity, but there is still a way to go



**Help people stay safe**

Train **20 million** farm workers on labor safety, especially in developing countries

42.4m

People trained on safe use<sup>5</sup>

We have trained unprecedented numbers, exceeding our 2020 target of 20 million by reaching 42.4 million people



**Look after every worker**

Strive for fair labor conditions throughout our entire supply chain network

99.0%

Suppliers included in sustainability and fair labor programs<sup>6</sup>



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

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

	2019	2018	2017
No. of reference farms	<b>1,659</b>	1,443	1,459
No. of benchmark farms	<b>1,928</b>	2,316	2,630

### 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<sup>1</sup> %

**18.8%**



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

Case study



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.

Rita Herford tracks and shares sustainability information with customers 

# Rescue more farmland

UN Sustainable Development Goals  
2, 13, 15, 17

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.

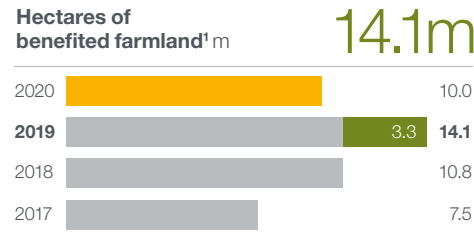
As well as working with farmers, we are also raising awareness of soil conservation among value chain partners, academics, government institutions and others. For example, Syngenta has been the private-sector partner of the UN Convention to Combat Desertification (UNCCD) for six years, alongside the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



<sup>1</sup> 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. Benefiting 1.9 million hectares, it exemplifies how the combination of digital agriculture

Case study

## More efficient practices make for a healthier farm

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.



Conservation agriculture keeps Péter Szabadka's soil healthy and strong

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.

# Help biodiversity flourish

UN Sustainable Development Goals  
2, 15, 17

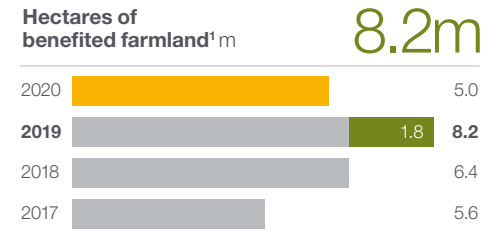
The sustainability of agriculture relies on biodiversity — for plant breeding, pollination and food diversity. We are promoting and enabling action to increase and connect habitats that support healthy and diverse wildlife populations.

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.



<sup>1</sup> 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.

## Making Bornholm a haven for pollinators

Case study

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.



← One of our wildflower strips outside Bornholm Airport

# Empower smallholders

UN Sustainable Development Goals  
1, 2, 17

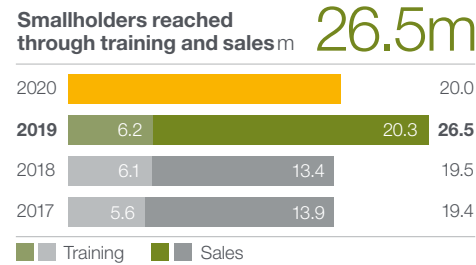
Smallholders produce more than 80 percent of the food consumed in much of the developing world. Their crop productivity lags well behind that of larger producers, so closing the gap significantly improves food security and reduces poverty.

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.

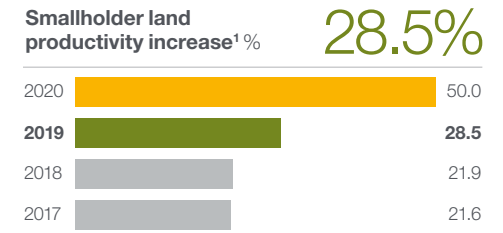


See “Help people stay safe” on [page 29](#)

**Did you know?** Smallholders help feed the world

They produce half of the world's calories **and 80% of the developing world's food**

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.



<sup>1</sup> On smallholder reference farms compared to baseline 2014

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.

Case study

## 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

UN Sustainable Development Goals  
2, 3, 17

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.

