

C0. Introduction

C0.1

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

This CDP submission is for Syngenta AG group, which encompasses the following operations of the Syngenta Group (www.syngentagroup.com): Syngenta Crop Protection, Syngenta Seeds and operations of Syngenta AG group that now form part of Syngenta Group China. This scope is referred to as 'Syngenta' or 'Syngenta AG group' in this document.

Syngenta AG group (www.syngenta.com) comprises over 30,000 employees and delivered USD 19.96 billion in sales in 2022. 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. We support farmers with technologies, knowledge and services so they can sustainably provide the world with better food, feed, fiber 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 non-governmental organizations to support the achievement of the United Nations Sustainable Development Goals.

This document may contain forward-looking statements, which can be identified by terminology such as "expect," "would," "will," "potential," "plans," "prospects," "estimated," "aiming," "on track" and similar expressions. Such statements may be subject to risks and uncertainties that could cause the actual results to differ materially from these statements. For Syngenta, such risks and uncertainties include risks relating to legal proceedings, regulatory approvals, new product development, increasing competition, customer credit risk, general economic and market conditions, compliance and remediation, intellectual property rights, implementation of organizational changes, impairment of intangible assets, consumer perceptions of genetically modified crops and organisms or crop protection chemicals, climatic variations, fluctuations in exchange rates and/or grain prices, single source supply arrangements, political uncertainty, natural disasters, and breaches of data security or other disruptions of information technology. Syngenta assumes no obligation to update forward-looking statements to reflect actual results, changed assumptions or other factors.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date

October 1 2021

End date

September 30 2022

Indicate if you are providing emissions data for past reporting years

Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for

1 year

Select the number of past reporting years you will be providing Scope 2 emissions data for

Not providing past emissions data for Scope 2

Select the number of past reporting years you will be providing Scope 3 emissions data for

Not providing past emissions data for Scope 3

C0.3

(C0.3) Select the countries/areas in which you operate.

Afghanistan

Albania
Algeria
Angola
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
Bahrain
Bangladesh
Belarus
Belgium
Belize
Bhutan
Bolivia (Plurinational State of)
Bosnia & Herzegovina
Botswana
Brazil
British Virgin Islands
Bulgaria
Burkina Faso
Cambodia
Cameroon
Canada
Chile
China
China, Macao Special Administrative Region
Colombia
Congo
Cook Islands
Costa Rica
Côte d'Ivoire
Croatia
Cuba
Cyprus
Czechia
Denmark
Dominican Republic
Ecuador
Egypt
El Salvador
Estonia
Ethiopia
Finland
France
French Guiana
French Polynesia
Gabon
Georgia
Germany
Ghana
Greece
Guadeloupe
Guatemala
Honduras
Hong Kong SAR, China
Hungary
Iceland
India
Indonesia
Iran (Islamic Republic of)
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kuwait
Kyrgyzstan
Latvia
Lebanon
Libya
Liechtenstein
Lithuania
Luxembourg
Malawi
Malaysia

Mali
Malta
Martinique
Mauritius
Mexico
Mongolia
Montenegro
Morocco
Mozambique
Myanmar
Namibia
Nepal
Netherlands
New Caledonia
New Zealand
Nicaragua
Nigeria
North Macedonia
Norway
Oman
Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Puerto Rico
Qatar
Republic of Korea
Republic of Moldova
Réunion
Romania
Russian Federation
Rwanda
San Marino
Saudi Arabia
Senegal
Serbia
Sierra Leone
Singapore
Slovakia
Slovenia
South Africa
Spain
Sri Lanka
State of Palestine
Sudan
Sweden
Switzerland
Syrian Arab Republic
Taiwan, 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
Venezuela (Bolivarian Republic of)
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

Bulk inorganic chemicals

Other chemicals

Specialty chemicals

Other, please specify (Seed production)

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
No	<Not Applicable>

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 or committee	Responsibilities for climate-related issues
Board-level committee	<p>RESPONSIBILITIES OF BOARD OF DIRECTORS: The sustainability governance is led by the Board of Directors of the parent company Syngenta Group Co. Ltd., which provides strategic direction regarding all sustainability matters – this includes climate-related issues – and exercises oversight over the Syngenta Group Co. Ltd. Group Leadership Team in this respect. The Syngenta Group Co. Ltd. Board of Directors delegates some of its powers and duties to the board level Syngenta Group Sustainability Committee.</p> <p>RESPONSIBILITIES OF BOARD-LEVEL COMMITTEE: The Sustainability Committee is mainly responsible for sustainability matters in innovation and operations, and for the review of the company's sustainable practices – these matters and practices include climate-related aspects, and in particular, the company's efforts on sustainable and climate-smart agriculture. It is also involved in the development of the sustainability ambition and strategy and oversees the company's sustainability framework and standards, including public ESG reporting, the company's sustainability plan, strategic sustainability partnerships, and innovation dialogues.</p> <p>This committee is chaired by an individual with extensive experience and expertise in sustainable and responsible agriculture and food production.</p> <p>EXAMPLE: Every year, the Syngenta Group Sustainability Committee reviews the Syngenta AG's ESG Report, including information about the company's GHG emissions and climate-related performance and activities. The ESG Report 2022 was reviewed by the Sustainability Committee in March 2023 and approved by the Board of Directors of Syngenta AG in May 2023 before publication on May 11, 2023.</p>

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	Overseeing and guiding employee incentives Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Overseeing the setting of corporate targets Monitoring progress towards corporate targets Overseeing and guiding public policy engagement Overseeing value chain engagement	<Not Applicable>	<p>The Sustainability Committee of the Syngenta Group Board of Directors meets several times a year to discuss sustainability issues and review the sustainability strategy and actions, including those related to climate change. The Board of Directors and its Sustainability Committee provide strategic direction regarding these matters and exercise oversight over the Group Leadership Team.</p> <p>The Sustainability Committee was established at the Syngenta Group Board of Directors level in 2021. In March 2023, the committee reviewed the Syngenta AG ESG Report 2022, which includes climate-related performance information, and recommended it for approval to the Syngenta AG Board of Directors.</p> <p>Previous activities led by the Syngenta AG Board of Directors include the approval of our commitment to invest USD 2 billion over five years in innovation targeted at delivering a step change in agricultural sustainability, including helping farmers tackle the threats posed by climate change. This was reaffirmed by the board in 2020 with the launch of our Good Growth Plan, which consists of four ambitious global commitments to reduce agriculture’s carbon footprint and to help farmers deal with the extreme weather patterns caused by climate change.</p> <p>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 consider sustainability criteria associated with the Good Growth Plan, including aspects related to climate change.</p> <p>The Chief Sustainability Officer (CSO) briefs the Sustainability Committee regularly on these matters, including providing information on the company’s performance against sustainability targets set in Syngenta’s Good Growth Plan. These targets include our commitment to enable for climate-smart agriculture.</p>

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	<p>The company’s efforts on sustainable and climate-smart agriculture fall under the responsibility of the Sustainability Committee. This committee is chaired by an individual, whose extensive experience and expertise in sustainable and responsible agriculture – which includes helping farmers tackle the threats posed by climate change – and food production is of key relevance for the committee’s activities.</p> <p>The Syngenta Group Co. Ltd. Board of Directors carries out periodic assessments of the independence and performance of committee members. The company organizes trainings for committee members (if needed) to gain professional knowledge of laws and standards required for performing their responsibilities.</p>	<Not Applicable>	<Not Applicable>

C1.2

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

Position or committee

Chief Sustainability Officer (CSO)

Climate-related responsibilities of this position

- Developing a climate transition plan
- Integrating climate-related issues into the strategy
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets
- Managing public policy engagement that may impact the climate
- Managing value chain engagement on climate-related issues

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

Quarterly

Please explain

The CHIEF SUSTAINABILITY OFFICER (CSO), who reports to the CEO, leads the Group 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 Group Leadership Team and the Sustainability Committee of the Syngenta Group Co. Ltd. Board of Directors on the progress made regarding the company’s sustainability commitments and advises them on required actions.

The GROUP LEADERSHIP TEAM oversees 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. As sustainability is every employee’s responsibility, each member of the Group Leadership Team is responsible for embedding sustainability in her/his area of responsibility.

The SUSTAINABILITY FUNCTION has global, regional and country representatives to ensure alignment of initiatives, performance management and policy engagement across the organization. The Sustainability function brings focus to our sustainability work and supports our commitment to collaborate more closely and transparently with governments, NGOs and society to find the solutions we collectively need. To enable the development, implementation and coordination of the Group strategy, the CSO leads a Sustainability Leadership Committee.

The SUSTAINABILITY LEADERSHIP COMMITTEE leads the design and supports the adoption of the Group-wide sustainability strategy and targets by business units and functional strategies. It also monitors progress, steers internal and external communication, and oversees the function’s talent development plans. Members of the Sustainability Leadership Committee are the heads of sustainability of the four Syngenta Group’s business units and the heads of business sustainability in the regions.

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	See more details in the following question.

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

Corporate executive team

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Performance indicator(s)

Progress towards a climate-related target

Incentive plan(s) this incentive is linked to

Long-Term Incentive Plan

Further details of incentive(s)

The Group Leadership Team's remuneration is linked to the company's overall performance, including its financial and sustainability performance. The long-term incentive plan considers sustainability criteria associated with the Good Growth Plan, including climate-related targets. Every year, the Syngenta Group Board is requested to approve the measure of sustainability performance proposed by the Chief Sustainability Officer. Based on the assessment, the overall achievement percentage can be adjusted up or down.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

Sustainability targets are set in Syngenta's Good Growth Plan, including targets and measures to manage our impact on climate change and our contribution to address the associated challenges.

In our Good Growth Plan, we commit to reduce the carbon intensity of our entire operations by at least 50% by 2030 vs. our 2016 baseline. In parallel, and validated by the Science Based Targets initiative, we have committed to reducing the carbon intensity of our own operations and supply chain by 68% based on value added by 2030 since our 2016 baseline. We are also committed to measuring and enabling carbon capture and mitigation.

Entitled to incentive

Chief Sustainability Officer (CSO)

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Performance indicator(s)

Progress towards a climate-related target

Incentive plan(s) this incentive is linked to

Long-Term Incentive Plan

Further details of incentive(s)

The Chief Sustainability Officer (CSO) is a member of the senior management group and the most senior employee solely responsible for sustainability. The CSO's remuneration includes sustainability performance associated with Syngenta's Good Growth Plan, and his annual performance goals and results are directly linked to sustainability topics, including climate change.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

Sustainability targets are set in Syngenta's Good Growth Plan, including targets and measures to manage our impact on climate change and our contribution to address the associated challenges.

In our Good Growth Plan, we commit to reduce the carbon intensity of our entire operations by at least 50% by 2030 vs. our 2016 baseline. In parallel, and validated by the Science Based Targets initiative, we have committed to reducing the carbon intensity of our own operations and supply chain by 68% based on value added by 2030 since our 2016 baseline. We are also committed to measuring and enabling carbon capture and mitigation.

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., 2022) or the following one as part of the budgeting process.
Medium-term	2	5	Five-year horizon (i.e., 2022-2026) 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 organization's strategic objectives. 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 the 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 to corporate (Syngenta AG group), assets (e.g., sites, countries), direct operations and the supply chain.

In environmental terms, a substantive impact would typically mean any release to the environment, which would justify 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

At Syngenta, risk management is everyone's responsibility from leadership teams through to each employee. All must consider and be accountable for risks within their functions and operations.

The PROCESS OF IDENTIFYING, ASSESSING AND RESPONDING TO RISKS AND OPPORTUNITIES – including climate-related risks and opportunities – that could have a substantive financial or strategic impact is INTEGRATED into our overall multi-disciplinary Enterprise Risk Management (ERM) Framework. Based on the ISO 31000 Risk Management Standard, the framework is governed by the Group Leadership Team and covers all stages of our VALUE CHAIN.

This PROCESS follows five steps:

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 (by screening current and emerging trends and ecosystem risks)
3. Assessment: gaining a deeper understanding of risks and opportunities by analyzing their likelihood and potential impact (on people, the environment, and business) in accordance with the overall ERM framework
4. Treatment: actively addressing the risks identified leading to reduce or remove the uncertainty of outcomes
5. Monitoring: regularly reviewing risks to evaluate the effectiveness of treatment measures and changes within the risk landscape

Climate change is considered in the ERM framework both from a strategic LONG-TERM BUSINESS VALUE IMPACT perspective (e.g., opportunities through increasing need for drought-resistant seeds, changes in consumer diets and preferences) and a SHORT- AND MEDIUM-TERM, OPERATIONAL perspective at corporate and business unit level (e.g., supply chain disruptions and contingencies due to flooding, earthquakes, heatwaves, and other physical acute and chronic risks).

Strategic LONG-TERM risks and opportunities are discussed on a REGULAR BASIS at global level and inform senior leadership decision making on significant trends for the next 10 to 20 years. This exercise is conducted with both internal and external experts.

The ANNUAL risk IDENTIFICATION exercise, which looks at the SHORT- AND MEDIUM-TERM risks and opportunities within the next five years, follows the company's strategic planning cycle. Global, regional, business unit and country specific strategic risk identification always involves multi-disciplinary experts from Sustainability, R&D, Production and Supply, IT, Finance and Commercial teams. Functions and Operations mirror a similar approach to risk identification and consider impacts on downstream and upstream. For instance, our HSE Management System (MS) requires all sites to understand their climate-related risks and put improvement plans, targets and mitigation measures in place. Sites' progress is monitored and routinely reviewed through the HSE MS assurance processes.

Further, Syngenta has engaged in in-depth CLIMATE SCENARIO ANALYSIS as a result of our commitment to implement the TCFD RECOMMENDATIONS, looking into medium- and long-term climate change-related risks and opportunities extending beyond 5 and 10 years and other transitional risks. Scenario results were shared within the company and published in our ESG Report 2020, and referenced in our 2021 and 2022 ESG Reports.

Once risks and opportunities have been identified, PRIORITIZATION is applied 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) undergo a more frequent assessment (based on their profile) to inform 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 CONTINUOUSLY MONITORED, and adjusted to the potential changes in the business as required, such as in cases of supply interruptions due to weather disturbances. In 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 management process. Climate change is one of the core drivers of some of the biggest Group risks and opportunities, and discussions on climate-smart agriculture happen at an increased frequency.

CASE STUDIES

TRANSITION RISK: Future legislation could limit carbon dioxide emissions in the manufacture of Syngenta products or increase the costs associated with such emissions. In our climate scenario work, we analyzed the potential impact of transition risks on our own and supplier chemical production. We identified that 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 that actions associated with our GHG reduction commitment could mitigate the risk and might even lead to a competitive advantage. Syngenta is working to make its production more energy-efficient and reduce carbon intensity. We have committed to reduce the carbon intensity of our operations and supply chain by at least 50% by 2030.

PHYSICAL RISK: 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 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. Actions include co-planning emergency responses with the supplier, reviewing and increasing the safety stock we hold, and identifying additional sources for the product.

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Current regulation can pose a risk (and bring opportunities) to Syngenta's operations and is always included in climate-related risk (and opportunity) assessments. Current regulations are 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 on the business and the environment.</p> <p>EXAMPLE: Cadastro Ambiental Rural (CAR) is a nationwide, compulsory public land registry for all rural properties in Brazil. The purpose of the requirement is to provide a consolidated database for the control and monitoring of Permanent Protected Areas (PPAs), which supports environmental and economic planning and fights deforestation. Syngenta Brazil's ESG Policy launched in Q1 2023 (voluntarily) implements the above requirement, providing that growers served by Syngenta in a direct-to-consumer relationship provide proof of CAR registration.</p> <p>Providing CAR information is not a standard commercial practice in the Crop Protection and Seeds sectors. While it could represent a risk if a customer does not want to provide CAR information and chooses a different supplier, it also provides a business opportunity as the restoration of native vegetation could require crop protection technologies (mainly herbicides) under some environmental conditions.</p>
Emerging regulation	Relevant, always included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Syngenta expects requirements from climate change-related regulations to intensify and increase. Emerging regulation is part of the 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 at country, regional and corporate (Group) level.</p> <p>EXAMPLE: In alignment with governments' commitments to the Paris Agreement, countries have set carbon reduction/neutralty goals. As a result, legislation may be enacted in the future that would limit carbon dioxide emissions in the manufacture of Syngenta products or increase the costs associated with such emissions. In the climate scenario analysis conducted in 2020, we identified that our sites might be potentially impacted by transition risks, but that actions associated with our GHG emission reduction commitment could mitigate this risk and might even give us a competitive advantage. 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 are focusing efforts on decarbonizing heat energy at our active ingredient manufacturing sites and rolling out a global renewable electricity sourcing strategy. This strategy aims to fully decarbonize electricity within five years through a combination of direct investments and power purchase agreements. Progress of site-based energy programs forms part of the business reviews. We also seek to partner with our suppliers to reduce their carbon footprint.</p>
Technology	Relevant, always included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Science and technology are critical enablers 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 until 2025 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.</p> <p>EXAMPLE: Digital technology is transforming the agricultural industry. Companies that are not keeping pace with the digital agriculture transformation risk not meeting customer needs and losing market share. Syngenta already has digital tools, which help growers to use agricultural input more accurately and efficiently. As an example, Syngenta's CROPWISE™ suite of products and services is used by agronomists, food companies, and growers. It helps to optimize farm operations and crop production by combining remote sensing, sensors, artificial intelligence, and expert knowledge. CROPWISE™ Sustainability products allow growers to identify actionable opportunities to improve their farm's sustainability. Through a simple app, growers can capture farming practice data, calculate their sustainability score, compare themselves to peers, identify improvement opportunities, and share results.</p>
Legal	Relevant, always included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Potential litigation related to climate change 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 legal 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 our enterprise-wide risk framework. Additionally, detailed mitigation plans to reduce the impact on the business are discussed.</p> <p>EXAMPLE: The Legal department takes a consolidated view across global operations on legal matters, including legal threats and potential litigations related to climate change, and discusses on a recurring basis the risk landscape and relevant legislation, including regulations related to climate change.</p>
Market	Relevant, always included	<p>RELEVANCE AND 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 is relevant and always included in risk and opportunity assessments. Syngenta 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.</p> <p>EXAMPLE: Innovation is the basis for a more sustainable future. But with innovation come uncertainties, including the risk of new technologies not being accepted by certain stakeholder groups, leading to restriction in certain markets (e.g., GMO restrictions in several European countries). We have always been proactive in addressing our products' environmental and socio-economic benefits and risks as part of product registration. In 2020, we have gone further and launched a series of innovation dialogues with external stakeholders to address sustainability trade-offs and dilemmas linked to new technologies. Our first innovation dialogue in 2020 focused on a systems approach to sustainability in the beef and dairy value chains through the lens of feed efficiency supported by our Enogen® corn for feed solutions. In 2022, we conducted sustainability foresight studies for specific crops and regions to identify how different market players perceive sustainability challenges. For instance, we did such studies for corn and soybean in Brazil in 2021 and for rice in Asia Pacific in 2022. The results of these studies help us to shape our product portfolio development to meet the future sustainability needs of customers and markets.</p>
Reputation	Relevant, sometimes included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Societal and customer expectations with regards to climate action are important inputs to our risk (and opportunity) assessments, and not responding to these could negatively impact Syngenta's reputation. Climate change mitigation and adaptation are critically important to Syngenta and our stakeholders on both short- and long-term horizons. Short-term, they help farmers to combat the climate impact facing them today, and long-term they provide solutions, which for example, can help to reduce agriculture's contribution to greenhouse gas emissions.</p> <p>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 and impact our freedom to operate. For example, the adoption of New Genomic Techniques has faced scrutiny in the EU and by consumers – although this technology has the potential to increase yield and make crops more resilient against population and climate challenges. Yet, if it follows a similar acceptance path to GMOs, this potential may not be realized. In some cases, it is more political influence or local economic considerations that influence the ability to use these technologies than a sound scientific risk assessment.</p>
Acute physical	Relevant, sometimes included	<p>RELEVANCE AND 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 level 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 comprehensive risk review of all our production sites' exposure to natural catastrophes is in place using NATHAN (Natural Hazard Assessment Network), a tool providing the probability of a natural disaster occurring based on historic data. Furthermore, through the internally developed Supply Chain Risk Visibility App, launched in December 2022, we are also able to simulate risk exposure of our own and our supplier's sites. These tools enable us to develop preventative risk mitigation strategies and ensure business continuity in case one of our own or a supplier site is exposed to extreme weather events.</p> <p>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. Floods could disrupt production and impact the delivery of certain products. Fortunately, the site has implemented good flood resilience measures, such as flood defense to protect the building and equipment, and established emergency plans and responses. Another example is a flood risk assessment of key third-party warehouses in Malaysia conducted in 2022, in response to significant flooding in the area in December 2021. The flood risk assessment helped the local team to decide which warehouses to continue using and which third parties to influence to implement adequate flood defense measures.</p>
Chronic physical	Relevant, sometimes included	<p>RELEVANCE AND RATIONALE FOR INCLUSION: Chronic physical risks and opportunities, such as droughts, are considered as part of the formal enterprise-wide risk framework (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 level. Risks and opportunities are prioritized according to their severity, mitigation plans discussed on an ongoing basis, and decisions taken depending on the business requirements.</p> <p>EXAMPLE: Chronic water scarcity has affected both crop protection development and seeds sites in southern Morocco over the last two years. Both sites have groundwater abstraction wells now reaching 150-200 meters below surface, but the main supply is now from a government desalination plant in operation since the end of 2022. The dependency on government desalination plants could pose potential water supply risks for Syngenta operations, or there could be restrictions on groundwater abstraction rates to protect the groundwater resource. The government plans to establish more desalination plants, dams and interconnecting channels on rivers in the north, but it will likely take several years before these are operational.</p>

