



# Syngenta's IPO: high investment risk

Risk values from hazardous pesticides and climate damage add up to USD 28-155 bn

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## About this report

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## Summary

Syngenta Group's has planned an Initial Public Offering (IPO) before the end of the year 2022. In the context of rising evidence of the negative health and environmental effects of Highly Hazardous Pesticides (HHPs), new investors as well as current debt-owners in the company might face financial risk. Moreover, transparency on Syngenta's large fertilizer distribution business is lacking, while this activity could be a huge carbon bomb. In total, in a low-risk/high-risk range, the financial risks add up to a value range of USD 28 to 155 billion. This is material versus the intended USD 45 billion market capitalisation.

- **Syngenta Group is a global market leader in crop protection.** The company with USD 28 billion revenues in 2021, has a market share of 24% in the global crop protection market and a 7% share in global seeds. Two-thirds of its revenues are generated in crop protection (pesticides). Approximately 14% of revenues is generated in crop nutrition (fertilizers).
- **Syngenta Group's exposure to Highly Hazardous Pesticides could put 20% to 38% of its plant protection revenues at risk, leading to a negative USD 630 - 1,229 million impact on EBITDA. In total, USD 6.3 - 12.3 billion value (discounted cash flow basis) would be at risk. Assets might become stranded.** Volumes could be severely hurt by regulators banning certain HHPs, including a ban on export from the EU to the rest of the world. In addition, broader regulation to reduce pesticides' use in general, and civil society and consumer pressure on Fast-Moving Consumer good companies and food retail, could affect volumes. Due to lower volumes, Syngenta might have idle product lines and overvalued intangible assets leading to asset write-downs of USD 2.5 to USD 4.7 billion.
- **Higher interest rates costs might affect pre-tax profit by 1.3% to 5.2% and have a value effect of USD 200 - 799 million.** As debt-owners might face ESG risks and consequently be hurt in their reputation, the effective interest rate of Syngenta Group could go up.
- **The group might be confronted with a USD 7.2 - 14.4 billion liability for occupational health care costs and water treatment costs.** Syngenta and competitors are already confronted with various lawsuits. In countries with a stronger regulatory and legal environment, the estimated low-risk outcome (7.2) is realistic, while the high-end number (14.4) refers to the global context. These societal costs are still mainly passed on to governments and individuals.
- **Due to Syngenta Group's Chinese fertilizer distribution business, the group faces a large climate damage liability of USD 127 billion.** This high-risk outcome represents all climate damage in the period 2016-2050 originating from Syngenta's activities, assuming that investors start to calculate with global scope 3 emissions and Syngenta will update its ESG targets to net-zero in 2050. The outcomes becomes really relevant if China introduces carbon costs. A low-risk scenario would only cover the European-oriented Syngenta plant protection and seed activity, leading to a much smaller carbon liability of USD 14 billion.
- **Syngenta Group's IPO plan should wake up investors.** As the total financial risks add up to a material number versus the intended IPO market capitalization (see Table 1), new investors could face significant risk. This occurs in the context that Syngenta seems to go for a valuation at the high-end in a peer group. With rising global attention for health, pollution, climate and healthy food, Syngenta Group's IPO intention faces ample red flags.
- **Current ESG ratings for Syngenta AG are in the average zone, but might deteriorate when the whole Syngenta Group including fertilizers will be covered.** The inclusion of the fertilizer activities will increase Syngenta's challenge on GHG emissions.



**Table 1 Summary of risks**

USD million	Low-risk scenario		High-risk scenario	
	Profit (EBITDA) impact	Value impact	Profit (EBITDA) impact	Value impact
Market access risk	630	6,302	1,229	12,289
Stranded asset risk		2,478		4,651
Financing risk	20	200	80	799
Health care and water pollution costs	720	7,200	1,440	14,400
Climate damage costs	784	13,884	11,137	127,414
Reputation risk		NA		NA
Double-counting	0	-2,478	0	-4,654
<b>Total risk</b>	<b>2,154</b>	<b>27,585</b>	<b>13,886</b>	<b>154,902</b>
Data:				
Syngenta Group EBITDA 2021	4,600		4,600	
Syngenta Group IPO equity value		45,000		45,000
Syngenta Group IPO enterprise value		66,365		66,365
Total risk as % of:				
Syngenta Group EBITDA 2021	46.8%		301.9%	
Syngenta Group IPO equity value		61.3%		344.2%
Syngenta Group IPO enterprise value		41.6%		233.4%

Source: Profundo. No double-counting is subtracted as reputation risk is not applied. There is no share price value to which Profundo's analysis can be applied, and the reputation risk is partly covered in the other categories

## Abbreviations

Abbreviation	Description
<b>DCF</b>	Discounted Cash Flow
<b>EBITDA</b>	Earnings Before Interest, Tax, Depreciation and Amortisation
<b>Enterprise value (EV)</b>	Market value of shares + Net-debt + Minorities, minus value of associates
<b>ESG</b>	Environmental, Social, and Governance
<b>EV/EBITDA</b>	Enterprise value/EBITDA ratio for valuation purposes.
<b>GHG</b>	Greenhouse Gas
<b>Market value</b>	Equity value = number of shares x share price
<b>Net profit</b>	Profit after tax payments
<b>P/E</b>	Price/earnings ratio for valuation purposes
<b>Pre-tax profit</b>	Profit before corporate tax
<b>Net revenues</b>	Revenues, or turnover, or sales excluding VAT or other sales related tax
<b>Abbreviation</b>	Description

# 1

## Syngenta Group's IPO

**Syngenta Group plans to start an Initial Public Offering (IPO) for a part of its shares. The group, now 100% owned by Chinese state-owned companies, would like to offer a minority stake to investors, existing of new shares. The seller and issuer of the shares intends to use the proceeds for further Syngenta Group's growth and acquisitions, and reduction of Syngenta's debt. In total, 15-20% of the share capital could become available for Chinese investors.**

### 1.1 Syngenta Group: ownership, financials, profile and business strategy

**The offering of a 20% stake could lead to a USD 10 billion proceeds and would value Syngenta Group's equity at USD 45 billion.** The state-owned ChemChina bought Syngenta for USD 43 billion in 2017.<sup>1</sup> The current owner of the Syngenta Group are Agrochemical Company (99%) and McDonnell Agrochemical, which both have ChemChina as a main owner above them, which on its turn is owned by Sinochem, which finally is owned by the Chinese state.

#### 1.1.1 Financials and profile – Syngenta AG and Syngenta Group

**Syngenta Group is a Chinese state-owned company that is active in plant protection, seeds and crop nutrition markets.** The group consists of four main business units: Syngenta Plant Protection, Syngenta Seeds, Syngenta Group China and Adama. Operating in more than 100 countries, Syngenta is the global market leader in plant protection in agriculture with a 24% market share, larger than Bayer (20%), BASF (12%) and Corteva (11%). Syngenta, Bayer, Corteva and BASF control more than two-third of the global pesticide market, after a very active merger process since the 1990's<sup>2</sup>. Syngenta Group is holding the third place in the global seeds industry with a 7% share as of 2020, according to data provided in Syngenta's IPO prospectus<sup>3</sup>. In seeds, Bayer is clearly leading with a 20% global market share.<sup>4</sup>

The agriculture company Syngenta was acquired by Chinese chemical group ChemChina in 2017 and delisted from stock exchanges in 2018. In 2020, the agricultural businesses of Sinochem, Israel-based pesticide company Adama (owned by the group for nearly 80%), and Swiss Syngenta were brought together under Syngenta Group Co. In 2021, Syngenta Group generated a net revenue of USD 28.2 billion and an EBITDA (earnings before interest, tax, depreciation and amortisation) of USD 4.6 billion (+14% year on year). In the first six months of 2022, Syngenta Group's revenue increased by 25% to USD 18.1 billion and EBITDA was up 32% to USD 3.5 billion compared to the first half of 2021. All business groups grew strongly.

