Syngenta AG - Climate Change 2020

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Syngenta is one of the world's leading science-based agtech companies with about 28,000 employees in some 90 countries dedicated to our purpose: Bringing plant potential to life. 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.

Syngenta innovates with world-class science to protect crops and improve seeds. Our two core businesses, Crop Protection (2019: USD 10.6 billion sales) and Seeds (2019: USD 3.1 billion sales), support farmers with technologies, knowledge and services so they can sustainably provide the world with better food, feed, fibre, and fuel.

Whether they grow corn or rice, vegetables or flowers, farmers trust Syngenta to help them produce healthy, premium crops and minimize the use of precious natural resources. We accelerate our innovation and invest to advance a more sustainable agriculture which is good for nature, farmers and society. We contribute to addressing the global challenge of food security by increasing yields through technology, improving crop quality, helping farmers use natural resources more efficiently and creating benefits for rural communities. We also encourage farmers to adopt climate-smart farming practices that help them to optimize inputs, reduce soil-based carbon emissions and build crop resilience to changing weather patterns.

We are committed to helping farmers and fighting climate change, making agriculture more resilient and sustainable. At the heart of our contribution is The Good Growth Plan, which includes bold commitments to reduce agriculture's carbon footprint and help farmers deal with extreme weather patterns caused by climate change. Our business – and the world's food security – depend on sustainable natural resources, healthy ecosystems and thriving rural communities. Which is why we cooperate with industry partners, governments, academia and NGOs to support the achievement of the United Nations Sustainable Development Goals (SDGs).

PLEASE NOTE: This submission is for Syngenta AG Group and not for Syngenta Group. Launched in June 2020, the Syngenta Group encompasses four business units. Under this new structure, the scope of this submission includes the Syngenta Crop Protection and Syngenta Seeds business units, as well as the former Syngenta AG Group's operations of Syngenta Group China business unit. More information about the newly launched Syngenta Group can be found here: https://www.syngenta.com/company/media/syngenta-news/year/2020/launch-syngenta-group-creating-global-agtech-market-leader

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	October 1 2018	September 30 2019	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Albania
Algeria
Angola
Argentina
Armenia
Australia
Austria
Azerbaijan
Bangladesh
Belarus
Belgium
Belize
Bolivia (Plurinational State of)
Bosnia & Herzegovina
Brazil
Bulgaria
Burkina Faso
Cameroon
Canada

Chile
China
China, Hong Kong Special Administrative Region
Colombia
Costa Rica
Côte d'Ivoire
Croatia
Cuba
Cyprus
Czechia
Denmark
Dominican Republic
Ecuador
Egypt
El Salvador
Estonia
Eswatini
Ethiopia
Finland
France
French Guiana
French Polynesia
Gabon
Georgia
Germany
Ghana
Greece
Guadeloupe
Guatemala
Honduras
Hungary
India
Indonesia
Iran (Islamic Republic of)
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kuwait
Kyrgyzstan
Latvia
Lebanon
Libya
Lithuania
Luxembourg
Malawi
Malaysia
Mali
Malta
Mauritius
Mexico
Morocco
Mozambique
Myanmar
Namibia
Netherlands
New Caledonia
New Zealand
Nicaragua
Nigeria
Norway
Oman
Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Puerto Rico
Qatar
Republic of Korea
Republic of Moldova
Réunion
Romania
Russian Federation

Saudi Arabia
Senegal
Serbia
Singapore
Slovakia
Slovenia
South Africa
Spain
Sri Lanka
State of Palestine
Sudan
Sweden
Switzerland
Taiwan, Greater China
Tajikistan
Thailand
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United Republic of Tanzania
United States of America
Uruguay
Uzbekistan
Viet Nam
Yemen
Zambia
Zimbabwe

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Please select

Bulk inorganic chemicals

Please select

Other chemicals

Specialty chemicals
Other, please specify (Seed production)

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Director on board	RESPONSIBILITIES OF BOARD OF DIRECTORS: As stated in Syngenta's "Regulations Governing the Internal Organization," the entire Board of Directors provides strategic direction regarding all sustainability matters – this includes climate-related issues – and exercises oversight over the Syngenta Executive Team in this respect. In particular, the Board of Directors: * defines the Company's sustainability strategic priorities, policies and issues; * assesses the effectiveness of the implementation of sustainability-related internal policies; * reviews sustainability and HSE performance and improvement plans; and * assesses and advises on sustainability-related actions proposed by the Syngenta Executive Team. RESPONSIBILITIES OF NEW BOARD DIRECTOR: In particular, the company's efforts on sustainable and climate-smart agriculture fall under the responsibility of a board director, who joined our Board of Directors in April 2019, reinforcing Syngenta's commitment to sustainable and responsible agriculture. This director brings extensive experience and expertise in sustainable food production and advises the Board of Directors on these matters. EXAMPLE: In 2019, Syngenta and its Board of Directors took the decision to dedicate USD 2 billion over five years to innovation targeted at delivering a step change in agricultural sustainability and, in particular, to help farmers prepare for and tackle the increasing threats posed by climate change. Additionally, they also committed to match this investment with a drive to reduce the carbon intensity of the company's operations by at least 50% by 2030, a commitment which has been validated by the Science Based Targets initiative (SBTi). Syngenta also set targets to reduce water and waste intensity in its operations by 20%. Every year, the Board of Directors approves our non-financial performance summary, which includes GHG performance data and is published in our Sustainable Business Report. The Board of Directors approved the 2019 report on February 20, 2020 and the 2018 report on February 14, 2019.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Board of Directors meets several times a year to discuss sustainability issues, including those related to climate change. The Board of Directors provides strategic direction regarding these matters and exercises oversight over the Syngenta Executive Team. At least once a year, the board reviews the business sustainability-related strategy and actions, including those related to climate change. Further discussions take place in additional meetings as needed. For example, in 2019 the board reviewed and approved our commitment to invest USD 2 billion over five years to innovation targeted at delivering a step change in agricultural sustainability, including helping farmers tackle the threats posed by climate change. The Board of Directors also approves our non-financial performance summary, which includes GHG performance data and is published in our Sustainable Business Report. The Board of Directors approved the 2019 report on February 20, 2020 and the 2018 report on February 14, 2019. The Board of Directors also discusses performance objectives and long-term incentive plans, which are put in place once a year. The long-term incentive plans include sustainability targets, including climate change. The Chief Sustainability Officer (CSO) briefs the Board of Directors frequently on these matters, including informing it on the company's performance against sustainability targets set in Syngenta's Good Growth Plan.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The CHIEF SUSTAINABILITY OFFICER (CSO), who reports to the CEO, leads the Business Sustainability function. This function coordinates and channels sustainability initiatives, performance management and policy engagements – including those related to climate change. It assesses and monitors the company's performance in relation to climate change and the wider sustainability agenda. The CSO provides regular updates to the Syngenta Executive Team and the Board of Directors on the progress made regarding the company's sustainability commitments and advises them on required actions.

The Business Sustainability function has global, regional and country representatives to ensure alignment of initiatives, performance management and policy engagement across the organization. The role of CSO and the Business Sustainability function were created in 2018 to bring a sharper focus to our sustainability work and support our commitment to work more closely and transparently with governments, NGOs and society to find the solutions we collectively need.

The SYNGENTA EXECUTIVE TEAM, which includes the CEO, CFO, COO Crop Protection, COO Seeds, Head Human Resources and Group General Counsel, directs business sustainability-related standards, strategy, objectives and partnerships – also including those related to climate issues. It reviews and advises on the effectiveness of implementation of internal policies. Sustainability should be every employee's responsibility. Each member of the Syngenta Executive Team is responsible for embedding sustainability in her/his area of responsibility.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Corporate executive team	Monetary reward	Company performance against a climate-related sustainability index	The Syngenta Executive Team's remuneration is linked to the overall company performance, including financial and sustainability performance. Sustainability targets are set in Syngenta's Good Growth Plan and Sustainable Operations strategy. They include targets and measures to manage our impact on climate change and our contribution to address the climate change challenge.
Management group	Monetary reward	Company performance against a climate-related sustainability index	Senior management's remuneration includes sustainability performance associated to Syngenta's Good Growth Plan and Sustainable Operations strategy. They include targets and measures to manage our impact on climate change and our contribution to address the climate change challenge.
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction project Efficiency project Behavior change related indicator Company performance against a climate-related sustainability index	As a member of the senior management group, the Chief Sustainability Officer's (CSO) remuneration includes sustainability performance associated to Syngenta's Good Growth Plan and Sustainable Operations strategy. As the most senior employee directly responsible for sustainability, the CSO's annual performance goals and results are directly linked to sustainability topics, including climate change.
Environment/Sustainability manager	Monetary reward	Emissions reduction project Emissions reduction target	The Head of Environment and Sustainable Operations is responsible for sustainable initiatives and performance within our own operations and the supply chain. As such, his annual goals and results are directly linked to these topics, which include management of GHG emissions, energy and climate change.
Public affairs manager	Non-monetary reward	Behavior change related indicator	Our business and external communications teams, which are responsible for our public affairs activities, play a vital role in regularly and actively communicating on our climate change performance, actions and position.
All employees	Non-monetary reward	Efficiency project Other (please specify) (Innovation in practices, products and services)	We encourage employees to develop innovative practices, products and services that, for example, generate cost savings or business related to climate change. For example, employees research and develop new and improved plant varieties that are more resistant to extremes in weather and temperature. Employees in our production and supply function also investigate ways to make production processes more resource-efficient and reduce our carbon footprint. Employees' efforts are recognized as part of their annual performance review.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	2	Current year (i.e. 2019) or the following one as part of the budgeting process.
Medium-term	2	5	Five-year horizon (i.e. 2019-2023) as part of the long-term planning performed by operational units.
Long-term	5	20	Strategic exercise performed at corporate level typically to cover the period from 5 up to 20 years.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

According to our enterprise-wide framework definitions, a substantive impact has a major effect on the delivery of the objectives and the organizational strategy. A climate-related risk may be assessed in terms of financial impact or using an environmental dimension of the enterprise framework which measures the direct impact on the environment. The framework is dynamic for use both at corporate and asset level and reflects adjusted definitions.

In financial terms, a substantive impact may represent a gross profit impact of 5-10% (major) or 10% and more (critical) in a year. The thresholds apply both for corporate (Syngenta AG Group) and asset level (e.g. sites, countries).