(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	Drought
----------------	---------

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 floods, droughts, heat stress, excess rain or winds 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.

For example, the Syngenta AG Financial Report 2022 states that forecast consumption of some products by growers could be materially affected if market or weather conditions after the reporting date were significantly different from those expected. In terms of the ability to collect revenues from customers, the provision of doubtful trade receivables increased in 2022 as a result of factors including adverse weather conditions in Brazil and Argentina that may impact farmer liquidity.

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)

300000000

Potential financial impact figure – maximum (currency)

350000000

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 climate scenario analysis conducted in 2020 identified a potential annual financial impact of approximately USD 300 million and USD 350 million in 2030 in a -2°C and 4°C climate scenario respectively. This potential impact was estimated by analyzing flood and drought risks in 20 key customer countries based on corn and soybean sales and the impact of past similar events, such as the floods in the USA and the droughts in Australia in 2019. Financial implications are derived mainly from the loss of sales, inability to collect receivables or missed product delivery and high inventories.

Cost of response to risk

289000000

Description of response and explanation of cost calculation

RESPONSE: Extreme weather events mainly impact our country and regional sales but the overall risk for the global business is mitigated by geographical differences. To mitigate exposure, Syngenta has established structured actions that are regularly reviewed, updated and improved. 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.

Part of the cost of response is also accounted for in our investment in the research and development of abiotic stress-related products. For instance, AGRISURE ARTESIAN® corn delivers strong performance in both drought and excessively wet conditions and our HYVIDO® hybrid barley seeds offer consistently higher yields thanks to improved water and nutrient uptake and stronger growth under stressful conditions.

Syngenta services such as AgriClime™ support farmers in their transition to using sustainable products and practices, limiting exposure to climate events during the crucial stage of crop cycles. The protection has brought confidence to farmers – as well as channel partners since 2020 – in over 15 countries around the world and AgriClime™ continues to bring unique weather protection to various market segments and product lines in a growing number of countries.

COST CALCULATION: In 2022, as part of our Good Growth Plan's commitment to accelerate innovation, we invested USD 289 million in sustainable agriculture

breakthroughs. This figure includes investments in the development and delivery of products, services and programs in 2022 that – among other sustainability-related objectives – help farmers to tackle the impacts of climate change, soil erosion and biodiversity loss. We are not able to disaggregate this figure to identify the cost of only addressing extreme weather events. We use sustainability investment criteria to decide on these investments. Only investments that provide breakthrough technologies or have clear benefits enabling a step change in sustainability are counted toward our target.

Comment

No 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	Flood (coastal, fluvial, pluvial, groundwater)
----------------	--

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 examined 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. According to the Flooding from Rivers and Sea Map (UK Environment Agency), the site's north side is located in a 30-year return period of river flooding and the site's south areas are located in a 100-year return period of river flooding.

Floods could cause disruption in the production of active ingredients and our product manufacturing. Like in many businesses, other Syngenta sites could be indirectly exposed to climate-related events, which temporarily limit production, through e.g., the 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)

54000000

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 estimated financial impact from flooding was calculated as a percentage of the total sum insured on the site in 2022. The estimated financial impact of flooding at this site has reduced compared to previous years due to the implementation of flood defense and safety stock measures.

Cost of response to risk

2200000

Description of response and explanation of cost calculation

RESPONSE: A written and proven emergency response plan exists. Flood resilience measures have also been implemented at the site, including the 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 employees are regularly trained on emergency plans. We have recognized the likely increasing frequency and severity of extreme weather events due to man-made climate change, and we incorporate these factors into our business continuity plans.

COST CALCULATION: The cost of the 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 estimate the cost to include USD 400,000 in revenue expenditure on cleaning out debris from the river and USD 1.8 million per day as the cost from lost production at the site.

Comment

The climate scenario analysis conducted in 2020 also provided insights about the extent to which extreme weather events could financially impact our sites. We estimated that the annual potential financial impact of extreme weather events on five of our key chemical sites (including the one referenced above) would approximately be USD 15 million and USD 20 million in 2030 in a <2°C and 4°C climate scenario respectively. This potential impact was estimated based on the potential impact of downtime days on the gross profit of these five sites.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)
----------------	--

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. In addition, to enhance the visibility of the likelihood of a climate-related event occurring at any Syngenta office, manufacturing, production, toller or supplier site, we also use a tool from Munich Re called NATHAN (Natural Hazard Assessment Network), in operational use since 2021. NATHAN analyzes the likelihood of natural disasters happening based on data from events that have occurred, covering over 3,000 Syngenta and non-Syngenta critical material sites. The tool receives direct data feeds from NASA, IPCC (Intergovernmental Panel on Climate Change), the German weather service, the Royal Netherlands Meteorological Institute, the UK Met Office, Météo-France, the Bureau of Meteorology (Australia), and the National Oceanic and Atmospheric Administration (USA). The tool enables us to work on mitigative and preventative plans to reduce the vulnerability of a site to extreme weather events.

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

RESPONSE: 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.

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.

Comment

The climate scenario analysis conducted in 2020 also provided insights about the extent to which extreme weather events could financially impact our suppliers. We estimated that the annual potential financial impact of extreme weather events on 25 of our key chemical supplier sites would approximately be USD 180 million and USD 220 million in 2030 in a <2°C and 4°C climate scenario respectively. This potential impact was estimated based on the potential impact of downtime days on the gross profit of each site.

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

Consumer demand and public regulations are driving companies in the food and feed value chain to lower the carbon footprint of their supply chains. Markets for carbon credits from agriculture are emerging and the EU and USA have committed to implement carbon farming programs or carbon border adjustment mechanisms. This means growers need agronomic advice, input and digital tools to implement climate-friendly farming practices.

We expect grower income from climate-related programs to be over USD 30 per hectare per year. We believe Syngenta can generate revenues from demand for products and services that enable climate-friendly farming.

Our herbicide product range supports soil conservation and enables climate-friendly practices. 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, helping to reduce carbon emissions from the soil. Our herbicides such as AXIAL® or CALLISTO® (selective) and GRAMOXONE® (non-selective) are widely used in conservation agriculture, especially in Brazil and the USA and increasingly in Asia.

Our seed treatment technology helps to sequester carbon in the soil. For example, 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. Seed treatment biostimulants such as EPIVIO™ improve incorporation of organic matter into the soil, improving carbon sequestration.

We advise growers on climate-smart soil practices such as minimum tillage, crop rotation and effective nutrient management. In 2022, our Good Growth Plan benefited 6 million hectares of farmland through soil conservation and biodiversity enhancement measures.

As carbon markets remain highly dynamic, we continue evaluating the inclusion of carbon farming in the Reverte Program in Brazil and in pilots in other parts of the world. We enrolled more than 50,000 hectares in Ukraine in the 2021/22 season and continue to build partnerships with large grower customers in this space.

To support the implementation of the EU Green Deal, we joined an initiative of the World Economic Forum aiming to decarbonize the food value chain and engaged with the European Commission on the EU carbon farming program scheduled to enter into force in 2023. We are also developing new technologies to help growers meet some of the specific targets the Green Deal purposes.

Time horizon

Long-term

Likelihood

Likely

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

It remains uncertain how the voluntary carbon market will develop, especially for agriculture, as the frameworks are under development. Further, the price of carbon credits in agriculture is still fluctuating up to USD 45 per tonne of CO₂. The total market size for agriculture is also difficult to estimate with accuracy given demand for voluntary carbon credits is nascent, regulation for carbon-farming markets under development, and consumers' willingness to pay for climate-friendly commodities unclear.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

REALIZATION: Syngenta is a science-based company, which is fully committed to enabling the transition toward more sustainable agriculture. Through our innovation in products and services, we promote farming systems that reduce GHG emissions and improve soil health. Our digital services help growers to connect their agronomic data and make well-informed end-to-end decisions.

We are committed to continuing investing in our collaborations in relevant platforms, such as the Cool Farm Tool that helps growers and stakeholders in the food value chain to quantify emission reductions and carbon sequestration.

We are further working on building collaborations with organizations such as The Nature Conservancy and channel partners to help develop, aggregate and scale carbon projects, as well as with partners willing to mobilize up-front investment for project development. We are also expanding our customer loyalty program to provide rewards to growers adopting climate-smart farming practices.

COST CALCULATION: Realizing this opportunity requires R&D and new projects in the target geographies. Syngenta committed to invest USD 2 billion over five years in sustainable agriculture breakthroughs. We believe that realizing this opportunity does not require additional funds. Costs will be covered by re-allocating existing budgets as part of our short-term and long-term planning cycles.

Comment

No 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. Climate change brings physiological challenges to crops, but it also results in changing patterns of pest and disease pressure, with a warmer climate extending the range of some pest species.

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 address global challenges like climate change, empowering them to reduce their impact while remaining viable and productive. For example, 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. Similarly, VIBRANCE™, a mode of action for seed treatment, supports conservation tillage and carbon capture. In addition to broad spectrum disease control, its root stimulating effect results in better biotic and abiotic stress management. 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. In our Good Growth Plan launched in June 2020, we 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?

Yes, a single figure estimate

Potential financial impact figure (currency)

140000000

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 opportunities associated with our products 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.

The figure reported is based on a selected offer and provided as an example. In the climate scenario analysis conducted in 2020, we assessed the potential financial impact of increased droughts on the demand for drought-resistant products. The assessment is based on the risk of droughts for a specific drought-resistant offer in 30 countries. In this 2020 analysis, we estimate that the annual potential financial impact would approximately be USD 140 million in 2030 for both <2°C and 4°C climate scenarios.

Cost to realize opportunity

289000000

Strategy to realize opportunity and explanation of cost calculation

REALIZATION: 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 2020, we 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.

For instance, the acquisition of Valagro in 2020 is enabling us to build a world-leading biologicals business. Valagro (now part of Syngenta Biologicals as of July 13, 2023) has a comprehensive crop portfolio in biologicals with a market-leading position in biostimulants and specialty nutrients. Valagro's biostimulant portfolio offers farmers products with active ingredients of purely natural origin, which stimulate the main physiological processes of plants while promoting their growth and productivity. In particular, Valagro's innovative biostimulant TALETE increases crop water productivity in conditions of adequate water availability and permanent or temporary water scarcity.

Valagro's portfolio extends our existing offer of products to help plants sustain abiotic stress. For instance, our EPIVIO™ brand family addresses abiotic stress through seed treatment. EPIVIO™ products stimulate seedling development by providing micronutrients and biostimulant compounds to the plant and by activating soil microflora. The resulting natural symbiotic cycle leads to stress-tolerant plants.

We also continue to provide farmers with our AGRISURE ARTESIAN® technology, which helps them manage water more efficiently. AGRISURE ARTESIAN® corn hybrids are built with selected genes that enable the plant to convert water to grain more effectively. In our climate scenario analysis, we identified that farmers will likely face an increased risk of drought, intensifying the demand for our drought-resistant products.

COST CALCULATION: In 2022, as part of our five-year USD 2 billion commitment, we invested USD 289 million in sustainable agriculture breakthroughs. Only investments that provide breakthrough technologies or have clear benefits enabling a step change in sustainability are counted toward our target.

Comment

No 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 our Good Growth Plan, we committed to reducing the carbon intensity of our entire operations by at least 50% by 2030 (vs. the 2016 baseline). Our carbon reduction target has been validated by the Science Based Targets initiative (SBTi). We also committed to a 20% reduction in water intensity and waste intensity in the same period. These targets are intrinsic to our commitment to reduce agriculture's carbon footprint and help farmers deal with extreme weather patterns caused by climate change.

We have developed a decarbonization road map for each of our manufacturing locations as well as a feasibility assessment of the switch to renewable energies at our main facilities by 2026. Further, in future purchase agreements, we aim to include a clause of intent to use 90% renewable energy by 2026.

In addition to the environmental benefits associated with these commitments, improving the efficiency of our production processes and working with our supply chain partners to improve theirs will directly benefit our future operating costs as less resources are used.

In the climate scenario analysis conducted in 2020, we assessed the potential financial impact of transition risks on our operations (<2°C global warming scenario). This analysis indicated that successfully achieving our targets could give us a competitive advantage, including protecting us from future CO2 pricing uncertainties.

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)

50000000

Potential financial impact figure – maximum (currency)

350000000

Explanation of financial impact figure

The range above is an estimate based on the avoidance of additional annual operational costs that would result from increased energy prices, waste treatment costs and carbon taxes that could be anticipated in a <2°C global warming transition scenario – including costs relating to our own operations and costs passed on to us by our suppliers. These additional costs would be avoided as a result of increased energy, material and waste efficiency, and improved carbon intensity of energy, material and waste leading to lower carbon taxes. The range does not include opportunities in R&D or significant savings likely to be realized thanks to an increased focus on process efficiency during product development.

Cost to realize opportunity

40000000

Strategy to realize opportunity and explanation of cost calculation

REALIZATION: To achieve our 2030 carbon intensity reduction target, we continue to focus on improving the efficiency of our manufacturing processes, designing and implementing site-based energy saving programs, increasing the share of renewable energy sources, and partnering with our crop protection and seeds suppliers to reduce their carbon footprint.

Projects that have already been completed since 2016 (baseline year for our SBTi commitment) include the installation of photovoltaic electricity generation at various of our sites, improved heat energy generation efficiency, reduction in hazardous waste generation (resulting in reduced treatment requirements), and process efficiency improvement projects at manufacturing sites across the world. Each of our key manufacturing sites has created a roadmap to meet our environmental targets. Collectively, these measures will ensure the successful achievement of our company targets.

New sustainability project ideas are evaluated and prioritized in terms of their contribution to meeting our commitments, as well as financial return metrics. In addition, all new major investment projects (including those not focused primarily on environmental sustainability outcomes) undergo a sustainability assessment to identify the most environmentally sustainable way to fulfil their objectives.

COST CALCULATION: The estimated figure for the annual cost to realize this opportunity is based on: 1) A representative mix of small, medium and large capital projects needed to achieve the targeted improvements; 2) Estimated cost increases passed on by suppliers for undertaking similar projects at their manufacturing locations; and 3) Increased operational costs (e.g., renewable energy certification).

Comment

No comment

C3. Business Strategy

C3.1

(C3.1) Does your organization’s strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

Publicly available climate transition plan

<Not Applicable>

Mechanism by which feedback is collected from shareholders on your climate transition plan

<Not Applicable>

Description of feedback mechanism

<Not Applicable>

Frequency of feedback collection

<Not Applicable>

Attach any relevant documents which detail your climate transition plan (optional)

<Not Applicable>

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future

We will develop a low-carbon transition plan as we align our sustainability agenda and activities across Syngenta Group’s business units.

Syngenta AG group has a target to reduce the carbon intensity of its operations, which has been validated by the SBTi. This is an important milestone toward a business model compatible with a low-carbon economy.