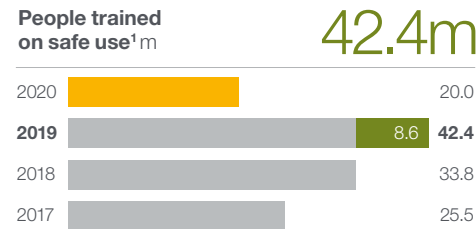
The benefit for customers comes both from using our products safely and using no more than is necessary, so that they minimize environmental impact and maximize their return on investment.

## 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.



<sup>1</sup> 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.

Case study

## 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 Daliutun 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.



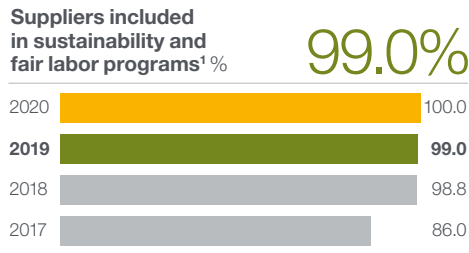
Shi Lijie advises farmers in the field on safe and effective pesticide use

# 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.



<sup>1</sup> 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](http://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, 88 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.



Case study

## 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.



← Bringing more women into our supply chain in Argentina

The Syngenta Foundation helps rural communities benefit from technology

# Turning innovations into smallholder income

© Syngenta Foundation Bangladesh

The Syngenta Foundation works with small-scale farmers in developing countries. We help them increase their productivity, income and resilience. Innovations in many forms play a crucial role. Our aim is to make these available to many more farmers, faster.

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.

Accelerating 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.



← Cassava planting material prepared for testing by Ugandan specialists

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.

### 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."



↑ Building a business that serves her community: Indian Agri-Entrepreneur Kavita Patil

**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](http://www.syngentafoundation.org)



## Our operations

# Putting sustainability first across all our operations

Securing the long-term viability of our business means using resources efficiently – and sustainably – in all our operations. It also means actively reducing adverse impacts on climate, the environment and society.

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

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.**



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

### 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.



Leaders from around the company gather together annually to discuss strategic priorities

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.

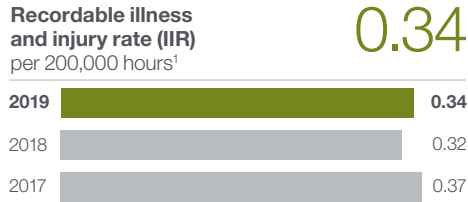
A recent survey of our employees confirmed that more than two thirds of them are benefiting from such conversations.

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.



<sup>1</sup> 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.

Case study

Turning data into knowledge

Dr. Laura Potter and her team tailor seed development to grower needs



Dr. Laura Potter is our Global Head of Analytics and Data Science, leading a team of mathematicians, geneticists and genomicists. 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 are continually improving the efficiency of our operations, while always seeking to reduce any adverse impacts. The long-term sustainability of our business also relies on engaging our supply chain in these efforts.**

**All sustainable operations performance indicators reported are for our own operations only.**

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.



See "Accelerating innovation in a changing world" on [pages 6-9](#)

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.

## Reducing our carbon footprint

Our 2030 target of at least 50 percent reduction in carbon intensity has been validated and endorsed by the Science Based Target initiative (SBTi). This is a joint initiative of CDP, the United Nations Global Compact, the World Resources Institute and World Wildlife Fund. Its goal is to enable leading companies to set ambitious and meaningful corporate greenhouse gas (GHG) reduction targets. Syngenta's commitment is to stay well below the Paris Agreement.



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

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.

**CO<sub>2</sub>e emissions intensity**  
g/\$ sales

120



In 2019, intensity-based and absolute CO<sub>2</sub>e 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 Paulinia, 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 CO<sub>2</sub>e 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 CO<sub>2</sub> 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

2.3



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.

**Hazardous waste intensity**  
g/\$ sales

14.7



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.

Case study

## Carbon-friendly flower cuttings from Ethiopia



Renewable geothermal energy keeps our young plants warm

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

UN Sustainable Development Goals 1, 8, 16, 17

**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

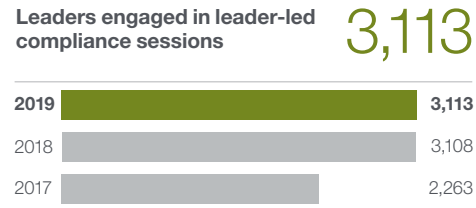
All our stakeholders – from farmers, governments and research bodies to our partners, suppliers and broader society – expect our leaders and employees to act ethically. Earning their trust by doing the right thing is fundamental to achieving our goals.