In environmental terms, a substantive impact would typically mean any release to the environment which would merit media attention, regardless of the entity level in question. Environmental-related impacts would be escalated for assessment with regards to criticality and strategic impact on the business.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
The process of identifying, assessing and responding to climate-related risks and opportunities is integrated into the overall Enterprise Risk Management (ERM) Framework which is based on the ISO 31000 Risk Management Standard and governed by the Syngenta Executive Team. Risk management is everyone's responsibility in Syngenta from leadership teams through to each employee. Every leader and employee must consider risks in the operations they are responsible for and be accountable within the scope of their role and in light of pursuing opportunities. The Syngenta process to identify and assess risks and opportunities, including climate-related risks and opportunities, consists of: 1. Context: understanding the uncertainties surrounding the delivery of the strategy, setting the risk appetite and risk tolerance 2. Identification: identifying, recognizing and describing risks and opportunities 3. Assessment: gaining a deeper understanding of risks and opportunities by analyzing their likelihood and potential impact in accordance with the overall ERM framework Climate change is considered throughout the process: from the identification of risks and opportunities by screening current and emerging trends and ecosystem risks to assessment of risks and opportunities by considering the impacts on the environment, business and people. Climate change is viewed both from a strategic long-term business value impact perspective (e.g., opportunities through changes in consumer diets and preferences) and a short-term, operational perspective at corporate and business unit levels (e.g., supply chain disruptions and contingencies due to flooding, earthquakes, heatwaves and other physical acute and chronic risks). Typically, strategic long-term risks and opportunities are discussed at global level and inform senior leadership decision making on significant trends for the next 10 to 20 years. This regular type of exercise is conducted with both internal and external experts. Syngenta has also engaged in more in-depth scenario work as a result of close collaboration and work on TCFD in 2019, looking into medium- and long-term climate change-related risks and opportunities extending beyond 5 and 10 years and other transitional risks. Scenario results are yet to be finalized and discussed. The annual risk identification exercise, which looks at the short- and medium-term risks and opportunities within the next 5 years, follows the company's established strategic planning cycle. Global, regional, business unit and country specific strategic risk identification always involves functional experts from the Sustainability, R&D, Production and Supply, Finance and Commercial teams, who provide a broad cross-functional view and consider climate change. Functions and Operations mirror a similar approach to risk identification with representatives from sub-functions and disciplines, and consider impacts on downstream and upstream. For example, within our supply chain, comprehensive risk assessments take place on a continuous basis to establish the exposure of our global operations to natural catastrophes. Each site exposure is determined by the likelihood and impact of a 100-year risk event and of a 500-year risk event for extreme weather events. The impact provides us with a number of potential number of days that a plant would be non-operational for each risk. To estimate the potential business interruption, we use the most severe downtime scenario weighted by: a) safety stock of the product held by Syngenta and b) the time taken to move to an alternative source. These days are then proportionally multiplied based on the manufacturing site's contribution to Syngenta's profit to estimate a potential overall business impact. Where high exposure to a natural catastrophe is identified, mitigating actions are taken to minimize the impact and/or likelihood of such an event. Examples of such actions include co-plan emergency responses with the supplier, review and increase the safety stock we hold, and identify additional sources for the product. Additionally, for example, our HSE Management System (MS) requires all sites to understand their climate-related risks as well as put improvement plans, targets and mitigating measures in place. Sites' progress is monitored and routinely reviewed through the HSE MS assurance processes. An example of a transitional risk for Syngenta is legislation. Legislation may be enacted in the future that would limit carbon dioxide emissions in the manufacture of Syngenta's products or increase the costs associated with such emissions. Syngenta is working actively to make its production more energy-efficient and to reduce its rate of carbon dioxide emissions per unit of sales revenue. Once risks and opportunities have been identified, a prioritization approach is applied to help the organization to focus and decide on the risks that could have a substantive impact on the delivery of the strategy and objectives, as well as on the opportunities to pursue. We consider both the potential likelihood of the downside risks materializing and their impact in environmental, people and financial terms. Risks with a more aggressive and volatile outlook (often based on expert opinion and discussion) go through a more frequent assessment based on their profile to inform the decision making on factors such as the potential impact and time to impact. Decisions on risk treatment plans (mitigate, transfer, accept or control) are based on and guided by factors such as risk severity, risk appetite, business case in investment for mitigation, regulations and local conditions affected by such decisions. Once treatment plans have been identified and established, mitigation plans and progress are discussed and monitored on a continuous basis and adjusted to the potential changes in the business as required, such as in cases of supply interruptions due to weather disturbances. In the particular case of supply disruption, decisions on re-routing distribution and other changes to distribution networks are discussed both at the company and asset level (e.g., production sites). Risks and opportunities are managed and reported within business units and functions, and Group Risk Management challenges and consolidates the inputs from business units. The Board of Directors discusses critical business risks and reviews the overall effectiveness of the risk process. Climate change is one of the core drivers of some of the largest group risks and opportunities, and discussions on climate-smart agriculture happen at an increased frequency.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	RATIONALE FOR INCLUSION: Current regulatory schemes pose a risk and an opportunity to Syngenta's operations and are always included in climate-related risk and opportunity assessments. Current regulations are typically discussed in connection with the business planning and review processes and reported to relevant parts of the organization to ensure compliance with the regulations (risk). Government regulations encouraging climate-smart agriculture practices and areas to be planted with certain crops can also have a positive impact on our revenues by encouraging us to expand our product offering (opportunity). The impact of current regulations is reviewed both from an upside and downside potential to the business and environment. EXAMPLE: Increased pricing of greenhouse gas emissions and regional pricing schemes may affect our regional competitiveness. Also, Syngenta's UK sites, which were under the EU Emission Trading Scheme (ETS), revised their ETS strategy post-Brexit. When the UK authority (The Environment Agency) allocated both the 2019 and 2020 free emission allowances into operators accounts in February 2020, Syngenta purchased 18,000 allowances as a hedge against the 2020 emissions. The Syngenta EU ETS account now stands at 62,623 allowances.
Emerging regulation	Relevant, always included	RATIONALE FOR INCLUSION: Syngenta expects climate change-related regulations to intensify and increase in terms of demands. Emerging regulation is part of our risk landscape and universe that operational units and business consider when identifying risks and opportunities from different and broad aspects of our business. Emerging regulations and their impacts on the business are discussed regularly both at national (country), regional and corporate (Group) levels. EXAMPLE: In alignment with governments' commitments to the Paris Agreement, countries are setting carbon reduction/neutrality goals and enacting corresponding regulations that will impact businesses. In our commitment to the Paris Agreement, Syngenta has agreed to reduce the carbon intensity in our operations by at least 50% by 2030. We will focus efforts on our main manufacturing sites on the direct use of energy and on the efficiency of our manufacturing processes. Progress of site-based energy programs forms part of the business reviews. We will also partner with our crop protection and seeds suppliers to reduce their carbon footprint.
Technology	Relevant, always included	RATIONALE FOR INCLUSION: Science and technology are driving factors in Syngenta's agenda to meet farmers' needs, and are always relevant and included in climate-related risk and opportunity assessments. Syngenta has committed to delivering at least two technological breakthroughs to market each year over the next five years to reduce agriculture's contribution to climate change. We are also investing in new digital tools and platforms helping farmers in increasingly complex growing conditions due to climate change. EXAMPLE: Digital technology is transforming the agricultural industry. As an example, in 2019, Syngenta issued field guidance on how to use FarmShots™, an innovator in high-resolution satellite imagery to look for bare ground as flood water recedes, identifying replant zones and providing tools for spotting nitrogen deficiencies.
Legal	Relevant, always included	RATIONALE FOR INCLUSION: Potential litigation related to climate change factors poses a risk to Syngenta and is, therefore, always included in climate-related risk assessments. Business units regularly discuss the likelihood of a litigation, current trends in the litigation environment, and the potential impact on the business and its reputation. Risks which pose a substantive impact on Syngenta are reported annually to the Board of Directors and are evaluated regarding impact and likelihood in accordance with the enterprise-wide risk framework. Additionally, detailed mitigation plans to reduce the impact on the business are discussed. EXAMPLE: The Legal department takes a consolidated view across global operations on legal matters, including climate change-related legal threats and discusses on a recurring basis the risk landscape and relevant legislation, including climate change-related regulations.
Market	Relevant, always included	RATIONALE FOR INCLUSION: Syngenta's role in the food chain and our ambition to grow through customer-focused innovation requires continuous input from the market, which remains relevant and always included in the risk and opportunity assessments. Syngenta carefully considers the short- and long-term impacts of climate change on the market, industry as a whole, consumers and the environment, and we regularly assess stakeholder concerns and expectations by engaging with growers, employees, communities close to operations, industry associations, NGOs, governments and investors. EXAMPLE: In an effort to stay current with market expectations regarding services and products, and scale up sustainable agricultural practices, Syngenta and The Nature Conservancy came together in 2019 to collaborate on The "Innovation for Nature". This global collaboration promotes soil health, resource efficiency and habitat protection in major agricultural regions worldwide.
Reputation	Relevant, sometimes included	RATIONALE FOR INCLUSION: Societal and customer expectations with regards to climate action and other reputational aspects are important inputs in risk and opportunity assessments and form part of the core discussions in Syngenta. Climate change mitigation and adaptation has high importance to Syngenta and Syngenta's stakeholders on both short- and long-term horizons. Short-term by helping farmers to combat the climate impact facing them today, and long-term by providing solutions which, for example, may help to reduce agriculture's contribution to greenhouse gas emissions. EXAMPLE: Some technological advancements which enable efficiency gains and new revenue streams from new product lines and product enhancements are under close scrutiny by society (e.g., technologies that benefit climate-smart agriculture such as GMO, pest and weed management technologies or more recently CRISP-Cas9 and Cp11 genome-editing).
Acute physical	Relevant, sometimes included	RATIONALE FOR INCLUSION: Potential acute physical risks in the form of extreme weather events, such as floods or tsunamis, could affect our production sites and disrupt our manufacturing capacity. Extreme weather events are considered in the risk assessments both at site and corporate/functional levels to ensure resilience and minimum disruption to operations. Risks are assessed using the enterprise-wide risk framework and treatment plans discussed in further detail based on the severity of the risk and criticality of site operations. A complete comprehensive risk review of all our production sites to natural catastrophe was conducted in 2017 in collaboration with our corporate insurer and a new review will take place in 2020 covering both supply chain and productions sites. EXAMPLE: One of our manufacturing sites in the UK is exposed to a potential flooding risk due to its geographical location and a statistical 30+ year return on a river flooding. The site has provided good flood resilience measures such as flood defense to protect the building and equipment as well as established emergency plans and responses.
Chronic physical	Relevant, sometimes included	RATIONALE FOR INCLUSION: Chronic physical risks and opportunities, such as droughts, are considered as part of the formal enterprise-wide risk and opportunity process which is further integrated into business planning and review processes. Chronic physical risks may influence the demand for certain products over the course of a season and are hence discussed at site, functional and business unit levels. The risks and opportunities are assessed against the enterprise-wide risk framework and prioritized according to their severity for mitigating actions. Mitigation plans for such risks are discussed on an ongoing basis and decisions are taken depending on the business requirements. EXAMPLE: In 2019, our seeds operations were impacted by a severe drought in Australia. To reduce the impact on the business both short- and long-term, Syngenta sales teams and agronomists in the field provide deep specialist advice (seasonal, medium- and long-term advice) to address growers needs, such as using digital seed placement tools to enable data-driven, optimized decisions. Syngenta also ensures that R&D teams connect closely with farmers by bringing customers to our research facilities around the world to talk to our scientists and plant breeders. This ensures a well-calibrated portfolio of products in the long term.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description
Syngenta results may be affected positively or negatively by extreme weather conditions such as flood and droughts that could impact demand for certain products over the course of a season or affect the ability to collect revenues from customers impacted by the events. Although climate change may make growing certain crops more or less viable in different geographic areas in the long term, Syngenta believes it is not likely to reduce overall demand for food and feed. We currently sell and develop new products to improve the water productivity of plants and increase tolerance to drought and heat, thus helping farmers to fight crop losses. Example: In 2019, extreme weather events in the USA and droughts in Australia had an impact on our sales and bottom line from these regions. Syngenta continues to recognize and address farmers' needs for high-performing products and data to make informed decisions, as well as provide them with deep agronomic advice.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
20000000

Potential financial impact figure – maximum (currency)
300000000

Explanation of financial impact figure
Extreme weather events mainly impact our country and regional sales but the overall risk for the global business is mitigated by geographical differences and Syngenta's global footprint. The values were estimated based on the information gathered from extreme weather events in 2019. In particular, we assumed the financial impact on our annual sales to reflect that of previous significant floods or droughts across the world, such as the floods more recently experienced in the USA and the droughts in Australia in 2019. Financial implications are derived mainly from loss of sales, ability to collect receivables or missed product delivery and high inventories.

Cost of response to risk

Description of response and explanation of cost calculation
Extreme weather events mainly impact our country and regional sales but the overall risk for the global business is mitigated by geographical differences and does not carry a cost estimate for mitigating this risk. Part of the cost of response is also accounted for in our investment in the research and development of abiotic stress-related products and thus cannot be disaggregated and specified. We annually invest about USD 1.3 billion in R&D. To mitigate exposure, Syngenta has established structured actions which are reviewed, updated and improved on a regular basis. Commercial and supply teams have processes in place to ensure that: (a) discussions focus on relevant business topics and include weather variability topics; (b) there is a sound understanding of the agricultural environment and emerging trends that may impact our industry; (c) the evaluation of unpredictable variability is realistic and well established; (d) a pragmatic and realistic approach to respond to plan variations is in place and; (e) innovative weather intelligence projects are executed to improve productivity and fast response. Syngenta aims to provide farmers with the right tools and skills to tackle climate change. Syngenta has products available – and in the pipeline – that improve the water productivity of plants and increase tolerance to drought and heat. As climate change brings less predictable and more extreme weather, we offer growers solutions such as AGRISURE ARTESIAN® corn, which delivers strong performance in both drought and excessively wet conditions. Our HYVIDO® hybrid barley seeds offer farmers consistently higher yields. Their root systems form earlier, with bigger and more roots, leading to stronger hybrid vigor, better water and nutrient uptake and stronger growth under stressful conditions. In selected countries, Syngenta offers AgriClime, which is a weather protection program built into qualifying Syngenta product purchases. In the event of certain adverse weather conditions during key growth stages, AgriClime returns up to 30% on those purchases. Through the digital AgriClime enrollment process, farmers enter their farm coordinates and select a qualifying Syngenta protocol to receive a personalized risk protection offer based on their weather history. The dataset utilizes local weather station data alongside weather data from trusted agencies like NASA to compile a 20-year history, down to a 3x3 mile area.

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Although the largest potential substantive climate-related risk would be downstream, some climate-related risks exist at site level in our own operations, which might be exposed to a certain extent to extreme weather events such as floods. As part of our insurance coverage analysis, we have analyzed which sites could be exposed to natural catastrophes. In particular, we have identified that one of our main sites located in the UK is directly exposed to flood risk. The Strategic Flood Risk Assessment records the site to be located in Flood Zone 3a (high risk) where the probability of a flood occurring is considered to be more than 1 in 100 years but less than 1 in 20 years. Floods could cause disruption in the production of active ingredients and our product manufacturing. Like many businesses, other Syngenta sites could be indirectly exposed to climate-related events which temporarily limit production, through e.g., disruption of transport networks, or restrictions on water usage.

Time horizon
Long-term

Likelihood
Very unlikely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
70000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
A flood, with potential to occur once in 100 years at this site, could restrict operations and cause property damage. The value was calculated based on the probable maximum loss in property damage and business interruption, as per the insurance report for the site.