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices		
<table border="1"> <tr> <td>Transition scenarios</td> <td>IEA SDS</td> </tr> </table>	Transition scenarios	IEA SDS	Company-wide	<Not Applicable>	<p>This scenario reflects actions needed by the energy sector to limit global warming under 2°C and supports the Sustainable Development Goals 7, 3.9 and 13.</p> <p>PARAMETERS:</p> <ul style="list-style-type: none"> Carbon price introduced (up to USD 140/t CO2 by 2040) Fossil fuel subsidies phased out by 2050 for net importers and by 2035 for net exporters Expanded support for deployment of Carbon Capture and Storage (CSS) Increased generation from renewables and nuclear <p>ASSUMPTIONS: For our analysis, we assumed that Syngenta would have the same business activities in 2030 as in 2020 when the analysis was conducted, and that no additional actions besides those already ongoing or planned would be conducted to mitigate or adapt to adverse impacts or to seize positive impacts.</p> <p>ANALYTICAL CHOICES: A 2030 time horizon was used for the analysis as 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.</p> <p>We identified and conducted deep dive scenario modelling for five climate-related risks and opportunities (see question 3.2b) to understand their potential financial impact on Syngenta in 2030.</p> <p>For each deep dive, calculation pathways were designed to estimate the financial impact of the risks and/or opportunities. Insights to design the pathways and data to perform the calculations were derived from internal and external sources. Internal data used in the calculations (e.g., sales, profits, costs) was mostly from 2019.</p> <p>We used a combination of quantitative and qualitative methods in our analysis, giving preference to quantitative information where good quality, decision-useful data was available from reputable sources.</p>
Transition scenarios	IEA SDS				

Climate-related scenario		Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios	IEA STEPS (previously IEA NPS)	Company-wide	<Not Applicable>	<p>This scenario shows the future energy outlook based on existing policies and upcoming policy intentions, as expressed in official targets and plans.</p> <p>PARAMETERS:</p> <ul style="list-style-type: none"> • Carbon price introduced (up to USD 44/t CO2 by 2040) • Fossil fuel subsidies phased out in the next 10 years • Increased generation from renewables but oil remains the largest source of primary energy <p>ASSUMPTIONS: For our analysis, we assumed that Syngenta would have the same business activities in 2030 as in 2020 when the analysis was conducted, and that no additional actions besides those already ongoing or planned would be conducted to mitigate or adapt to adverse impacts or to seize positive impacts.</p> <p>ANALYTICAL CHOICES: A 2030 time horizon was used for the analysis as 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.</p> <p>We identified and conducted deep dive scenario modelling for five climate-related risks and opportunities (see question 3.2b) to understand their potential financial impact on Syngenta in 2030.</p> <p>For each deep dive, calculation pathways were designed to estimate the financial impact of the risks and/or opportunities. Insights to design the pathways and data to perform the calculations were derived from internal and external sources. Internal data used in the calculations (e.g., sales, profits, costs) was mostly from 2019.</p> <p>We used a combination of quantitative and qualitative methods in our analysis, giving preference to quantitative information where good quality, decision-useful data was available from reputable sources.</p>
Physical climate scenarios	RCP 2.6	Company-wide	<Not Applicable>	<p>This scenario reflects the Paris Agreement's commitment to limit global warming to 2°C, preferably to 1.5°C, and is consistent with an ambitious reduction of GHG emissions.</p> <p>PARAMETERS:</p> <ul style="list-style-type: none"> • Global emissions peak by 2020 and decline to zero by 2080 • Global mean sea level rise of 0.4m by 2100 • High frequency and intensity of heat waves and extreme precipitation events <p>ASSUMPTIONS: For our analysis, we assumed that Syngenta would have the same business activities in 2030 as in 2020 when the analysis was conducted, and that no additional actions besides those already ongoing or planned would be conducted to mitigate or adapt to adverse impacts or to seize positive impacts.</p> <p>ANALYTICAL CHOICES: A 2030 time horizon was used for the analysis as 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.</p> <p>We identified and conducted deep dive scenario modelling for five climate-related risks and opportunities (see question 3.2b) to understand their potential financial impact on Syngenta in 2030.</p> <p>For each deep dive, calculation pathways were designed to estimate the financial impact of the risks and/or opportunities. Insights to design the pathways and data to perform the calculations were derived from internal and external sources. Internal data used in the calculations (e.g., sales, profits, costs) was mostly from 2019.</p> <p>We used a combination of quantitative and qualitative methods in our analysis, giving preference to quantitative information where good quality, decision-useful data was available from reputable sources.</p>
Physical climate scenarios	RCP 8.5	Company-wide	<Not Applicable>	<p>This scenario is consistent with a future with no policy changes to reduce emissions and characterized by increasing GHG emissions that lead to high atmospheric GHG concentrations.</p> <p>PARAMETERS:</p> <ul style="list-style-type: none"> • Global emissions continue to rise due to the high carbon intensity of the energy system • Global mean sea level rise of 0.63m by 2100 • Very high frequency and intensity of heat waves and extreme precipitation events <p>ASSUMPTIONS: For our analysis, we assumed that Syngenta would have the same business activities in 2030 as in 2020 when the analysis was conducted, and that no additional actions besides those already ongoing or planned would be conducted to mitigate or adapt to adverse impacts or to seize positive impacts.</p> <p>ANALYTICAL CHOICES: A 2030 time horizon was used for the analysis as 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.</p> <p>We identified and conducted deep dive scenario modelling for five climate-related risks and opportunities (see question 3.2b) to understand their potential financial impact on Syngenta in 2030.</p> <p>For each deep dive, calculation pathways were designed to estimate the financial impact of the risks and/or opportunities. Insights to design the pathways and data to perform the calculations were derived from internal and external sources. Internal data used in the calculations (e.g., sales, profits, costs) was mostly from 2019.</p> <p>We used a combination of quantitative and qualitative methods in our analysis, giving preference to quantitative information where good quality, decision-useful data was available from reputable sources.</p>

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

FOCAL QUESTIONS: What risks and opportunities could Syngenta face due to climate change and how could Syngenta contribute to a low-carbon transition?

RATIONALE: 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. The analysis was conducted in 2020 and 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 the TCFD. They are also in line with those used by peers and competitors.

AREAS CONSIDERED FOR SCENARIO ANALYSIS: We developed a materiality heat map 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 modelling in the following five climate-related risks and opportunities to understand their potential financial impact on Syngenta in 2030:

- 1) Impact of extreme weather on own and supplier chemical production sites
- 2) Impact of climate change policies on countries with owned and supplier chemical production
- 3) Impact of extreme weather on key customer countries for corn and soybean production
- 4) Impact of increased droughts on the demand for drought-resistant portfolio
- 5) Impact of changes in consumer diets on the demand for plant-based proteins and feed crops

Results of the climate-related scenario analysis with respect to the focal questions

ANSWERING THE FOCAL QUESTION: Our analysis done in 2020 shows that the scenarios modeled present both financial risks and financial opportunities for Syngenta in 2030. While certain financial risks in our operations and activities would need to be managed, we would also be able to actively pursue innovation opportunities to help farmers deal with the impacts of climate change and to address the shifts in consumer preferences. Our findings confirm climate-related aspects that are already considered in our business objectives and strategy development processes.

RESULTS SUMMARY for each deep dive:

- 1) The potential impact of extreme weather events on our chemical production activities does not differ significantly between the two scenarios, 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 the Science Based Targets initiative) mitigate risks and might even give us 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 depending on the production area.
- 5) The impact of changes in consumer diets increases seed sales opportunities in both scenarios, although less in a <2°C scenario.

INFLUENCE ON BUSINESS STRATEGY AND FINANCIAL PLANNING: The climate scenario analysis showed that by 2030, growers would be faced with increased risks from droughts and floods. By offering farmers products that can help them adapt to climate change, Syngenta can tap into new market opportunities. Launched in June 2020, our current five-year Good Growth Plan includes bold commitments to accelerate innovation and strive for carbon-neutral agriculture. We committed to invest USD 2 billion over the next five years in R&D of products, services and programs for farmers in alignment with the findings from our deep dives 3, 4 and 5. We also committed 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.

C3.3

(C3.3) 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	<p>INFLUENCE: Our strategy continues to evolve based on 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.</p> <p>Weather events that are unfavorable to agriculture tend to negatively affect 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.</p> <p>At the same time, future weather patterns constitute a valuable input into our product development process. The climate scenario analysis conducted in 2020 showed that by 2030, growers would be faced with increased risks from droughts and floods. Among other insights, the analysis showed that by offering farmers products that can help them adapt to climate change, Syngenta can tap into new market opportunities linked to the transition to a low-carbon economy. 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.</p> <p>STRATEGIC DECISION: As a result, in our current Good Growth Plan launched in June 2020, 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, and although they will take place within the next five years, we believe they will contribute to shape the future of agriculture long-term. As part of this commitment, in 2022, we invested USD 289 million in sustainable agriculture breakthroughs, reaching USD 1.3 billion since 2020. This was mainly driven by investments in Crop Protection and Seeds R&D.</p> <p>TIME HORIZON: Long-term</p>
Supply chain and/or value chain	Yes	<p>INFLUENCE: Our strategy is also influenced by the need to make our supply chain less emission-intensive in the medium term. 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.</p> <p>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. This target was validated by the Science Based Targets initiative and is part of our Good Growth Plan launched in June 2020.</p> <p>As part of the analysis conducted in 2019 to determine our carbon reduction target, we identified that our chemical supplier base has the most significant impact on our total emissions and that a small portion of companies within our chemical supply chain accounts for a considerable amount of our carbon emissions. Subsequently, we engaged with key suppliers representing around 70% of our chemical carbon footprint in 2022. These engagements included obtaining information on carbon reduction commitments, product carbon footprints and consumption, and energy sources at their manufacturing sites. Working with experts from the energy sector, we are now exploring ways in which we could accelerate their decarbonization.</p> <p>TIME HORIZON: Long-term</p>
Investment in R&D	Yes	<p>INFLUENCE: As is the case for 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.</p> <p>STRATEGIC DECISION: As a result, in our current Good Growth Plan launched in June 2020, 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 it. Among others, this investment covers R&D of products, services and programs.</p> <p>Examples of investments that Syngenta is making include the Reverte program in Brazil, where the company 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 pastureland. In 2022, we focused on improving carbon sequestration, water retention, and overall biodiversity through regenerative land management practices and on reducing emissions through maintaining native vegetation. By the end of 2022, regenerative farming practices were implemented on 80,000 hectares across 60 farms. We aim to further scale the Reverte program in the coming years.</p> <p>Land recovery brings benefits to both Syngenta and the farmer. For Syngenta, it generates 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.</p> <p>TIME HORIZON: Long-term</p>
Operations	Yes	<p>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.</p> <p>In the climate scenario analysis conducted in 2020, we identified that physical risk of extreme weather events (floods and storms) on our chemical production increases under both scenarios. In addition, as part of our insurance coverage analysis (time horizon analysis of 100 and 500 years), we 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.</p> <p>However, in the climate scenario analysis, we also identified that in the case of a <math>-2^{\circ}\text{C}</math> scenario, our actions associated with our carbon reduction commitment are expected to mitigate the financial impact of transition risks and might even generate a competitive advantage.</p> <p>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.</p> <p>We also work actively to make our production operations more efficient and to reduce carbon dioxide emissions – in line with our commitment to reducing the carbon intensity of our operations and supply chain by at least 50% by 2030. In 2022, we developed a decarbonization road map for each of our manufacturing locations as well as a feasibility assessment of the switch to renewable energies at our main facilities by 2026. Further, in future purchase agreements, we aim to include a clause of intent to use 90% renewable energy by 2026.</p> <p>TIME HORIZON: Short- and medium-term</p>

C3.4

(C3.4) 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	<p>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 financial 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 driven by our desire to address farmers' needs and return on investment in support of our long-term strategy and commitment to sustainable agriculture.</p> <p>In our Good Growth Plan launched in 2020, 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 allocates 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 are distinct from those we make as part of good practice, benefit – wherever possible – large-scale and smallholder farmers, and contribute to meeting the United Nations Sustainable Development Goals. A clear process and associated criteria – developed with The Nature Conservancy – are used for assessing investments.</p> <p>As a result of this commitment, in 2022, we invested USD 289 million in sustainable agriculture breakthroughs. This was mainly driven by investments in Crop Protection and Seeds R&D.</p> <p>An example of investment we are making under this commitment includes our TYMIRIUM® technology, an easy-to-use solution for seed treatment and soil applications, that provides powerful activity against plant-parasitic nematodes and soil-borne diseases. Highly targeted, TYMIRIUM® technology boosts productivity while helping preserve soil biodiversity. By protecting the root biomass and preserving a vibrant range of life forms in the soil, farmers will improve crop nutrient use efficiency and crop resilience to stress conditions, as well as enhance agroecosystem conservation. Another example is the CROPWISE™ Sustainability app, which provides a simple way for growers to capture data and deliver continuous improvements from regenerative agriculture practices. After completing a self-assessment through the app, growers receive a sustainability leadership score and actionable insights on how to improve the sustainability of their farm operations. We are also partnering with farmers worldwide to promote sustainable agriculture practices. In China for example, we are working with wheat farmers as part of our Run Tian project, which encourages farmers to reduce straw burning and to incorporate straw and crop leftovers into the soil, improving air quality and sequestering carbon in the soil. In 2022, our soil conservation and biodiversity enhancement projects benefited 6 million hectares and generated a carbon benefit potential of 2.9 million tonnes of CO2e.</p> <p>TIME HORIZON: Medium-term</p>

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	No, and we do not plan to in the next two years	<Not Applicable>

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

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Year target was set

2019

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2
Scope 3

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Category 1: Purchased goods and services
Category 2: Capital goods
Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)
Category 4: Upstream transportation and distribution
Category 5: Waste generated in operations
Category 6: Business travel
Category 7: Employee commuting
Category 8: Upstream leased assets
Category 9: Downstream transportation and distribution
Category 10: Processing of sold products
Category 12: End-of-life treatment of sold products
Category 13: Downstream leased assets
Category 15: Investments

Intensity metric

Metric tons CO2e per USD(\$) value-added

Base year

2016

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

0.000082

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

0.000061

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)

0.000853

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)

0.000038

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)

0.000049

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)

0.000089

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)

0.000021

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)

0.000007

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)

0.000001

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)

0.000017

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)

0.000008

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)

0.000017

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

0.000013

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

0

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

0

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)

0.001113

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

0.001256

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure

100

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
100

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
100

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
100

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
100

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
100

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
100

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
100

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
100

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
100

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
100

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
100

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
0

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
100

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year

2030

Targeted reduction from base year (%)

67.6

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]

0.000406944

% change anticipated in absolute Scope 1+2 emissions

54.2

% change anticipated in absolute Scope 3 emissions

54.2

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

0.000057

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

0.000039

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)

0.001045

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)

0.000028

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)

0.000018

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)

0.000066

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)

0.000015

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)

0.000007

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)

0.000002

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)

0.000008

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)

0.000006

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)

0.000056

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

0

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

0

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

0.000053

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)

0.001304

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

0.001401

Does this target cover any land-related emissions?

Yes, it covers land-related and non-land related emissions (e.g. SBT approved before the release of FLAG target-setting guidance)

% of target achieved relative to base year [auto-calculated]

-17.0777899219839

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The Syngenta target covers Scope 1, 2 and 3 emissions for our operations as per the reporting boundary disclosed in C0.5.

Scope 3 emissions include 13 of the 15 Scope 3 categories except the categories "Use of sold products" and "Franchises". The "Use of sold products" category is not applicable in alignment with our SBTi commitment, reflecting the absence of externally-validated methodologies that consider both benefits and emissions from the use of agricultural inputs. The "Franchises" category is not applicable as we do not have franchises. Emissions from the "Investments" category were not material for the base year and thus included in category 1: "Purchased good and services". This has changed over time and we now report progress on this category.

We don't have a separate FLAG target but land-related emissions are embedded in the emission factors (EF) we use. The types of emissions included in the EFs are direct land use change emissions and land management emissions.

Plan for achieving target, and progress made to the end of the reporting year

OUR 2022 PERFORMANCE: In 2022, intensity-based CO2 emissions from Scope 1, 2 and 3 sources increased by 12% based on value added compared to the 2016 baseline. Absolute Scope 1+2 emissions decreased by 11% since 2016, while absolute Scope 3 emissions increased by 55% in the same period. Representing about 93% of our total absolute emissions, Scope 3 emissions increased to 10,857k tonnes in 2022 from 6,994k tonnes in 2016.

PLAN AND NEXT STEPS: Syngenta believes that reducing the environmental impact of our own operations is integral to our contribution to reducing the impact of agriculture on climate change. We are making good progress in developing emission reduction mechanisms and are pleased to have achieved an intensity reduction in our Scope 1+2 emissions. However, our recent rapid business growth has significantly outstripped those reductions, especially with regards to Scope 3 emissions. Reducing our Scope 3 emissions is a key priority and significant work is ongoing across the organization to do so. We recognize that we must adopt a different approach in how we achieve our carbon reduction target, and we are committed to addressing this issue. This demands focused efforts from Syngenta and our supply chain partners. At the same time, we continue to provide innovative solutions and encourage the use of agricultural practices that help farmers mitigate climate change.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

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

2020

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

2021

Figure or percentage in base year

0

Target year

2022

Figure or percentage in target year

3000000

Figure or percentage in reporting year

6000000

% of target achieved relative to base year [auto-calculated]

200

Target status in reporting year

Achieved

Is this target part of an emissions target?

This target is part of Syngenta's current five-year Good Growth Plan launched in June 2020, in which we committed to strive for carbon-neutral agriculture and in particular to "enhance biodiversity and soil health on 3 million hectares of rural farmland every year". This is a renewed target, which was also part of our first Good Growth Plan (2013-2019), reinforcing our commitment to soil health and biodiversity conservation.

As an integral part of this target, we encourage and train farmers on 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 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. In 2022, we conducted 111 soil health projects and 70 biodiversity projects benefiting 6 million hectares of farmland.

We also report on the estimated carbon benefit on farmland adopting our soil conservation and biodiversity enhancement projects. The carbon benefit potential corresponds to the net change in soil carbon pools, reflecting the accumulated difference between carbon inputs to the soil after CO₂ uptake by plants and CO₂ release due to decomposition in the soil. The carbon benefit potential is calculated based on the number of hectares on which our soil- and biodiversity-related practices were applied, multiplied by the corresponding practice and climatic zone factors outlined in the IPCC fourth assessment report, Table 8.4, page 512 (www.ipcc.ch/site/assets/uploads/2018/03/ar4_wg3_full_report-1.pdf).

In 2022, the carbon benefit potential on farmland associated with our soil conservation and biodiversity enhancement projects was 2,931k tonnes of CO₂e, which is slightly lower (-3.5%) than in 2021. Please note that this carbon benefit potential is not included in our science-based target emission reporting.

Is this target part of an overarching initiative?

Other, please specify (Climate Smart Agriculture - CSA 100)

Please explain target coverage and identify any exclusions

Since 2013, we have measured our impact on sustainable agriculture through our first and now our current 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". By encouraging farmers to implement climate-smart practices, we support them in turning agricultural fields into carbon sinks, helping to remove carbon dioxide from the atmosphere. Therefore, our biodiversity and soil health targets are particularly relevant here.