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).



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.



Every day, we remove \$1m of counterfeit products from the market



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.

**Corporate community investment \$m**

\$24m



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.

**Case study**

Taking care of rural communities



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 Jinmao 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 2005 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.

After joining CNAC in 2005, he held various senior positions, including Deputy Secretary of the Communist Party of China, Assistant President and Chief Strategy Officer (2014–2017), Assistant President and Chief Strategy Officer (2011–2014), and Assistant President and Director of the Planning Department (2008–2011), Director of the Planning Department (2005–2008). From 2000 to 2005, he was Senior Engineer and Project Manager at the China National Petroleum and Chemical Planning Institute. From 1998 to 2000, he worked at the Planning Department of China National Petroleum Administration Authority. From 1994 to 1998, he worked at the Chinese Ministry of Chemical Industries, holding positions in the Planning Department and the Planning Institute.

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  
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 the Food and Agriculture Organization of the UN. Her work has taken her to more than 60 countries outside Europe and North America. She is a member of eight scientific academies, and has served on the boards of Rabobank and Unilever.

Louise Fresco obtained her Doctoral Degree with honors from Wageningen University 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.



### 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:

- Listed companies: The Estée Lauder Companies, Inc., Restaurant Brands International, Inc., Bunge Limited and Loews Corporation.
- Non-listed companies: Continental Grain Company, Wayne Farms LLC, Restaurant Technologies and Castleton Commodities International LLC.

He holds a Bachelor's Degree from Amherst College and is a graduate of Harvard Business School's Advanced Management Program.



### J. Erik Fyrwald

Chief Executive Officer

Executive Director

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 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.



### Sophie Kornowski

Non-executive Director

Independent Director

Member of the Compensation  
Committee and the Committee  
of Independent Directors

**Born:** 1963  
**Nationality:** French  
**Initial appointment:** 2018

#### Professional background

Dr. Sophie Kornowski is currently Senior Partner at Gurnet 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.

Dr. Kornowski previously served as Executive Vice-President of Roche Partnering and was a member of the Roche Extended Corporate Executive Committee as well as a member of the Board of Chugai, Japan. Prior to that, she led the French affiliate of Roche in France for five years. Before joining Roche in 2007, she held several management positions at Merck & Co. (1996-2007), Sanofi Winthrop (1991-1996), Abbott Diagnostics and Abbott Pharmaceutical Products (1985-1991).

In addition to her functions in Syngenta, Dr. Sophie Kornowski holds the following board memberships:

- Non-listed companies: Founder and Non-Executive Director of Mème Cosmetics, France; Stallergenes Greer, France.

Dr. Sophie Kornowski is also a member of the Strategic Committee of the Genopole in France. She holds a Doctorate in Pharmacy from the Faculty of Pharmacy Paris V, and an MBA in Marketing and Finance from the University of Chicago Booth, Graduate School of Business.



### 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. He was the Chairman of the Board of B3, the Brazilian stock exchange, among many other listed and non-listed companies.

Most of his early professional experience was in the Brazilian public sector (1971-2002) having occupied several positions in Brazil's Ministry of Finance and Ministry of Planning, helping the institutional building in the public financial area in Brazil, including the creation of the National Treasury Organization. As a Minister of State, he was in charge of the Energy Crisis Committee and was Chief of Staff to President Cardoso. After his experience in the public sector, he went to the private sector, where he was COO or CEO of four major companies in Brazil, including Petrobras and BRF. As Petrobras' CEO he led the company's recovery. Apart from his function in Syngenta, Pedro Parente currently holds the following board memberships:

- Listed companies: BRF S/A.

- Non-listed companies: Continental Grain Company, E.bricks Early Stage Consultoria Ltda, EB Capital, Pague Menos S/A, and Prumo Logística.

He is also the Chairman of OSESP's board, the Symphony Orchestra of São Paulo.

Pedro Parente graduated in Electronic Engineering from the University of Brasília.