Cost of response to risk
500000

Description of response and explanation of cost calculation
The cost of response to this risk is part of the operational costs and general contingency plans at the site and cannot easily be disaggregated and specified. We estimated this figure over 5 years: USD 100,000 in capital expenditure on plant protection measures, and USD 400,000 in revenue expenditure on clean out of debris from the river. A written and proven emergency response plan exists. Flood resilience measures have also been implemented at the site, including: deployment of temporary flood defense to protect some buildings and equipment, concrete walls to protect Combined Heat and Power, and raising of some critical equipment. Response actions have been fully implemented and emergency plans regularly trained. We have recognized the likely increasing frequency and severity of extreme weather events due to man-made climate change, and we incorporate this into our business continuity plans.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Upstream

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Climate change impacts within our chemical supply chain are important as it represents a significant proportion of our business. Chemical manufacturing plants within our supply chain can be impacted by extreme weather events such as floods. We operate a comprehensive risk management process within our supply chain, and one of the risk elements we assess is natural catastrophe. We have analyzed the top 250 chemical supplier sites by business contribution to understand which of these sites may be exposed to natural risks. The location of each supplier site is analyzed to determine potential exposure to flood, storm, hail, tsunami and storm surge risks using external risk data. We adjust this analysis to consider the impact of climate change on the likelihood and severity of those risks.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
120000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
We assess each site to determine the likelihood and impact of a 100-year risk event and of a 500-year risk event for extreme weather events such as floods, tsunamis, etc. The impact provides us with a number of potential downtime days (i.e. the number of days the plant will be non-operational) for each risk. We then take the most severe downtime scenario and calculate the estimated days of business interruption considering: a) safety stock of the product held by Syngenta and b) the time taken to move to an alternative source. We then multiply these days proportionally to the manufacturing site's contribution to Syngenta's profit to estimate a potential overall business impact. We took the risk scenarios where we classify the likelihood of the risk occurring as 'possible', which according to our framework means within a decade or less, to estimate the potential financial impact figure above.

Cost of response to risk

Description of response and explanation of cost calculation
The cost of response for this risk cannot be disaggregated and specified as it is part of the overall cost of our supplier-related activities. Where considerable risk is identified,

actions are taken such as identifying mitigation or emergency response plans with the supplier, increasing the safety stock we hold, and identifying additional sources for the product. The process enables us to gain greater visibility of risk and exposure, quantify the risks through a likelihood and impact analysis, prioritize the risks that require mitigation actions and ensure there is a clear owner responsible for taking action.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Agricultural soils are among the planet's largest reservoirs of carbon and hold potential for expanded carbon sequestration, and thus provide a prospective way of mitigating the increasing atmospheric concentration of CO2 (Source: FAO). Syngenta encourages farmers to implement climate-smart soil practices such as minimum tillage, crop rotation, and effective nutrient management. These practices serve to enhance soil carbon stocks and influence the carbon fluxes between the soil and the atmosphere. Used in combination with permanent crop cover strategies, such as leaving crop residues or using cover crops and fallows, fields used in agriculture can effectively serve as carbon sinks, and help to remove carbon dioxide and other greenhouse gases from the atmosphere. Syngenta supports commercial activities that promote soil health and fertility, while helping it to reduce, capture and store carbon more effectively. The implementation of climate-smart practices and the use of technology can help farmers sequester carbon in the soil. In a carbon market, carbon sequestered through agriculture could be used to offset emissions from another industry. Syngenta is currently working on better understanding the potential of carbon markets in an agricultural context, how to effectively measure soil carbon sequestration and what the commercial benefits could be for farmers and Syngenta. Our herbicide product range supports modern farming practices that could reduce the amount of carbon dioxide released from the soil. For instance, weed control using herbicides lowers the need for tillage, leaving the plants' roots in the soil for better soil compaction and enhanced soil organic matter, which helps, among other things, to reduce carbon emissions from the soil. Our herbicides such as AXIAL or CALLISTO (selective herbicide) and GRAMOXONE (non-selective herbicide) are widely used for conservation agriculture, especially in countries like Brazil and the USA, and now increasingly in Asia. Seed treatment technology also has an important role to play to sequester carbon in the soil. For example, introduced in 2019 in the USA, VAYANTIS® fungicide not only controls diseases in corn, soybeans, canola, oilseed rape and cereal crops, but also protects the soil by enabling reduced- and no-till cropping systems. Other seed treatment biostimulants, such as EPIVIO, also improve the incorporation of organic matter into the soil and hence improve carbon sequestration.

Time horizon
Long-term

Likelihood
About as likely as not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
We are currently in the exploratory phase and the impact to Syngenta has not yet been quantified financially. Carbon soil sequestration remains an attractive and low-cost alternative to remove CO2 from the atmosphere. We estimate the total value of a market for soil sequestration over the next 50 years at USD ~20 billion to ~140 billion with a 75% value capture for growers and the remainder captured by intermediary services such as project development, quantification and verification. Estimates are subject to a high degree of uncertainty, with potential sequestration rates ranging from 1.2 to 4.5 tonnes of CO2e/hectare/year and carbon prices ranging from USD 2.5 to 30 per tonne of CO2e. The benefits from soil carbon sequestration still face many challenges to scale as a tradeable asset, such as lack of suitable protocols, high cost of quantification, leakage and permanence. Subsidies, pricing of co-benefits and GHG reductions will be vital to provide additional incentives to growers to adopt carbon farming. Key opportunities for Syngenta include the provision of optimized agronomic protocols with seed, crop protection combined with soil health practices, with additional value capture through carbon quantification services, financial services and project aggregation.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
To better communicate the supply of carbon benefits, we will start to quantify the carbon impacts of our soil and biodiversity programs reported under The Good Growth

Plan and increasingly leverage Farm Management Systems to benchmark sustainable outcomes on customer farms. To enable commercially-viable carbon markets at global scale, we are investing in remote and proximate sensing technology solutions and we are using machine learning to reduce the costs of quantifying soil carbon sequestration. We will also continue to invest in our collaborations with food value chain partners committed to carbon removal and reducing emissions in their raw material sourcing as part of their regenerative agriculture and SBTi targets. These collaborations include active participation on platforms such as the Gold Standard Value Change program (protocol development), the Cool Farm Alliance (carbon benefits quantification) and voluntary carbon markets, such as the Ecosystem Market Service Consortium in the USA. We are further working on building partnerships with organizations such as The Nature Conservancy and channel partners to help develop, aggregate and scale carbon projects, as well as partners willing to mobilize up-front investment for project development. We are also expanding our customer loyalty program to provide rewards to growers for adopting carbon farming practices. We are currently in the exploratory phase and cost has not yet been quantified. In 2019, Syngenta committed to dedicate USD 2 billion over five years to innovation targeted at delivering a step change in agricultural sustainability, in particular to help farmers prepare for and tackle the increasing threats posed by climate change. This opportunity is part of this commitment.

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development of new products or services through R&D and innovation

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Climate change is one of the biggest challenges facing today's food systems. Changes to temperature, as well as to the frequency and severity of extreme weather events, are already hampering crop yields and productivity around the world. These effects are compounded by the increasingly warm and wet climates that many growers are working in, allowing weeds, pests, and fungal diseases in crops to thrive. In 2019, the seeds market faced unprecedented challenges on multiple fronts, including the increasingly extreme impacts of climate change, such as floods in the USA 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. Syngenta supplies tailored solutions for different climate conditions, soil structures and crops. Through our solutions, digital services, and our network of partnerships, Syngenta is helping farmers around the world address global challenges like climate change, empowering them to reduce their impact while remaining viable and productive. For example, drought-tolerant seeds, such as Syngenta's AGRISURE ARTESIAN® corn hybrids, can help produce reliable yields in drier and semi-arid conditions. Our HYVIDO® hybrid barley seeds offer farmers consistently higher yields. Their root systems form earlier, with bigger and more roots, leading to stronger hybrid vigor, better water and nutrient uptake, and stronger growth under stressful conditions. When these products are combined with good management practices, agriculture is made more resilient to changes in climate and water availability. In 2019, Syngenta announced that it will accelerate its innovation to address the increasing challenges faced by farmers around the world and the changing views of society. We have committed to invest USD 2 billion over the next five years and deliver at least two technological breakthroughs to market each year to reduce agriculture's contribution to climate change, harness its mitigation capacity, and help the food system stay within planetary boundaries. Syngenta's new approach aims to further improve the way crops are grown and protected, and find solutions that address interconnected environmental, societal and economic challenges.

Time horizon
Medium-term

Likelihood
About as likely as not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The potential financial impact of this opportunity is sensitive information and cannot be disclosed. We expect sales of solutions for shifting pest patterns, new drought-tolerant plants as well as nitrogen and water-efficient technologies to increase.

Cost to realize opportunity
2000000000

Strategy to realize opportunity and explanation of cost calculation
We manage this opportunity through increased investment in the development of products, services, programs, partnerships as well as capital expenditures, that offer a clearly differentiated sustainability benefit or are breakthrough technologies enabling a step change in sustainability. In 2019, we have committed to invest USD 2 billion over the next five years and deliver at least two technological breakthroughs to market each year to reduce agriculture's contribution to climate change, harness its mitigation capacity, and help the food system stay within planetary boundaries. Through a multi-year collaboration with The Nature Conservancy, Syngenta is developing strategies to identify and test new innovations and technology that can benefit farmers and contribute to positive environmental outcomes. Examples of new activities in 2019 include the increased innovation in biocontrols and efficient feed. For many years, Syngenta has 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. In 2019, 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. Along with improved farm profitability, Syngenta's 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.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Use of more efficient production and distribution processes

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description
In 2019, we committed to reducing the carbon intensity of our entire operations by at least 50% by 2030 to support the ambitious goals of the Paris Agreement on climate change. Our carbon target has been validated by the Science Based Target initiative (SBTi). We also committed to a 20% reduction in water intensity and waste intensity in the same period. These commitments are intrinsic to our Good Growth Plan commitments to reduce agriculture's carbon footprint and help farmers deal with extreme weather patterns caused by climate change. Resource efficiency plays a vital role in achieving our 2030 carbon, water and waste intensity reduction targets. In 2019, we concluded a major piece of work aimed at assessing and measuring our environmental footprint. For instance, 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. An example of what can be achieved is our site in Paulínia, Brazil, which is upgrading its existing system of lighting to LEDs and solar LEDs. This will save 394 MWh of electricity per year and avoid the emission of 25.2 metric tons of CO2e per year – the equivalent of the annual electricity consumption of 213 Brazilian families.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
200000000

Potential financial impact figure – maximum (currency)
500000000

Explanation of financial impact figure
The figure given is an estimate based on the potential operational saving in terms of energy purchased, energy used, supplier costs being reduced, waste prevented among other activities. It does not include opportunities in R&D or significant savings likely to be realized because of an increased focus in process efficiency in the product development phase.