Plan for achieving target, and progress made to the end of the reporting year

<Not Applicable>

List the actions which contributed most to achieving this target

In 2022, 111 soil health projects in 19 countries benefited a total of 4.7 million hectares of farmland. Latin America accounted for about 53% of the total hectares that

benefited from soil conservation measures. Our continued collaboration with the ILPF (Integração Lavoura Pecuária Floresta) network, which aims to accelerate the adoption of integrated crop-livestock-forest systems in Brazil, benefited approximately 1.2 million hectares. Also in Brazil, we continued implementing our flagship soil project Reverte with The Nature Conservancy to restore 1 million hectares of degraded land to profitable agricultural production and avoid conversion of local vegetation to agriculture.

We also continued our efforts across other regions. For example, in our Europe, Africa and Middle East region, soil health projects benefited a total of 1.5 million hectares. Our soil health training program in Russia contributed around 60% of the total benefited hectares in the region. The program supports our agricultural partners in improving soil health and preventing potential risks associated with soil degradation and decreased soil biodiversity and fertility.

In 2022, 70 projects in 32 countries benefited 1.3 million hectares of farmland. The Europe, Africa and Middle East and North America regions accounted for 95% of the total hectares benefited by biodiversity enhancement measures. About 90% of the global hectares of benefited farmland were linked to the establishment of multifunctional field margins through our Operation Pollinator program, Sustainable Solutions projects and other initiatives.

Developed by Syngenta more than 15 years ago, our global Operation Pollinator program continues to create essential habitats in field margins and on fallow land in agricultural, golf course or other landscapes. The program uses specially selected wildflowers to attract a variety of pollinators and increase biodiversity, but also promotes the establishment of multifunctional field margins by providing habitat and wildlife corridors that connect landscapes.

Through our Sustainable Solutions projects, we continued to support farmers in North America to implement multifunctional field margins benefiting about 560,000 hectares of farmland in 2022.

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	50	
To be implemented*	27	3959
Implementation commenced*	31	8865
Implemented*	26	9761
Not to be implemented	2	

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings	Lighting
--------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

18

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)
 Scope 2 (market-based)
 Scope 3 category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Voluntary/Mandatory

Voluntary

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

20000

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

63300

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

No comment

Initiative category & Initiative type

Energy efficiency in buildings	Insulation
--------------------------------	------------

Estimated annual CO2e savings (metric tonnes CO2e)

5

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Voluntary/Mandatory

Voluntary

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

3000

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

180000

Payback period

>25 years

Estimated lifetime of the initiative

16-20 years

Comment

No comment

Initiative category & Initiative type

Energy efficiency in production processes	Cooling technology
---	--------------------

Estimated annual CO2e savings (metric tonnes CO2e)

352

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Voluntary/Mandatory

Voluntary

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

360000

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

4700000

Payback period

16-20 years

Estimated lifetime of the initiative

>30 years

Comment

No comment

Initiative category & Initiative type

Low-carbon energy consumption	Nuclear
-------------------------------	---------

Estimated annual CO2e savings (metric tonnes CO2e)

8500

Scope(s) or Scope 3 category(ies) where emissions savings occur

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

Ongoing

Comment

No comment

Initiative category & Initiative type

Company policy or behavioral change	Resource efficiency
-------------------------------------	---------------------

Estimated annual CO2e savings (metric tonnes CO2e)

200

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Voluntary/Mandatory

Voluntary

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

68000

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

0

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

No comment

Initiative category & Initiative type

Low-carbon energy generation	Solar PV
------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

586

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

24000

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

237870

Payback period

4-10 years

Estimated lifetime of the initiative

21-30 years

Comment

Installation of photovoltaic panels on our sites.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Lighting Projects, Introducing Building Energy Management Systems, Building Insulation)
--------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

19

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

2890

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

80000

Payback period

21-25 years

Estimated lifetime of the initiative

6-10 years

Comment

Multiple projects in the USA – main focus is on LED lighting.

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement
---	-------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

43

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

6240

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

35357

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

No comment

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 R&D of new plant varieties that can capture energy from the sun more effectively and use nitrogen more efficiently. In addition, we invest in R&D of new and sophisticated herbicides – helping growers to adopt conservation tillage, which improves soil fertility and provides higher productivity. In our Good Growth Plan launched in 2020, we committed to invest USD 2 billion over the next five years to help farmers prepare for and tackle the increasing threats posed by climate change. In 2022, we invested USD 289 million in sustainable agriculture breakthroughs. This was mainly driven by investments in Crop Protection and Seeds R&D.
Internal price on carbon	In 2022 we piloted a shadow carbon price on capital investment projects. This will be rolled out more widely in 2023.
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 soil management 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. As part our Good Growth Plan's commitment to strive for carbon-neutral agriculture, we encourage and train farmers on conservation agriculture practices that reduce greenhouse gas emissions and increase carbon sequestration in the soil. In 2022, our soil conservation and biodiversity enhancement projects benefited 6 million hectares of farmland. The estimated carbon benefit on farmland from adopting these projects was 2,931k tonnes of CO2e. This carbon benefit potential corresponds to the net change in soil carbon pools, reflecting the accumulated difference between carbon inputs to the soil after CO2 uptake by plants and CO2 release due to decomposition in the soil.
Employee engagement	Internally, we share stories about improvement activities at our sites, across our functions and globally through webinars, newsletters, the company's intranet, etc. to showcase local achievements and inspire others to implement similar activities at their sites or in their regions.
Other (Investment in energy efficiency)	To achieve our 2030 carbon intensity reduction target, we focus on improving the efficiency of our manufacturing processes, designing and implementing site-based energy saving programs, increasing the share of renewable energy sources, and partnering with our crop protection and seeds suppliers to reduce their carbon footprint. In addition, we are working to further optimize our logistics network and business travel.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

No taxonomy used to classify product(s) or service(s) as low carbon

Type of product(s) or service(s)

Chemicals and plastics	Other, please specify (Crop protection chemicals)
------------------------	---

Description of product(s) or service(s)

We contribute to reducing GHG emissions and enhancing carbon sequestration in the agricultural sector through our products and services. Although the sector is the world's second largest emitter of GHGs, literature suggests that agriculture has the potential to simultaneously sequester 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. While penetration of low- and no-tillage practices today is estimated at 11% of hectares globally, it has shown rapid growth in key markets, with approximately 40% of hectares in Brazil and the USA now using low- and no-tillage practices (source: McKinsey, Agriculture and climate change report, p.21: <https://www.mckinsey.com/industries/agriculture/our-insights/reducing-agriculture-emissions-through-improved-farming-practices>). In particular, our non-selective herbicides are widely used for conservation agriculture.

The % revenue calculation is estimated based on sales of non-selective herbicides and corn and soybean seeds as outlined in our Financial Report 2022, p.4, and on the estimated adoption rate of conservation practices.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

<Not Applicable>

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

<Not Applicable>

Functional unit used

<Not Applicable>

Reference product/service or baseline scenario used

<Not Applicable>

Life cycle stage(s) covered for the reference product/service or baseline scenario

<Not Applicable>

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

<Not Applicable>

Explain your calculation of avoided emissions, including any assumptions

<Not Applicable>

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

3

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

No taxonomy used to classify product(s) or service(s) as low carbon

Type of product(s) or service(s)

Chemicals and plastics	Other, please specify (Crop protection chemicals)
------------------------	---

Description of product(s) or service(s)

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.

Research found that, in terms of land cover, technology-driven intensification provides benefits for global nature conservation. However, these benefits are uneven, with deforestation still occurring in specific regions. Productivity gains must thus be complemented by measures to reduce agricultural land expansion into carbon and biodiversity-rich lands (sources: Derek Byerlee, James Stevenson, Nelson Villoria (2014); Robert Ewers, Jörn Scharlemann, Andrew Balmford and Rhys Green (2009)). A 2010 study from Stanford University had also 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), the equivalent of 590 GtCO2e, between 1961 and 2005 (source: Jennifer A. Burney, Steven J. Davis, and David B. Lobell (2010)).

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

<Not Applicable>

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

<Not Applicable>

Functional unit used

<Not Applicable>

Reference product/service or baseline scenario used

<Not Applicable>

Life cycle stage(s) covered for the reference product/service or baseline scenario

<Not Applicable>

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

<Not Applicable>

Explain your calculation of avoided emissions, including any assumptions

<Not Applicable>

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

1

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

No taxonomy used to classify product(s) or service(s) as low carbon

Type of product(s) or service(s)

Other	Other, please specify (Animal feed)
-------	-------------------------------------

Description of product(s) or service(s)

Enogen® corn for feed is a modified form of corn-based cattle feed. Our Enogen® corn for feed delivers feed efficiency gains over regular corn by improving starch and organic matter digestibility. Greater feed efficiency means that farmers need less feed to achieve the same outcomes. This leads to a reduction in overall greenhouse gas production per unit of milk or beef output relative to a conventional feed alternative. Based on peer reviewed research and external life cycle assessment studies for dairy cows (source: https://www.syngenta-us.com/newsroom/news_release_detail.aspx?id=223702) and beef cattle production (source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8532713/>) in the US market, we estimated that Enogen® use in 2022 accounted for about 1.8 million tonnes of avoided CO2e emissions.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify (Life Cycle Impact Assessment)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Gate-to-gate

Functional unit used

The complete suite of analyses in the study evaluated several sub-systems and functional units:

- 1000 kg live weight gained for beef production gate-to-gate systems of backgrounding and feed yard
- Liquid volume of energy-corrected milk production for dairy cattle

Each functional unit was analyzed for environmental impacts, including climate change potential (kg CO2e).

Reference product/service or baseline scenario used

Standard US feed corn products were used to establish the baseline case for Enogen®. The average form of corn feed in the USA contains no trait modification that would affect animal production or subsequent GHG emissions. Feed corn is produced under similar conditions and the Enogen® modifications do not require any changes in the feed corn production pathway.

Life cycle stage(s) covered for the reference product/service or baseline scenario

Gate-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

1800000

Explain your calculation of avoided emissions, including any assumptions

The objective of the LCA was to determine if the substitution of a conventional corn with Enogen® feed corn provides environmental benefits in the beef and dairy supply chains.

ESTIMATION METHODOLOGY: Based on the nature of the claim, an LCA analysis was deemed to be the most appropriate approach for documenting the avoided emission claims. The LCAs included here document the full scope of operations: from cow-calf through to backgrounding and finishing operations for beef, and through to a full lactation cycle for dairy cows to include the full production life of the animal. LCAs were carried out for both dairy and beef operations in accordance with ISO 14040 and 14044 standards.

Beef per unit emission change estimate:

- Conventional feed emissions = 2,547 kg CO2e/296 kg weight gain
- Enogen® feed emissions = 2,400 kg CO2e/296 kg weight gain
- Net avoided emissions: -147.7 Kg CO2e per animal (per year)

Dairy per unit emission change estimate:

- Net reduction of 0.105 Kg CO2e/kg energy corrected milk production (Average of LCA analysis in two locations)
- 37.95 kg ECM/cow/day on Enogen®
- 300 days of milk production per year
- Net avoided emissions: -1,195 Kg CO2e/cow/year

US Enogen® Headcount (2022 numbers used as reference point for scaling example):

- Beef 1,238,448
- Dairy 1,327,875

Time basis of claim (annualized vs. net at sale):

- Claim can be based on summed total, tracked weight gain to sale (annual) or on number of animals fed by Enogen® with fixed assumption for weight gain or dairy production (example used here).

TOTAL AVOIDED EMISSIONS ESTIMATION:

- Dairy emission reduction = -1,195 kg CO2e per head * 1,327,875 head = 1,586,810 tons of CO2e per year
- Beef emission reduction = -147.7 kg CO2e per head * 1,238,448 head = 182,919 tons of CO2e per year
- > TOTAL = -1,778,000 tons CO2e per year in the USA

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.25

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

Yes, an acquisition

Name of organization(s) acquired, divested from, or merged with

Valagro

Details of structural change(s), including completion dates

Although Syngenta Crop Protection completed the acquisition of the leading biologicals company Valagro in 2020, Valagro's environmental data was only integrated in Syngenta's data systems in time for the 2022 reporting cycle. Therefore, Valagro's Scope 1+2 emissions were included for the first time in Syngenta's reported emissions in 2022. Yet, as the integration of Valagro's data systems is still ongoing, it was not possible to include Valagro in the Scope 3 calculation in 2022. Valagro's Scope 3 emissions are estimated to add around 0.5% to the Syngenta corporate carbon footprint.

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology Yes, a change in reporting year definition	<p>In 2022, spend-based emission factors used to calculate carbon emissions where volumes are not a relevant metric were updated from USEEIO 2002 to USEEIO 2013. This change impacted Scope 3 categories 1, 2, 3, 5, 6, 12 and 15. Furthermore, the emission factors used to calculate emissions related to "Upstream and Downstream leased assets" (categories 8 and 13) were updated to CBECs 2018. Similarly, the volume-based factors used were updated from AR5 to AR6. For "Purchased seeds," we started using country-specific instead of regional or world-average factors.</p> <p>The calculation for "Upstream and Downstream Transportation" and "Distribution" (categories 4 and 9) was changed to use primary data collected from the main logistics partner. This replaced the previous finance-based model, and significantly improved calculation quality.</p> <p>In category 10, an assumption was used to assign part of an emission factor to volumes processed by third-party contract manufacturers, as using the full factor would double-count emissions from raw materials provided to the third party by Syngenta. In 2022, following further research into the emissions contributing to the emissions of Syngenta products, we modified this assumption.</p> <p>An upgrade in an internal data system used to collect data for categories 1, 2, 3, 5, 6, 10 and 15 required a modification in the automated calculation protocol used to calculate emissions related to these categories.</p> <p>Driven by the Health, Safety and Environment function, the method to calculate emissions from company vehicles was changed to use reported data on distances instead of separately collecting data on vehicle use. This improved the coverage of the data.</p> <p>The definition of the reporting year for Scope 3 emissions was changed from July-June to October-September to align with the reporting period used for Scope 1+2 emissions.</p>

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	No, because the impact does not meet our significance threshold	<Not Applicable>	The SBTi requires companies to recalculate and resubmit targets at least every 5 years to ensure the validity of targets if significant (defined as 5% of reported total baseline emissions) cumulative errors or method changes are identified, or if significant changes in company structure or activities occur. The impact of the changes was measured by comparing 2021 reported emissions to 2021 emissions calculated using the 2022 method; the impact was found to be close to 5%. As per internal guidance based on SBTi, this prompts a measurement of the impact of the changes on the baseline. This baseline review will involve calculating 2016 emissions using the 2022 method, and comparing the results to the reported 2016 baseline figures. If this review shows that the change in calculation method impacts the baseline by more than 5%, then the baseline will be restated. This review will be done in 2023.	No

C5.2

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

Scope 1

Base year start

October 1 2009

Base year end

September 30 2010

Base year emissions (metric tons CO2e)

684000

Comment

Please note that this base year is not the same year used for our carbon reduction target as outlined in question C4.1b.

Base year 2010 was selected because a significant revision of our central environmental data reporting system (SERAM) was conducted to improve data quality and methodologies. We therefore believe 2010 offers a fair comparison with the current reporting.

Scope 2 (location-based)

Base year start

October 1 2009

Base year end

September 30 2010

Base year emissions (metric tons CO2e)

301000

Comment

Please note that this base year is not the same year used for our carbon reduction target as outlined in question C4.1b.

Base year 2010 was selected because a significant revision of our central environmental data reporting system (SERAM) was conducted to improve data quality and methodologies. We therefore believe 2010 offers a fair comparison with the current reporting.

Scope 2 (market-based)

Base year start

October 1 2009

Base year end

September 30 2010

Base year emissions (metric tons CO2e)

301000

Comment

Please note that this base year is not the same year used for our carbon reduction target as outlined in question C4.1b.

Base year 2010 was selected because a significant revision of our central environmental data reporting system (SERAM) was conducted to improve data quality and methodologies. We therefore believe 2010 offers a fair comparison with the current reporting.

As the value of market-based emissions was not defined in 2010, we estimate their value to be identical to location-based emissions.

Scope 3 category 1: Purchased goods and services

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

5360000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 2: Capital goods

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

238000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

311000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 4: Upstream transportation and distribution

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

562000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 5: Waste generated in operations

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

133000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 6: Business travel

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

43000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 7: Employee commuting

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

6000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 8: Upstream leased assets

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

105000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 9: Downstream transportation and distribution

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

49000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 10: Processing of sold products

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

107000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

This category is not applicable in alignment with our Science Based Targets initiative commitment, reflecting the absence of externally-validated methodologies that consider both benefits and emissions from the use of agricultural input.

Scope 3 category 12: End of life treatment of sold products

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

79000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 13: Downstream leased assets

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

1000

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Not applicable. Similar to today, Syngenta did not have any franchises in the base year.

Scope 3 category 15: Investments

Base year start

October 1 2015

Base year end

September 30 2016

Base year emissions (metric tons CO2e)

0

Comment

Same base year used for our carbon reduction target as outlined in question C4.1b.

Emissions from this category were not material in the base year and thus were included in category 1: "Purchased good and services". This has changed over time and we now report progress in this category.

Scope 3: Other (upstream)

Base year start**Base year end****Base year emissions (metric tons CO2e)****Comment**

Scope 3: Other (downstream)

Base year start**Base year end****Base year emissions (metric tons CO2e)****Comment**

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

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)**

473000

Start date

October 1 2021

End date

September 30 2022

Comment

We use the GHG Protocol Corporate Accounting and Reporting Standard to prepare our corporate-level emission inventory. We report our GHG emissions using the operational control approach. Scope 1 emissions are calculated in our Syngenta Environmental Reporting and Management (SERAM) reporting tool from data collected at our sites.

The GWP values are based on the IPCC Sixth Assessment Report, 2021 (AR6). The change from AR5 to AR6 was made in 2022.

Past year 1**Gross global Scope 1 emissions (metric tons CO2e)**

419000

Start date

October 1 2020

End date

September 30 2021

Comment

2021 values were restated due to a reporting error in the consumption of fuel (biomass) found at one of our sites. Previous value reported was 427,000.

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, only location-based figures are available as only a limited number of sites currently have non-standard electricity contracts in place. Work is ongoing to assess the impact and availability of green electricity sources.

C6.3

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

Reporting year

Scope 2, location-based

336000

Scope 2, market-based (if applicable)

328000

Start date

October 1 2021

End date

September 30 2022

Comment

For most sites, only location-based figures are available as only a limited number of sites currently have non-standard electricity contracts in place. A project is ongoing to assess the impact and availability of green electricity sources.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 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, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source of excluded emissions

Scope 1+2 emissions from small sites with limited or part-time staff are not included in the reporting boundary.