**Table 2 Syngenta Group key financial items**

USD millions	2018	2019	2020	2020 Proforma	2021
Net revenue	21,113	20,924	22,016	23,004	28,200
Operating profit	1,874	2,237	2,189	2,399	
Finance income/expense	1,165	1,247	679	671	
Other expenses	-37	438	124	185	
Tax expense	171	-133	227	255	
Minority Interest	1,187	1,004	518	483	



USD millions	2018	2019	2020	2020 Proforma	2021
Net profit (parent)	-612	-319	641	805	
<b>Ratios:</b>					
Operating margin	8.9%	10.7%	9.9%	10.4%	
EBITDA	3,418	3,692	3,781	3,951	4,600
Net-debt	12,388	13,548	7,944	7,987	7,987
Net-debt/EBITDA (x)	3.6x	3.7x	2.1x	2.0x	1.7x

Source: Syngenta Group IPO prospectus, Company publications on <https://www.syngentagroup.com/en/media/syngenta-news/year/2022>

Syngenta publishes its results in two ways: in business groups (based on management) and in product groups (based on product-type; see Table 3). In every business group, various product-types are being sold. The Syngenta Plant Protection + Syngenta Seed activities represent the Syngenta AG business, or the former Syngenta, in total 66% of revenues. Adama and Syngenta Group China have been added in the merger process after the Chinese state took control.

**The product group diversification shows how Syngenta Group's revenues are exposed to plant protection products (66% of revenue) such as chemical herbicides (against weeds), fungicides (against fungi), insecticides (against insects) and other pesticides which could lead to many external negative impacts, including on health.** Crop nutrition (fertilizers) represents 14% of revenue. Fertilizers contribute to greenhouse gas emissions and climate change in the process of production (fossil fuels, mainly gas, is needed) and in the use.

Geographic-wise, Syngenta has a diversified destination base for revenue. Revenue in the EU, where pesticide regulation is most developed, is part of the 23% 'Europe, Africa and Middle East' revenue share. This was still 25.5% in 2018.

**Table 3 Syngenta Group revenue breakdown**

Revenues (USD million)	2018	2019	2020	2020 (%)
<b>By Business Unit</b>				
Syngenta Plant Protection	10,356	10,479	11,092	50%
Syngenta Seeds	3,341	3,206	3,316	15%
Syngenta Group China	4,379	4,256	4,676	21%
Adama	4,061	3,989	4,121	19%
Eliminations	-1,024	-1,007	-1,190	-5%
Total	21,113	20,924	22,016	100%
<b>By Product Group</b>				
Plant Protection	13,774	13,872	14,587	66%
Seed	3,326	3,186	3,305	15%
Crop Nutrition	3,431	3,206	2,984	14%
Modern Agri Services	132	231	717	3%
Other	415	388	390	2%
Other Operating Income	34	41	33	0%
Total	21,113	20,924	22,016	100%
<b>By Geography</b>				
Europe, Africa and Middle East	5,385	5,057	4,977	23%

Revenues (USD million)	2018	2019	2020	2020 (%)
Latin America	4,643	5,209	5,389	24%
North America	4,372	4,112	4,288	19%
Asia Pacific (excl. China)	2,156	2,130	2,582	12%
China	4,350	4,172	4,478	20%
Other	206	245	303	1%
<b>Total</b>	<b>21,113</b>	<b>20,924</b>	<b>22,016</b>	<b>100%</b>

Source: Syngenta Group IPO prospectus

### 1.1.2 Business strategy: a four-pillar list of opportunities – growing existing business

**Syngenta Group's strategy has four pillars.<sup>5</sup>**

1. The company wants to lead the agricultural transformation through innovation. In seeds it wants to invest in biotech products. In plant protection, Syngenta wants to be a leader in biologics with DSM as a long-term partner in R&D.
2. Syngenta wants to expand the innovative agricultural service platform centred on farmers. This connects with new agricultural inputs and services, as well as with the food and feed value chains. Productivity, crop quality, and costs could be improved for farmers.
3. The company wants to grow geographic-wise, also through more synergies.
4. Syngenta strives to supplying a growing population with sufficient quality food while reducing the carbon footprint of agricultural production.

These four pillars show that the group wants to grow further in existing business, generating a lot of profits and cash, and at the same time wants to strengthen its position between farmers and the downstream sectors, also by providing innovative products. The phrase 'reducing the carbon footprint' is interesting, as the company has a huge position in fertilizer distribution in China.

### 1.2 IPO prospectus: financial risks seem understated

**An IPO prospectus is meant to list the material risks that a company is facing. Syngenta's IPO prospectus discusses general risk factors in a qualitative way in section 4. Section 11.3 discusses some major litigation and arbitration cases in a quantitative context.** Most concrete in the prospectus document is a list of 'major litigation and arbitration' (prospectus section 11.3) that is going on as many individuals and companies try to get compensation for the harm that is done by Syngenta Group's products or activities. The total quantified amount exceeds USD 6 billion, of which a major part for the seed business. Several pending cases (in particular for pesticides, for instance Paraquat's relation to Parkinson disease) are not quantified. It is uncertain whether the (court) cases will lead to real payments but investors should be aware of these risks.

**A part of these (pending) court cases' financial impact might be covered in the occupational healthcare risk calculation in the next sections. However, there are many other potential financial impacts on Syngenta which are not covered in the prospectus in a quantitative way.** Risks such as market access risk due to regulation, and healthcare/environmental risks, can be material in monetary value in the plant protection sector. The risks sections of the IPO prospectus do not inform investors about the materiality of these risks compared to the proposed valuation of the company or compared to the recent EBITDA or net profit.<sup>6</sup> The current report will do this in the following sections.

# 2

## Financial risks could be numerous

**Because of increasing legislation, changing consumer attitudes on sustainability and transparency offered by civil society publications, Syngenta Group might face financial risks. These risks are virtually unnamed in Syngenta Group's IPO prospectus while their total value is material. This section calculates Syngenta Group's market access risk, stranded assets risk, financing risk, health risks and climate damage risks.**

### 2.1 Market access risk could be material

**As a consequence of regulation on HHPs (Highly Hazardous Pesticides) and the impact of changing consumer and society attitude to the use of (certain) pesticides, Syngenta Group could face revenues-at-risk.** This could lead to a loss of earnings/profits and value for the group. In section 2.2 the stranded asset risk is discussed, although there might be overlap between the value of market access risk and stranded asset risk.

#### 2.1.1 The risks of Syngenta's pesticides' activities

**Pesticides are chemicals designed to kill living organisms such as fungal disease (fungicides), insects (insecticides) or weeds (herbicides). They lead to benefits in agricultural crop production, but also affect humans and other non-target organisms.** The toxicity of different substances vary greatly. And while some are acutely toxic to humans, others might increase the risk of developing chronic diseases such as cancer, or poison the environment.

The World Health Organization (WHO) and the UN Food and Agriculture Organization (FAO) define "Highly Hazardous Pesticides (HHPs)" as those "that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or GHS or their listing in relevant binding international agreements or conventions"<sup>7</sup>.

Through the industry lobby group Croplife International, BASF, Bayer, Corteva Agriscience, FMC, and Syngenta, which dominate the global agricultural pesticides market (65% of the USD 58 billion market in 2018), is promoting the innovations in the industry which replace HHPs.

However, in 2020 Unearthed and Public Eye got their hands on data from a leading market intelligence company Philips McDougall<sup>8</sup> (PMD; now part of HIS which is part of S&P Global<sup>9</sup>) covering 40% of the market (USD 23.3 billion) with revenues in 43 countries. They analysed this data comparing it to PAN's 2019 list of highly hazardous pesticides. This list was developed by the Pesticide Action Network (PAN) in the absence of an official list (while FAO and WHO have defined criteria for HHPs, they have yet not published a list of the pesticides that should be considered "highly hazardous").