Cost to realize opportunity
40000000

Strategy to realize opportunity and explanation of cost calculation
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. Organizationally and workwise we have created strategies and roadmaps for Production, Energy Supply, Product Supply Chain, Process Development and Technical Evaluation and we have started programs to realize the opportunities in carbon, water and waste. We currently have several projects in the development stage for our active ingredient manufacturing plants that have the potential to significantly reduce our Scope 1 and 2 emissions in the short to medium term. Each individual project is assessed in terms of return on investment and value. Indirect financial benefits, for example financial savings brought about by partnering with suppliers on efficiency management, are harder to quantify. Additionally, among other actions, an internal mechanism has been put in place to allocate USD 40 million per year to CAPEX projects for improving sustainability aspects in line with our carbon, water and waste reduction targets. This commitment is part of our Accelerating Innovation commitment to invest USD 2 billion in the next five years in innovations that help farmers prepare for and tackle the increasing threats posed by climate change.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?
Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 8.5 IEA Sustainable development scenario IEA CPS	IDENTIFICATION: Two contrary climate-related scenarios were analyzed for their impact on Syngenta: a low-carbon transition scenario (i.e. successful transformation of the economies to curb GHG emissions and limit global warming well below 2°C) and a physical climate impact scenario (i.e. GHG emissions are not reduced rapidly enough and physical climate change impacts materialize). The scenarios were chosen to identify climate-related transition risks, and physical risks and opportunities. These scenarios were selected because they provide a holistic description of future climate-related developments, and the underlying assumptions are among the most frequently used and recommended by TCFD. They are also in line with those used by peers and competitors. TIME HORIZON: The time horizon was 2030 because it best aligns with our business planning, strategy and R&D timelines. On average, the registration of any new crop protection product takes 10 years before a product is commercially launched. Similarly, it takes around 13 years from discovery of a new genetic sequence until registration and launch. AREAS CONSIDERED FOR SCENARIO ANALYSIS: We conducted a scenario materiality assessment to identify high-priority climate-related transition and physical risks and opportunities in each value chain phase (i.e. supply chain, own operations, customer, consumer). We then conducted deep dive scenario analyses in the following areas: 1) Impact of extreme weather in key chemical production and supplier sites; 2) Impact of transition risks in key countries with own and supplier chemical production; 3) Impact of extreme weather in key customer countries for corn and soybean production; 4) Opportunities derived from our drought-resistant portfolio and 5) Impact of changes in consumer diets and protein shifts. RESULTS SUMMARY: Preliminary results for the deep dives show: 1) The potential impact of extreme weather events on our chemical production activities does not differ significantly between the two scenarios under both a <2°C and 4°C scenario by 2030, with flooding being the most material risk; 2) The potential impact of transition risks in a <2°C scenario is greater on our own chemical production sites than on the supply chain, but actions associated with our GHG emission reduction commitment (approved by SBTi) mitigate risks and might even give a competitive advantage; 3) The potential impact of extreme weather events on our customers will increase under both scenarios, affecting our business more in the case of droughts than floods; 4) The impact of increased droughts could intensify the demand for drought-resistant seeds under both scenarios but geographical shifts might be observed as impact of chronic changes to the climate will be different in different production areas; and 5) The impact of changes in consumer diets increases seed sales opportunities in both scenarios, although less in a <2°C scenario. RESULTS USE: We intend to share the results widely within the organization and work to embed the approach in our internal processes where relevant. The scenario analyses have recently been finalized and results require further analysis. However, preliminary results seem to support our existing climate-related considerations in our business objectives and strategy development processes. EXAMPLE: Addressing climate change challenges in agriculture has always been part of our business objectives and strategic considerations. We made our commitment clearer in 2019, when we announced we will invest USD 2 billion over the next five years to advance sustainable agriculture, including helping farmers mitigate and adapt to climate change. This investment includes R&D of products, services and programs for farmers as analyzed in deep dives 3, 4 and 5. This investment will be matched with a drive to reduce the carbon intensity of our operations by at least 50% by 2030 and support the mitigation of the risks identified in deep dives 1 and 2.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	INFLUENCE: Our strategy continues to evolve in consideration of trends that will impact the agricultural industry in the short, medium and long term. Changes in weather patterns that impact growing conditions and pest pressure are particularly important. Weather events that are unfavorable to agriculture tend to affect negatively our sales. For example, the dramatic flooding in the USA during 2019 impeded cultivation of tens of millions of acres, which had a direct negative impact on our seeds and crop protection sales in that market. At the same time, future weather patterns constitute a valuable input into our product development process. For example, plants that are more tolerant to droughts will be needed to produce food as temperature increases. Weed control using herbicides lowers the need for tillage, leaving the plants' roots in the soil for better soil compaction and enhanced soil organic matter, which helps, among other things, to retain more water and reduce carbon emissions from the soil. STRATEGIC DECISION: As a result, in 2019, Syngenta committed to invest USD 2 billion over the next five years to advance sustainable agriculture, including helping farmers mitigate and adapt to climate change. Investments will partly be directed toward products and services. These investments will take place within the next five years, but we believe they will shape the future of agriculture long-term. TIME HORIZON: Long-term
Supply chain and/or value chain	Yes	INFLUENCE: Our strategy is also influenced by the need to make our supply chain less emission-intensive in the medium term. In 2019, we concluded a major piece of work aimed at assessing and measuring our environmental footprint in our own operations and supply chain. This analysis identified that most of our environmental impact comes from our suppliers. For example, our supply chain accounts for about 90% of our carbon footprint. Clearly, managing our environmental performance means working closely with our suppliers to help them manage their impacts. STRATEGIC DECISION: As a result, in 2019, we committed to reducing the carbon intensity of our entire operations, including our supply chain, by at least 50% by 2030. As part of this commitment, for example, we are working toward CO2 intensity reduction for all our land, sea and air distribution logistics and implementing a global program with partners who integrate and coordinate all logistics operations across supply chains to optimize processes and gain economies of scale. In 2019, we extended our long-term collaboration with A.P. Moeller-Maersk, a fourth-party logistics (4PL) provider. An important focus of the partnership is on sustainable logistics, eliminating fossil fuels in container shipping and supply chains to reduce CO2 emissions. TIME HORIZON: Long-term
Investment in R&D	Yes	INFLUENCE: Same as in the case of products and services above, our investment in R&D is influenced by climate change in the medium and long term – it is mainly driven by the opportunities it creates to help farmers mitigate and adapt to it. STRATEGIC DECISION: As a result of this, in 2019, Syngenta committed to invest USD 2 billion over the next five years to reduce agriculture's contribution to climate change and help farmers adapt to climate change. Among others, this investment covers research and development of products, services and programs. Examples of investments that Syngenta will make include the Reverte program in Brazil, where Syngenta is working with partners to enhance the sustainable growth of agriculture by promoting integrated cattle/crop farming in degraded areas of the Cerrado biome. Through a holistic approach involving best agronomic practices, financial tools and input protocols, Reverte will help farmers and cattle holders improve the productivity of degraded pasture land. Today, some 18 million hectares of Cerrado areas are in some stage of degradation – meaning that more areas than necessary are used to deliver the needed ecosystem services. In the first five years of implementation, the initiative has the potential to reach one million hectares. Reverte allows farmers to sustainably expand agriculture into lands that are already open without tree cover, but uncultivated due to soil degradation. The initiative aims to demonstrate the economic viability of reclaiming land rather than opening new areas for cultivation, thereby contributing to the preservation of native vegetation. The goal is to increase farmer productivity in the short term to enable a return on investment and prevent further degradation. Land recovering brings benefits to both Syngenta and the farmer. For Syngenta, it opens new sustainable market segments. For the farmer, it provides the opportunity to expand agriculture through regenerative and climate-resilient farming practices, such as carbon sequestration, soil recovery and water efficiency. TIME HORIZON: Long-term
Operations	Yes	INFLUENCE: Our strategy is also influenced by the need to ensure business continuity. Extreme weather events could affect Syngenta's own production facilities, which could impact our costs or ability to meet supply requirements. For example, as part of our insurance coverage analysis (time horizon analysis of 100 and 500 years), we have identified that some Syngenta facilities are located in areas of potential floods. Flood management plans have therefore been put in place and this is assessed via site-specific environmental impact assessments. STRATEGIC DECISION: Syngenta works actively to ensure business continuity, for example by implementing flood resilience measures in the short term. We have recognized the likely increasing frequency and severity of extreme weather events due to man-made climate change, and we incorporate this into our business continuity plans. We also work actively to make our production operations more efficient in the short term and to reduce the rate of carbon dioxide emissions per unit of sales revenue in the medium term in line with our commitment to reducing the carbon intensity of our operations and supply chain, by at least 50% by 2030. TIME HORIZON: Short- and medium-term

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures Capital allocation Acquisitions and divestments	Climate is a key determinant for Syngenta's products and operations. A changing climate affects agriculture in terms of growing seasons, water availability, pests and crop productivity, as a result altering demand for our products. This could impact positively or negatively the company's results in different geographic areas depending on whether growing certain crops is more or less viable in that area (climate change is however not likely to reduce overall global demand for food and feed). This creates the opportunity for Syngenta to develop solutions that help farmers mitigate and adapt to climate change. Our capital allocation as well as decisions on capital expenditure or potential acquisitions are thus influenced by our drive to address farmers' needs and return on investment in support of our long-term strategy and commitment to sustainable agriculture. In 2019, Syngenta committed to invest USD 2 billion over the next five years to reduce agriculture's contribution to climate change, harness its mitigation capacity, and help the food system stay within planetary boundaries. Our investment model will allocate capital and resources toward products, services, programs, partnerships and capital expenditures, that offer a clearly differentiated sustainability benefit or are breakthrough technologies enabling a step change in agricultural sustainability. These investments will be distinct from those we make as part of good practice and will – wherever possible – benefit large-scale and smallholder farmers and contribute to meeting the United Nations Sustainable Development Goals. A clear process and associated criteria – developed in collaboration with The Nature Conservancy (TNC) – will be used for assessing the investment. An example of investment we will make under this commitment includes the Reverte program in Brazil, where we are promoting integrated cattle/crop farming in degraded areas of the Cerrado biome. The initiative aims to demonstrate the economic viability of reclaiming land rather than opening new areas for cultivation, thereby contributing to the preservation of native vegetation. Such programs also open new sustainable market segments for Syngenta. TIME HORIZON: Medium-term

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (location-based) + 3 (upstream and downstream)

Intensity metric
Metric tons CO2e per USD($) value-added

Base year
2016

Intensity figure in base year (metric tons CO2e per unit of activity)
0.00126

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
99.8

Target year
2030

Targeted reduction from base year (%)
67.6

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
0.00040824

% change anticipated in absolute Scope 1+2 emissions
54.2

% change anticipated in absolute Scope 3 emissions
54.2

Intensity figure in reporting year (metric tons CO2e per unit of activity)

% of target achieved [auto-calculated]
<Calculated field>

Target status in reporting year
New

Is this a science-based target?
Yes, this target has been approved as science-based by the Science Based Targets initiative

Please explain (including target coverage)
The target with baseline 2016 was announced in October 2019. The first progress report will be issued in 2020. As such, we cannot provide an “intensity figure in reporting year” for 2019 and the % of target achieved in 2019 is thus not auto-calculated. The Syngenta target covers our Scope 1, 2 and 3 emissions. Scope 3 emissions include 12 of the 15 Scope 3 categories except the categories "use of sold products", "franchises" and "investments". The latter two are not applicable. Regarding the use of sold products, we believe that the end use of our products results in carbon savings through the more efficient use of resources and land in the agricultural value chain. The Science Based Targets initiative (SBTi) does not currently account for carbon benefits in calculations, so this category has not been included. The SBTi was developed in line with the Paris Agreement to help guide sectors in achieving goals in line with global reduction targets to maintain a 2 C temperature rise. The target derived by Syngenta is in line with the “well below 2 C” target. Syngenta has tens of thousands of suppliers and is prioritizing engagement with them to maximize our impact. In addition, we will decarbonize our own operations and demonstrate leadership to our value chain. We will assist our value chain partners in understanding their own impacts and the best way to achieve our targets.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2013

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Land use change	Other, please specify (Hectares of benefited farmland)

Target denominator (intensity targets only)
<Not Applicable>

Base year
2014

Figure or percentage in base year
0

Target year
2020

Figure or percentage in target year
10000000

Figure or percentage in reporting year
14100000

% of target achieved [auto-calculated]
141

Target status in reporting year
Achieved

Is this target part of an emissions target?
This target is part of Syngenta's Good Growth Plan, in which we have committed to "Rescue more farmland" by improving the fertility of 10 million hectares of farmland on the brink of degradation by 2020. In 2019, we improved the fertility of 3.3. million hectares and reached a total of 14.1 million hectares since our 2014 baseline, exceeding our target. We remain committed to soil health and we have thus renewed this target as part of the new iteration of our Good Growth Plan announced in June 2020. As an integral part of this target, we encourage and train conservation agriculture practices that reduce greenhouse gas emissions and increase carbon sequestration in the soil. One way to prevent carbon from being released from the soil is through conservation agriculture practices such as minimum soil disturbance, permanent soil cover (e.g., crop residues or cover crops), and crop rotation. Not tilling the soil also prevents the passing of heavy machinery on the field that burns fossil fuels. This means farmers can grow more crops, while keeping carbon in the soil and releasing less fuel emissions in the air.

Is this target part of an overarching initiative?
Other, please specify (Climate Smart Agriculture - CSA 100)

Please explain (including target coverage)
Since 2014, we have measured our impact on sustainable agriculture through The Good Growth Plan. Our commitment seeks to empower global food systems to contribute to the United Nations Sustainable Development Goals (SDGs), including SDG 13: "Climate action". This is why our targets to make crops more efficient and rescue more farmland outlined here are especially relevant.

Target reference number
Oth 2

Year target was set
2013

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Resource consumption or efficiency	Other, please specify (Percentage increase in land productivity)

Target denominator (intensity targets only)
<Not Applicable>

Base year
2014

Figure or percentage in base year
0

Target year
2020

Figure or percentage in target year
20

Figure or percentage in reporting year
18.8

% of target achieved [auto-calculated]
94

Target status in reporting year
Underway

Is this target part of an emissions target?
This target is part of Syngenta's Good Growth Plan, in which we have committed to "Make crops more efficient" by increasing the average productivity of the world's major

crops by 20% without using more land, water or inputs by 2020. The world needs a step change in crop productivity to “grow more with less” and meet the needs of its growing population. To do so, we work in partnership with growers who use our products and agronomic advice. With increased yield, the use-efficiency of the resources involved on a per unit output basis is increased, meaning that the same amounts of land, energy, water, and nutrients, can produce more food, fuel and fiber. The UN Food and Agriculture Organization recognizes that sustainable intensification strategies, which conserve and restore resources, are important in addressing climate change. More efficient resource use (i.e. increase in land productivity) supports both adaptation to and mitigation of the effects of climate change by improving farm productivity and income while reducing emissions per unit of output. As part of our "Make crops more efficient" commitment, we also analyze greenhouse gas (GHG) footprints from our farm network. We have partnered with two organizations, Field to Market and the Cool Farm Alliance, to bring our growers online tools that calculate GHG footprints from data they are already collecting. This enables them to support their customers’ GHG accounting, with evidence that their footprints are reducing as they use inputs more efficiently. Since the launch of The Good Growth Plan, we have seen a 36.7% GHG emission efficiency increase across our reference farm network.