Scope(s) or Scope 3 category(ies)

Scope 1
Scope 2 (location-based)
Scope 2 (market-based)

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

Emissions are not relevant

Relevance of Scope 3 emissions from this source

<Not Applicable>

Date of completion of acquisition or merger

<Not Applicable>

Estimated percentage of total Scope 1+2 emissions this excluded source represents

14

Estimated percentage of total Scope 3 emissions this excluded source represents

<Not Applicable>

Explain why this source is excluded

Thresholds to include and exclude sites from our environmental reporting are set in Syngenta's operating procedures. On an annual basis, country and regional HSE staff verify that the correct reporting sites are included. Sites with individual energy consumption $\leq 0.1\%$ of the total Syngenta (≤ 8500 GJ/year) are excluded from environmental reporting and thus from our carbon disclosure. However, sites with total energy consumption $<0.1\%$ of the total may be included if their waste generation or water use is significant ($>0.1\%$ of the total). We also include some sites, which are below the reporting thresholds, to drive cultural change.

In 2022, we added 26 new sites to the reporting scope, which is now 114 sites. This change was primarily due to requests from the business to add smaller sites that would not otherwise be in scope of the reporting criteria. This is part of Syngenta's overall effort to drive further improvements in HSE and sustainability.

Explain how you estimated the percentage of emissions this excluded source represents

While small sites below the reporting thresholds for environmental data are not required to report on their Scope 1+2 emissions, all Syngenta sites are required to report on Health and Safety, which includes the number of hours worked. The missing Scope 1+2 emissions are estimated by extrapolating the calculated average emissions per hour worked per site type to the sites with only Health and Safety data.

Source of excluded emissions

Scope 3: Use of sold products

Scope(s) or Scope 3 category(ies)

Scope 3: Use of sold products

Relevance of Scope 1 emissions from this source

<Not Applicable>

Relevance of location-based Scope 2 emissions from this source

<Not Applicable>

Relevance of market-based Scope 2 emissions from this source

<Not Applicable>

Relevance of Scope 3 emissions from this source

Emissions are not evaluated

Date of completion of acquisition or merger

<Not Applicable>

Estimated percentage of total Scope 1+2 emissions this excluded source represents

<Not Applicable>

Estimated percentage of total Scope 3 emissions this excluded source represents

<Not Applicable>

Explain why this source is excluded

The use of Syngenta's products is not currently in scope of the calculation. This category is not applicable in alignment with our Science Based Targets initiative commitment, reflecting the previous absence of externally-validated methodologies that consider both benefits and emissions from the use of agricultural input. Syngenta is currently evaluating the impact of the new FLAG guidance on its reporting.

Explain how you estimated the percentage of emissions this excluded source represents

<Not Applicable>

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, calculated

Emissions in reporting year (metric tons CO₂e)

8695000

Emissions calculation methodology

Supplier-specific method

Hybrid method

Average data method

Spend-based method

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

2

Please explain

TYPES AND SOURCES OF DATA USED: Emissions related to Purchased goods and services are calculated using both direct and indirect procurement data through a combination of supplier data (where available), volume-based data (where quantities are measured in metric unit of measurement), and spend-based factors if necessary. The calculation is made using an in-house algorithm, which increases replicability and transparency compared to a manual calculation process.

A small number of supplier product emission factors for chemical raw materials – that were validated as being complete and accurate – were collected in a supplier data survey in 2020, and used for the corporate carbon footprint calculation in 2021. These factors and more factors collected in similar supplier surveys in 2021 and 2022 were used in the 2022 calculation. These factors are assigned to purchased materials based on both the product code and the supplier's name.

Where supplier data is not available but the quantity of a purchased material is measurable in standardized metric units, the average data method is used. Emission factors are assigned using an in-house algorithm that allocates the best available emission factor to each line item by considering both the type of material and its geographical origin. Where a matching emission factor is not available (for example, for fine chemicals or custom intermediates), a proxy emission factor is assigned using the general chemical class of the material. For indirect purchases and services where an emission factor cannot be assigned to reflect the volume of a material and for raw materials measured in non-standard units, the spend-based method is used instead. Emission factors are assigned using the same algorithm as average volume-based and supplier-specific emission factors.

EXTENT OF THE BOUNDARY: The emission factors used to calculate emissions related to the category are cradle-to-gate.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

230000

Emissions calculation methodology

Spend-based method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: Emissions related to Capital goods are calculated using the spend-based method. The Syngenta in-house corporate emissions calculation algorithm that is used to calculate several Scope 3 categories, including Capital goods, prioritizes average volume-based emission factors as much as possible. However, as capital goods are usually not measurable in standardized units, the spend-based method is used. The factors used are adjusted for inflation each year.

Our program to collect real data from suppliers for the Scope 3 category Purchased goods and services does not currently include Capital goods. This is due to the greater complexity of assigning unit-specific emission factors to Capital goods, and the smaller total magnitude of the category compared to Purchased goods and services.

EXTENT OF THE BOUNDARY: The emission factors used to calculate emissions related to the category are cradle-to-gate.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

152000

Emissions calculation methodology

Spend-based method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: Emissions related to the category Fuel-and energy-related activities are calculated by applying spend-based USEEIO factors (adjusted annually for inflation) to the spend data related to purchased fuels and energy. As this category only covers aspects of energy- and fuel-related activities not already covered by Scope 1+2 emissions, the applied factors are adjusted down to 20% of the original factor to conservatively cover fuel extraction and production as well as electricity transmission and distribution losses. The 20% allocation is based on a previous analysis of the average transmission losses in countries where Syngenta has significant manufacturing assets.

In 2022, to see whether both methods produced similar results, we used a separate volume-based method to calculate the 2021 figure independently of the reported figure. The emissions reported by Syngenta sites related to energy and fuel were multiplied by the same assumed 20% as in the spend-based method to generate an estimate of the emissions related to transmission and distribution losses. The figure generated using this method for 2021 was very close to the reported 2021 figure using the spend-based method.

Due to planned changes in site reporting, the volume-based method was not implemented in 2022. However, the similarity of the results validates and gives us confidence in the spend-based method and the reported results.

EXTENT OF THE BOUNDARY: The 20% adjustment factor conservatively covers transmission and distribution losses of electricity as well as fuel extraction and production.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

548000

Emissions calculation methodology

Supplier-specific method
Hybrid method

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

67

Please explain

TYPES AND SOURCES OF DATA USED: In 2022, the calculation method of Upstream transportation and distribution was upgraded to utilize data from the third-party logistics partner, rather than the previous financial model. This improved the specificity of the calculation significantly. However, the data coverage of the logistics partner was not yet 100%; to solve this, an assumption of the percentage of missing data was made and the total was adjusted up. Furthermore, the logistics partner's data only covers Crop Protection; therefore, a second assumption was made and the total was adjusted up to cover the missing Seeds data. As a result, while the calculation is based on supplier data, due to the applied calculations, the percentage of supplier data in the final figure is 67%.

EXTENT OF THE BOUNDARY: The calculation covers emissions which occur during the operation of vehicles for transportation.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

127000

Emissions calculation methodology

Spend-based method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: Emissions related to the category Waste generated in operations is calculated by assigning a spend-based emission factor to spend data on waste disposal and treatment. This is done with the same in-house emission factor assignment algorithm used for other Scope 3 categories, including Purchased goods and services and Processing of sold products.

A different method was piloted in 2022 to check that the results of this calculation were similar to the method currently used. This experimental method used the reported volume data from waste treatment and disposal from Syngenta sites, and applied volume-based factors to generate a carbon footprint. The waste disposed was classified as either hazardous or non-hazardous, and as landfilled or incinerated, and emission factors describing these treatments were applied. The end result was very close to the reported figure for 2021. Due to the ongoing process to upgrade the site environmental reporting system, this volume-based method was not used in 2022. However, the similarity of the results validates and gives us confidence in the current spend-based method.

EXTENT OF THE BOUNDARY: The emissions associated with the treatment and disposal of waste are included in the boundary.

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

60000

Emissions calculation methodology

Spend-based method
Distance-based method

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

46

Please explain

TYPES AND SOURCES OF DATA USED: Data from two sources is used to calculate carbon emissions related to Business travel. The first source is data received from the travel agency used by Syngenta to book all business travel by air. The travel agency classifies flights taken by Syngenta employees as either domestic, international or long-haul, and as economy, business or first class. Depending on the classification, emission factors are applied on the flight distance. The data is then shared with and checked by Syngenta. This data covers only air travel, and represents 46% of the data obtained from suppliers.

The rest of the business travel-related emissions is calculated using the spend-based method as well as data on travel-related spending and expenses of Syngenta employees. This data is extracted from the internal spend database, and suitable spend-based factors are applied. To avoid double counting, expenses related to air travel are excluded.

EXTENT OF THE BOUNDARY: Emissions related to the use of vehicles are included in the calculation boundary.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

14000

Emissions calculation methodology

Other, please specify (Average method based on the number of employees and UK average commuting patterns)

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

0

Please explain

TYPES AND SOURCES OF DATA USED: To calculate the emissions related to the category Employee commuting, the total number of Syngenta employees is multiplied by an emission factor per person per year, derived from the data on the average commuting habits of people in the UK based on DEFRA data.

We believe this figure is a conservative value to estimate emissions from Syngenta employee commuting. Although the per-person average of Syngenta employees may be higher than this average in some areas (such as in Brazil and the USA, where vehicular travel is more common), in other areas (such as in Switzerland where public transport, bicycling and walking are common, or in China and India, where small vehicles are common) the per-person average is expected to be lower; therefore, the UK factor is seen as a suitable average. Due to the very small magnitude of this category compared to other Scope 3 categories, this method is deemed sufficient and calculation improvement efforts are focused on other categories.

EXTENT OF THE BOUNDARY: Emissions associated with the use of vehicles are included in the category.

Upstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

70000

Emissions calculation methodology

Other, please specify (Method based on asset size and function)

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

100

Please explain

TYPES AND SOURCES OF DATA USED: For the calculation of the category Upstream leased assets, data about the size, function and leasing status of Syngenta assets is obtained from the facility management partner company. To avoid double counting, sites owned by Syngenta or leased sites that already report annually into our central environmental data reporting system (SERAM) are excluded. The remaining relevant data is then multiplied by emission factors for different building types (e.g., warehouse, office) derived from the 2012 CBECs building survey in terms of kgCO₂e/m²/year to generate the category footprint.

EXTENT OF THE BOUNDARY: Emissions associated with the use of leased buildings and land assets are included in the calculation.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

48000

Emissions calculation methodology

Supplier-specific method
Hybrid method

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

67

Please explain

TYPES AND SOURCES OF DATA USED: Similar to the calculation of emissions for the category Upstream transportation and distribution, the calculation method for Downstream transportation and distribution was upgraded in 2022 to utilize data from the third-party logistics partner, rather than the previous financial model. This improved the specificity of the calculation significantly. However, the data coverage of the logistics partner was not yet 100%; to solve this, an assumption of the percentage of missing data was made and the total was adjusted up. Furthermore, the logistics partner's data only covers Crop Protection; therefore, a second assumption was made and the total was adjusted up to cover the missing Seeds data. As a result, while the calculation is based on supplier data, due to the applied calculations, the percentage of supplier data in the final figure is 67%.

EXTENT OF THE BOUNDARY: Emissions associated with the use of fuels are included in the calculation boundary.

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

469000

Emissions calculation methodology

Hybrid method
Average data method
Spend-based method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: The emissions related to the category Processing of sold products are calculated using an adjusted version of the method used for Purchased goods and services. As for Purchased goods and services, the best available emission factor is assigned to each line item from the centralized purchasing dataset, based on the material's chemical class and available emission factors, and where possible, taking into consideration geography.

This category covers materials whose raw materials have been purchased and partly produced by Syngenta, before being finished by an external processor. Therefore, the raw materials already appear in Syngenta's Purchased goods and services figure, and the activity done by the processing company represents the last few production steps in the finished material. After the relevant emission factor has been assigned to the purchased material, it is multiplied by 15% to reflect the contribution of the processing company.

The 15% factor allocation is based on the split between Scope 1+2 and Scope 3 emissions of Syngenta's own operations across the three years where the company has calculated a Scope 3 footprint as well as the historical annual Scope 1+2 reporting. Scope 1+2 have contributed around 10% of the total corporate carbon footprint. A similar split is expected for Syngenta's processing partner companies, whose activities are similar.

The factor allocation percentage was adjusted from 25% to 15% in 2022 following further analyses of the contribution of formulation, fill and pack operations to the carbon emissions of Syngenta's products, which showed that 25% was a significant over-estimate. The 15% adjustment factor remains conservative.

Work is ongoing to collect supplier data for this category to replace external database emission factors.

EXTENT OF THE BOUNDARY: Emissions from the activities of external processor companies are included in the category calculation.

Use of sold products

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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 use of Syngenta's products is not currently in scope of the calculation. This category is not applicable in alignment with our Science Based Targets initiative commitment, reflecting the previous absence of externally-validated methodologies that consider both benefits and emissions from the use of agricultural input. Syngenta is currently evaluating the impact of the new FLAG guidance on its reporting.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Average data method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: The category End of life treatment of sold products only includes emissions from the incineration of expired treated seeds. For the rest of Syngenta's products, when they are used according to the label, no end-of-life treatment is required. The quantity of disposed seeds is reported by the relevant geographies, and an emission factor describing waste incineration is applied to the volume.

In 2022, all of the expired seeds were incinerated with heat recovery; therefore, the emissions from incineration were assigned to the energy produced, and the emissions relevant to the category End-of-life treatment of sold products were assigned as 0.

EXTENT OF THE BOUNDARY: Emissions from the disposal of expired products are included in the category calculation.

Downstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

200

Emissions calculation methodology

Other, please specify (Method based on asset size and function)

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

100

Please explain

TYPES AND SOURCES OF DATA USED: To calculate emissions for the Downstream leased assets category, data about the size, function and leasing status of Syngenta assets is obtained from the facility management partner company. To avoid double counting, sites owned by Syngenta or leased sites that already report annually into our central environmental data reporting system (SERAM) are excluded. The remaining relevant data is then multiplied by emission factors for different building types (e.g., warehouse, office) derived from the 2012 CBECs building survey in terms of kgCO2e/m2/year to generate the category footprint.

EXTENT OF THE BOUNDARY: Emissions from the operation of downstream leased assets are included in the category calculation.

Franchises

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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 does not have any franchises.

Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

444000

Emissions calculation methodology

Average data method

Spend-based method

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

0

Please explain

TYPES AND SOURCES OF DATA USED: Data from two sources is used to calculate emissions related to Investments.

The first is data on the value, size, location, type of business activity and percentage of Syngenta ownership in companies. Appropriate spend-based emission factors are identified based on the activity type and applied to the share of Syngenta in the company.

The second is data related to the trading of agricultural products. These are classified as Investments rather than Purchased goods and services due to the ownership structure of the trading system. Where the volume of the traded agricultural product is listed in standardized units, a suitable volume-based emission factor is applied. Where the volume listed is not in standardized units, a suitable spend-based factor is applied. For both factor types, the end result is divided by two to reflect the ownership structure of the materials and specifically the share owned by Syngenta.

EXTENT OF THE BOUNDARY: Proportional emissions from projects Syngenta invests in as well as traded agricultural products are included in the category calculation.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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's upstream activities are sufficiently covered by the Scope 3 activities listed above.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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's downstream activities are sufficiently covered by the Scope 3 categories listed above.

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	341	No comment

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

0.00004012

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

801000

Metric denominator

unit total revenue

Metric denominator: Unit total

19963000000

Scope 2 figure used

Market-based

% change from previous year

6.8

Direction of change

Decreased

Reason(s) for change

Other emissions reduction activities

Acquisitions

Change in output

Change in revenue

Change in methodology

Change in boundary

Please explain

Compared to 2021, intensity-based CO2e emissions from Scope 1+2 sources decreased by 7% based on sales. The main driver of this change was an increase in revenue, which offset the increase in absolute Scope 1+2 emissions. Below we explain the influence of different factors on the change in the intensity KPI.

OTHER EMISSION REDUCTION ACTIVITIES: We implemented several emission reduction initiatives as reported in Q4.3b, which reduced our Scope 1+2 emissions by about 9,000 tonnes of CO2e. For example, the purchase of nuclear energy certificates for electricity purchased at our site in Monthey resulted in an estimated annual saving of CO2e of 8,500 tonnes. However, this did not significantly change the intensity figure.

ACQUISITIONS: Although Syngenta Crop Protection completed the acquisition of the leading biologicals company Valagro in 2020, Valagro's environmental data was only integrated in Syngenta's data systems in time for the 2022 reporting cycle. Therefore, Valagro's Scope 1+2 emissions were included for the first time in Syngenta's reported emissions in 2022. Yet, this did not significantly change the intensity figure.

CHANGE IN OUTPUT: The increase in absolute Scope 1+2 emissions in 2022 was primarily due to increased production. This factor and the change in boundary were the main drivers of the increase in absolute emissions.

CHANGE IN REVENUE: Sales in 2022 were 19% higher than in 2021. The performance of both Crop Protection and Seeds businesses benefitted from good farm economics, underpinned by generally strong crop prices. The increase in revenue was 8 percentage points higher than the increase in absolute Scope 1+2 emissions, which resulted in a decrease of intensity-based CO2e emissions.

CHANGE IN METHODOLOGY: The increase in absolute Scope 2 emissions was partially due to the update and standardization of emission factors used as part of the implementation of a new reporting tool in 2022. The overall change in methodology resulted in Scope 1+2 emission reductions. However, this did not significantly change the intensity figure.

CHANGE IN BOUNDARY: Scope 1+2 emissions have also increased due to a greater number of sites reporting in 2022 (+24 sites), which is now 114 sites. This factor and the change in output were the main drivers of the increase in absolute emissions.

Intensity figure

24.45

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

801000

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

32761

Scope 2 figure used

Market-based

% change from previous year

4.9

Direction of change

Increased

Reason(s) for change

Other emissions reduction activities

Acquisitions

Change in output

Change in methodology

Change in boundary

Please explain

Compared to 2021, intensity-based CO2e emissions from Scope 1+2 sources increased by 5% based on FTE. The main driver of this change was an increase in absolute Scope 1+2 emissions, which was 5 percentage points higher than the increase in FTE. In 2022, the number of permanent FTEs increased by 6% mainly due to business growth in all regions. Below we explain the influence of different factors on the change in the intensity KPI.

OTHER EMISSION REDUCTION ACTIVITIES: We implemented several emission reduction initiatives as reported in Q4.3b, which reduced our Scope 1+2 emissions by about 9,000 tonnes of CO₂e. For example, the purchase of nuclear energy certificates for electricity purchased at our site in Monthey resulted in an estimated annual saving of CO₂e of 8,500 tonnes. However, this did not significantly change the intensity figure.