The result was that the five large pesticide companies made 35% of their pesticide revenues from selling pesticides featured on the PAN list of highly hazardous pesticides. This data is an important input for potential market access risk.<sup>10</sup>

### 2.1.2 Changing regulatory context for pesticides and hazardous pesticides

**A very broad regulatory wave is affecting pesticides in general and hazardous pesticides in particular.** It is now widely accepted that to reduce pesticide risk, HHP substances should be phased out from agriculture. Already in 2006, the FAO council proposed “that the activities of FAO could include risk reduction, including the progressive ban on highly hazardous pesticide”<sup>11</sup>. In 2017, UN experts pointed to the “catastrophic impact” of pesticides on the environment, human health and society as a whole, calling them a “human rights concern”<sup>12</sup>. In 2019, the WHO has called exposure to HHPs “a major public health concern”<sup>13</sup>. Finally, in 2019, FAO and WHO launched a call for action to “detoxify agriculture and health from highly hazardous pesticides”<sup>14</sup>.

**Over the past decades, many HHPs have been forbidden and disappeared from the market, most in the EU and the UK, but also in the USA and various other markets around the globe.** In the EU, the number of authorized pesticide substances has more than halved since regulation was tightened in 1991 and again in 2009. “The key step was in 2009, when the EU decided to reject approval or re-approval of substances presenting particular health hazards. This was done by introducing so-called “cut-off” criteria into legislation which exclude authorization for substances that are for example probably carcinogenic or toxic for reproduction”.<sup>15</sup>

In an effort to promote global transition to sustainable agri-food systems, the EU plans<sup>16</sup> to introduce measures to stop exporting hazardous pesticides that were banned in the EU. Several countries such as France, Belgium and Germany<sup>17</sup> have already adopted or are in the process of adopting national export bans. This is going to impact the industry who has large factories across Europe.

The EU is also planning to no longer allow residues of certain EU-banned pesticides in imported food products.<sup>18</sup> Those HHPs could then no longer be used in the supply chains of agricultural products entering the EU. As the EU is one of the world’s largest importers of agri-food products, these measures are likely to impact global sales of HHPs.

Additionally, in June 2022, the European Commission proposed new rules to reduce the use and risk of pesticides in the EU, targeting on EU-level a 50% reduction in chemical pesticides by 2030. The Commission had found the existing rules on the Sustainable Use of Pesticides Directive to be too weak and that progress had been insufficient in reducing the risks and impacts of pesticide use on human health and the environment<sup>19</sup>.

**In other crucial markets with high attention for consumer-affecting events, like the UK and the USA, no regulation like the EU is in the process of implementation.** This is related to Brexit (UK) and strong agricultural lobby organizations. More relevant is the pace of banning of certain types of HHPs from the market. US regulators are now being sued over several controversial decisions aimed at keeping certain dangerous HHPs on the market (see note<sup>20</sup> for further details). Pressure from civil society is mounting and regulatory proposals are being developed in the USA to tighten the grip on HHPs.<sup>21</sup>

**Many countries outside these regions have limited regulation or implementation capacities. Yet many are starting to act on HHPs.** Following re-evaluations, India decided<sup>22</sup> to ban 18 HHPs at once in 2018 and might ban another 27. Other large agricultural producers such as China and Brazil have recently banned several hazardous substances including Syngenta’s Paraquat herbicide. There is opposition to European countries exporting pesticides to the Global South that were banned within Europe due to their hazardous nature. Recent legal opinion found<sup>23</sup> such exports were in breach with obligations under international conventions.

While there is yet no comprehensive international framework to govern HHPs, the UN promotes national regulatory measures on HHPs. FAO, WHO and UN environment program (UNEP) are developing<sup>24</sup> an action plan to respond to the widely recognized need to scale up action on HHPs. Other initiatives to bring HHPs on the agenda include the International Conference on Chemicals Management, the Convention on Biological Diversity, and the Stockholm Convention.

### 2.1.3 The downstream sector is turning against pesticides

**On top of the regulatory context and changes, the private downstream sector is raising the standards.** Consumers want to eat healthier and ask for healthier food product offerings, excluding chemical substances. A German study showed that more than two-thirds of organic consumers (70%) and over one-half of conventional consumers (53%) rated the risks of pesticides, chemicals and toxins as greater than the benefits.<sup>25</sup>

Retailers and Fast-Moving Consumer Good (FMCG) companies need to adjust their products. Civil society is raising the pressure on food retailers, like ranking supermarkets on pesticides.<sup>26</sup> As a consequence, retailers are raising their requirements to FMCGs and farmers<sup>27</sup>, who pass them to companies like Syngenta. Many consumer brands and sustainability standards are eliminating certain HHPs from their supply chains<sup>28</sup>. Syngenta might be affected and lose pesticides revenues.

### 2.1.4 The value of market access risk

**Public Eye research found out that 39.2% of Syngenta’s pesticides revenue was from the sales of HHPs.** Investigation found that the main markets for Syngenta’s HHPs were low- and middle income countries (LMICs). This reflects the fact that many high-income countries (particularly in the EU) have tightened regulations and banned many HHPs. Ten of the 20 Syngenta top-selling pesticides according to PMD (the market data that Public Eye based its research on) classify as PAN HHP. Six of the 10 top-selling HHPs are no longer approved in the EU, of which four have lost EU approval in the last four years.

Due to increasing action by regulators on HHPs, Syngenta Group faces a risk that a material part of its revenues might disappear in future years. The HHP calculation for Adama’s plant protection activities, point to 35.0% of HHPs in its plant protection revenue. Adama is an off-patent producer of plant protection products, with 85% of its revenue generated in plant protection.

**Table 4 Estimate of HHP revenue as % of total revenue**

USD billion	2018	Sample PMD	HHPs in sample PMD
Global pesticide market	57.6	23.0	
% of sample of total market		39.9%	
% of sample			
Top-5 global	37.2	13.4	4.8
Market share top-5	64.6%		
% of sample of top-5			35.4%
<b>Syngenta AG</b>	8.34	3.41	1.34
% of sample of Syngenta AG plant protection		40.9%	
% of sample Syngenta (source Public Eye)			39.2%
<b>Adama plant protection</b>	3.42		
% of Adama plant protection*			35.0%
Syngenta plant protection + Adama plant protection			38.2%

Source: Profundo, based on Syngenta Group IPO prospectus document, Public Eye online: <https://www.publiceye.ch/en/topics/pesticides/pesticide-giants-make-billions-from-bee-harming-and-carcinogenic-chemicals>, Bloomberg.; \*) Adama is based on unpublished PMD data analysed by Public Eye/Unearthed.

**High-risk scenario might cost Syngenta USD 12.3 billion in Discounted Cash Flow value.** From here on, the calculation of revenue at risk is the next step. In a high-risk scenario, Syngenta Group's global revenues in plant protection might be affected (losing all HHPs sales), leading to a USD 6,686 million impact on revenues and a USD 1,229 million impact on EBITDA (see Table 5). These revenue and EBITDA impact are separately calculated for Syngenta AG and Adama business units with their own EBITDA margins. The DCF (Discounted Cash Flow) value at risk is calculated on USD 12,289 million (based on 7% discount rate, no growth).

**In a low-risk scenario, only Syngenta's revenues from the most hazardous substances would be affected, leading to a USD 6.3 billion value impact (DCF basis).** These are HHPs sold by Syngenta that were banned in the EU explicitly to protect human health and the environment and listed in the EU PIC regulation<sup>29</sup> governing the international trade with hazardous chemicals. Hazards posed by those pesticides are well established and the chemicals are increasingly disapproved by regulators outside the EU. These pesticides will fall under the planned EU trade restrictions for banned pesticides: the EU is likely to both ban the import of food products made with these pesticides and stop exporting them. Syngenta AG's PMD sales of HHPs that are included in the EU PIC list totalled USD 643.4 million. This can be re-calculated (taking into account the size of the sample) to 18.9% of Syngenta AG's Crop protection revenue in 2018. For Adama the number is 24.6%.