## 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, Stephen 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:** 2018

#### Professional background

Prior to his current function as President Global Crop Protection, Jonathan Parr was Chief Operating Officer (COO) EAME & Latin America (2015–2016). Before that, he was Head of Global Crops & Assets for Syngenta (2014), Regional Director for EAME (2009–2013), Head of Syngenta Flowers (2007–2008), Head of Marketing and Strategy (2004–2007) and European Manufacturing Manager (2000–2003). Before joining Syngenta, he worked for AstraZeneca as a Factory Manager (1998–2000), Global Product Manager Fungicides (1996–1998) and Supply Chain Project Manager (1994–1996). From 1987 to 1994, he held project and engineering management functions at Imperial Chemical Industries (ICI). Apart from his function in Syngenta, Jonathan Parr holds no other mandates in the supreme executive bodies of listed or non-listed companies.

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.



### 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.



Read more on  
[www.sustainability.syngenta.com](http://www.sustainability.syngenta.com)

#### Sustainability governance

The Board of Directors provides strategic direction regarding all sustainability matters. Louise O. Fresco, who brings extensive experience and expertise in sustainable food production, joined our Board of Directors in April 2019 reinforcing our commitment to sustainable and responsible agriculture. The Syngenta Executive Team provides regular updates to the Board of Directors on the progress made regarding the company sustainability commitments.

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

#### → Relevance to sustainable development:

Level of significant impact on global sustainable growth determined using The Global Risk Report 2019, The Earth Security Report 2017 and the Food in the Anthropocene Report of the EAT Lancet Commission<sup>1</sup>

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.



Read more on  
[www.materiality.syngenta.com](http://www.materiality.syngenta.com)

#### 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 benefiting 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.



Read more on  
[www.gri.syngenta.com](http://www.gri.syngenta.com)

<sup>1</sup> World Economic Forum, The Global Risk Report 2019, 14th Edition, p. 5; Earth Security Group, The Earth Security Report 2017, p. 6; The Lancet Commissions, Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems, 2019, p. 6, p. 27 and p. 33-39



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.

**Materiality matrix**



# Non-financial performance summary

## The Good Growth Plan

Reporting period October 1 – September 30	Cumulative since baseline 2014	2019	2018	2017
<b>Make crops more efficient<sup>1</sup></b>				
Total number of reference farms		<b>1,659</b>	1,443	1,459
Total number of benchmark farms		<b>1,928</b>	2,316	2,630
Land productivity increase on reference farms		<b>18.8%</b>	13.0%	10.9%
Land productivity increase on benchmark farms		<b>12.4%</b>	7.0%	7.3%
Nutrient efficiency increase on reference farms		<b>46.8%</b>	30.2%	20.3%
Reference farms outperforming benchmark farms		<b>57%</b>	64%	–
Pesticide field application efficiency increase on reference farms		<b>33.4%</b>	24.7%	14.2%
Reference farms outperforming benchmark farms		<b>33%</b>	38%	–
Greenhouse gas emission efficiency increase on reference farms <sup>2</sup>		<b>36.7%</b>	8.8%	14.0%
Reference farms outperforming benchmark farms		<b>65%</b>	69%	–
<b>Rescue more farmland</b>				
Hectares of benefited farmland (m)	14.1	<b>3.3</b>	3.4	3.1
<b>Help biodiversity flourish</b>				
Hectares of benefited farmland (m)	8.2	<b>1.8</b>	0.8	0.7
<b>Empower smallholders</b>				
Land productivity increase on smallholder reference farms <sup>1</sup>		<b>28.5%</b>	21.9%	21.6%
Land productivity increase on smallholder benchmark farms <sup>1</sup>		<b>11.0%</b>	6.3%	5.1%
Smallholders reached through training (m)		<b>6.2</b>	6.1	5.6
Smallholders reached through sales (m)		<b>20.3</b>	13.4	13.9

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](http://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