Is this target part of an overarching initiative?
Other, please specify (Climate Smart Agriculture - CSA 100 (https://www.wemeanbusinesscoalition.org/commitment/commit-to-climate-smart-agriculture/))

Please explain (including target coverage)
Since 2014, we have measured our impact on sustainable agriculture through The Good Growth Plan. Our commitment seeks to empower global food systems to contribute to the United Nations Sustainable Development Goals (SDGs), including SDG 13: “Climate action”. This is why our targets to make crops more efficient and rescue more farmland outlined here are especially relevant.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	6	5000
To be implemented*	3	2000
Implementation commenced*	3	1000
Implemented*	4	5000
Not to be implemented	0	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Low-carbon energy consumption	Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
4500

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
This initiative concerns a new contract in a research center for green electricity (Scope 2).

Initiative category & Initiative type

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)

Estimated annual CO2e savings (metric tonnes CO2e)

125

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
5000

Investment required (unit currency – as specified in C0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
6-10 years

Comment
This initiative concerns the optimization of heating regulation parameters, leading to a reduction of natural gas consumption (Scope1).

Initiative category & Initiative type

Energy efficiency in buildings	Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
125

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
5000

Investment required (unit currency – as specified in C0.4)
10000

Payback period
1-3 years

Estimated lifetime of the initiative
6-10 years

Comment
This initiative concerns the installation of low-energy bulbs in greenhouses (Scope 2).

Initiative category & Initiative type

Low-carbon energy consumption	Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
250

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
6-10 years

Comment
This initiative concerns participation in a regional agreement for low-carbon electricity (Scope 2).

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low-carbon product R&D	We invest in the research and development of new plant varieties that can capture energy from the sun more effectively and use nitrogen more efficiently. In addition, we invest in research and development of new and sophisticated herbicides – helping growers to adopt conservation tillage which improves soil fertility and provides higher productivity. In October 2019, we announced a USD 2 billion investment over the next five years to help farmers prepare for and tackle the increasing threats posed by climate change.
Dedicated budget for other emissions reduction activities	We invest in farmers' training and capacity building to enable more farmers to improve their farming practices in order to maximize crop yield and to support greater carbon storage in soils and vegetation. Responsible management of soil makes agriculture more resilient to the causes and effects of climate change. Soil is a major storage area for carbon in our ecosystem, but when it is degraded or disturbed, carbon is released back into the atmosphere, becoming a greenhouse gas.
Dedicated budget for other emissions reduction activities	To achieve our 2030 carbon intensity reduction target, we are focusing on improving the efficiency of our manufacturing processes, designing and implementing site-based energy saving programs, increasing the share of renewable sources of energy, and partnering with our crop protection and seeds suppliers to reduce their carbon footprint. In addition, we are working to further optimize our business travel and our logistics network.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Group of products

Description of product/Group of products
Through our products and services, we contribute to reducing GHG emissions and enhancing carbon sequestration in the agricultural sector. Although the sector is the world's second largest emitter of GHGs (after the energy sector), agriculture simultaneously sequesters a significant amount of emissions. Our herbicide product range supports modern farming practices like minimum or no-till and thus helps to reduce the amount of carbon dioxide released from the soil. For instance, weed control using herbicides lowers the need for tillage, leaving the plants' roots in the soil for better soil compaction and enhanced soil organic matter, which helps, among other things, to reduce carbon emissions from the soil. Our herbicides such as AXIAL or CALLISTO (selective herbicide) and GRAMOXONE (non-selective herbicide) are widely used for conservation agriculture, especially in countries like Brazil and the USA, and now increasingly in Asia. Syngenta continues to innovate and expects to launch additional products that support soil health in the near future. For example, seedcare products reduce pressure from nematodes and soil diseases, which pose major challenges to farmers to implement soil conservation practices such as no- or minimum tillage and cover cropping. Additionally, seedcare products lead to higher root mass and thereby support increased carbon retention in soils and long-term fertility of soils. Agricultural soils are among the planet's largest reservoirs of carbon and hold potential for expanded carbon sequestration, and thus provide a prospective way of mitigating the increasing atmospheric concentration of CO2. It is estimated that soils can sequester around 20 Pg C in 25 years, more than 10 % of the anthropogenic emissions. (Source: FAO: http://www.fao.org/soils-portal/soil-management/soil-carbon-sequestration/en/)

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Literature review (see example in description above))

% revenue from low carbon product(s) in the reporting year
3

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
We expect to increase the development of climate-smart solutions and technologies that help farmers work sustainably. These include conservation agriculture practices that aim to reduce soil disturbance, enhance permanent soil cover and implement crop rotation. Our herbicide and seedcare product ranges play an important role. Calculation on % revenues estimated based on herbicide sales as outlined in Syngenta's Financial Report 2019, page 5 (i.e. USD 3,538 million/USD 13,582 million) and adoption rate of conservation practices.

Level of aggregation
Product

Description of product/Group of products
Syngenta's AGRISURE ARTESIAN® is a drought-tolerant corn hybrid seed that produces reliable yields even in drier and semi-arid conditions increasingly encountered by farmers around the world. Better technologies, such as AGRISURE ARTESIAN® drought-tolerant seeds, help to optimize crop yields and thereby reduce land use-based emissions by decreasing the amount of arable land needed per unit of crop, consequently allowing for higher carbon sequestration by the remaining untouched land, leaving it in its natural state. The UN Food and Agriculture Organization recognizes that sustainable intensification strategies, which conserve and restore resources, are important in addressing climate change. More efficient resource use, including farmland use, supports both adaptation to and mitigation of the effects of climate change by improving farm productivity and income while reducing emissions per unit of output. Also, a 2010 study from Stanford University found that the net effect of higher yields in agriculture – driven by the adoption of higher-yielding crop varieties, increased use of pesticides and fertilizers, and improved access to irrigation and mechanization – has avoided emissions of up to 161 gigatons of carbon (GtC) (590 GtCO2e) between 1961 and 2005. (Source: Jennifer A. Burney, Steven J. Davis, and David B. Lobell (2010) Greenhouse gas mitigation by agricultural intensification PNAS: http://www.pnas.org/content/107/26/12052.long)

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Literature review (see example in description above))

% revenue from low carbon product(s) in the reporting year
1

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
We expect to increase the development of climate-smart solutions and supporting technologies for farmers. Climate Smart Agriculture, through sustainable soil management practices, optimized water use, and improved crop technologies is an effective way to become more resource-efficient so that more land can be used to restore forests and sequester even more carbon.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
October 1 2009

Base year end
September 30 2010

Base year emissions (metric tons CO2e)
684000

Comment

Scope 2 (location-based)

Base year start
October 1 2009

Base year end
September 30 2010

Base year emissions (metric tons CO2e)
301000

Comment

Scope 2 (market-based)

Base year start
October 1 2009

Base year end
September 30 2010

Base year emissions (metric tons CO2e)
301000

Comment
As the value of market-based emissions was not defined in 2010, we estimate their value to be identical to location-based emissions. This year, we have changed the base year to 2010, compared to 2006 reported in previous submissions. In 2010, a significant revision of our environmental data reporting (SERAM) was conducted to improve data quality and methodologies. We believe base year 2010 offers a better comparison with the current reporting.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Defra Voluntary 2017 Reporting Guidelines
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Cool Farm Tool
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
615000

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
For most sites, location-based figures are identical to market-based figures.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
361000

Scope 2, market-based (if applicable)
355000

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source
Emissions from energy used in sales office buildings

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
Emissions from energy used in sales office buildings are not significant compared with emissions generated by production activities. A carbon footprint pilot was conducted in a business office in a significant country and results showed that these emissions are negligible (<0.1%) compared with emissions generated in production activities. Please note: Emissions from fleet cars used by sales representatives based in this office are included in the disclosure of Scope 1 emissions. Similarly, emissions from business trips (air travel) are included in the disclosure of Scope 3 emissions.

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Syngenta purchases a wide range of goods and services, from specialty chemicals for synthesis or seeds produced by farmers to worldwide logistics or cloud computing systems. Calculating the emissions from these purchased goods and services is highly complex. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents most of our 2016 baseline Scope 3 emissions (>75%). For reporting year 2019, this figure has not been calculated. We will provide it starting in reporting year 2020.

Capital goods

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Our business is not capital-intensive and the capital goods are amortized over very long periods. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a small part of our 2016 baseline Scope 3 emissions (<4%). For reporting year 2019, this figure has not been calculated. We will provide it starting in reporting year 2020.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Limited fuel- and energy-related activities. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a small part of our 2016 baseline Scope 3 emissions (<5%). For reporting year 2019, this figure has not been calculated. We will provide it starting in reporting year 2020.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
628000

Emissions calculation methodology
Type and source of data: - List of all the shipments, with transportation mode. - Average emission factors specific to regions and modes of transportation (air, sea, road, rail). The factors were defined internally, based on a detailed analysis of the shipments. - Methodology: Calculation done individually per region and mode of transport. - Emissions = tons x emission factor. All results are added to consolidate emissions globally. - Data quality: Transport and distribution are contracted. Some haulers are able to supply the emissions resulting from their activities. We used this information to test our methodology. Both results were compared and no significant difference found. Upstream and downstream emissions are included in our GHG reporting for the year 2019. Emissions from transportation and distribution (upstream and downstream) were considered to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. Emissions of upstream transportation and distribution represent about 7% of our 2016 baseline Scope 3 emissions (and downstream transportation and distribution <1%).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
We are currently implementing a fourth-party logistics (4PL) project to optimize logistics and our transportation network. The project will allow to track emissions more accurately as well as significantly optimize CO2 emissions.

Waste generated in operations

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The magnitude of emissions due to waste generated in operations is not significant, and no other relevance criterion is fulfilled. Moreover, some waste is used as fuel in cement kilns or energy production units and is reported by the operators of these units. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a small part of our 2016 baseline Scope 3 emissions (<2%).

Business travel

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
37000

Emissions calculation methodology
- Methodology: All business trips are booked via a travel agency, which supplies an annual value for business trip emissions, using the DEFRA methodology and emission factors. - Data quality: Results supplied by the travel agency were cross-checked internally. We estimate that the reliability of the results provided is +/- 20%. - Emissions from business travel are included in our annual GHG reporting.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
The calculation of emissions due to business travel is supplied by the travel agency and represents the travels made by the company's employees.

Employee commuting

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The calculation done in 2013 showed this is not relevant as the emissions are <0.1% of the total emissions reported. The magnitude of emissions from employee commuting is not significant, and no other relevance criterion is fulfilled. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. As mentioned, this source of emissions represents a very small part of our 2016 Baseline Scope 3 emissions (<0.1%) – confirming our findings from 2013.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have no upstream leased assets.

Downstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
These emissions are included in upstream transportation and distribution emissions (reported above). Our ongoing fourth-party logistics (4PL) project to optimize logistics and our transportation network also applies in this case. However, to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019, we calculated upstream and downstream transportation and distribution separately. This source of downstream emissions represents a small part of our 2016 baseline Scope 3 emissions (<1%).

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Products sold are "ready to use," limited processing is needed. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a small part of our 2016 baseline Scope 3 emissions (<2%).

Use of sold products

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Emissions resulting from the sole use of sold products have not been evaluated. However, we have evaluated the GHG emission efficiency (kg CO2e/t crop) of farms, which have used our products and followed our protocols. In 2019, the GHG emissions efficiency increase on these reference farms was 36.7% compared to baseline 2014. We also believe that the end use of our products results in carbon savings through the more efficient use of resources and land in the agricultural value chain.

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Sold products are seeds and plant protection products. They are used by farmers as part of the farming process. They require no end-of-life treatment. Waste from package materials is frequently recycled. This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a small part of our 2016 baseline Scope 3 emissions (<2%).

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This value was calculated to set the 2016 baseline for our SBTi-approved emission reduction target set in late 2019. This source of emissions represents a very small part of our 2016 Baseline Scope 3 emissions (<0.1%).

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have no franchises.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Our investments do not generate Scope 3 emissions.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have no other upstream emissions.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have no other downstream emissions.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	19000	

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00007142

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
970000

Metric denominator
unit total revenue

Metric denominator: Unit total
13582000000

Scope 2 figure used
Market-based

% change from previous year
5.4

Direction of change
Increased

Reason for change
Please note that in 2019, we restated Syngenta AG's consolidated sales of 2018 (as reported in last year's CDP submission). Using the previous 2018 sales, the increase of this intensity value would have been 5.1% instead of the one reflected here of 5.4% which was calculated using the restated 2018 sales. The increase in emissions was mainly due to increased emissions from our own operations and from purchased energy. In particular, the increase in emissions from our 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, USA. 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 greenhouse gases generated by electricity consumption. This methodology uses more accurate market-based emission factors, where available. The increase in emissions was partially offset by the emission reduction activities outlined in C4.3b, e.g., contracting of green electricity, optimization of heating use, implementation of low-energy bulbs in greenhouses.