ACQUISITIONS: Although Syngenta Crop Protection completed the acquisition of the leading biologicals company Valagro in 2020, Valagro's environmental data was only integrated in Syngenta's data systems in time for the 2022 reporting cycle. Therefore, Valagro's Scope 1+2 emissions were included for the first time in Syngenta's reported emissions in 2022. Yet, this did not significantly change the intensity figure.

CHANGE IN OUTPUT: The increase in absolute Scope 1+2 emissions in 2022 was primarily due to increased production. This factor and the change in boundary were the main drivers of the increase in absolute emissions.

CHANGE IN METHODOLOGY: The increase in absolute Scope 2 emissions was partially due to the update and standardization of emission factors used as part of the implementation of a new reporting tool in 2022. The overall change in methodology resulted in Scope 1+2 emission reductions. However, this did not significantly change the intensity figure.

CHANGE IN BOUNDARY: Scope 1+2 emissions have also increased due to a greater number of sites reporting in 2022 (+24 sites), which is now 114 sites. This factor and the change in output were the main drivers of the increase in absolute emissions.

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 CO ₂ e)	GWP Reference
CO ₂	384732	IPCC Sixth Assessment Report (AR6 - 100 year)
HFCs	88232	IPCC Sixth Assessment Report (AR6 - 100 year)
N ₂ O	36	IPCC Sixth Assessment Report (AR6 - 100 year)
CH ₄	0	IPCC Sixth Assessment Report (AR6 - 100 year)

C7.2

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

Country/area/region	Scope 1 emissions (metric tons CO2e)
Argentina	8624
Bangladesh	51
Belgium	2063
Brazil	5872
Chile	452
China	41559
Colombia	24
Ethiopia	479
France	7867
Germany	472
Greece	132
Guatemala	382
Hungary	3358
India	774
Indonesia	3097
Italy	5523
Kenya	1365
Republic of Korea	59
Mexico	26
Morocco	281
Pakistan	182
Singapore	0
South Africa	111
Spain	423
Switzerland	8795
Thailand	272
Netherlands	6115
Turkey	623
United Kingdom of Great Britain and Northern Ireland	141657
United States of America	146599
Viet Nam	12
Egypt	274
Norway	4287
Philippines	1098
Portugal	597
Russian Federation	264
Other, please specify (Rest of world / Non-stationary sources)	79231

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	334180
Seeds	59064
Corporate	79487

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
St Gabriel, LA	116833	30.25	-91.1
Huddersfield	137663	53.66	-1.75
Nantong	40902	31.9	120.92
Ituiutaba	267	-18.97	-49.46

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Culiacan	8	24.8	-107.39
Formosa	1128	-15.56	-47.22
Saint Pierre	4720	49.16	1.39
Enkhuizen	3882	52.7	5.27
Kaisten	3565	47.55	8.03
Monthey	4910	46.25	6.96
Jealotts Hill	2462	51.45	-0.74
De Lier	2234	51.98	4.27
Venado Tuerto 1	3803	-33.75	-61.97
Paulinia	2922	-22.75	-47.15
Greensboro, NC	2804	36.07	-79.91
Seneffe	2063	50.52	4.23
Waterloo, NE	2338	41.29	-96.28
Mezotur	2780	47	20.61
Research Triangle Park, NC	2240	35.9	-78.86
Venado Tuerto 2	4242	-33.75	-61.97
Lone Tree, IA	2024	41.48	-91.43
Omaha, NE	2099	41.21	-95.92
Matao	351	-21.6	-48.37
Phillips, NE	1264	40.9	-98.21
Pasco, WA	1681	46.24	-119.11
Slater R&D, IA	1028	41.88	-93.68
Casalmorano	937	45.29	9.9
Thika	1283	-1.05	37.08
Sarrians	1146	44.08	4.97
Gilroy West Flowers, CA	751	37.01	-121.56
Aigues-Vives	676	43.23	2.53
Clinton, IL	661	38.59	-89.42
Grangemouth	1532	56.02	-3.72
Salinas, PR	486	17.98	-66.3
Santa Isabel R&D	579	-23.32	-46.23
Stanton, MN	599	44.47	-93.02
Beijing SBC	647	39.91	116.39
Arica	305	-18.48	-70.32
Slater P&S, IA	445	41.88	-93.68
Bad Salzuflen	472	52.09	8.75
Nerac	527	44.14	0.4
Lombes	399	43.48	0.91
Agadir	281	30.42	-9.58
Munchwilen	296	47.54	7.96
Koka	479	34.96	136.17
Mustafakemalpassa	349	39.95	28.57
Woodland, CA	368	38.68	-121.77
Uberlandia	534	-18.92	-48.28
Saint-Sauveur	279	47.36	5.41
Lucas do Rio Verde	302	-13.07	-55.92
Alva, FL	1194	26.72	-81.62
Graneros	147	-34.06	-70.73
Goa R&D	294	15.3	74.09
Cascavel	185	-24.96	-53.46
Vero Beach, FL	126	27.64	-80.4
Karachi	182	24.85	67.02
Enofyta	132	38.32	23.63
Naples, FL	169	26.15	-81.8
Jardines Mil Flores	105	18.58	-91.03
Bay, AR	90	35.74	-90.56
Nampa, ID	8415	43.66	-116.52
Valagro HQ (Atessa)	4586	42.14	14.44
Valagro Norway (Algea)	4287	63.11	7.77
Pasuruan	3086	-7.63	112.82
Pangasinan	1029	16.03	120.58
Moncarapacho	597	37.08	-7.79
Ocsa	578	47.3	19.25
Rannebenur	367	14.62	75.63
Othello, WA	286	46.84	-119.05
Kaha	274	30.3	31.21
Muradiye	274	38.99	43.76
Yelets	264	52.61	39.61
Junction City, KS	225	39.05	-9.73
Jalapa	187	14.64	-89.99
Porrino	175	42.16	-8.63

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Carmona	140	37.47	-5.65
Bangpoo	138	13.54	100.65
Chartres	119	48.44	1.53
El Ejido	108	36.79	-2.73
Porto Nacional	103	-10.69	-48.4
Other sites	1180	0	0
Non-stationary sources	78960	0	0

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	334180	<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/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Argentina	3435	3347
Bangladesh	373	373
Belgium	1178	1658
Brazil	5464	913
Chile	1131	1011
China	56484	56484
Colombia	329	215
Egypt	313	313
France	1379	1418
Germany	837	566
Greece	268	214
Guatemala	1235	936
Hungary	953	1177
India	9896	9896
Indonesia	5980	5890
Italy	1219	2173
Kenya	378	378
Republic of Korea	5373	5373
Mexico	621	660
Morocco	612	612
Pakistan	218	218
Singapore	302	302
South Africa	1543	1543
Spain	924	1219
Switzerland	98005	107970
Thailand	1733	1733
Netherlands	7804	2413
Turkey	1082	1008
United Kingdom of Great Britain and Northern Ireland	19635	18742
United States of America	105457	97057
Viet Nam	443	443
Ethiopia	1	1
Norway	38	0
Philippines	1249	1249
Portugal	295	477
Russian Federation	165	165

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	262665	262669
Seeds	73120	65043
Corporate	674	432

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)
Monthey	70593	83053
St Gabriel, LA	58372	50580
Nantong	51084	51084
Kaisten	17808	16848
Grangemouth	14900	18742

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Research Triangle Park, NC	7109	7109
Goa R&D	7243	7243
Enkhuizen	5920	0
Omaha, NE	4849	4849
Greensboro, NC	4725	4118
Huddersfield	905	0
Waterloo, NE	2428	2428
Iksan	5373	5373
Phillips, NE	2651	2651
Jealotts Hill	3830	0
Stein	4364	3975
Munchwilen	1160	816
Beijing SBC	4184	4184
Clinton, IL	2658	2658
Lone Tree, IA	1815	1815
De Lier	1884	2413
Venado Tuerto 2	1647	1602
Formosa	1437	314
Muttenz	3463	3112
Paulinia	2112	0
Slater R&D, IA	2613	2613
Vero Beach, FL	1167	1167
Pasco, WA	1410	1410
Venado Tuerto 1	1516	1474
Kunshan	1216	1216
Brits	1441	1441
Stanton, MN	1833	1833
Alva, FL	883	883
Seneffe	1178	1658
Mezotur	859	1072
Gunung Putri	894	894
Ituiutaba	995	87
Bad Salzuflen	837	566
Woodland, CA	356	356
Arica	1198	910
Slater P&S, IA	1018	1018
Jalapa	699	529
Lopburi	771	771
Aurangabad	596	596
Saint Pierre	536	551
Salinas, PR	443	443
Chittagong	373	373
San Luis Potosi	561	597
Bien Hoa	443	443
Thika	198	198
Porrino	514	675
Santa Isabel R&D	271	271
Bangpoo	456	456
Uberlandia	368	278
Gilroy West Flowers, CA	275	275
Karachi	218	218
Casalmorano	320	570
Agadir	612	612
Jardines Mil Flores	400	303
Carmona	301	448
Tak Fah	269	269
Matao	279	27
Aigues-Vives	275	283
Cartagena	329	215
Tuas	302	302
Enofyta	268	214
Naples, FL	128	128
Nerac	259	266
Basel	416	166
Mustafakemalpassa	143	69
Graneros	133	101
Bay, AR	82	82
Saint-Sauveur	140	144
Lucas do Rio Verde	90	68
Other sites	595	496
Pasuruan	4995	4995

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Nampa, ID	3647	3647
Glenn, CA	1670	1670
Valagro HQ (Atessa)	899	1603
Rannebenur	1106	1106
Jefferson, IA	1038	1038
Tuscola, IL	1000	1000
Pekin, IL	998	998
Pangasinan	980	980
Hyderabad	951	951
Muradiye	939	939
Moncarapacho	295	477
Dassel, MN	476	476
Junction City, KS	447	447
Bien Hoa	443	443
Amboy, MN	429	429
Othello, WA	322	322
Kaha	313	313
Belmond, IA	311	311
Danvers, MN	304	304
Alabel	269	269
Khon Kaen	237	237
Ruiru	180	180
Yelets	165	165
Bethlehem	101	101
El Ejido	109	96
Sarrians	85	88

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

No

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	262665	262669	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
Ammonia	0.57	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Methanol	0.06	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Polymers	0.01	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Lubricants	0.03	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Soda ash	0.01	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Carbon black	0.06	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>This calculation method means that carbon emissions related to individual purchased materials or groups of materials can be identified within and separated from the overall category footprint. This is done by searching for the material name using its CAS number and product name in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. The carbon emissions related to the feedstock were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the material. Materials purchased in small quantities only contribute to a very limited extent to the Purchased Goods and Services (PGS) category total. Materials that contribute less than 0.005% of the PGS category total are not individually listed in this table.</p>
Other (please specify) (Remaining chemical feedstock purchases not listed above, including both fine chemicals and base chemicals)	20.6	<p>The overall carbon footprint related to Scope 3, Category 1 is calculated by assigning the best available emission factor to each individual line item describing a purchased material. Where possible, the emission factor is assigned based on the CAS number and country of origin; if these are unavailable, we use the product description and region of origin. For raw materials, volume-based emission factors can generally be used as the purchased quantity is labelled in standardized units. Volume-based factors are preferred and used as much as possible.</p> <p>The category "Other" contains emissions related to all other chemical feedstocks not listed above individually. These are identified by category description in the Syngenta corporate carbon footprint visualization tool, which is a custom Power BI dashboard designed to provide data users with easy access to consolidated data and the details behind it. Materials listed above individually are identified by CAS number and product name and excluded from this total. The carbon emissions related to remaining feedstocks were hence identified, and divided by the total Scope 3 Category 1 footprint to calculate the percentage of the category represented by the group.</p>

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 in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	586	Decreased	0.08	No significant change recorded in renewable energy consumption. Most changes in this category are due to a change in methodology. CALCULATION: The decrease of 586 tonnes of CO2e resulting from our low-carbon energy generation initiatives (such as the installation of photovoltaic panels) is reported in Q4.3b.
Other emissions reduction activities	9175	Decreased	1.27	We implemented several emission reduction initiatives as reported in Q4.3b, which helped us to reduce our Scope 1+2 emissions by about 9,000 tonnes of CO2e. CALCULATION: [Total estimated annual CO2e savings from Q4.3b] - [Estimated annual CO2e savings attributed to change in renewable energy consumption]
Divestment	0	No change	0	No change due to divestment
Acquisitions	10476	Increased	1.46	Although Syngenta Crop Protection completed the acquisition of the leading biologicals company Valagro in 2020, Valagro's environmental data was only integrated in Syngenta's data systems in time for the 2022 reporting cycle. Therefore, Valagro's Scope 1+2 emissions were included for the first time in Syngenta's reported emissions in 2022. CALCULATION: [Scope 1 emissions reported in Q7.7a] + [Scope 2 emissions (market-based) reported in Q7.7a]
Mergers	0	No change	0	No change due to mergers
Change in output	50400	Increased	7	In 2022, we observed a 7% increase in sales volumes. If no measures had been introduced, we assume that the increased output alone would have generated an extra 7% more emissions compared to last year. CALCULATION: [Total Scope 1+2 emissions 2021] * 0.07
Change in methodology	6924	Decreased	0.96	In 2022, we implemented a new reporting tool and revised calculation methods and emission factors. We estimate that these methodology changes have a cumulative impact of approximately -1% on overall Scope 1+2 emissions. CALCULATION: [Total Scope 1+2 emissions 2021] * 0.0096
Change in boundary	36809	Increased	5.11	Scope 1+2 emissions have also increased due to a greater number of sites reporting in 2022 (+24 sites), which is now 114 sites. This change was primarily due to requests from the business to add smaller sites that would not otherwise be in scope of the reporting criteria. This is part of Syngenta's overall effort to drive further improvements in HSE and sustainability. CALCULATION: [Total Scope 1+2 emissions due to all new sites added] - [Scope 1+2 emissions due to the acquisition of Valagro]
Change in physical operating conditions	0	No change	0	No change due to change in physical operating conditions
Unidentified	0	No change	0	No unidentified changes
Other	0	No change	0	No change due to other reasons

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	Yes

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)	50833	1285834	1336667
Consumption of purchased or acquired electricity	<Not Applicable>	117347	572931	690278
Consumption of purchased or acquired heat	<Not Applicable>	0	2249	2249
Consumption of purchased or acquired steam	<Not Applicable>	8089	396355	404444
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	15000	<Not Applicable>	15000
Total energy consumption	<Not Applicable>	191269	2257369	2448638

C-CH8.2a

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

Consumption of fuel (excluding feedstocks)

Heating value

LHV (lower heating value)

MWh consumed from renewable sources inside chemical sector boundary

9147

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

783946

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

253583

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1046676

Consumption of purchased or acquired electricity

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

76038

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

399164

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

475202

Consumption of purchased or acquired heat

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

0

Consumption of purchased or acquired steam

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

8089

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

396355

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

404444

Consumption of self-generated non-fuel renewable energy

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

1145

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1145

Total energy consumption

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

94419

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

1579465

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

253583

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1927467

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.

Sustainable biomass

Heating value

LHV

Total fuel MWh consumed by the organization

0

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

Comment

Not applicable

Other biomass

Heating value

LHV

Total fuel MWh consumed by the organization

50833

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

50833

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

Comment

This is a combination of waste wood and corn cobs used by seed sites in Brazil to generate heat to dry seeds.

Other renewable fuels (e.g. renewable hydrogen)

Heating value

LHV

Total fuel MWh consumed by the organization

0

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

Comment

Not applicable

Coal

Heating value

LHV

Total fuel MWh consumed by the organization

0

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

Comment

Not applicable

Oil

Heating value

LHV

Total fuel MWh consumed by the organization

92778

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

46389

MWh fuel consumed for self-generation of steam

46389

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

This includes light and heavy fuel oils as well as diesel. The breakdown provided is an estimate as accurate values are not available at this time.

Gas

Heating value

LHV

Total fuel MWh consumed by the organization

939444

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

645346

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

294098

Comment

It is understood that this would include natural gas as well as LPG. Self-cogeneration only occurs at our Huddersfield site in the UK.

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

LHV

Total fuel MWh consumed by the organization

253611

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

253611

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

Comment

This includes waste gas, which is used to fire a boiler.

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

1336666

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

350833

MWh fuel consumed for self-generation of steam

691735

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

294098

Comment

No comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	49190	49190	2222	2222
Heat	12778	12778	12778	12778
Steam	137580	137580	0	0
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

48025

Generation that is consumed inside chemicals sector boundary (MWh)

48025

Generation from renewable sources inside chemical sector boundary (MWh)

980

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

137580

Generation that is consumed inside chemicals sector boundary (MWh)

137580

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

C8.2e

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

Country/area of low-carbon energy consumption

Brazil

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

40763

Tracking instrument used

I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or re-powering)

2015

Comment

2015 was selected as the default year as there are a diversity of sources.

Country/area of low-carbon energy consumption

Switzerland

Sourcing method

Default delivered electricity from the grid (e.g. standard product offering by an energy supplier) from a grid that is 95% or more low-carbon and where there is no mechanism for specifically allocating low-carbon electricity

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify (This is a diverse mix of renewables, however, primarily hydropower)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

33685

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Switzerland

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or re-powering)

2010

Comment

2010 was selected as it is assumed to fairly represent the introduction of this source of energy.

Country/area of low-carbon energy consumption

Switzerland

Sourcing method

Direct line to an off-site generator owned by a third party with no grid transfers (direct line PPA)

Energy carrier

Steam

Low-carbon technology type

Sustainable biomass

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

7109

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Switzerland

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or re-powering)

2019

Comment

No comment

Country/area of low-carbon energy consumption

United Kingdom of Great Britain and Northern Ireland

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

22808

Tracking instrument used

REGO

Country/area of origin (generation) of the low-carbon energy or energy attribute

United Kingdom of Great Britain and Northern Ireland

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or re-powering)

2015

Comment

The facilities sourced include a wide variety of wind turbines. We cannot therefore provide an exact start date.

Country/area of low-carbon energy consumption

Netherlands

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

16791

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Netherlands

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2015

Comment

The contract guarantees that the wind was produced from a variety of sources in Europe. 2015 was selected as an average commissioning date.

Country/area of low-carbon energy consumption

Switzerland

Sourcing method

Heat/steam/cooling supply agreement

Energy carrier

Heat

Low-carbon technology type

Other biomass

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

2249

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Switzerland

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2010

Comment

2010 was selected as it marks the start date of this facility.

Country/area of low-carbon energy consumption

Norway

Sourcing method

Default delivered electricity from the grid (e.g. standard product offering by an energy supplier) from a grid that is 95% or more low-carbon and where there is no mechanism for specifically allocating low-carbon electricity

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify (Diverse energy mix with a heavy proportion of wind and hydropower)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

2357

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Norway

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2015

Comment

2015 was selected as an average date for this diverse portfolio.