Reporting period October 1 – September 30	Cumulative since baseline 2014	2019	2018	2017
<b>Help people stay safe</b>				
People trained on safe use (m) <sup>3</sup>	42.4	<b>8.6</b>	8.3	8.2
Countries with established Syngenta product toxicovigilance programs		<b>100</b>	100	100
Crop Protection sales represented		<b>93%</b>	93%	94%
<b>Look after every worker</b>				
Suppliers included in sustainability and fair labor programs <sup>4,5</sup>		<b>99.0%</b>	98.8%	86.0%
Coverage of Syngenta Fair Labor Program				
Syngenta seed producing countries <sup>5</sup>		<b>88%</b>	88%	68%
Seed supply farms <sup>5</sup>		<b>99.3%</b>	99.2%	86.0%
Of which: farms in Fair Labor Association (FLA)'s audit scope		<b>100%</b>	100%	67%
Of which: farms monitored <sup>6</sup>		<b>20%</b>	n/a	20%
Coverage of Supplier Sustainability Program				
Chemical suppliers <sup>7</sup>		<b>94%</b>	94%	90%
Formulation, fill and pack tollers <sup>7</sup>		<b>83%</b>	86%	–
Packaging manufacturers <sup>8</sup>		<b>63%</b>	50%	–
HSE audits at warehouse/logistics service providers		<b>86</b>	65	117
Commercial flowers farms with valid GlobalG.A.P. certification		<b>88%</b>	96%	90%
Commercial flowers farms with valid G.R.A.S.P. assessment <sup>9</sup>		<b>100%</b>	44%	32%

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 own 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](http://www.data.syngenta.com)

## People

Reporting period October 1 – September 30	2019	2018	2017
<b>Employment</b>			
Employees <sup>1</sup>	<b>28,265</b>	27,732	27,669
Europe, Africa and Middle East <sup>2</sup>	<b>11,860</b>	11,690	12,372
North America	<b>4,091</b>	4,120	4,092
Latin America	<b>5,794</b>	5,676	4,907
Asia Pacific	<b>6,520</b>	6,246	6,298
Part-time employees	<b>914</b>	912	927
Turnover rate <sup>3</sup>	<b>9.5%</b>	12.8%	11.3%
of which: <35 years	<b>34%</b>	33%	42%
35-50 years	<b>42%</b>	41%	43%
>50 years	<b>24%</b>	26%	15%
Attrition rate <sup>4</sup>	<b>6.4%</b>	5.8%	5.2%
Senior managers	<b>292</b>	299	339
Europe, Africa and Middle East <sup>2</sup>	<b>57%</b>	55%	62%
North America	<b>23%</b>	24%	17%
Latin America	<b>11%</b>	9%	11%
Asia Pacific	<b>10%</b>	12%	10%
<b>Diversity</b>			
Nationalities in senior management	<b>37</b>	36	33
Female employees	<b>31%</b>	30%	30%
Female employees in management roles	<b>25%</b>	24%	23%
Female employees in senior management	<b>18%</b>	17%	17%
<b>Employee development</b>			
Leadership and talent development investment (\$m)	<b>6.9</b>	6.5	4.2

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

Reporting period October 1 – September 30	2019	2018	2017
<b>Health, safety and well-being</b>			
Recordable injury and illness rate (IIR) per 200,000 hours <sup>5</sup>	<b>0.34</b>	0.32	0.37
Recordable injury rate per 200,000 hours <sup>5</sup>	<b>0.31</b>	0.29	0.34
Europe, Africa and Middle East <sup>2</sup>	<b>0.37</b>	0.39	0.43
North America	<b>0.54</b>	0.54	0.64
Latin America	<b>0.34</b>	0.18	0.30
Asia Pacific	<b>0.13</b>	0.14	0.16
Recordable occupational illness rate per 200,000 hours <sup>5</sup>	<b>0.03</b>	0.03	0.03
Europe, Africa and Middle East <sup>2</sup>	<b>0.03</b>	0.01	0.02
North America	<b>0.04</b>	0.07	0.08
Latin America	<b>0.07</b>	0.03	0.04
Asia Pacific	<b>0.00</b>	0.02	0.00
First aid cases	<b>404</b>	378	382
Cases of recordable injuries	<b>142</b>	123	151
Bruise, strain, sprain and dislocation	<b>39%</b>	35%	36%
Cut and abrasion	<b>22%</b>	28%	25%
Bone fracture	<b>9%</b>	13%	15%
Concussion and internal injury	<b>1%</b>	5%	3%
Multiple injuries	<b>5%</b>	2%	6%
Other	<b>24%</b>	17%	15%
Cases of recordable occupational illness	<b>14</b>	11	12
Cases of work-related stress	<b>12</b>	7	7