Intensity figure
34.32

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
970000

Metric denominator
full time equivalent (FTE) employee

Metric denominator: Unit total
28265

Scope 2 figure used
Market-based

% change from previous year
3.6

Direction of change
Increased

Reason for change
The increase in emissions was mainly due to increased emissions from our own operations and from purchased energy. In particular, the increase in emissions from our 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, USA. 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 greenhouse gases generated by electricity consumption. This methodology uses more accurate market-based emission factors, where available. The increase in emissions was partially offset by the emission reduction activities outlined in C4.3b, e.g., contracting of green electricity, optimization of heating use, implementation of low-energy bulbs in greenhouses.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	429000	IPCC Fifth Assessment Report (AR5 – 100 year)
Other, please specify (Various chlorinated or fluorinated refrigerant gases)	186000	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	208000
Asia Pacific (or JAPA)	52000
Latin America (LATAM)	48000
United Kingdom of Great Britain and Northern Ireland	256000
France	11000
Benelux	9000
Switzerland	7000
Other, please specify (Rest of world)	24000

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

By facility

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Crop Protection	494000
Seeds	51000
Corporate	70000

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Huddersfield	252000	53.66	-1.75
St Gabriel	141000	30.25	-91.1
Greens Bayou	36000	29.76	-95.17
Nantong	39000	31.9	120.92
Ituiutaba	13000	-18.97	-49.46
St Pierre	7000	49.16	1.39
Enkhuizen	3500	52.7	5.27
Jealotts Hill	2000	51.45	-0.74
Monthey	2500	46.25	6.96
Waterloo NE	1000	41.29	-96.28
De Lier	2500	51.98	4.27
Venado Tuerto	2500	-33.75	-61.97
Kaisten	4500	47.55	8.03
Greensboro	2500	36.07	-79.91
Formosa	8500	-15.56	-47.22
Paulinia	4000	-22.75	-47.15
Seneffe	2000	50.52	4.23
Omaha, NE	2000	41.21	-95.92
Other sites	22500		
Non-stationary sources	67000		

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	494000	<Not Applicable>	These emissions relate to our chemical production activities (i.e. our Crop Protection business unit). Operational control boundaries are used.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America	147000	147000	299000	44000
Asia Pacific (or JAPA)	60000	60000	125000	11000
Latin America (LATAM)	8000	8000	61000	47000
United Kingdom of Great Britain and Northern Ireland	28000	21000	99000	36000
Benelux	6000	6000	20000	8000
Switzerland	104000	104000	393000	49000
Other, please specify (Rest of world)	8000	9000	45000	53000

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

By facility

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Crop Protection	291000	285000
Seeds	56000	56000
Corporate	14000	14000

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
St Gabriel	78000	78000
Monthey	64000	64000
Nantong	45000	45000
Kaisten	33000	33000
Grangemouth	21000	21000
Greens Bayou	16000	16000
Research Triangle Park	10000	10000
Jealotts Hill	5000	0
Greensboro	10000	10000
Stein	4000	4000
Omaha, NE	7000	7000
Phillips, NE	4000	4000
Waterloo NE	4000	4000
Slater R&D, IA	4000	4000
Iksan	5000	5000
Goa R&D	4000	4000
Clinton, IL	3500	3500
Munchwilen	3500	3500
Beijing SBC	3000	3000
Enkhuizen	3000	3000
De Lier	2500	2500
Venado Tuerto	2500	2500
Vero Beach, FL	2000	2000
Pasco, WA	2000	2000
Lone Tree, IA	1500	1500
Alva, FL	1500	1500
Brits	1500	1500
Huddersfield	1500	0
Kunshan	1000	1000
Paulinia	1000	1000
Formosa	1000	1000
Mezotur	1000	1000
Seneffe	1000	1000
Slater P&S, IA	1000	1000
Others	13000	13500

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	291000	285000	These emissions relate to our chemical production activities (i.e. our Crop Protection business unit). Operational control boundaries are used.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Other (please specify) (Commodity and specialty chemicals)	31	Syngenta purchases a wide variety of commodity and specialty chemicals. Based on a current assessment of our entire carbon footprint (i.e. as per 2016 baseline calculation for our science-based carbon intensity reduction target, which considers Scope 3 emissions beyond those reported under 6.5), we estimate that 71% of Syngenta's tCO2e come from our supply chain direct emissions. Of that 71%, 31% come from the purchase of raw materials such as commodity and specialty chemicals. The calculation methodology is based on spend data (as defined by the GHG Protocol). Syngenta has evaluated all direct and indirect procurement data to complete this exercise.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	Syngenta does not sell this product
Methane (CH4)	0	Syngenta does not sell this product
Nitrous oxide (N2O)	0	Syngenta does not sell this product
Hydrofluorocarbons (HFC)	0	Syngenta does not sell this product
Perfluorocarbons (PFC)	0	Syngenta does not sell this product
Sulphur hexafluoride (SF6)	0	Syngenta does not sell this product
Nitrogen trifluoride (NF3)	0	Syngenta does not sell this product

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	9000	Decreased	1	The decrease in emissions between 2018 and 2019 is due to purchased electricity. EXPLANATION OF CALCULATION: - Change in renewable energy consumption = Emissions due to purchased electricity in 2018 – emissions due to purchased electricity in 2019 - Change in Scope 1+2 emissions = 9000t - Scope 1+2 2018 = 919000t - Percentage: 9000/919000 x 100 = 1%
Other emissions reduction activities	1000	Decreased	0.1	The reduction of emissions is due to a decrease in company car emissions. EXPLANATION OF CALCULATION: - Emissions due to company cars 2018 = 68000t - Emissions due to company cars 2019 = 67000t - Emissions reduction: 68000t – 67000t = 1000t Percentage: 1000/919000 x 100 = 0.1%
Divestment	0	No change	0	No divestment
Acquisitions	0	No change	0	No acquisition
Mergers	0	No change	0	No merger
Change in output	67000	Increased	7.3	There was a production increase in some major sites, generating higher emissions in 2019. The increase of these emissions was partly compensated by emission reduction activities and a change in methodology. EXPLANATION OF CALCULATION: - Emission reduction: 9000t + 1000t + 6000t = 16000t - Emissions (Scope 1 + 2) 2018 = 919000t - Emissions (Scope 1 + 2) 2019 = 970000t - Emission increase: 970000t – 919000t = 51000t - Total change in output: 51000t + 16000t = 67000t - Percentage : 67000/919000 x 100 = 7.3%
Change in methodology	6000	Decreased	0.7	There was a change in methodology (i.e. moving from location-based CO2 to market-based CO2), leading to a decrease in emissions: EXPLANATION OF CALCULATION: - Location-based CO2 = 361000t - Market-based CO2 =355000t - Change = 361000t – 355000t = 6000t - Emissions (Scope 1 + 2) 2018 = 919000t - Percentage: 6000/919000 x 100 = 0.7 %
Change in boundary	0	No change	0	No change in boundary
Change in physical operating conditions	0	No change	0	No change in physical operating conditions
Unidentified	0	No change	0	Not applicable as all changes have been identified
Other	0	No change	0	Not applicable as there was no other change

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	43000	1368000	1411000
Consumption of purchased or acquired electricity	<Not Applicable>	205000	424000	629000
Consumption of purchased or acquired heat	<Not Applicable>	0	12000	12000
Consumption of purchased or acquired steam	<Not Applicable>	0	401000	401000
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	248000	2205000	2453000

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	1220000
Consumption of purchased or acquired electricity	<Not Applicable>	454000
Consumption of purchased or acquired heat	<Not Applicable>	9000
Consumption of purchased or acquired steam	<Not Applicable>	391000
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	2074000

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1030000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
335000

MWh fuel consumed for self-generation of steam
336000

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
359000

Emission factor
184

Unit
metric tons CO2 per MWh

Emissions factor source
Average value from several providers (e.g., DEFRA, ADEME, Bilan carbone, etc.)

Comment

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
25000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
25000

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3

Unit
metric tons CO2 per metric ton

Emissions factor source
Average value from several providers (e.g., DEFRA, ADEME, Bilan carbone, etc.)

Comment

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
25000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3.2

Unit
metric tons CO2e per metric ton

Emissions factor source
Average value from several providers (e.g., DEFRA, ADEME, Bilan carbone, etc.)

Comment
Diesel fuel is used mainly for vehicles and heating of buildings. A detailed consumption breakdown of these uses is not available.

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
67000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
67000

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3.3

Unit
metric tons CO2 per metric ton

Emissions factor source
Average value from several providers (e.g., DEFRA, ADEME, Bilan carbone, etc.)

Comment

Fuels (excluding feedstocks)
Wood

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
43000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
43000

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
1.8

Unit
metric tons CO2 per metric ton

Emissions factor source
Average value from several providers (e.g., DEFRA, ADEME, Bilan carbone, etc.)

Comment

Fuels (excluding feedstocks)
Other, please specify (Carbon-free process by-product gas)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
221000

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
221000

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0

Unit
metric tons CO2 per metric ton

Emissions factor source
Not applicable because we use a carbon-free process by-product gas

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor
24000

Comment

Sourcing method
Other, please specify (Total electricity from renewable origin in grid production)

Low-carbon technology type
Low-carbon energy mix

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Other, please specify (Remaining of the world)

MWh consumed accounted for at a zero emission factor
224000

Comment

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks
Natural gas

Total consumption
1343.11

Total consumption unit
million cubic feet

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit
56.3

Heating value of feedstock, MWh per consumption unit
306

Heating value
HHV

Comment
The best estimate for the heating value is: 410380 MWh.

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	0
Natural Gas	100
Coal	0
Biomass	0
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Land use

Metric value
3.3

Metric numerator
Million hectares of benefited farmland

Metric denominator (intensity metric only)

% change from previous year
3

Direction of change
Decreased

Please explain
As part of Syngenta's Good Growth Plan, we have committed to "Rescue more farmland" by improving the fertility of 10 million hectares of farmland on the brink of degradation. One way to prevent carbon from being released from the soil is through conservation agriculture practices such as minimum soil disturbance, permanent soil cover (e.g., crop residues or cover crops), and crop rotation. Since 2014, we have implemented 261 projects in 44 countries, benefiting 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 (3.4 million hectares in 2018).

Description
Other, please specify (Land productivity)

Metric value
18.8

Metric numerator
Percentage increase in land productivity*

Metric denominator (intensity metric only)

% change from previous year

Direction of change
<Not Applicable>

Please explain
As part of Syngenta's Good Growth Plan, we have committed to "Make crops more efficient" by increasing the average productivity of the world's major crops by 20% without using more land, water or inputs. The UN Food and Agriculture Organization recognizes that sustainable intensification strategies, which conserve and restore resources, are important in addressing climate change. More efficient resource use supports both adaptation to and mitigation of the effects of climate change by improving farm productivity and income while reducing emissions per unit of output. Since 2014, land productivity increase on reference farms is 18.8%. * Since baseline 2014

Description
Other, please specify (Greenhouse gas emission efficiency increase)

Metric value
36.7

Metric numerator
Percentage increase in GHG emission efficiency*

Metric denominator (intensity metric only)

% change from previous year

Direction of change
<Not Applicable>

Please explain

As part of Syngenta's Good Growth Plan, we have committed to "Make crops more efficient". Under this umbrella, we analyze the GHG footprint from our farm network. We have partnered with two organizations, Field to Market and the Cool Farm Alliance, to bring our growers online tools that calculate GHG footprints from data they are already collecting. Since 2014, we have seen a 36.7% GHG emission efficiency increase across our reference farm network. * Since baseline 2014

Description
Waste

Metric value
200000

Metric numerator
Tonnes of hazardous waste

Metric denominator (intensity metric only)

% change from previous year
6

Direction of change
Increased

Please explain
In 2019, absolute hazardous waste increased by 6%, mainly due to contaminated construction waste generated in an expansion project at our site in Monthey, Switzerland; the disposal of obsolete equipment and stored waste in Huddersfield, UK; and increased production activities compared to 2018.

Description
Waste

Metric value
132000

Metric numerator
Tonnes of non-hazardous waste

Metric denominator (intensity metric only)

% change from previous year
11

Direction of change
Decreased

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

Description
Energy usage

Metric value
8733

Metric numerator
TJ

Metric denominator (intensity metric only)

% change from previous year
1

Direction of change
Decreased

Please explain
Absolute energy consumption decreased by 1% in 2019. The decrease was partly due to the scaling down of production in two of our major sites. This was partially offset by increased production in other sites around in the world.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product
Specialty chemicals

Production (metric tons)
161896.56

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)
4.53

Electricity intensity (MWh per metric ton of product)
2.16

Steam intensity (MWh per metric ton of product)
2.32

Steam/ heat recovered (MWh per metric ton of product)
0

Comment
Syngenta produces a variable range of chemicals. The capacity is variable, depending on the product mix, hence cannot be reported. In the 2018 CDP submission, there was an error and only Scope 1 and 2 energy emissions were reported. In addition, there was an error in the production volumes reported. When corrected, the intensity metrics reported should have been 6.27 (direct emissions intensity), 3.27 (electricity) and 3.0 (steam).