Country/area of low-carbon energy consumption

Turkey

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

171

Tracking instrument used

I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

Turkey

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or re-powering)

2015

Comment

No comment

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of purchased electricity (MWh)

18451

Consumption of self-generated electricity (MWh)

49190

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

44367

Consumption of self-generated heat, steam, and cooling (MWh)

137580

Total non-fuel energy consumption (MWh) [Auto-calculated]

249588

Country/area

Switzerland

Consumption of purchased electricity (MWh)

110470

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

294333

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

404803

Country/area

United States of America

Consumption of purchased electricity (MWh)

275301

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

275301

Country/area

China

Consumption of purchased electricity (MWh)

49934

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

63737

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

113671

Country/area

Republic of Korea

Consumption of purchased electricity (MWh)

7837

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

4256

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

12093

Country/area

Brazil

Consumption of purchased electricity (MWh)

52336

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

52336

Country/area

France

Consumption of purchased electricity (MWh)

24235

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

24235

Country/area

Other, please specify (Rest of World)

Consumption of purchased electricity (MWh)

151714

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

12778

Total non-fuel energy consumption (MWh) [Auto-calculated]

164492

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

43206708

Total consumption unit

cubic metres

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: 358,632 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	
Natural Gas	100
Coal	
Biomass	
Waste (non-biomass)	
Fossil fuel (where coal, gas, oil cannot be distinguished)	
Unknown source or unable to disaggregate	

C9. Additional metrics

C9.1

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

Description

Land use

Metric value

6

Metric numerator

Million hectares of benefited farmland

Metric denominator (intensity metric only)**% change from previous year**

9

Direction of change

Decreased

Please explain

Under our current Good Growth Plan launched in June 2020, Syngenta made ambitious commitments and set targets for 2025. We committed to enhance biodiversity and soil health on 3 million hectares of rural farmland every year. This commitment builds on a similar commitment in our first Good Growth Plan (2013-2019).

As well as providing products and services to tackle soil health challenges, we contribute to raising awareness about the challenges facing modern agriculture and to promoting the adoption of sustainable soil management practices with our customers, growers large and small, as well as other stakeholders in the food chain and policymakers. In 2022, 111 soil health projects in 19 countries benefited a total of 4.7 million hectares of farmland – an 8% decrease compared to 2021. Latin America accounted for about 53% of the total hectares that benefited from soil conservation measures.

Further, we provide solutions to farmers to enhance biodiversity. A key strategy involves managing less productive farmland alongside fields and waterways to provide corridors connecting wildlife habitats. These multifunctional field margins support sustainable intensification on more productive land and help reintroduce local species while providing buffers for soil and water. We also invest heavily in product stewardship and safety initiatives to train farmers on the safe and responsible use of crop protection products, and we work with seed banks to share and protect the genetic diversity of food crops. In 2022, 70 projects in 32 countries benefited 1.3 million hectares of farmland – an 11% decrease compared to 2021. About 90% of the global hectares of benefited farmland were linked to the establishment of multifunctional field margins through our Operation Pollinator program, Sustainable Solutions projects and other initiatives.

Note: The 2021 value was restated due to a reporting error caused by the incorrect inclusion of soil conservation projects from Syngenta Group China entities that fall outside Syngenta AG group boundaries.

Description

Other, please specify (Carbon benefit potential on farmland)

Metric value

2931000

Metric numerator

Tonnes CO₂e

Metric denominator (intensity metric only)

Not applicable

% change from previous year

4

Direction of change

Decreased

Please explain

In our current Good Growth Plan launched in June 2020, we also commit to strive for carbon-neutral agriculture. We invest in R&D of products, disseminate agricultural practices, and provide technologies that strengthen agriculture against both the causes and the effects of climate change. We encourage farmers to implement climate-smart practices such as minimum tillage, crop rotation and effective nutrient management. In combination with permanent crop cover strategies, these practices turn agricultural fields into carbon sinks, helping to remove carbon dioxide from the atmosphere.

In line with this commitment, in 2020, we started reporting on the estimated carbon benefit on farmland adopting our soil conservation and biodiversity enhancement projects. The carbon benefit potential corresponds to the net change in soil carbon pools, reflecting the accumulated difference between carbon inputs to the soil after CO₂ uptake by plants and CO₂ release due to decomposition in the soil. The carbon benefit potential is calculated based on the number of hectares on which the specific soil- and biodiversity-related practices are applied, multiplied by the annual mitigation potential of the corresponding practice and climatic zone outlined in the IPCC Fourth Assessment Report, Table 8.4, page 512 (www.ipcc.ch/site/assets/uploads/2018/03/ar4_ar4_wg3_full_report-1.pdf).

In 2022, the carbon benefit potential on farmland was 2,931k tonnes of CO₂e, which is slightly lower (-3.5%) than last year. Over 60% of this benefit potential comes from agronomic practices such as crop rotation and soil cover supporting increased soil carbon storage.

Description

Waste

Metric value

376

Metric numerator

Grams of hazardous and non-hazardous waste

Metric denominator (intensity metric only)

\$sales

% change from previous year

9

Direction of change

Increased

Please explain

As stated in our HSE Policy and Standards, we actively promote environmental protection, including waste management. We aim to reduce the waste intensity of our operations and supply chain by 20% by 2030 compared to our 2016 baseline.

For our own operations, we have been reporting annually on hazardous and non-hazardous waste generation. In 2022, despite reporting an overall increase, we continued working to reduce waste generated in our own operations. Absolute hazardous waste remained relatively stable in 2022, decreasing by about 1%. Some of our sites are implementing measures for waste reduction. For example, our site in Monthey (Switzerland) has reported 4% less total hazardous waste generated compared to last year (a reduction of more than 3k tonnes) thanks to waste reduction measures implemented in the manufacturing of active ingredients. Absolute non-hazardous waste increased by 27% (+37k tonnes) in 2022, driven by significant packaging waste associated with increased production and an increased quantity of write-off seeds. Our sales increased by 19% in 2022 compared to 2021.

Description

Energy usage

Metric value

8787

Metric numerator

TJ

Metric denominator (intensity metric only)

Not applicable

% change from previous year

5

Direction of change

Increased

Please explain

In 2022, absolute energy consumption increased by 5% due to a greater number of sites reporting in 2022 (+26 sites), which is now 114 sites.

The percentage of both renewable energy and renewable electricity were 8% and 17% respectively. These percentages have significantly changed compared to last year due to a material change in the definition. Since 2022, sites are required to have a specific renewable electricity supply contract or certificate scheme to be able to report on the amount of renewable electricity purchased. In previous years, renewable electricity from national grids was also considered.

Note: The 2021 value was restated due to a reporting error in the consumption of fuel (biomass) found at one of our sites.

C-CH9.3a

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

Please select

Production (metric tons)**Capacity (metric tons)****Direct emissions intensity (metric tons CO2e per metric ton of product)****Electricity intensity (MWh per metric ton of product)****Steam intensity (MWh per metric ton of product)****Steam/ heat recovered (MWh per metric ton of product)****Comment**

We do not disclose information on capacity externally due to its sensitive nature.

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	<p>We recognize the challenges climate change poses for agriculture – and the contribution Syngenta can make to tackle it. Agriculture presents a significant climate change mitigation potential derived from greenhouse gas (GHG) removals, as well as reduction of GHG emissions through adequate management of land and livestock.</p> <p>We have product and service innovations on the market – and in the pipeline – that improve the water productivity of plants, increase yield and feed efficiency, reduce food loss and waste, and help sequester and mitigate loss of carbon in the soil. For example, we invest in R&D of new and sophisticated herbicides – helping growers to adopt conservation tillage, which improves soil fertility and provides higher productivity.</p>

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

Product redesign

Stage of development in the reporting year

Large scale commercial deployment

Average % of total R&D investment over the last 3 years

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)

Average % of total R&D investment planned over the next 5 years

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan

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. Syngenta’s R&D criteria include a specific criterion on climate, resilience and soil health among others.

For instance, our acquisition in 2020 of Valagro (now part of Syngenta Biologicals as of July 13, 2023), a leading biologicals and biostimulants company, enables Syngenta to build a world-leading biologicals business. It reinforces our strategy to provide farmers with more complementary product and technology choices, and underpins our aspiration to make agriculture more resilient and sustainable.

Climate change also increases the demand for certain types 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. 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. Another example is TYMIRIUM® technology, a solution for seed treatment and soil applications to combat plant parasitic nematodes and soil-borne pathogens while keeping soil health in sustainable balance. This technology preserves life in the soil and helps plants to become more resilient to climate change.

Seed treatment technology has also an important role to play to sequester carbon in the soil. For example, our VAYANTIS® fungicide not only controls diseases in corn, soybean, canola, oilseed rape and cereal crops, but also protects the soil by enabling reduced and no-till cropping systems.

In 2020, we 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. At present, we are not able to isolate an investment amount specifically for low-carbon R&D for chemical production activities. We anticipate we will be able to report on this figure in the coming years.

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-AG-ESG-Report-2022.pdf

Page/ section reference

PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including Scope 1, 2 and 3 GHG emissions reported on page 111.

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-AG-ESG-Report-2022.pdf

Page/ section reference

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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: Purchased goods and services
- Scope 3: Capital goods
- Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
- Scope 3: Upstream transportation and distribution
- Scope 3: Waste generated in operations
- Scope 3: Business travel
- Scope 3: Employee commuting
- Scope 3: Upstream leased assets
- Scope 3: Investments
- Scope 3: Downstream transportation and distribution
- Scope 3: Processing of sold products
- Scope 3: End-of-life treatment of sold products
- Scope 3: Downstream leased assets

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-AG-ESG-Report-2022.pdf

Page/section reference

PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including Scope 1, 2 and 3 GHG emissions reported on page 111.

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	<p>We report "emission intensity" based on revenues (see answer to question C6.10) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis and covers 100% of reported emissions.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including Scope 1, 2 and 3 GHG emissions and the related intensity values reported on page 111. Syngenta-AG-ESG-Report-2022.pdf</p>
C4. Targets and performance	Year on year emissions intensity figure	ISAE3000	<p>We report "emission intensity" based on value added in alignment with our SBTi-validated carbon intensity reduction target (see answer to question C4.1b) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis and covers 100% of reported emissions.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including Scope 1, 2 and 3 GHG emissions and the related intensity values reported on page 111. Syngenta-AG-ESG-Report-2022.pdf</p>
C9. Additional metrics	Energy consumption	ISAE3000	<p>We report "energy consumption" (see answer to question C9.1) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including "energy consumption" reported on page 112. Syngenta-AG-ESG-Report-2022.pdf</p>
C9. Additional metrics	Other, please specify (Land use)	ISAE3000	<p>We report "hectares of farmland benefited by soil conservation and biodiversity enhancement measures" (see answer to question C9.1) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including "hectares of farmland benefited by soil conservation and biodiversity enhancement measures" reported on page 110. Syngenta-AG-ESG-Report-2022.pdf</p>
C9. Additional metrics	Other, please specify (Carbon benefit potential)	ISAE3000	<p>We report "carbon benefit potential on farmland" (see answer to question C9.1) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including "carbon benefit potential on farmland" reported on page 110. Syngenta-AG-ESG-Report-2022.pdf</p>
C9. Additional metrics	Waste data	ISAE3000	<p>We report "total waste intensity" (see answer to question C9.1) in our ESG Report 2022. As such, this metric is included in the limited assurance engagement conducted by PwC.</p> <p>The assurance is conducted on an annual basis.</p> <p>PwC's Independent Assurance Report is on pages 117-118 of our ESG Report 2022 attached. As outlined in the assurance report, assurance was conducted on the information presented in the "Non-financial performance summary" on pages 109-116, including "total waste intensity" reported on page 113. Syngenta-AG-ESG-Report-2022.pdf</p>

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.

UK ETS

C11.1b

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

UK ETS

% of Scope 1 emissions covered by the ETS

29

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2022

Period end date

December 31 2022

Allowances allocated

5407

Allowances purchased

98000

Verified Scope 1 emissions in metric tons CO2e

473000

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

No comment

C11.1d

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

Syngenta's strategy is to continue to comply with all relevant regulations in every country we operate in. The financial implications of regulations such as the UK ETS will continue to be considered when making decisions on energy sourcing and usage. Overall, we strive to reduce the emission of GHG gases wherever possible, in order to reach our stated reduction targets.

Our key manufacturing sites have established decarbonization roadmaps establishing pathways to reaching our stated 2030 carbon targets, which include the implementation of key projects between now and 2030. We are continuously monitoring progress against these roadmaps to ensure reductions are actually achieved.

To ensure the impact on our targets is evaluated in all significant capital projects, we launched a pilot shadow carbon price in 2022, which has been tested to evaluate the business case of a sustainability-related capital investment.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?

No

C11.3

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

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Type of internal carbon price

Shadow price

How the price is determined

Benchmarking against peers

Objective(s) for implementing this internal carbon price

Change internal behavior

Drive low-carbon investment

Scope(s) covered

Scope 1

Scope 2

Pricing approach used – spatial variance

Uniform

Pricing approach used – temporal variance

Static

Indicate how you expect the price to change over time

<Not Applicable>

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

75

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

200

Business decision-making processes this internal carbon price is applied to

Other, please specify (Capital investments > USD 2 million (pilot))

Mandatory enforcement of this internal carbon price within these business decision-making processes

No

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan

We launched a pilot shadow carbon price in 2022, which has been tested to evaluate the business case of a sustainability-related capital investment. The shadow price will be rolled out to further projects and areas in 2023.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers/clients

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 GHG emissions data at least annually from suppliers

Collect targets information at least annually from suppliers

Collect climate-related risk and opportunity information at least annually from suppliers

Collect climate transition plan information at least annually from suppliers

Collect other climate related information at least annually from suppliers

% of suppliers by number

0.1

% total procurement spend (direct and indirect)

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

40

Rationale for the coverage of your engagement

RATIONALE: Syngenta spends more than USD 8 billion per year with more than 50,000 suppliers; therefore, 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. From this, we were able to identify that our chemical supplier base has the most significant impact on our total emissions and that a small portion of companies within our chemical supply chain represents a considerable amount of our CO2 emissions.

ENGAGEMENT ACTIVITIES: In 2022, we engaged with and received data and information from 73 chemical suppliers accounting for about 35% of our Scope 3 footprint. They provided information on carbon targets, actions taken and planned, product-level carbon footprint data or site-level energy data. We run webinars with our suppliers in English and Chinese to explain our challenge, what we expect from them, and the information we need.

After chemical and seeds suppliers, the next largest contributing category to our Scope 3 emissions is logistics. We focus our engagement on our 9 fourth-party logistics (4PL) providers because they have the largest impact within the category as they are responsible for the overall management of sub-contractors who move goods on our behalf. We thus have a strategic relationship and leverage to influence their approach. We require these 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, all 9 providers representing about 5% of our Scope 3 footprint report to us using GLEC guidelines.

In total, we engaged with and received data from suppliers representing approximately 40% of our Scope 3 footprint.

Impact of engagement, including measures of success

MEASURES OF SUCCESS: We use the information and data provided by our chemical suppliers to help map their relative carbon maturity. This helps us to determine which suppliers to prioritize for further one-to-one engagements as described in the example below on "engagement and incentivization". The information and data are then used in the one-to-one engagements as a basis for further discussion with suppliers on topics such as energy sourcing and data transparency. Where product carbon footprint (PCF) data has been provided by suppliers and validated against recognized standards by Syngenta, it is used to replace existing calculated emission factors and improve the accuracy of our Scope 3 carbon footprint.

We worked with other chemical companies in our industry to establish the Together for Sustainability initiative's chemical industry standard for PCF data. At the end of 2023, we will implement the TFS platform for collecting carbon data from suppliers, a common platform to be used by all companies in the industry. By 2026, our objective is that 70% of our chemical supply chain (by carbon footprint) provides and regularly updates its Scope 1, 2 and 3 data for the products we purchase from them.

With our logistics providers, our objective is to reduce emissions by 5% each year and base 90% of our footprint on GLEC data. We also intend to replace the interim financial model currently used to calculate upstream and downstream transportation and logistics figures with a more accurate one.

IMPACT: In our 2022 reported Scope 3 footprint, we used primary data from our chemical suppliers for 10 of the chemical products we purchase, representing about 1.3% of our total Scope 3 emissions (vs. 5 products and 0.9% in 2021).

We establish roadmaps with each of our logistics providers and use the data we receive to identify reduction opportunities with them. For instance, our teams in China and Pakistan worked on optimizing product storage by relocating selected products, which enabled to minimize travel distance and reduce CO2 emissions by 7% and 4% respectively. In Thailand, with the support of our logistics partner, we switched to biodiesel when transporting Syngenta products, which led to a 10% reduction in carbon emissions.

Comment

We are a member of Together for Sustainability (TFS), an initiative of the chemical industry to improve the sustainability performance of chemical industry supply chains. We actively contribute to the work of TFS to develop a consistent approach to engaging with suppliers on carbon emissions across the chemical industry.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Climate change performance is featured in supplier awards scheme
Offer financial incentives for suppliers who reduce your upstream emissions (Scopes 3)

% of suppliers by number

0.05

% total procurement spend (direct and indirect)

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

52

Rationale for the coverage of your engagement

RATIONALE: Syngenta spends more than USD 8 billion per year with more than 50,000 suppliers; therefore, 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. From this, we were able to identify that our chemical supplier base has the most significant impact on our total emissions and that a small portion of companies within our chemical supply chain represents a considerable amount of our CO2 emissions.

ENGAGEMENT ACTIVITIES: Bi-annually, we present sustainability awards at our Syngenta Supplier Awards event. We ask our suppliers to nominate themselves by submitting stories related to sustainability improvements. The judging of the awards is conducted by a group consisting of the heads of procurement functions and sustainability representatives. Successful suppliers received an award presented by the heads of Syngenta's procurement function.

Impact of engagement, including measures of success

MEASURES OF SUCCESS: For the most recent award, we received 36 nominations for sustainability-related improvements, of which 19 were related to carbon improvements.

IMPACT: Our sustainability awards are an opportunity to recognize and acknowledge efforts by suppliers in reducing carbon, water and waste. They also highlight our ambition and incentivize other suppliers to work on improvements. We expect the number and quality of submissions to increase over time as more and more companies start to engage with us on carbon reduction.