## Sustainable operations

Reporting period October 1 – September 30	2019	2018	2017
<b>Energy</b>			
<b>Energy intensity (MJ/\$sales)<sup>1</sup></b>	<b>0.65</b>	0.66	0.67
Energy (TJ)	<b>8,833</b>	8,966	8,484
Gas (TJ)	<b>3,796</b>	3,926	3,405
Electricity (TJ)	<b>2,265</b>	2,297	2,387
Steam (TJ)	<b>1,445</b>	1,318	1,450
Oil (TJ)	<b>331</b>	310	287
Other (TJ)	<b>996</b>	1,115	955
<b>Greenhouse gases</b>			
<b>Total CO<sub>2</sub>e emissions intensity (g/\$sales)<sup>1</sup></b>	<b>120</b>	117	120
Total CO <sub>2</sub> e emissions (000s tonnes)	<b>1,635</b>	1,585	1,515
Within direct control			
CO <sub>2</sub> e emissions from own operations (000s tonnes)	<b>548</b>	521	443
CO <sub>2</sub> emissions from company vehicles (000s tonnes)	<b>67</b>	68	70
Within indirect control			
CO <sub>2</sub> e emissions from purchased energy (000s tonnes)	<b>355</b>	330	353
CO <sub>2</sub> e emissions from business trips (000s tonnes) <sup>2</sup>	<b>37</b>	27	46
CO <sub>2</sub> emissions from distribution (000s tonnes)	<b>628</b>	639	603
<b>Other air emissions</b>			
<b>Other air emissions intensity (g/\$sales)<sup>1</sup></b>	<b>0.066</b>	0.066	0.070
Other air emissions (tonnes)	<b>899</b>	900	884
NO <sub>x</sub> (tonnes)	<b>430</b>	440	410
Non-halogenated VOCs (tonnes)	<b>276</b>	276	322
Halogenated VOCs (tonnes)	<b>28</b>	27	17
Particulates (tonnes)	<b>115</b>	105	88
SO <sub>2</sub> (tonnes)	<b>35</b>	38	32
NH <sub>3</sub> (tonnes)	<b>4</b>	4	5
HCl (tonnes)	<b>11</b>	10	10

<sup>1</sup> 2018 environmental intensity values were restated due to the restatement of Syngenta AG consolidated sales of 2018

<sup>2</sup> Since 2019, the value includes all greenhouse gases and is expressed in CO<sub>2</sub>e. In previous years, only CO<sub>2</sub> emissions were reported

Reporting period October 1 – September 30	2019	2018	2017
<b>Water</b>			
<b>Water usage intensity (liters/\$sales)<sup>1</sup></b>	<b>2.3</b>	2.3	2.5
Water usage (million cubic meters)	<b>30.9</b>	31.4	31.7
Cooling (million cubic meters)	<b>18.3</b>	17.9	19.1
Irrigation (million cubic meters)	<b>5.0</b>	5.3	4.9
Processing and washing (million cubic meters)	<b>5.7</b>	6.3	5.8
Product ingredient (million cubic meters)	<b>0.2</b>	0.2	0.2
Sewage and sanitary (million cubic meters)	<b>0.9</b>	0.9	1.0
Other (million cubic meters)	<b>0.8</b>	0.8	0.7
Origin of water			
Surface fresh water (million cubic meters)	<b>20.4</b>	19.7	21.3
Underground water (million cubic meters)	<b>7.8</b>	8.8	7.5
Drinking water from municipal network (million cubic meters)	<b>2.6</b>	2.8	2.8
Recovered rain water (million cubic meters)	<b>0.1</b>	0.1	0.1
<b>Wastewater effluents</b>			
<b>Industrial wastewater discharge intensity (liters/\$sales)<sup>1</sup></b>	<b>0.71</b>	0.67	0.72
Industrial wastewater discharge (million cubic meters)	<b>9.7</b>	9.1	9.1
Total organic carbon (TOC) (tonnes)	<b>573</b>	490	499
Chemical oxygen demand (COD) (tonnes)	<b>1,687</b>	1,441	1,522
Biological oxygen demand (BOD) (tonnes)	<b>194</b>	162	154
Total suspended solids (tonnes)	<b>277</b>	451	252
Soluble salts discharged (000s tonnes)	<b>130</b>	146	122
Direct discharge of uncontaminated cooling water (million cubic meters)	<b>18.3</b>	17.9	19.1

## Sustainable operations continued

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

**Environmental compliance**

Significant unplanned releases <sup>2</sup>	<b>5</b>	0	0
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<sup>1</sup> 2018 environmental intensity values were restated due to the restatement of Syngenta AG consolidated sales of 2018

<sup>2</sup> Since 2019, significant unplanned releases are those classified as high as per the International Council of Chemical Associations (ICCA)'s standard for the reporting of Process Safety Incidents. In previous years, these releases were classified according to a Syngenta internal standard

## Business integrity

Reporting period October 1 – September 30	2019	2018	2017
<b>Corporate conduct</b>			
Compliance cases reported <sup>1</sup>	<b>251</b>	299	215
Leaders engaged in leader-led compliance sessions <sup>2,3</sup>	<b>3,113</b>	3,108	2,263
Completion rate <sup>2,3</sup>	<b>92%</b>	99%	95%
Employees in scope for Code of Conduct commitment <sup>3,4</sup>	<b>21,887</b>	–	–
Completion rate <sup>3,4</sup>	<b>99%</b>	–	–
<b>Security management</b>			
Sites included in Syngenta Security 360° Program	<b>148</b>	131	129
Product Security cases	<b>981</b>	880	723
Suspect counterfeit Crop Protection product seized by authorities (tonnes)	<b>1,782</b>	1,657	541
Suspect counterfeit Seed product seized by authorities (tonnes)	<b>1,817</b>	196	93
<b>Animal testing compliance</b>			
Management system audits performed in contract laboratories	<b>7</b>	4	17
Management system non-compliances found	<b>0</b>	0	0
<b>Biotechnology and regulatory compliance</b>			
Employees completing field trial regulatory compliance training	<b>1,984</b>	1,140	1,426
Field trial locations planted under country regulatory compliance programs <sup>5</sup>	<b>475</b>	434	299
<b>Economic value shared</b>			
Economic value shared (\$m)	<b>13,210</b>	16,298	12,095
Payments to suppliers	<b>8,659</b>	7,877	7,508
Employee wages and benefits	<b>2,847</b>	2,755	3,099
Payments to governments (taxes) <sup>6</sup>	<b>292</b>	168	241
Payments to providers of capital	<b>787</b>	4,819	593
Capital expenditure	<b>601</b>	655	631
Corporate community investment <sup>7</sup>	<b>24</b>	24	23

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

<sup>2</sup> 2018 values were restated to represent all 2018 sessions

<sup>3</sup> 2019 values represent calendar year 2019

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

<sup>5</sup> Represents all trial locations covered by country specific regulatory compliance programs whether they require a permit or not

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

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

## 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
- The data and information disclosed in the Non-financial performance summary in the Report on pages 48 to 51 do not give a fair picture of Syngenta's non-financial performance.

PricewaterhouseCoopers AG



Gerd Tritschler Konstantin Meier  
Zurich, 25 February 2020

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Cautionary statement regarding forward-looking statements: This document contains forward-looking statements, which can be identified by terminology such as “expect”, “would”, “will”, “potential”, “plans”, “prospects”, “estimated”, “aiming”, “on track” and similar expressions. Such statements may be subject to risks and uncertainties that could cause the actual results to differ materially from these statements.

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.

The Sustainable Business Report was originally published in English.

This publication is available on the Internet: [www.syngenta.com](http://www.syngenta.com)



For further information and answers to many “Frequently Asked Questions”, visit our corporate website: [www.syngenta.com](http://www.syngenta.com)

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.



WE SUPPORT

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.

**SUSTAINABLE DEVELOPMENT GOALS**



Read more on [sustainabledevelopment.un.org](http://sustainabledevelopment.un.org)

*Bringing plant potential to life*