The USD 3,560 million revenue at risk is 20% of Syngenta's plant protection revenues. This 20% is roughly similar to a 15% number in remarks by Mark Davis of the Centre of Pesticide Suicide Prevention. He guided in a webinar that HHPs represent 10-15% of all chemicals used in agriculture and that 85% to 90% of pesticides will remain to be sold due to intensive lobbying by the plant protection industry.<sup>30</sup> It should be noted, that these percentages are apples and pears as Mark Davis mentioned numbers, while calculations in the current report refer to values. However, both emphasize a market access risk for Syngenta Group.

**Table 5 Syngenta Group: revenue and EBITDA at risk from HHPs**

USD million	Syngenta* plant protection	Adama plant protection	Total Syngenta Group
<b>Syngenta plant global protection revenues (2021) – High risk scenario</b>	13,170.0	4,351.0	17,521.0
HHPs % (2018)	39.2%	35.0%	38.2%
HHPs 2021 revenue estimate	5,162.6	1,522.9	6,685.5
EBITDA margin (%), 2021	20.5%	11.2%	
EBITDA at risk	1,058.3	170.6	1,228.9
DCF value at risk	10,583.4	1,705.6	12,289.0
<b>2021 plant protection revenues of HHP's sales included in the EU PIC list– Low risk scenario</b>			
% of global sales	18.9%	24.6%	20.3%
HHPs 2021 revenue estimate	2,498.1	1,070.3	3,559.5
EBITDA at risk	510.3	119.9	630.2
DCF value at risk	5,102.7	1,198.8	6,301.5

Source: Profundo, based on Syngenta Group IPO prospectus document, Syngenta AG publications, Adama financials; \*) Syngenta AG



## 2.2 Stranded asset risk

As Syngenta Group might see up to 38.2% of its plant protection revenues at risk, the company might also be confronted with stranded assets in its tangible fixed assets as well its intangible fixed assets. Due to the risk of losing a part of its revenues (see section 2.1), fixed assets (plants, production lines) might need to be closed and/or intangible assets (client lists, paid goodwill for acquisition) might have a valuation on the balance sheet that is too high. Thus, Syngenta might be forced to write down, or impair, some of its assets. As the company does not give segmental information on assets, the percentage of the impairment charge is based on the revenue percentage of the affected HHPs in Syngenta Group's total revenues 2021 of USD 28.2 billion.

Value at risk is calculated for a low-risk scenario (EU PIC list) as well as for a high risk scenario (global HHPs revenues affected). Syngenta could face stranded assets amounting to USD 2,478 million to USD 4,654 million (Table 6).

**Table 6 Syngenta Group: estimated stranded assets**

USD million	Low-risk	High-risk
% of plant protection revenues at risk	20.3%	38.2%
% of total revenues at risk = A	12.6%	23.7%
Fixed assets total (2020)	4,766	4,766
Intangible assets total (2020)	14,866	14,866
Total (2020)	19,632	19,632
% of assets at risk (A)	12.6%	23.7%
Stranded assets	2,478	4,654

Source: Profundo, based on Syngenta Group IPO prospectus document

## 2.3 Financing risk: holders of debt and future shareholders might hesitate

Syngenta Group faces a financing risk value of between USD 200 million and USD 799 million. Higher interest rates could affect pre-tax profit by 1.3% to 5.2%. This is based on 2020 financial data (2021 data are not completely available) showing that Syngenta Group had a net-debt of USD 7,897 million and an effective interest rate of 8.4%. Table 7 assumes 0.25% higher interest rates with debt-owners becoming more cautious. Due to their own ESG policies, various financial institutions might face reputation risk and could lower their exposure to the pesticide sector. This might lead to slightly higher interest rates (scenario A). If ESG grows further, globally, and debt-owners get even more reluctant, the assumption is that the effective interest rate might increase by 1.0%-point (scenario B) or even more.

**Table 7 Syngenta: financing risk**

USD million	2020/21 Base	Scenario A	Scenario B
Net-debt	7,987		
Net interest payment	671		
Interest rate	8.40%		
<b>Additional interest rate</b>	0%	0.25%	1.00%
New interest rate	8.40%	8.65%	9.40%
Interest costs	671	691	751

USD million	2020/21 Base	Scenario A	Scenario B
Pre-tax profit impact	0	-20	-80
Pre-tax profit	1,543	1,523	1,463
% change		-1.3%	-5.2%
DCF Financing Risk		-200	-799

Source: Profundo, based on Syngenta Group IPO prospectus document.

## 2.4 Healthcare risk and water treatment costs of pesticides use

**Over a period of 2021 to 2030, Syngenta Group is building up a liability of responsibility for direct attributable health and water treatment costs of an accumulated USD 7 to 14 billion.** Pesticides provide many benefits by killing agricultural pests and diseases. However, they also lead to health impacts to humans and water pollution. A comprehensive review of unintentional acute pesticide poisoning recently found that 44% of the global farm workforce is acutely poisoned by pesticides every year, with South (East) Asia (54-65%) and Africa (21-84%) most affected, mainly through HHPs.<sup>31</sup> Pesticides entail several types of costs, including internal costs due to the purchase and the application of pesticides, and various other costs due to the impact of treatments on human health and the environment. Four categories of costs can be distinguished:

- Regulatory costs
- Human health costs
- Environmental costs
- Defensive expenditures

**Those costs are either internal to the market but hidden to the users, or external to the market and most often paid by a third parties (government, people who get ill). There are some costs that are born by companies, often the outcome of a court case.** In 2012, Syngenta settled a US lawsuit agreeing to pay USD105 million to compensate public water providers for the cost of removing atrazine from the drinking water to ensure residues are kept below the legal limit.<sup>32</sup> Atrazine is a top-selling Syngenta HHP that is very persistent in water and banned in the EU due to ground water contamination. In the US, numerous lawsuits were filed against the main glyphosate seller Bayer, alleging that the herbicide caused cancer. Several jury verdicts have already awarded plaintiffs almost USD 2.5 billion. Bayer has taken a provision of USD 4.5 billion to set up a program to deal with further claims.<sup>33</sup> Note that Syngenta also sells glyphosate as one of its top HHPs. Finally, Syngenta is facing hundreds of Paraquat lawsuits in the USA as the weedkiller can be associated with the development of Parkinson's disease among farmers who used it.<sup>34</sup>

Based on 61 papers published between 1980 and 2016 and 30 dataset, Bourget and Guillemaud collected the following outcomes which could be relevant for a risk value calculation.<sup>35</sup>

**Table 8 Internal and external costs of pesticides\***

USD billion	Annually low-end	Annually high-end	Comment
Regulatory costs	4.0	<i>If all regulations were followed</i> 22.0	USA. In the 2000s
Health costs	1.5	<i>Including fatalities</i> 15.0	2005, USA
Environmental	8.0		1992, USA

USD billion	Annually low-end	Annually high-end	Comment
Defensive costs - organic food expenditure	6.4		2012, Global
Overall hidden costs	0.0054 - 13.6		Range from 5.4 million in 1996 in Niger to 13.6 bn in USA in 1992
USA		39.5	End 80s, early 90s
Benefit/cost ratio			Might have easily fallen below 1x

Source: Profundo, based on Bourget, Guillemaud in "The hidden and external costs of pesticide use", online: <https://hal.archives-ouvertes.fr/hal-01303109/document>; \*) comment: studies are based on past incidents. Many countries have forbidden the use of certain products.

Le Basic (Bureau d'Analyse Sociétale d'Intérêt Collectif) built on this report and applied the concept of 'societal costs', which are costs due to human activities (of production and/or consumption) transferred to society. Le Basic calculated the annual costs related to the use of pesticides and distinguished three societal costs categories for the EU:

- Societal costs attributable to pesticides uses (€ 2.3 billion): regulatory costs, drinking-water treatment, treatment of occupational diseases among agricultural workforce, VAT reductions, company subsidies, and GHG emission costs.
- Societal costs partly attributable to pesticides uses (€ 105.9 billion): public aid for agriculture, treatment of diseases in general population, measures to protect biodiversity, and palliative measures for water treatment.
- Non-calculable societal costs: public research, loss of human life, environmental and health effects from waste burning, consumption of bottled water (out of fear for pesticides), damage to ecosystem services, national action plans for insects, national action plans for sustainable use of pesticides.

**To calculate the societal costs that can be attributable to Syngenta Group, the study from Le Basic can be best applied as this study distinguishes costs directly attributable to pesticides including with regard to occupational disease (diseases hurting the farmers).** The to-pesticides-directly attributable costs (€ 2.3 billion) were 2.5X higher than the by Le Basic calculated profits before taxes and depreciation (€ 940 million in 2017).<sup>36</sup>

**Table 9 Le Basic: various societal costs/public expenditures directly related to pesticides in EU**

Regulation	€ billion
Treatment of drinking water	1.3
Treatment of occupational diseases	0.4
Subsidies to manufacturers	0.001
Regulation	0.007
Reduction in VAT	0.4
GHG	0.2
Total	2.31

Source: Le Basic, [https://lebasic.com/wp-content/uploads/2021/11/Pesticides-a-model-thats-costing-us-dearly\\_EN-Synthesis.pdf](https://lebasic.com/wp-content/uploads/2021/11/Pesticides-a-model-thats-costing-us-dearly_EN-Synthesis.pdf)

These EU costs calculations (of water treatment and treatment of occupational risk) can be applied to other countries in the world. High-income and low-income countries should be distinguished. In high-income countries, a better regulatory and legal environment enables governments to pass on societal costs to the pesticide companies, while in lower-income countries these mechanisms do not always work. Of pesticides revenues of the top-5 pesticides' producers, Le Basic indicates that at least 50% is generated in low-income countries (Profundo: for Syngenta Group, nearly 55% of plant protection revenues are from outside North America and Europe). **If globally, the costs for treatment of drinking water and treatment of occupational health costs directly related to pesticide use would be passed to the industry, the risk would be USD 6.0 billion. This would be a high-risk scenario; in a low-risk scenario only the EU and USA government and society would be able to pass on these costs to the industry and thus the total would be USD 3.0 billion.** Note that the health risk from further pesticide growth in the rest of the world is material with 9.3X more people living outside EU/USA.

**Table 10 Estimate of annual global health costs pesticides + treatment drinking water**

USD billion (1€ = 1 USD)	EU	USA	Ratio World x (EU + USA)**	RoW***	Total
Treatment of drinking water	1.3	1.0*	1X	2.3	4.6
Treatment of occupational diseases	0.4	0.3****	1X	0.7	1.4
Total health and drink water costs	1.7	1.3		3.0	6.0
Population	447	331	9.3X	7,202	7,980

Source: Profundo, \*) based on Le Basic's EU estimate, translated to per inhabitant; \*\*) ratio RoW 1X based on geographical revenue division; \*\*\*) RoW outcome = Ratio x (EU + USA) for drinking water, respectively Ratio x (average EU and USA) for diseases; Wikipedia, Worldometer; \*\*\*\*) data of Table 8 have not been used, as Le Basic data are more relevant.

Based on its 24% pesticide market share, Syngenta's annual externalized and attributable health costs and water treatment costs can be calculated at USD 1.4 billion. These externalized costs exceed the 2020 net profit (USD 1,16 billion) of Syngenta Group (see Table 11).

Assuming the company might have solved the problems in 2031, 10 years of externalized costs lead to USD 14.4 billion. In case only EU and USA would be able to pass on those costs, a low-risk scenario would be 50% of this, or USD 7.2 billion. Annual costs would be 720 million. This is on top of potential liabilities from sales before 2021.

**Table 11 Syngenta's share of direct attributable health and water treatment costs**

USD billion	Worldwide costs	Syngenta's annual share	Syngenta's liability 2021-2030 (10 years)
Syngenta market share global pesticides		24%	
Treatment of drinking water	4.6	1.1	11.0
Treatment of occupational diseases	1.4	0.3	3.4
Total health and drink water costs, global (High-risk)	6.0	1.4	14.4
Total health and drink water costs, EU/USA (Low-risk)	3.0	0.7	7.2

Source: Profundo

Relative to the intended IPO value (market capitalisation and enterprise value), the societal costs seem high in a high-end scenario. They are 32% of the intended market capitalisation, and 22% of the enterprise value.

**Table 12 Syngenta's health/water cost liability – High-end scenario**

USD million	Value	Liability as % of market/EV value
Health/water liability		14,400
Intended market capitalisation	45,000.0	32%
Intended enterprise value	66,365.0	22%

Source: Profundo

## 2.5 Biodiversity and climate damage risk: a hidden carbon bomb

**In addition to the profit & loss risks related to pesticides, like market access, higher financing costs and direct health and water treatment costs, Syngenta Group also faces financial risks associated with environmental/biodiversity and climate risks.** While the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and other organizations have been active in valuing the impact of, for instance, pesticides, the bee-loss, and declining pollination, there is currently not a common language on valuing this for companies. A 2021 study concluded that 5-8% of global crop production would be lost without pollination services and that the value of a proper pollination would be USD 235–577 billion annually. Because of its market share of 24% of the global pesticide production one could say that the Syngenta would be responsible for a large part of lost revenues. Many of Syngenta's HHPs are bee-harming and some are top-selling products for the company, and it already felt the impact of lawsuits.<sup>37</sup>

Regarding climate change, the acceptance of responsibility for climate damage is clearly increasing. This is because there is zero scientific doubt about the relation between GHG emissions and climate change, and many companies report on their GHG emissions. Moreover, the carbon cost methodology is widely seen as a proxy for climate damage costs<sup>38</sup>. This section 2.5 will calculate a climate damage cost and liability for Syngenta Group as a whole, so including the fertilizer revenues in China.

### 2.5.1 Syngenta's GHG targets could raise various questions

**The current Syngenta AG GHG targets do not cover the whole group, and will need to be extended to the whole group in a planned 2023 update. Also, the update should include a 2040 or 2050 net-zero target.** Current GHG targets do cover the Syngenta AG activities, which are 66% of the Syngenta Group. The Syngenta AG unit has the following targets:

- Reduction of scope 1, 2 and 3 emissions of Syngenta Crop Protection and Seeds by 50% in 2030 versus a base in 2016, measured through carbon intensity (carbon emissions per unit of activity or sales). Based on added value (scope 1 and 2 directly under control of the company), the target is a reduction in carbon intensity of 68%. This is validated by the Science Based Targets initiative (SBTi).
- Syngenta AG looks to compensation plans: in 2020, the carbon benefit potential on farmland associated with Syngenta's soil conservation and biodiversity enhancement projects was 1.95 million ton CO<sub>2</sub>e in 2020<sup>39</sup> and 3.04 million ton in 2021.<sup>40</sup>

Syngenta adds in its Good Growth Plan Progress Report 2021 that it has started to transition the ESG reporting to the whole Syngenta Group. It expects to publish its first Group ESG report in 2023.<sup>41</sup> **Although Syngenta AG says the target is validated by SBTi, investors should be alert:**

- The current targets do not apply (yet) to a large part of the Chinese activities, including fertilizers. The non-Syngenta AG activities are 34% of the business.
- Section 2.5.3 will reveal large scope 3 emissions from non-Syngenta AG activities. The requirements of SBTi about scope 3 reporting is that for companies with scope 3 emissions that are at least 40% of total emissions (scope 1, 2, and 3), at least 67% of scope 3 emissions must also be covered. The Chinese fertilizer activities have high emissions so that total scope 3 is >40% of Syngenta Group emissions. In the 2023 update extended to the whole Group, the communicated scope 3 emissions will probably become much higher.
- The current targets for the Syngenta AG are only for 2030, and lack a target for 2040 or 2050.
- For 2030, the company focuses on 'intensity', which implies emissions relative to/as percentage of revenues. Syngenta lacks an absolute target.

### 2.5.2 Syngenta's defensive arguments on its emissions

**Syngenta emphasizes its emission reduction credentials, but they lack transparency.** Syngenta defends its Syngenta AG (crop protection and seeds business) emissions with the argument that a 2010 study from Stanford University had 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<sup>42</sup> of up to 161 gigatons of carbon (GtC), the equivalent of 590 GtCO<sub>2</sub>e, between 1961 and 2005.<sup>43</sup>

Syngenta mentions in its IPO document that in the context of the urgent challenges facing the world, agriculture is an important cause that is increasingly depleting global freshwater reserves, and agriculture-related GHG have been 23% of total global GHG emissions; agriculture also suffers from the consequences of climate change, and desertification is causing arable land of continuous loss. However, Syngenta says that China has the challenge to improve agricultural efficiency as it has to feed 20% of global population with only 7% of global arable land. Syngenta wants to contribute to innovations leading to soil health, biological products, input reduction which will effectively reduce carbon emissions from agricultural production.<sup>44</sup> Syngenta guides it is not inactive to address emission reduction, through its branded Enogen Corn which improves feed conversion efficiency and reduces carbon emissions, developing more efficient and high-protein soybean seeds, and supporting farmers to reduce agricultural carbon emissions.

There is no transparency on how effective these measures are to reduce Syngenta's footprint.

### 2.5.3 Size of emissions: potentially large in Syngenta Group China through fertilizers

**The Syngenta Group will have had more emissions than Syngenta AG due to its fertilizer business, but reporting lacks transparency.** Syngenta currently reports scope 1, 2 and 3 emissions amounting to 9.8 million ton CO<sub>2</sub>-eq in 2021. However, these data lack the Syngenta Group China, including fertilizer sales, and Adama activities.

**Table 13 Syngenta's own reporting on scope 1, 2 and 3 emissions for Syngenta AG**

Million ton (Oct-Sep)	2019	2020	2021
Scope 1, 2	0.9	0.8	0.7
Scope 3	NA	9.0	9.1
Total		9.7	9.8

Source: Syngenta AG, ESG Report 2021



In 2020, China generated 20.3% of the Syngenta Group revenues (based on the IPO prospectus; the English result publication<sup>45</sup> indicates 21.1%: data on Syngenta Group lack consistency), and in 2021 24.1% (prospectus does not give 2021 data). Of the 2020 group revenues (prospectus), 13.6% came from crop nutrition (fertilizers), and this is probably completely generated in the Chinese activities, according to the IPO prospectus. Therefore, 67% (13.6%-point of 20.3%) of the Chinese activities consist of fertilizer business (USD 2.98 billion in 2020).

In a fact sheet of Syngenta China, the company said that it had 300 million ton of high-quality phosphate rock resources, and an annual operating scale of 12 million ton in fertilizer. The fertilizer distribution channels cover 95% of the arable land, nationwide. The company calls itself the leading fertilizer supplier and distribution service provider in China.<sup>46</sup> Syngenta confirmed to us that “...Syngenta Group China, mainly through Sinofert, is the biggest crop nutrition company in China in terms of market share, according to prospectus released in 2021. Syngenta Group had 10% market share in China’s crop nutrition market in 2020, while the No 2 company had a market share of 8%.”

The prospectus indicates that Syngenta is a large distributor of basic fertilizers, compound fertilizers and specialty fertilizers, in total 10 million ton in 2020, which is slightly less than the above-mentioned 12 million ton. This is much more than its own production (see Table 14). While for most of Syngenta’s Chinese activities the number of processing sites are mentioned in the prospectus, this is not transparent for fertilizers. This supports the view that Syngenta China is a re-seller of fertilizer, of which production probably occurs at the parent company.

**Table 14 Syngenta Group: fertilizer volume, emissions and carbon costs**

	2018	2019	2020
Basic fertilizer:			
Sales (million ton)	7.8	7.6	7.9
Production (million ton)	0.8	0.6	0.07
Other:			
Sales (million ton)	2.44	2.34	2.49
Production (million ton)	0.987	0.92	1.06
Total fertilizer sales (million ton)	10.24	9.94	10.39
CO <sub>2</sub> -eq/GHG emissions per ton	7.0	7.0	7.0
Total GHG emissions (million ton)	71.9	69.8	72.9

Source: Syngenta Group IPO prospectus

Sinofert, which seems to be 53% owned by Syngenta Group and would be at the heart of its Chinese operations, says to have sold in 2021 1.69 million tons of potash fertilizer, 2.97 million tons of nitrogen fertilizer, 2.94 million ton of phosphate fertilizer, 2.1 million tons compound fertilizer and 0.1 million ton special fertilizers.<sup>47</sup>

**There are various types of fertilizers, like synthetic nitrogen, phosphorus, potash-based and compound fertilizers.** Synthetic nitrogen fertilizers are widely used in conventional agriculture as a crop nutrition, to boost productivity. Their production and use lead to emissions of carbon dioxide (CO<sub>2</sub>) and methane as well as nitrous oxide. The last one is a highly potent greenhouse gas that has 265 times more global warming potential than carbon dioxide.<sup>48</sup> In a recent study, the total annual CO<sub>2</sub>-eq emissions of the global synthetic nitrogen fertilizer supply chain are estimated at 1,250 million tons. This is 2.4% of global emissions. Of this 1,250 million tons, 40% come from the production (fossil fuels, methane) and transport and 60% from the moment that the product is used on the soil.<sup>49</sup> While China has a 26.1% share in the total global use of nitrogen fertilizers, Chinese emissions contribute a higher percentage of 28.1% which is due to the use of coal as its main energy source.

**Table 15 Synthetic fertilizers and emissions**

2018	Consumption (mln ton)	Emissions industry + transport (mln ton)	Emissions agriculture (mln ton)	Total emissions (mln ton)	Emission (ton) per ton fertilizer
Global	107.7	468	777	1,245	11.6
China	28.1	172	178	350	12.5
% China	26.1%	36.8%	22.9%	28.1%	

Source: Nature.com, <https://www.nature.com/articles/s41598-022-18773-w>

**The above-mentioned 11.6 -12.5 ton GHG emission per ton fertilizer (Table 15) is a high outcome compared to several studies as well as what companies report. Other fertilizers, like phosphorous and potash, have different and often lower emissions.** Yara, a European fertilizer company, reports for 2021 scope 1, 2 and 3 emissions of 75.4 million tons, with in total 38.6 million tons fertilizer products delivered, of which 20.9 million tons produced by the company<sup>50</sup>. This is 2.0 tons GHG per ton product delivered and 3.6 ton GHG per ton produced. The International Fertilizer Society gives emissions for various products. For Chinese based products there are variations from 2.84 to 11.2 tons GHG per ton product<sup>51</sup>. Sinofert reports a different set of incomplete emissions. The 12.5 ton CO<sub>2</sub>-eq/ton product emission number is an outcome of a study for the most emission-intensive nitrogen product. Sinofert has also lower emitting fertilizers. On the safe side, the average of the 2.84-11.2 (=7.0) tons GHG per ton Chinese fertilizer mentioned in this paragraph will be applied in this study. This is above the 3.6 ton GHG/ton of Yara, which has a gas based fertilizer product. Gas has a lower emission footprint than coal.

#### **2.5.4 Syngenta Group's carbon and climate costs in two scenarios – high and low**

**A low-risk scenario will lead to a USD 13.9 billion climate cost liability.** In 2020, Syngenta AG (the Swiss part) spent USD 0.5 million on Swiss ETS rights.<sup>52</sup> In a low-risk scenario, we could assume that in a few years' time due to more intense climate regulation, the whole scope 1, 2 and 3 emissions of this unit with a strong European basis might be charged with a carbon emission price of USD 80 ton per ton CO<sub>2</sub>, a price level seen in the EU during 2022. In a low-risk scenario the assumption is that China would not charge Syngenta's Chinese business unity for carbon costs.

In this low-risk scenario, the annual impact would be USD 784 million, or 17.0% of 2021 EBITDA (USD 4,600 million/USD 4.6 billion). For the value impact, the period of 2016-2050 is considered as since the agreements of 2015 climate conference in Paris, every nation state and company should be aware of the need for reductions in GHG emissions. The value impact for 2016-2050 would be a total of USD 13,884 million. The current carbon cost of USD 80 per ton is multiplied with Syngenta's scope 1 and 2 carbon emissions from 2016 to 2050 (see Table 18). **Although Syngenta has not yet promised to be net-zero in 2050, the assumption for this calculation is that the group will set this target (in the 2023 update) like many other companies.**

**Table 16 Syngenta Group: Low-risk scenario for emissions and carbon costs**

	Annual impact	Impact 2016-2050
Scope 1, 2 and 3 GHG emissions Syngenta AG (million ton)	10	174*
Carbon costs per ton (USD)	80	80
Total costs (USD million)	784	
Total value (USD million)		13,884
EBITDA 2021 respectively intended enterprise value	4,600	66,365
% of EBITDA respectively value	17.0%	20.9%

Source: Profundo and Syngenta Group IPO prospectus; \*) see last column Table 18.

**In a high-risk scenario, the climate damage liability might grow to USD 127.4 billion.** The assumption is that also all other global scope 3 emissions could be charged and/or that China could introduce a carbon price of USD 80 per ton GHG emissions. Another argument for a high-risk scenario is that international investors will start to calculate with scope 3 emissions as a proxy for climate damage costs. As Syngenta Group China seems mainly a re-seller of fertilizer, emissions are for a large part scope 3 (from suppliers).

If Syngenta would be committed to net-zero in 2050, and the decline would be linear, the total climate damage costs from 2016 to 2050 can be calculated (Syngenta should have been aware of the dangers of climate change since 2015, the Paris Agreements). In Table 17, the 2030 target of Syngenta AG on carbon intensity has been translated into an absolute number.

**Table 17 Syngenta Group: total GHG emissions and targets**

Million ton	2018	2019	2020	2021	2030	2050
Scope 1, 2, 3 Syngenta AG	NA	NA	9.7	9.8	4.9	0
China fertilizers	71.9	69.8	72.9	NA	NA	0
Rest of China and other	NA	NA	NA	NA	NA	0
Total GHG emissions and targets	NA	NA	82.7	NA	NA	0

Source: Syngenta AG, Profundo

As a next step, the GHG emissions for 2016-2050 are calculated (assuming net-zero in 2050). The outcome is that until 2050, Syngenta is building up a climate liability value of USD 127,414 million (USD 127.4 billion), with 74% to occur in the period 2022-2050 (Table 18).

**Table 18 Syngenta Group: total climate/GHG liability**

Million ton	2016-2021	2022-2030	2030-2050	2022-2050	Total 2016-2050
<b>GHG emissions:</b>					
Scope 1, 2, 3 Syngenta AG	58.4	66.1	49.0	115.1	173.5
China fertilizers	361.5			1,057.6	1,419.1
Rest of China and other	NA	NA	NA		NA
Total GHG emissions and targets	419.9			1,172.7	1,592.7
% of total	26.4%			73.6%	100.0%
Carbon costs per ton (USD)	80			80	80
Carbon liability (USD million)	33,595.8			93,818.0	127,413.8

Source: Profundo; Non-available (NA) fields are filled with the first available numbers from Table 17. For instance, the 9.7 million ton Scope 1, 2 and 3 emissions for Syngenta AG in 2020 are also used for 2016-2019. Finally, for the intermediate periods between the last available data and targets, a linear methodology has been used.

As percentage of intended (based on IPO value) market capitalisation and enterprise value by Syngenta Group, the total climate damage in 2016-2050 would be nearly three-fold the intended market capitalisation and nearly two-fold the intended enterprise value.

**Table 19 Syngenta Group: Climate/GHG liability versus intended IPO value**

USD million	2016-2021	2022-2050	Total 2016-2050
Carbon liability	33,595.8	93,818.0	127,413.8
Intended market capitalisation	45,000.0	45,000.0	45,000.0
Intended enterprise value	66,365.0	66,365.0	66,365.0
Carbon liability as % of:			
Intended market capitalisation	74.7%	208.5%	283.1%
Intended enterprise value	50.6%	141.4%	192.0%

Source: Profundo, Syngenta IPO prospectus

**In a zero-emission scenario for 2050, Syngenta has the opportunity to make a gradual switch to biofertilizers and organic fertilizers.** This could represent a new market opportunity expected to be worth a total USD 45 billion in 2030. Companies producing conventional fertilizers could leverage their competitive advantage in production to capture a proportion of this new market.<sup>53</sup> In the current study, the impact of such a switch on margins, profits and emissions is not calculated.

## 2.6 Reputation risk – no additional negative or positive impact

**Syngenta might face reputation risk on top of regulatory, litigation, health and climate damage risks.** Stakeholders in the company will become less loyal, leading to reluctance to accept a job, or avoid buying Syngenta's products, and reluctance to finance the company. Most of them have been covered already. Reputation value loss can be reflected in the value of a company on the stock market.

A company could also face a reputation opportunity. If a company reacts proactively on discussions on hazardous products, pollution, and climate damage, the company could earn a reputation premium. Proactive behaviour could generate a 20% share price improvement, while a string of negative sustainability events followed by a lagging or no reaction might impact the value by a negative 30%.<sup>54</sup>

**Syngenta Group is not an FMCG, and currently it is not listed on the market.** Reputation risk/opportunity is a relatively important risk category for Fast-Moving Consumer Goods companies (FMCGs), as these have a large reputation value related to their brands value and the other risks (stranded assets, market access, regulatory, financing, climate) are relatively small versus their market value. Regarding Syngenta, as the outcomes for the other risks categories do already cover many elements of reputation risk, the additional negative impact of reputation risk on the total value risk is limited. There is also no reason to calculate a positive reputation opportunity for Syngenta.

## 2.7 Summary of financial risks

**The sum of all the risks analysed in preceding sections, results into a total EBITDA risk of between USD 2,154 million in a low-risk scenario, and USD 13,886 million in a high-risk scenario.** This is respectively 47% and 302% of Syngenta Group’s 2021 EBITDA. While in a low-risk scenario all cost categories contribute a material percentage of the total, in a high-risk scenario the climate damage cost is dominant.

**When these annual costs items are valued based on discounted cash flow, the values are respectively USD 27.6 billion for a low-risk scenario and USD 154.9 billion in a high-risk scenario.** These values are corrected for double-counting and for no-cash impact (here stranded assets). In a low-risk scenario, the value of risks is a large part of the intended IPO equity value and enterprise value. In the high-risk scenario both the total equity value and enterprise value could be wiped out under the assumption that the current market valuation do not discount any of the risks calculated.