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Product redesign	Large scale commercial deployment	≤20%		Our R&D investments are influenced by climate change and associated changes in weather patterns that impact growing seasons and pest patterns, and hinder the ability of farmers to produce food. Climate change increases the demand for certain type of crop protection chemicals supporting climate-smart agriculture. For example, our herbicide product range supports modern farming practices like minimum or no-till and thus helps to reduce the amount of carbon dioxide released from the soil. Weed control using herbicides lowers the need for tillage, leaving the plants' roots in the soil for better soil compaction and enhanced soil organic matter. Herbicides such as AXIAL or CALLISTO (selective herbicide) and GRAMOXONE (non-selective herbicide) are widely used for conservation agriculture, especially in countries like Brazil and the USA, and now increasingly in Asia. Seed treatment technology has also an important role to play to sequester carbon in soil. For example, introduced in 2019 in the USA, VAYANTIS® fungicide not only controls diseases in corn, soybeans, canola, oilseed rape and cereal crops, but also protects the soil by enabling reduced- and no-till cropping systems.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Syngenta_SBR19.pdf

Page/ section reference
PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including GHG emissions Scope 1, 2 and 3 reported on page 50.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Syngenta_SBR19.pdf

Page/ section reference
PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including GHG emissions Scope 1, 2 and 3 reported on page 50.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Upstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Syngenta_SBR19.pdf

Page/section reference
PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including GHG emissions Scope 1, 2 and 3 reported on page 50.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Business travel

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Syngenta_SBR19.pdf

Page/section reference
PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including GHG emissions Scope 1, 2 and 3 reported on page 50.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year emissions intensity figure	ISAE3000	We report our "emission intensity" based on revenues (see answer to question C6.10) in our Sustainable Business Report. As such, this metric is included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis and covers 100% of reported emissions. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including GHG emissions Scope 1, 2 and 3, and the related intensity value, which is reported on page 50. Syngenta_SBR19.pdf
C9. Additional metrics	Energy consumption	ISAE3000	We report our "energy consumption" (see answer to question C9.1) in our Sustainable Business Report. As such, this metric is included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis and covers 100% of the scope reported. We conducted organization-wide assurance. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including energy consumption, which is reported on page 50. Syngenta_SBR19.pdf
C9. Additional metrics	Other, please specify (Land use (soil conservation))	ISAE3000	We report on "hectares of benefited farmland" due to soil conservation measures (see answer to question C9.1) in our Sustainable Business Report. As such, this metric is included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis and covers 100% of the scope reported. We conducted organization-wide assurance. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including "Hectares of benefited land" under "Rescue more farmland", which is reported on page 48. Syngenta_SBR19.pdf
C9. Additional metrics	Other, please specify (Land productivity increase)	ISAE3000	We report on "land productivity increase" (see answer to question C9.1) in our Sustainable Business Report. As such, this metric is included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including "Land productivity increase" under "Make crops more efficient", which is reported on page 48. Syngenta_SBR19.pdf
C9. Additional metrics	Other, please specify (Greenhouse gas emission efficiency increase)	ISAE3000	We report on "greenhouse gas emission efficiency increase" (see answer to question C9.1) in our Sustainable Business Report. As such, this metric is included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including "greenhouse gas emission efficiency increase" under "Make crops more efficient", which is reported on page 48. Syngenta_SBR19.pdf
C9. Additional metrics	Other, please specify (Waste (hazardous and non-hazardous))	ISAE3000	We report on "hazardous waste" and "non-hazardous waste" (see answer to question C9. 1) in our Sustainable Business Report. As such, these metrics are included in the limited assurance engagement conducted by PwC. The assurance is conducted on an annual basis. PwC's Independent Assurance Report is on page 52 of our Sustainable Business Report 2019 (attached here). As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 48 to 51, including "hazardous waste" and "non-hazardous waste", which are reported on page 51. Syngenta_SBR19.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Switzerland carbon tax

Switzerland ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS
8

% of Scope 2 emissions covered by the ETS
0

Period start date
January 1 2019

Period end date
December 31 2019

Allowances allocated
46706

Allowances purchased
18000

Verified Scope 1 emissions in metric tons CO2e
66183

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Facilities we own and operate

Comment
The percentage of Scope 1 emissions is related to total Scope 1 emissions.

Switzerland ETS

% of Scope 1 emissions covered by the ETS
0.3

% of Scope 2 emissions covered by the ETS
5

Period start date
January 1 2019

Period end date
December 31 2019

Allowances allocated
16003

Allowances purchased
1698

Verified Scope 1 emissions in metric tons CO2e
1628

Verified Scope 2 emissions in metric tons CO2e
18507

Details of ownership
Facilities we own and operate

Comment
The percentage of Scope 1 emissions is related to total Scope 1 emissions. The percentage of Scope 2 emissions is related to total Scope 2 emissions.

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Switzerland carbon tax

Period start date
January 1 2019

Period end date
December 31 2019

% of total Scope 1 emissions covered by tax
1

Total cost of tax paid
560000

Comment
The amount of carbon tax paid and disclosed above has been reimbursed as the sites are part of the regulatory CO2 instruments (ETS and target agreements).

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Two of our major sites in the UK (Huddersfield and Grangemouth) participate in the EU ETS, and our Kaisten site in Switzerland participates in the Swiss ETS.

In the UK, our strategy has been to retain our surplus of EU carbon allowances to compensate for any shortfalls that could occur in Phase III (2013-2020). As the UK has now left the EU, the UK authority (The Environment Agency) allocated both the 2019 and 2020 free emission allowances into operators accounts in February 2020. Therefore (technically) there was no need to purchase any allowances for the 2019 emission compliance. However, 18,000 allowances were purchased as a hedge against the 2020 emissions as the market was at a low level earlier in the year. The Syngenta EUETS account now stands at 62,623 allowances.

In Kaisten, our strategy is to implement initiatives that increase energy efficiency, consequently reducing GHG emissions. Thanks to this strategy, we expect the site to stay within the allocated allowances for the period 2013-2020. If this would prove impossible, the site would then buy additional emission rights at periodic auctions in order to balance its production growth. The site purchased 16,039 emission rights in 2016, and 5,529 emissions rights in 2017. In 2018, the site bid a higher price and purchased 14,692 emission rights. In 2019, the site purchased 1,698 emission rights.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
0.08

% total procurement spend (direct and indirect)
15.6

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
RATIONALE: As Syngenta spends more than USD 8 billion per annum with more than 50,000 suppliers, we cannot directly engage with and influence every supplier. Our strategy is therefore to identify the areas in our supply chain with the biggest impact and engage directly with suppliers in those categories to understand actual impacts and their carbon reduction strategies. In 2019, we set science-based carbon emission reduction targets. To do so, we established a Scope 3 inventory and identified where our biggest impacts are. Our Chemical Supplier base has the most significant impact on our total emissions and 45 companies in particular. ENGAGEMENT ACTIVITIES: These 45 companies are requested to disclose to us annually carbon and energy data related to products we purchase through a specific questionnaire. In addition, we have started to run webinars with our suppliers to give them more information on our carbon, water and waste targets and explain what we expect from them.

Impact of engagement, including measures of success
MEASURE OF SUCCESS: The engagement enables us to increase the accuracy of our Scope 3 inventory and validate the right focus areas. We expect these 45 companies to provide us with the information requested in order to replace emissions calculated based on spend in our Scope 3 inventory with actual measurements. IMPACT: The data is analyzed at both a supplier level and specific product supply chain level. At supplier level, the information provides an insight into the relevant maturity levels of our suppliers and enables us to identify carbon reduction opportunities as well as gaps in our suppliers' understanding and knowledge. Where we have identified

opportunities, we have started to engage with the environmental and sustainability functions of our suppliers to explore carbon reduction initiatives. Where gaps in knowledge and understanding exist, we plan to establish specific training programs to help accelerate the learning of our suppliers. In 2019, we ran a pilot whereby we gave three of our key chemical suppliers in India access to a software platform that helps manufacturers identify and implement environmental sustainability improvements (i.e. Manufacture 2030). Through the platform, 35 actions to improve environmental efficiency were identified and implemented by all three companies. We are currently quantifying the impacts. Asking our suppliers for this data sends a strong signal that Syngenta considers GHG emission reduction as important and helps drive focus on low-carbon solutions. This is part of Syngenta's commitment to reduce the carbon intensity of our operations by at least 50% by 2030.

Comment

Type of engagement
Compliance & onboarding

Details of engagement
Included climate change in supplier selection / management mechanism
Climate change is integrated into supplier evaluation processes

% of suppliers by number
1.22

% total procurement spend (direct and indirect)
49

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
RATIONALE: As Syngenta spends more than USD 8 billion per annum with more than 50,000 suppliers, we cannot conduct detailed audits at every supplier. We therefore apply a risk-based approach. Packaging, Chemical Procurement and Formulation Tolling categories have been identified as high impact/high risk categories following a risk assessment across procurement categories. ENGAGEMENT ACTIVITIES: These categories are subject to regular audits and assessments through Syngenta's Supplier Sustainability Program. As part of this program, all suppliers are (at a minimum) required to undergo a regular independent sustainability assessment conducted through the EcoVadis platform. The assessment requires companies to answer questions and upload supporting documents (e.g., policies, procedures, KPIs) covering various topics, including their approach to climate change and their actions to track and reduce GHG emissions. Certain suppliers within the categories who are defined as high impact/high risk are required to undergo further on-site audits covering various topics including how policies, processes and targets related to energy and GHG emission reduction are being implemented on sites.

Impact of engagement, including measures of success
MEASURE OF SUCCESS: We measure the percentage of suppliers in the Supplier Sustainability Program. We target to have 100% of our suppliers in 'risk categories' to be included in our program. Within the program, suppliers not achieving the set performance results are expected to make improvements. IMPACT: Audits and assessments generate findings, and suppliers subsequently establish corrective actions. Our buyers work with suppliers to ensure these corrective actions are completed. A formal follow-up occurs after 12 months to validate completed actions and monitor progress. The results of audits and assessments form part of the selection criteria for identifying preferred or development suppliers in our Supplier Relationship Management program and feed into our supply chain risk management process. We acknowledge improvement in the sustainability performance of our suppliers in our annual supplier awards. In 2019, 95% of chemical suppliers, 83% of formulation, fill and pack tollers, and 63% of packaging manufacturers were part of our Supplier Sustainability program. As part of the program, these companies have disclosed their GHG emissions and associated emission reduction actions in the EcoVadis assessment.

Comment
As members of the chemical industry's Together for Sustainability initiative, we work with industry to conduct audits and assessments to a common standard and we benefit from sharing the results between members of the initiative. Our Supplier Sustainability Program is monitored by 4 regional sustainability teams and a global governance team (consisting of senior management) oversees the process. Buyers are required to undergo training on the process, sustainability and how to engage with suppliers.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Offer financial incentives for suppliers who reduce your upstream emissions (Scopes 3)

% of suppliers by number
0.02

% total procurement spend (direct and indirect)
3.4

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
RATIONALE: Engagement with our logistics partners offers the opportunity to reduce our Scope 3 emissions and optimize our logistics footprint. Given logistics impacts a large part of the organization, it is also an opportunity to spread the message about CO2 reduction to many people within Syngenta. Within the logistics category, we have focused our engagement on our 12 fourth-party logistics (4PL) providers. The rationale for focusing on these companies is that they have the largest impact because they are responsible for the overall management of sub-contractors who are moving goods on our behalf. These are companies with whom we have a strategic relationship and which we are therefore most able to influence. ENGAGEMENT ACTIVITIES: We require 4PL partners to measure and report to us monthly the carbon footprint associated with our business following the Global Logistics Emission Council (GLEC) methodology. Currently 8 (of the 12) providers are reporting following GLEC guidelines. We use this data to report against internal KPIs and identify reduction opportunities. For example, in 2019, we extended our long-term collaboration with A.P. Moeller-Maersk, a 4PL provider. An important focus of the partnership is on sustainable logistics, eliminating fossil fuels in container shipping and supply chains to reduce CO2 emissions. NOTE to Scope 3 emissions: For the year 2019, we reported limited sources of Scope 3 emissions. As such, emissions from transportation and distribution represented 94% of our 2019 reported Scope 3 emissions (in C6.5). However, to determine the 2016 baseline for our SBTi-approved emission reduction target set in late 2019, a broader range of Scope 3 emissions was calculated. In this case, emissions from transportation and distribution represent about 8% of our 2016 baseline Scope 3 emissions.