Comment

No comment

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Run a campaign to encourage innovation to reduce climate impacts on products and services
Collaborate with suppliers on innovative business models to source renewable energy
Other, please specify (Developing joint roadmaps with suppliers to both improve data quality and transparency and agree on action plans to reduce carbon footprint)

% of suppliers by number

0.04

% total procurement spend (direct and indirect)

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

19

Rationale for the coverage of your engagement

RATIONALE: Syngenta spends more than USD 8 billion per year with more than 50,000 suppliers; therefore, 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 1 to 1 with suppliers in those categories to develop 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. From this, we were able to identify that our chemical supplier base has the most significant impact on our total emissions and that a small portion of companies within our chemical supply chain represents a considerable amount of our CO2 emissions.

Based on business relationships, the estimated carbon footprint and relative maturity, we engaged with 28 key chemical suppliers (representing about 19% of our Scope 3 footprint) through a series of 1 to 1 meetings and workshops with the objective of co-developing transition plans to reduce the carbon of key products supplied to us. In 2022, we mainly focused on the suppliers to 4 of our key supply chains.

ENGAGEMENT ACTIVITIES: We are using a 4-step process to engage with suppliers through a series of workshops and have developed resources to support the engagement. The output of the engagement is shared roadmaps that we jointly develop and own with our key suppliers that outline:

- a) Actions to improve data transparency and quality
- b) Actions and initiatives to reduce the carbon footprint of products supplied to us (either at a site or product level)
- c) Areas or opportunities for further collaboration or exchange on sustainability topics

These roadmaps are incorporated into the standard business review process together with the supplier to ensure successful execution and update. During the development of our shared roadmaps, our collaboration between our sourcing teams and suppliers is supported by our Supplier Decarbonization Resources. Our manufacturing blueprint lists in detail sustainable manufacturing best practices and opportunities; our transition plan guidance outlines the process to create a site manufacturing transition plan (e.g., a roadmap); and our Low Carbon Energy Guide provides a high-level overview of technologies that can be considered to decarbonize energy supply.

Impact of engagement, including measures of success

MEASURES OF SUCCESS: For our chemical supply chain, our short-term objective is to have carbon reduction plans in place and agreed for 18 key supply chains by the end of 2023 in line with our corporate targets. To deliver on this objective, we require the key suppliers to those 18 supply chains to have roadmaps in place outlining the actions to be taken to deliver carbon reductions and to improve data transparency at product level.

IMPACT: Through engaging with the suppliers to the first 4 supply chains, we were able to identify carbon reduction opportunities that can reduce the footprint of specific supply chains by up to 48%. In one supply chain, through the implementation of process efficiency improvements and energy decarbonization plans at key suppliers, we were able to reduce the footprint of that specific supply chain by 5% (17,500 tonnes of carbon emissions).

Comment

No comment

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services
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% of customers by number

30

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

0

Please explain the rationale for selecting this group of customers and scope of engagement

RATIONALE: We engage with smallholder farmers around the world to train and advise them on good agriculture practices, including 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 income 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 hinders their ability to implement better agricultural practices.

ENGAGEMENT ACTIVITIES: Over half of our sales are made in growing economies where smallholder farmers predominate. In 2022, we trained 10.1 million smallholder farmers, which we estimate represent about 30% of all the farmers we reach. The level of engagement and type of training and advice we provide to smallholders vary 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.

Impact of engagement, including measures of success

MEASURES OF SUCCESS: In this case, we measure success by the number of smallholder farmers we have trained on good agriculture practices. In our Good Growth Plan, we committed to train 8 million farmers every year on the safe use of our products. On average, more than half are smallholder farmers.

IMPACT: In 2022, we trained 10.1 million smallholder farmers, which accounts for 78% of all the people we trained. Asia Pacific and China accounted for 99% of smallholders trained. Compared to 2021, we observed a 52% increase in the number of smallholders trained. Loosening of COVID-19 restrictions in some countries facilitated face-to-face training, enabling us to reach more smallholder farmers. We increased our impact by reaching a greater number of people through more engagement on the ground and local partnerships. For example, in India, our commercial teams used their farmer interactions as an opportunity to train growers and farmworkers on the safe use of crop protection products, and through our collaboration with CropLife, we made personal protective equipment more widely available.

Very often, smallholders' yields are impaired by limited access to technology, or lack of knowledge about how to apply it effectively. For example, in the Philippines, we worked with the Asia Society for Social Improvement and Sustainable Transformation on SIBOL, an initiative to improve farmer livelihoods and yields through healthy soil. This initiative aims to educate over 20,000 corn farmers on proper soil management and regenerative farming practices by promoting climate-smart agricultural practices and suitable technologies to increase corn yields within three years. In 2022, two model farms were established in strategic corn-producing locations, and results from these pilots will help further scale up the project.

C12.1d

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

OTHER VALUE CHAIN 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.

STRATEGY: Syngenta focuses on delivering sustainable sourcing solutions for its 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 collaborative projects 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. We prioritize our climate-related engagement based on partner needs, which falls into four areas:

1. Food quality and safety
2. Biodiversity
3. Soil health/GHG emission reduction (carbon sequestration)
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, The Nature Conservancy and Solidaridad. For initiatives related to soil health/GHG emission reduction (carbon sequestration), we are working with eight partners on coffee, potatoes, wheat, rice, corn, malting barley, fruits and garlic in Vietnam, Thailand, India, China, Brazil, Mexico, Chile and the 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, Syngenta and Solidaridad continue working together on two three-year programs launched in 2021. The Sustainable Program in China aims to reduce the environmental footprint of cotton and vegetable production for 20,000 smallholders. Further, the Horticulture Program in Kenya is intended to improve climate resilience and farm economics for 30,000 horticulture smallholder farming households.

Another element of the Syngenta's climate-related engagement strategy is our active participation in key platforms that involve different members of the value chain, from farmers, NGOs, to multinational food suppliers and retailers.

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

EXAMPLE 1: Syngenta is a member of the Cool Farm Alliance and Field to Market (FtM). 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 and FtM's sustainability metrics into Syngenta's farm management software Land.db in the USA are used to engage with farmers. These results are also used to engage with food value chain partners and other commercial stakeholders to raise awareness, benchmark performance and inform decision making.

EXAMPLE 2: Since 2021, Syngenta is a member of the SAI Platform, a global food industry initiative with over 170 members across the agricultural supply chain. We have been active in the Regenerative Agriculture working group, helping define metrics to assess regenerative agriculture.

EXAMPLE 3: Syngenta has joined the Living Soils of the Americas program, driven by the Inter-American Institute for Cooperation on Agriculture (IICA in Spanish) and the Carbon Management and Sequestration Center of The Ohio State University. This initiative is designed to work with governments and other strategic public and private partners, opening a pathway to scale up best management practices. It is envisioned to serve as a bridge between science, policy and development work on soil health restoration in the Americas.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, climate-related requirements are included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Setting a low-carbon energy target

Description of this climate related requirement

As outlined in our Supplier Code of Conduct, "Suppliers will work towards measuring the impact of their normal operations on the environment in so far as they relate to products or services supplied to Syngenta (e.g., Greenhouse gas emissions, energy consumption, water consumption, and waste)". To assess and improve the standards of our suppliers, we monitor their performance through audits and assessments. These are either conducted by our own teams or in collaboration with partners. When gaps are identified, we support suppliers in making the required improvements. We are currently developing specific KPIs linked to these audits and assessments to better understand which requirements in our supplier code of conduct are being met and by which percentage of suppliers.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

27

Mechanisms for monitoring compliance with this climate-related requirement

Off-site third-party verification
On-site third-party verification
Grievance mechanism/Whistleblowing hotline

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

<https://www.syngenta.com/sites/syngenta/files/presentation-and-publication/updated/public%20policy%20positions/climate-change-policy-position.pdf>
climate-change-policy-position.pdf

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

We coordinate and channel all our global policy engagements on climate change, directly and indirectly, through our global Sustainability function to ensure the consistency of our engagements with our climate change strategy across geographies and company functions. The 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 Sustainability teams in close collaboration with the global team. Regular communications (e.g., weekly Business Plan Review calls with leadership teams across regions and across both Seeds and Crop Protection business units; 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 CSO and Sustainability function have been strengthened over the past year to bring increased focus to our sustainability work, reinforce alignment of our activities in associations, and support our commitment to work more closely and transparently with policy makers, governments, NGOs and society.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers

The Koronivia Joint Work on Agriculture (KJWA) is a landmark decision under the United Nations Framework Convention on Climate Change (UNFCCC) that recognizes the unique potential of agriculture in tackling climate change. The Conference of the Parties at its twenty-seventh session, held in Sharm El Sheikh in 2022, adopted decision 3/CP.27 on the "Sharm el-Sheikh joint work on implementation of climate action on agriculture and food security". This four-year joint work includes implementing the outcomes of the Koronivia joint work on agriculture and previous activities addressing issues related to agriculture.

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

International agreement related to climate change mitigation

Policy, law, or regulation geographic coverage

Global

Country/area/region the policy, law, or regulation applies to

<Not Applicable>

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

We are continuously supporting CropLife International in their engagement with the UN Framework Convention on Climate Change (UNFCCC) Koronivia joint work on agriculture and the Sharm El-Sheikh joint work on implementation of climate action on agriculture and food security. Syngenta supports policies that recognize the importance of innovation for a sustainable and productive agriculture to meet ambitious climate change, nature and food security targets.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Other, please specify (CropLife International (CLI))

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their 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. CLI advocates in favor of policies, which support and enhance agriculture's role in mitigating and adapting to climate change, by advocating for policy frameworks that foster innovation including research and development for new solutions, access to market of innovative solutions, and farmers' access to innovation. Syngenta's CEO is the Chair of the CLI Board of Directors, and we are an active member, contributing with advocacy support, case studies and expertise.

Why this work matters for climate: according to the IPCC, in 2019 approximately 22% of global GHG emissions came from agriculture, forestry and other land use. To mitigate and adapt to climate change, farmers need better tools and practices that will help them to meet the food security challenge, and 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. Farmers are also the first hit by climate change, having to cope with rising temperatures, changing weather patterns, frequent and more severe droughts and floods, and the emergence of new pests and diseases.

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.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify (International Seed Federation (ISF))

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The International Seed Federation (ISF) advocates that through innovation, we can produce improved seed varieties to help farmers adapt to climate change, and support sustainable agriculture and food security. The ISF acknowledges its role in contributing to a more sustainable future and has embraced the UN SDGs, including SDG 13 on climate change.

Extreme weather conditions, such as floods and drought, regularly undermine production of crops, impoverishing farmers and increasing food and nutrition poverty locally, regionally and globally. Yet, in the next 30 years, the world will have to produce 60% more food to feed the global population – this will only be possible if the world's farmers have access to varieties of their choice.

Plant breeding innovations can provide farmers with solutions to respond to climate challenges. Plant breeders have developed climate-resilient varieties, such as drought-tolerant maize and rust-resistant wheat, that yield well despite drought conditions. Innovations in plant breeding have also led to the development of varieties that have higher resistance to pests and diseases, which is critical to farmers as disease pressure increases with the rise in temperature.

Further, new breeding techniques and precision breeding techniques can help develop new varieties more precisely and rapidly. Innovations in plant breeding do not replace traditional practices, they simply increase the range of tools available to plant breeders.

"Achieving the right environment for innovation and movement of seeds requires constant engagement among industry, farmers, and government to ensure alignment of global policies. This continues to be the focus of ISF." (source: ISF).

As a member of the ISF Task Force for the UN Food Systems Summit, Syngenta contributes to the ISF's positioning on climate change and advocacy at UNFCCC COPs.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

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-AG-ESG-Report-2022.pdf

Page/Section reference

ESG Report 2022, pages as follows:

- * Page 12: The Good Growth Plan outlining our commitment to strive for carbon-neutral agriculture
- * Page 13: Working to reduce greenhouse gas emissions
- * Pages 37-44: Disclosures on “Carbon capture and mitigation in agriculture” and related “Soil health” and “Biodiversity”
- * Page 54: Disclosure on “Greenhouse gas emissions”
- * Page 106: TCFD’s recommended disclosures

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets
- Other metrics

Comment

This report is also available on our website: www.esg-reporting.syngenta.com

Publication

In mainstream reports

Status

Complete

Attach the document

Syngenta-AG-Financial-Report-2022.pdf

Page/Section reference

Financial Report 2022 page: 2 (PDF, page 6)

Content elements

- Strategy

Comment

This report is also available on our website: <https://www.syngenta.com/en/company/bond-investor-information/financial-results>

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization’s role within each framework, initiative and/or commitment
Row 1	Science Based Targets Network (SBTN) Sustainable Agriculture Initiative (SAI) Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact World Business Council for Sustainable Development (WBCSD) Other, please specify (Food Collective, World Economic Forum, Coalition for Action for Soil Health)	<p>We are a member of the Food and Agriculture and Climate Pathways of the World Business Council for Sustainable Development (WBCSD). We are actively engaged in helping shape common understanding across industry on mitigation of climate change and promoting the transition and adoptions towards regenerative agriculture. Our CSO is a Board member of the Food and Agriculture Pathway. Goals for 2023 include working towards harmonizing regenerative agriculture frameworks and looking into opportunities for emission reductions.</p> <p>We are a member of the Sustainable Agriculture Initiative (SAI), and actively involved in the Regenerative Agriculture Program that focuses on farm-level regenerative agriculture through an outcome-based framework and implementation program targeted at farmers.</p> <p>Since 2022, we are a participant of the Science Based Targets Network (SBTN) Corporate Engagement Program, pledging alignment with SBTN’s goals and vision, and contributing with advice and end-user insights to the development of SBTN methods and tools. We support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, see press release, December 11, 2017) and have been working to implement them since 2018. We address the disclosure recommendation in our ESG Report 2022, p.106.</p> <p>We support the 10 principles of the UN Global Compact (UNGC) through a commitment to sustainability and the ongoing implementation of policies on human rights, fair labour, environmental protection and anti-corruption. We have been a UNGC signatory since January 15, 2009. Our Communication on Progress submissions are available on the UNGC website. Our commitment and information on our actions and progress can be found in the ESG Report 2022, p.134.</p> <p>We are members of the Food Collective, which brings together CEOs and Executives in transforming the food value chain.</p> <p>We are member of the World Economic Forum (WEF) where we participate in many leader dialogues and initiatives on food and agriculture, e.g., Food Innovation Hubs, Alliance of CEO Climate Leaders.</p> <p>We are an active member of the Coalition for Action for Soil Health (CA4SH), a multi-stakeholder coalition to facilitate the implementation, adoption, and global coordination of soil restoration practices,</p>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	<p>RESPONSIBILITIES OF BOARD OF DIRECTORS: The sustainability governance is led by the Board of Directors of the parent company Syngenta Group Co. Ltd., which provides strategic direction regarding all sustainability matters – this includes biodiversity-related issues – and exercises oversight over the Syngenta Group Co. Ltd. Group Leadership Team in this respect. The Syngenta Group Co. Ltd. Board of Directors delegates some of its powers and duties to the board level Syngenta Group Sustainability Committee.</p> <p>RESPONSIBILITIES OF BOARD-LEVEL COMMITTEE: The Sustainability Committee is mainly responsible for sustainability matters in innovation and operations, and for the review of the company’s sustainable practices – these matters and practices include associated biodiversity-related aspects. It is also involved in the development of the sustainability ambition and strategy and oversees the company’s sustainability framework and standards, including public ESG reporting, the company’s sustainability plan, strategic sustainability partnerships, and innovation dialogues.</p> <p>This committee is chaired by an individual with extensive experience and expertise in sustainable and responsible agriculture and food production.</p> <p>The CHIEF SUSTAINABILITY OFFICER (CSO), who reports to the CEO, leads the Group Sustainability function. This function coordinates and channels sustainability initiatives, performance management and policy engagements – including those related to agricultural biodiversity. It assesses and monitors the company’s performance in relation to agricultural biodiversity and the wider sustainability agenda. The CSO provides regular updates to the Group Leadership Team and the Sustainability Committee of the Syngenta Group Co. Ltd. Board of Directors on the progress made regarding the company’s sustainability commitments and advises them on required actions.</p> <p>EXAMPLE: Agricultural biodiversity allows farmers to grow the food required to sustain the growing global population. In June 2020, Syngenta and Syngenta AG’s Board of Directors took the decision to launch the new Good Growth Plan (www.goodgrowthplan.com). By doing so, they reaffirmed our commitment to enhance biodiversity and soil health on 3 million hectares of rural farmland every year.</p>	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Other, please specify (1) Support the development of agricultural practices and provide products and services helping farmers to enhance biodiversity 2) Enhance biodiversity and soil health on 3 million hectares of rural farmland every year)	CBD – Global Biodiversity Framework SDG

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Downstream

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

Other, please specify (Proprietary and scientific literature methods)

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

Syngenta has launched LivingGro® a comprehensive science-based sustainable agriculture initiative. The scientific work associated with LivingGro® is taking place on productive farms in several countries, either as full-scale pilots or as customized approaches. In both cases, the focus is on soil and biodiversity, crop and agroecosystem health, and the objective is to provide the scientific basis for designing and developing scalable agronomic protocols that promote sustainable agriculture practices and support efficient food production within healthy agroecosystems (<https://www.syngenta.com/en/innovation-agriculture/livingro>).

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Downstream

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

No biodiversity assessment tools/methods used

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

<Not Applicable>

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?

Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area

Natura 2000 network of protected areas

Country/area

United Kingdom of Great Britain and Northern Ireland

Name of the biodiversity-sensitive area

Firth of Forth Special Protection Area (SPA), RAMSAR site and Site of Special Scientific Interest (UK SSSI)

Proximity

Up to 5 km

Briefly describe your organization's activities in the reporting year located in or near to the selected area

The site itself is not in a protected area but our site effluent goes to a third-party effluent treatment plant and then the fully treated effluent discharges into a protected area, which starts approximately 400 meters from our site boundary.

These protected areas are mainly shoreline salt marsh and mud flats where wading birds are present, and the point of discharge for the treated effluent is one kilometer offshore in deep water to reduce the potential for any abnormal discharges that could affect the shoreline areas.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Project design
Physical controls
Operational controls
Abatement controls

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

The protected area is the Firth of Forth Special Protection Area (SPA), RAMSAR site and UK SSSI – all for the protection of key species of wading birds and their supporting ecosystem. We could affect it if we discharged abnormal types or volumes of chemicals via our effluent system. We have done a significant number of assessments on this as required by UK COMAH regulations, and have numerous layers of protection in place to prevent abnormal effluent discharges. These include physical, operational and abatement controls and project design.

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water management

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	State and benefit indicators

C15.7

(C15.7) Have you published information about your organization’s response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Impacts on biodiversity Details on biodiversity indicators	We report "hectares of farmland benefited by biodiversity enhancement measures" in our ESG Report 2022 on page 42. Syngenta-AG-ESG-Report-2022.pdf

Note, the supplier module has been deleted as it contains confidential information of our clients.

C16. 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.

No additional comment

C16.1

(C16.1) 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)