**Table 20 Summary of risks**

USD million	Low-risk scenario		High-risk scenario	
	Profit (EBITDA) impact	Value impact	Profit (EBITDA) impact	Value impact
Market access risk	630	6,302	1,229	12,289
Stranded asset risk		2,478		4,651
Financing risk	20	200	80	799
Health care and water pollution costs	720	7,200	1,440	14,400
Climate damage costs	784	13,884	11,137	127,414
Reputation risk		NA		NA
Double-counting/no cash impact	0	-2,478	0	-4,654
<b>Total risk</b>	<b>2,154</b>	<b>27,585</b>	<b>13,886</b>	<b>154,902</b>
Data:				
Syngenta Group EBITDA 2021	4,600		4,600	
Syngenta Group IPO equity value		45,000		45,000
Syngenta Group IPO enterprise value		66,365		66,365

USD million	Low-risk scenario		High-risk scenario	
	Profit (EBITDA) impact	Value impact	Profit (EBITDA) impact	Value impact
Total risk as % of:				
Syngenta Group EBITDA 2021	46.8%		301.9%	
Syngenta Group IPO equity value		61.3%		344.2%
Syngenta Group IPO enterprise value		41.6%		233.4%

Source: Profundo. No double-counting is subtracted as reputation risk is not applied. There is no share price value to which Profundo's analysis can be applied, and the reputation risk is partly covered in the other categories

## 2.8 Syngenta's ESG ratings: these include only 66% of activities

**Syngenta's scores by all rating agencies do only focus on the activities of Syngenta AG (66% of revenues), the European based plant protection and seed activities. This means that Adama and Syngenta Group China, which include the fertilizer distribution activities with a high climate damage component, are not included. This means that a rating for the whole group might be weaker than the current mixed outcomes for the AG entity.**

Syngenta AG's 2021 ESG score by Sustainalytics of 28.3 out of 100 means a "medium risk" in the system of the rating agency. Syngenta AG is ranked as number 130 of the 482 chemical companies, and as number 8,285 of the total list of 14,667 companies. This is in the lower half. Sustainalytics' ESG Risk Ratings measure a company's exposure to industry-specific material ESG risks and how well a company is managing those risks. BASF also has a score of 28.3 (#131 in chemicals respectively 8,312 of total). Bayer is ranked as a pharmaceutical and has a position of 9,244 in the total. In the well-recognized Carbon Disclosure Project (CDP), BASF has a similar A-ranking as Syngenta AG, and Bayer has no input delivered.

Another rating system is developed by World Benchmark Alliance's Food and Agriculture Benchmark, focusing on system changes based on progress versus SDGs (Sustainable Development Goals). In this group, Syngenta AG ranks 28 out of 350 with a score of 42.2 out of 100. The company scores below Unilever (position 1, score 71.7), but broadly in line with Bayer (42.2 points, 26<sup>th</sup> position) and BASF (40.9; 33<sup>th</sup>).<sup>55</sup>

**Table 21 Syngenta AG ESG ratings and rankings**

Rating agency	Current	Context	Previous
Sustainalytics 2022	Medium (28.3 out of 100)	#130 (previous 91) of 482 (481) in chemical industry #8285 out of total 14,667 companies covered	Medium (27.2)
CDP Climate 2021	A-	High (A) to low (D-)	A-
World Benchmark Alliance: Food and Agriculture Benchmark	28th (42.2 out of 100)	of 350 companies	n/a

Source: Sustainalytics, CDP, World Benchmark Alliance



**With so many ESG scores around, CSRHub<sup>56</sup> created a consensus of rating agencies scores.** Based on 30 sources for Syngenta AG, it has an ESG outcome of 52% compared with 30,984 companies. This means 48% of the companies have better ratings.

Overall, there are large differences in ESG ratings and how the separate Environmental, Social, and Governance factors are weighted. Environment is seen as best/easiest<sup>57</sup> to measure, largely because the most dominant item now is decarbonization. Social factors are much more difficult to measure, as is Governance, which contains the elements like "no bribery" and "checks-and-balances in management."

**Differences in rating methodologies also lead to differences in presentation of the scores.** MSCI ESG Research Rating assigns firms ESG scores ranging from best (AAA) to worst (CCC). S&P Global ESG Rank yields a total sustainability percentile rating derived from the total sustainability score and the S&P Global ESG Rank. Sustainalytics Industry Rank provides a percentile rating to companies based on their ESG total score relative to their industry peers. The CDP Score reflects a company's degree of commitment to climate change mitigation, adaptation, and transparency. At CDP, the firms rated are only those that respond on time to a questionnaire sent in response to an investor request. The Institutional Shareholder Services (ISS) Governance Score assesses a company's governance practices, while the Bloomberg ESG Disclosure Score is a proprietary rating derived from the extent of a company's ESG disclosure.

A paper from MIT<sup>58</sup> concluded that ESG ratings from different providers vary substantially. In a dataset, the correlations between the ratings range from 0.38 to 0.71 (which is low), based on ESG ratings from six different rating providers: KLD, Sustainalytics, Moody's ESG (previously Vigeo-Eiris), S&P Global (previously RobecoSAM), Refinitiv (previously Asset4), and MSCI. The main conclusions were as follows: 1) it is difficult to evaluate the ESG performance of a company (or a fund), 2) the differences in ratings do impact the incentive for ESG improvement, and 3) the share prices do not reflect ESG performance.

**The EU is striving for standardization to support green financing.** Since the correlations between the various ESG ratings methodologies are low, the consequential risk is that ESG is seen as a marketing instrument by companies and asset managers. This creates doubts about the usefulness for insights about financial value creation. Therefore, the EU has begun a public consultation aimed at strengthening the reliability and comparability of ESG ratings, which could help grow the sustainable finance market.

## 2.9 Peer group valuation and Syngenta Group's financial risks

**Based on the crucial valuation multiples price/earnings (P/E), Enterprise Value/Earnings Before Interest, Tax, Depreciation and Amortisation (EV/EBITDA) and EV/Revenues, Syngenta Group is valued materially above the benchmark group.** The planned IPO of USD 45 billion for a 20% stake implies that Syngenta Group's P/E ratio for the 2021 year would be 106% higher than its peer group (which includes the valuation of Syngenta Groups' subsidiary Adama, still partly listed). The EV/EBITDA ratio would be 86% higher than the peer group average, and the EV/Revenue ratio 74% higher. Probably the IPO value intention is based on the valuation of Corteva and the 'scarcity' argument: only a minority stake is available for Chinese investors.

This intended valuation for Syngenta Group occurs in the context of a lower EBITDA margin than the average of the industry, as well as the current analysis of the financials risks which are material.

**Table 22 Syngenta Group: valuation of the peer/benchmark group**

29/09/2022	P/E 2021*	P/E 2022	P/E 2023	EV/EBITDA 2021	EV/EBITDA 2022	EV/Revenue 2021/22	EBITDA adjusted margin 2021
Bayer	7.7	6.1	5.9	5.5	6.2	1.73	28.4%

<b>29/09/2022</b>	<b>P/E 2021*</b>	<b>P/E 2022</b>	<b>P/E 2023</b>	<b>EV/EBITDA 2021</b>	<b>EV/EBITDA 2022</b>	<b>EV/Revenue 2021/22</b>	<b>EBITDA adjusted margin 2021</b>
BASF	5.4	6.0	7.6	4.8	5.3	0.68	14.3%
Corteva	39.2	22.9	18.9	12.6	13.7	2.50	26.5%
Adama	23.1	18.6	15.1	8.1	6.4	0.50	11.2%
Average	18.9	13.4	11.9	7.8	7.9	135.3%	20.1%
Syngenta	38.8			14.4		2.35	16.3%
% premium vs peer group	106%			86%		74%	

Source: Profundo, based on Bloomberg and Syngenta Group IPO prospectus document. \*) Current price or equity value/earnings 2021

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