Impact of engagement, including measures of success
MEASURE OF SUCCESS: Our objective is to ensure that our fourth-party logistics (4PL) providers measure and set targets to reduce emissions, and that we work together to identify projects where we can reduce our footprint. IMPACT: Currently 8 (of the 12) 4PL partners report to us the carbon footprint associated with our business following Global Logistics Emission Council (GLEC) guidelines. We use this data to identify reduction opportunities together with 4PL partners. For instance, an opportunity we identified was to replace road transportation with rail for moving a key product in the USA. We were able to reduce deliveries by road by 64 bulk truck loads, resulting in a reduction in emissions of 90 metric tons of CO2. We have started to put joint roadmaps in place with our key partners and within the next three years, we plan to implement contractual requirements to measure and reduce the carbon of our key partners.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number
20

% of customer - related Scope 3 emissions as reported in C6.5
0

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
We engage with smallholder farmers around the world to train and advise them on good agriculture practices, in particular on how to increase land productivity. Sustainable intensification strategies are important in addressing climate change. More efficient resource use supports both adaptation to and mitigation of the effects of climate change by improving farm productivity and incomes while reducing emissions per unit of product. Smallholder farmers are highly vulnerable to climate change. These farmers face challenges in increasing production, preserving natural resources and addressing the impact of climate change in food production systems. Meeting these challenges is vital to sustained livelihoods and poverty reduction (Source: FAO: http://www.fao.org/family-farming/detail/en/c/293342/). The lack of information and access to technical support often hinder their ability to implement better agriculture practices. Over half of our sales are made in growing economies where smallholder farmers predominate. In 2019, we trained 6.2 million smallholder farmers, which we estimate represent about 20% of all farmers we reach. The level of engagement and type of training and advice we provide to smallholders varies across geographies and needs. 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. As part of Syngenta's Good Growth Plan, we have committed to "Empower smallholders" by reaching 20 million smallholders and enabling them to increase land productivity by 50% by 2020.

Impact of engagement, including measures of success
In this case, we measure success by the number of smallholder farmers we have trained and helped to increase land productivity. In 2019, we reached 20.3 million smallholders through sales and 6.2 million smallholders through training activities. Six years into the Good Growth Plan, the average land productivity in smallholder reference farms has increased by 28.5% – almost three times better than the average increase for smallholder reference farms. Very often, smallholders' yields are impaired by limited access to technology, or lack of knowledge about how to apply it effectively. For example, reference tomato growers in Africa have seen significant yield gains since we introduced them to hybrid seeds and gave them appropriate training. In the Philippines, we found particularly poor yields among rice growers using low-quality crop protection. After being trained on the efficient use of high-performance products such as VIRTAKO® insecticide, some of these growers have doubled their yields per hectare. Improving farm productivity supports climate change mitigation by reducing emissions per unit of product.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

STRATEGY: Syngenta focuses on delivering sustainable sourcing solutions for our partners in the food industry. This effort is coordinated by a dedicated team tasked with identifying and converting partnership interests into a range of outcomes – from thought leadership to influence policy to driving results in countries where there is mutual interest to deliver outcomes. These initiatives are tailored to address the specific needs of each partner in a country, and solutions and services range from delivering crop growing programs and farmer trainings to certification of farming practices.

PARTNERS: Partners include food companies and civil society organizations with whom Syngenta works to promote sustainable agricultural practices aimed at reducing farmers' environmental footprint, including their greenhouse gas emissions, and at supporting the farming community to adopt a climate-smart approach.

PRIORITIZATION: We prioritize our climate-related engagement based on partner needs, which fall into four areas: 1) Food quality and safety; 2) Biodiversity; 3) Soil health/GHG emission reduction (carbon sequestration); and 4) Safe use/Capacity building (training events). In each area, we use digital tools and offer tailored services and solutions.

Where possible, we endeavor to include credible and neutral third-party players, for instance Wageningen University and The Nature Conservancy (TNC). For initiatives related to soil health/GHG emission reduction (carbon sequestration), we are working with eight partners on coffee, potatoes, wheat, malting barley and garlic in Vietnam, Thailand, China, Mexico, Colombia and USA.

METHODS OF ENGAGEMENT: There are different stages of engagement ranging from early exploratory discussions to concept design and collaborative initiatives in countries. For example, we are currently exploring with TNC the possibility to develop a framework for piloting improved practices with contracted farmers in Argentina.

MEASURING OUTCOMES: Key metrics include number of farmers and hectares involved, farmer return on investment and resource efficiency improvements.

EXAMPLE 1: In Vietnam, we are working to promote climate change resilience for coffee plantations with three value chain partners: Louis Dreyfus Company, Jacobs Douwe Egberts and IDH The Sustainable Trade Initiative. Using 24 demonstration plots as well as direct action on farms, the three-year project aims to develop and promote sustainable landscapes that reduce soil degradation, combat deforestation, conserve irrigation water and improve climate change resilience. We have trained up to 2,500 farmers and agronomists on sustainability issues, eliminating overuse and unsafe use of pesticides. We are working with local authorities to develop a model that can be scaled up further. The second phase of the partnership was launched at the end of 2019, and it extends the model into three more highlands provinces, benefiting a total of 3,000 farmers by 2021 (4,800 hectares ~ 14,000 tons of coffee beans).

EXAMPLE 2: Syngenta is a member of the Cool Farm Alliance (CFA) and Field to Market. These organizations provide science-based sustainable agriculture assessment tools to track GHG emissions on farms and identify improvement opportunities through climate-smart agricultural practices.

The results of the integration of the Cool Farm Tool (CFT) and Field to Market's sustainability metrics into our farm management software Land.db in the USA are used to engage with farmers. These results are also used to engage with input retailers and distributors, food value chain partners and other commercial stakeholders to raise awareness, benchmark performance and inform decision-making. Data confidentiality, auditability and transparency are leading principles in our farmer-focused, data-driven GHG initiatives and fundamental to building trust with our partners and stakeholders.

Since 2018, Syngenta has chaired the CFA Technical Development and Operations Committee and been a member of the Executive Committee, helping to streamline the Cool Farm Tool product development in line with CFA member needs. We also participate in the Technology Partners Working Group to help connect the CFT to other systems and are helping to review and develop the way CFA member data will support improvements of the CFT calculations.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Adaptation or resilience	Support	We are currently supporting CropLife International in its submission to the UN Framework Convention on Climate Change (UNFCCC) Koronivia road map under the Koronivia joint work on agriculture.	Syngenta supports policies that recognize the importance of agriculture and food security in the climate change agenda.
Adaptation or resilience	Support	Syngenta co-leads the Scaling Natural Climate Solutions workstream in the World Economic Forum's Alliance of CEO Climate. The alliance aims to scale up affordable natural climate mitigation solutions for achieving the goals of the Paris Agreement on climate change. We are currently developing key actions and initiatives that alliance members will engage in to deliver results at the UN Climate Change Conference (COP26).	We advocate for bold action to move the world toward a low-carbon and climate-resilient economy.
Adaptation or resilience	Support	Syngenta co-leads the World Business Council for Sustainable Development's (WBCSD) Nature Action Agenda. The project aims to develop guidance, contribute to global targets and frameworks, and drive collective business action toward Net Zero Nature Loss.	We are aiming to build collective business advocacy, especially on nature-based solutions, for the UNFCCC COP26, the UN Convention on Biological Diversity COP15 and the Food Systems Summit in 2021.
Adaptation or resilience	Support	Syngenta has been the private-sector partner of the UN Convention to Combat Desertification (UNCCD) for the past six years. We support UNCCD in running the Soil Leadership Academy, which is designed to strengthen (inter)national policy processes and frameworks toward "a land-degradation neutral world." Together with the UNCCD and the WBCSD, we have organized over 30 SLA workshops to raise awareness about soil conservation among UNCCD member nations, civil society organizations and academia. Through these workshops we have trained 170 delegates from 114 countries in sustainable land management; 60 countries have set land degradation neutrality targets and 45 more have agreed to. Further, at the 2019 UNCCD COP14, Syngenta sponsored the Business Day on Soil, Land and Agriculture to clarify how to move toward a land-degradation neutral world. The key outcome was the UNCCD Delhi Declaration from Business that captures business perspectives, commitments and policy asks.	Syngenta supports policies that advocate for natural climate solutions that can deliver large-scale emission reductions cost-effectively. Also, we support policies that protect and improve soil health at scale.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

CropLife International

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CropLife International (CLI) and its global network "champion the role of agricultural innovations in crop protection and plant biotechnology to support and advance sustainable agriculture" (source: CLI). Farmers in many parts of the world have to cope with rising temperatures, changing weather patterns, frequent and more severe droughts and floods, and the emergence of new pests and diseases. All or part of this could be attributable to climate change. CLI sees agricultural policies as key to combating climate change and making farm systems more resilient to its effects. By empowering farmers with access to technology and education, with the help of policy makers, politicians, and the plant science industry, CLI believes that a lasting and sustainable difference can be made across the food and agriculture value chains. To adapt to climate change, farmers need better tools and practices that will help them meet the food security challenge, ensure resilient agriculture systems and strong rural economies. Increased investment in research, development and scientific capacity is key to finding new sustainable solutions to help farmers maintain, enhance and evolve their production systems. Through transparent and open dialogue, CLI believes that it is important to show how the industry is providing new technologies, innovations in crop protection, plant biotechnology and digital solutions to make a positive impact on biodiversity. CropLife International carried this message forward at the 4th UN Environment Assembly (UNEA) at the United Nations Framework Convention on Climate Change (UNFCCC) where the agricultural business sector, including the plant science industry, was represented. A delegation of member companies and CLI representatives contributed to the negotiations, participated in side events, and engaged in bilateral discussions with member states. This led to greater visibility for agricultural issues within the context of climate change and biodiversity, and helped define the role of the plant science industry as a part of the solution (source: CLI, Annual Report 2019).

How have you influenced, or are you attempting to influence their position?

Syngenta engages with CropLife International to promote climate-smart agriculture and provides case studies on how technologies along with the right agronomic practices are contributing to climate change mitigation and adaptation. Syngenta's CEO is a member of CLI's Board of Directors.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

We work with leading global organizations to bring our voice to relevant arenas on sustainable agriculture and climate change. Among our partners are the World Business Council for Sustainable Development (WBCSD), the Global Alliance for Climate Smart Agriculture (GACSA), The Nature Conservancy (TNC) and the World Economic Forum (WEF).

Syngenta is a member of GACSA's Strategic Committee and Knowledge Action Group, working with other industry bodies and NGOs to promote research and development into technologies, practices, and policy approaches for climate-smart agriculture.

Syngenta is a member of the Tropical Forest Alliance, a public-private partnership dedicated to collaborative action to realize sustainable rural development and better growth opportunities based on reduced deforestation and sustainable land use management in tropical forest countries.

Syngenta entered into an official partnership with TNC in 2019, with the goal of contributing to and developing their *Provide Food and Water Sustainably* and *Tackle Climate Change* pathways. Our *Innovation for Nature* collaboration directly carries out projects to improve resilience and adaptation to climate change, and advocates for science-based approaches to agriculture and climate change policy. As an example, Syngenta and TNC are working in peri-urban environments of Kenya, near Nairobi, to improve community water resources for off-season irrigation, thereby helping to prevent soil erosion and improve local resilience to drought and rainfall variability.

In addition, Syngenta engages with the Committee on World Food Security (CFS) through the Private Sector Mechanism, led by the Inter-Agri Food Network (IAFN). We aim to connect and align with experts, policy makers, value chain partners and other stakeholders over key issues concerning food and nutritional security. We are also engaging with relevant stakeholders at CFS for events including UNFCCC COPs and Food Systems Summit in 2021.

At CFS specifically, we advocate for agri-businesses to tackle food and nutritional security in line with the SDGs, especially SDG 2 (Zero Hunger). We also help bring agri-businesses' voice to the CFS, particularly on policy topics such as Codex Alimentarius, Agroecology, climate change, youth agri-entrepreneurship, etc.

We have also expressed our support for the recommendations of the industry-led Task Force on Climate-related Financial Disclosure (TCFD), convened by the Financial Stability Board. The 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 WBCSD and TCFD to identify good practice, enhance disclosure effectiveness and help companies implement TCFD's recommendations.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

We coordinate and channel all our global policy engagements on climate change, directly and indirectly, through our global Business Sustainability function to ensure consistency of our engagements with our climate change strategy across geographies and company functions. The Business Sustainability function is led by the Chief Sustainability Officer (CSO), who reports to the CEO.

Our regional and country level policy engagements on climate change are carried out through our respective regional and country Business Sustainability teams in close collaboration with the global team. Regular communications (e.g., weekly Business Plan Review calls with leadership teams across regions and townhalls with all members of the function) and the development of policy positions ensure all our policy engagements around the world are consistent with our company position on climate.

The role of CSO and the Business Sustainability function were created in 2018 to bring a sharper focus to our sustainability work and support our commitment to work more closely and transparently with policy makers, governments, NGOs and society.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In voluntary sustainability report

Status
Complete

Attach the document
Syngenta_SBR19.pdf

Page/Section reference
Sustainable Business Report 2019, pages: 8, 9, 24, 37, 38, 47, 48 and 50

Content elements
Strategy
Emissions figures
Emission targets
Other metrics

Comment
This report is also available on our website: https://www.syngenta.com/company/presentations-and-publications

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Publication
In mainstream reports

Status
Complete

Attach the document
Financial Report 2019.pdf

Page/Section reference
Financial Report 2019, page: 2 (PDF, page 4)

Content elements
Strategy

Comment
This report is also available on our website: https://www.syngenta.com/company/presentations-and-publications

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Publication
In voluntary communications

Status
Complete

Attach the document
Syngenta climate-change-policy-position.pdf

Page/Section reference
Our policy position: Syngenta and climate change, entire document

Content elements
Strategy
Other, please specify (Policy position)

Comment
This policy position is also available on our website: https://www.syngenta.com/company/policy-positions

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C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	CEO	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms