Financial Report 2019

syngenta

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Selected Financial Data

Syngenta has prepared the consolidated financial statements in US dollars ($) and in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS). Financial figures are presented in millions of dollars ($m) except where otherwise stated. The basis of preparation of the consolidated financial statements and the key accounting policies are discussed in Note 1 and in Notes 2 and 27, respectively, to the consolidated financial statements.

The selected financial highlights information in accordance with IFRS presented below has been extracted from the consolidated financial statements of Syngenta. Investors should read the entire consolidated financial statements and not rely on the summarized information. The information includes the results of operations and the net assets of Land.db Enterprises Inc. from October 15, 2015, FarmShots, Inc. from February 1, 2018, Nidera Seeds Holdings B.V. from February 6, 2018, Abbott & Cobb from March 30, 2018, Strider Desenvolvimento de Software Ltda from April 30, 2018, Icepage Limited from July 26, 2018, The Cropio Group from August 30, 2019 and full consolidation of Sanbei Seeds Co. Ltd. From November 1, 2019.

Financial highlights

	Year ended December 31,				
($m)	**2019**	2018[1]	2017	2016	2015
Amounts in accordance with IFRS					
Income statement data:					
Sales	**13,582**	13,569	12,649	12,790	13,411
Cost of goods sold	**(7,383)**	(7,288)	(6,491)	(6,507)	(7,042)
Gross profit	**6,199**	6,281	6,158	6,283	6,369
Operating expenses	**(4,272)**	(4,151)	(6,104)	(4,636)	(4,528)
Operating income	**1,927**	2,130	54	1,647	1,841
Income/(loss) before taxes	**1,503**	1,731	(116)	1,361	1,592
Net income/(loss)	**1,456**	1,451	(96)	1,181	1,344
Net income/(loss) attributable to Syngenta AG shareholders	**1,450**	1,447	(98)	1,178	1,339
Cash flow data:					
Cash flow from operating activities	**838**	1,367	1,839	1,807	1,190
Cash flow used for investing activities	**(248)**	(1,641)	(577)	(521)	(462)
Cash flow from (used for) financing activities	**(204)**	(350)	(303)	(1,134)	(1,188)
Capital expenditure on tangible fixed assets	**(521)**	(448)	(394)	(425)	(453)
Balance sheet data:					
Current assets less current liabilities	**3,799**	3,828	5,341	5,089	5,537
Total assets	**22,397**	21,182	20,333	19,068	18,977
Total non-current liabilities	**(9,181)**	(9,073)	(5,615)	(4,830)	(4,896)
Total liabilities	**(17,926)**	(17,038)	(12,333)	(11,097)	(10,557)
Share capital	**(6)**	(6)	(6)	(6)	(6)
Total shareholders' equity	**(4,397)**	(4,118)	(7,976)	(7,950)	(8,401)

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

All activities were in respect of continuing operations.

Introduction

The following discussion includes forward-looking statements subject to risks and uncertainty. See “Forward-looking statements” at the beginning of this document. This discussion also includes non-GAAP financial data in addition to GAAP results. See Appendix A to this section for a reconciliation of this data and explanation of the reasons for presenting such data.

Constant exchange rates

Approximately 44 percent of Syngenta’s sales and 57 percent of Syngenta’s costs in 2019 were denominated in currencies other than US dollars. Therefore, Syngenta’s results for the period covered by the review were significantly impacted by movements in exchange rates. Sales in 2019 were flat to 2018 on a reported basis, 4 percent higher when calculated at constant rates of exchange. The Company therefore provides analysis of results calculated at constant exchange rates (“CER”) and also actual results to allow an assessment of performance before and after taking account of currency fluctuations. To present CER information, current period results for entities reporting in currencies other than US dollars are converted into US dollars at the prior period’s exchange rates, rather than the exchange rates for this year. An example of this calculation is included in Appendix A of this section.

Overview

Syngenta is a world leading agribusiness operating in the crop protection, seeds, professional solutions and flowers markets. Crop protection chemicals include herbicides, insecticides, fungicides and seed treatments to control weeds, insects and diseases in crops, and are essential inputs enabling growers around the world to improve agricultural productivity and food quality. In Seeds, Syngenta operates in the high value commercial sectors of field crops (including corn, oilseeds, and cereals) and vegetables. The Professional Solutions business provides turf and landscape and professional pest management products, and the flowers business provides flower seeds, cuttings and young plants to professional growers and consumers.

Syngenta’s results are affected, both positively and negatively, by, among other factors: general economic conditions; weather conditions, which can influence the demand for certain products over the course of a season and the quantity and cost of seeds supply; commodity crop prices; and exchange rate fluctuations. Government measures, such as subsidies or rules regulating the use of agricultural products, genetically modified seeds, or areas allowed to be planted with certain crops, also can have an impact on Syngenta’s industry. Syngenta’s results are also affected by the growing importance of biotechnology to agriculture and the use of genetically modified crops. In future years, climate change may have both positive and negative impacts on Syngenta’s results. Climate change may make growing certain crops more or less viable in different geographic areas, but is not likely to reduce overall demand for food and feed. Syngenta currently sells and is developing products to improve the water productivity of plants and increase tolerance to drought and heat. Legislation may be enacted in the future that limits carbon dioxide emissions in the manufacture of Syngenta’s products or increases the costs associated with such emissions. Syngenta works actively to make its production operations more energy efficient and to reduce the rate of carbon dioxide emissions per unit of sales revenue.

Syngenta operates globally to capitalize on its technology and marketing base. Syngenta’s largest market in 2019 was Latin America, which represented approximately 31 percent of consolidated sales (2018: 27 percent), followed by Europe, Africa and the Middle East at 29 percent (2018: 31 percent), North America at 25 percent (2018: 27 percent), and Asia Pacific at 15 percent (2018: 15 percent). Markets for agricultural products in Europe, Africa and the Middle East and North America are seasonal resulting in both sales and operating profit for Syngenta in these markets being weighted towards the first half of the calendar year, which largely reflects the northern hemisphere planting and growing cycle. Latin America has its main selling season in the second half of the year due to its location in the southern hemisphere. Asia Pacific sales and operating profit are more uniform throughout the year.

Syngenta’s most significant manufacturing and research and development sites are located in Switzerland, the United Kingdom (“UK”), the United States of America (“USA” or “US”) and China. Syngenta has major research centers focused on identifying new active ingredients in Stein, Switzerland and Jealott’s Hill, UK. Syngenta’s primary center for agricultural genomics and biotechnology research is in the USA.

References in this document to market share estimates are based where possible on global agrochemical and biotechnology industry information provided by a third party or on information published by major competitors and are supplemented by Syngenta marketing staff estimates.

The consolidated financial statements are presented in US dollars, as this is the major currency in which revenues are denominated. However, significant, but differing proportions of Syngenta’s revenues, costs, assets and liabilities are denominated in currencies other than US dollars. Approximately 13 percent of sales in 2019 were denominated in Euros, while a significant proportion of costs for research and development, administration, general overhead and manufacturing were denominated in Swiss francs and British pounds sterling (approximately 12 percent in total). Sales in Swiss francs and British pounds sterling together made up approximately 2 percent of total sales. Marketing and distribution costs are more closely linked to the currency split of the sales. As a result, operating profit in US dollars can be significantly affected by movements in exchange rates, in particular movements of the Swiss franc, British pound sterling, Euro and Brazilian real, relative to the US dollar, and the relative impact on operating profit may differ from that on sales. Sales in emerging markets are over 57 percent of Syngenta’s total sales. Where it is not commercially disadvantageous, Syngenta sets sales prices in these markets in US dollars, particularly in parts of Latin America and the CIS. However, in many emerging territories Syngenta sells in the local currency of the countries in the territory and as a result has a long exposure to multiple emerging market currencies. The effects of currency fluctuations within any one year have been reduced by risk management strategies such as hedging and the aforementioned US dollar sales pricing. For further information on these strategies please refer to Note 25 of the consolidated financial statements.

The consolidated financial statements are based upon Syngenta’s accounting policies and, where necessary, the results of management estimations. Syngenta believes that the critical accounting policies and estimations underpinning the financial statements are in the areas of (i) royalty and license income, (ii) capitalization of development costs, (iii) impairment, (iv) acquisition accounting, (v) adjustments to revenue and trade receivables, (vi) deferred tax assets (vii) uncertain tax positions (viii) seeds inventory valuation and allowances, (ix) environmental provisions and (x) defined benefit post-employment benefits. These policies are described in more detail in Notes 2 and 27 to the consolidated financial statements.

Summary of results

Net income in 2019 attributable to Syngenta's shareholder was $1,450 million, including $291 million from capitalizing development costs as described in Note 2 to the consolidated financial statements. Net income in 2018 was $1,447 million.

Sales in 2019 were broadly flat with the prior year, but 4 percent higher at constant exchange rates, with a 2 percent increase in sales volumes and a further 2 percent increase in local currency sales prices. Currency movements reduced reported sales by 4 percent, particularly from a weaker Euro and Brazilian real, though the impact in Brazil was mitigated by local currency sales price increases in Crop Protection products. Sales of Crop Protection products increased by 1 percent, 5 percent at constant exchange rates. Seeds sales were 4 percent lower than 2018, 1 percent at constant exchange rates. Sales of both Crop Protection and Seeds products were adversely impacted by severely adverse weather conditions in the United States in the key first half selling season. Seeds sales in 2019 included income received under change of control clauses of approximately $80 million (2018: $100 million). Local currency sales prices were 3 percent higher in Crop Protection, with the recovery of adverse currency impacts in Brazil and lower rebates and discounts in the United States. Local currency sales prices in Seeds were broadly flat with the previous year.

Operating income as a percentage of sales was 14.2 percent in 2019. Excluding restructuring costs, operating income as a percentage of sales increased by 1.4 percentage points in 2019 compared with 2018, with 2.5 percentage points coming from the capitalized development costs; otherwise margins were lower largely due to reduced gross profit margins in Crop Protection products. Including costs reported in cost of goods sold, restructuring and impairment charges were $337 million in 2019 before related taxation, compared to a net gain of $51 million in 2018, which included divestment gains relating particularly to mandated divestments totaling $365 million. Currency exchange rate impacts reduced operating income by approximately $53 million, despite lower losses on related hedges in 2019 compared to 2018, but the currency impact was more than offset by the higher local currency sales prices achieved in emerging markets, particularly Brazil.

Excluding cash paid to settle the US AGRISURE VIPTERA® litigation of $1,110 million in 2019 ($450 million in 2018) and the impact of capitalizing development costs of $344 million, cash flow from operating activities was $213 million lower with increased interest paid following the $4.75 billion bond issue in April 2018 and higher other financial payments including settlement of bond hedges on a maturing Swiss bond. Change in net working capital was an inflow of $27 million, compared to an outflow of $69 million in 2018 as higher inventories were more than offset by a lower build up in trade receivables, including an increase in the factoring of receivables without recourse. Cash flow used for investing activities in 2019 was $248 million including $344 million capitalized development costs and net of $522 million of proceeds from disposals of property, plant and equipment. 2018 included business acquisitions of $1,375 million, particularly that of Nidera and was net of proceeds from disposals of intangible assets of $456 million and proceeds from disposals of property, plant and equipment of $127 million. Cash flow used for financing activities was $146 million lower than in 2018. In 2019, term loans of $500 million were raised from two banks, while a CHF350 million bond matured. In 2018, $4.75 billion of bonds of various maturities were issued, with a dividend of $4.71 billion subsequently paid to Syngenta's shareholder. In 2019 Syngenta paid a dividend of $900 million.

Sales of Crop Protection products were 1 percent higher, 5 percent higher at constant exchange rates. Strong sales volume growth in Brazil more than offset the impact of a very adverse weather delaying the season and reduced crop area in the United States; higher local currency sales prices in Brazil offset the impact of a weaker real, while net prices were higher in the US partly reflecting reduced rebates and discounts. Seeds sales were 4 percent lower, 1 percent at constant exchange rates; adjusted for lower income under change of control agreements, sales at constant exchange rates were broadly flat, with growth in Asia and Latin America offsetting weaker field crop and Vegetables sales in the United States.

Sales of Flowers products were flat, 4 percent at constant exchange rates.

Gross profit margin was approximately 0.7 percentage points lower including the reversal of purchase accounting inventory step ups; excluding this, gross profit margin was approximately 0.9 percentage points lower due largely to increased raw material costs in Crop Protection.

Marketing and distribution expenses increased by 1 percent, 6 percent at constant exchange rates, with increased charges for doubtful receivables, particularly in Eastern Europe.

Research and development expense in 2019 was net of capitalized development costs of $344 million, $151 million for Crop Protection, $182 million Seeds and $11 million Flowers. Excluding this, Research and development expense was 4 percent lower than 2018, flat at constant exchange rates, with cost inflation offsetting productivity improvements.

General and administrative, including divestment gains and restructuring and impairment, the components of which are described under the Restructuring and impairment heading below, increased by $491 million compared with 2018. General and administrative excluding restructuring and impairment was $71 million higher than 2018, including foreign exchange hedging losses of $38 million compared with losses of $67 million in 2018. Excluding currency effects, General and administrative excluding restructuring and impairment was $149 million higher, with increased litigation expenses and higher spend on the development of digital platforms and capabilities.

Divestment gains in 2018 included $365 million related to the mandated Crop Protection product divestments and $69 million gains on the disposal of property, plant and equipment, largely relating to the sale and leaseback of part of Syngenta's Basel HQ. Divestment gains in 2019 include the mandated divestment of some Crop Protection products in India required following the acquisition of Syngenta AG by ChemChina and the sale and leaseback of the remaining buildings at Syngenta's Basel HQ. Other Restructuring and impairment expenses in 2019, including $1 million reported in cost of goods sold, were $365 million (2018: $314 million, including $33 million reported in cost of goods sold). Cash restructuring costs were $179 million (2018: $201 million) and non-cash impairments (including reversal of inventory step ups reported in cost of goods sold) were $186 million (2018: $113 million). These costs are described in more detail in Note 6 to the consolidated financial statements.

Financial expense, net was $24 million higher than 2018. As noted above, bonds totaling $4.75 billion were issued in 2018, with the proceeds largely paid as a dividend to Syngenta's shareholder, largely driving the $88 million increase in interest expense; this was partly offset by lower currency losses, net. The tax rate was 3 percent, compared to 16 percent in 2018 due to a one off deferred tax revaluation gain following Swiss tax reform in 2019.

Acquisitions, divestments and other significant transactions

2019
On January 3, 2019, Syngenta divested certain crop protection products in India, pursuant to commitments given to the Indian antitrust authority Competition Commission of India relating to ChemChina's acquisition of Syngenta.

On January 3, 2019, Syngenta completed the sale and leaseback transaction for the remaining buildings and land at its Basel site which were not disposed of in 2018.

On June 6, 2019, Syngenta acquired the cyclamen flowers business of Varinova, a specialized breeding company based in the Netherlands, in order to enhance Syngenta's portfolio and breeding pipeline.

On August 30, 2019, Syngenta acquired The Cropio Group, an agricultural technology company with a primary focus in Eastern Europe. The Cropio platform is an equipment-integrated, end-to-end software solution that provides imaging, recordkeeping, and equipment tracking. Significant opportunities for collaboration across Syngenta's other digital agriculture platforms are expected.

On November 1, 2019, Syngenta obtained control of Sanbei Seeds Co. Ltd., China, a former associate in which Syngenta has held a 49 percent equity ownership since 2008, as a result of the transactions and agreements involving China National Agrochemical Corporation (CNAC), a ChemChina group subsidiary.

During December 2019, as part of Syngenta's real estate portfolio monetization strategy, Syngenta completed a sale-and-leaseback transaction for two of its global research and development sites.

2018
On February 1, 2018, Syngenta acquired 100% of the stock of FarmShots, Inc., a US-based innovator of high-resolution satellite imagery that detects plant health by analyzing absorbed light from field images. This platform with proprietary processing and multiple plant health index capabilities provides actionable insights normally acquired by walking through a farm and visually inspecting plants. It enables growers to reduce field scouting by as much as 90 percent and helps them focus on areas of need.

On February 6, 2018, Syngenta completed the acquisition of the global seeds business of Nidera from Nidera B.V., a subsidiary of COFCO International Ltd., by acquiring 100% of the issued shares of Nidera Seeds Holding B.V..

On March 30, 2018, Syngenta purchased the business of Abbott & Cobb, a US-based privately owned global breeder and seller of proprietary hybrid vegetable seeds.

On April 30, 2018, Syngenta purchased 100% of the quotas of Strider Desenvolvimento de Software Ltda ("Strider"), a company incorporated in Brazil. Strider is an important participant in the Latin American digital agriculture market. Strider develops and markets technological tools and digital farm management solutions.

On July 26, 2018 Syngenta acquired 100% of the shares of Icepage Limited, the holding company of Floranova, a respected UK based flower and home garden vegetable seeds breeder.

On December 31, 2018, Syngenta completed a sale and leaseback transaction for two buildings at its Basel headquarters site.

Restructuring programs

In February 2014, Syngenta announced the AOL restructuring program to drive further improvement in operating income margins and accelerate delivery of operational leverage. The program targeted an improvement in profitability as a percentage of sales over the period up to 2018 from a reduction in the ratios of cost of goods sold, marketing and distribution, research and development and general and administrative expenses to sales. The program included plans to further improve efficiency in customer facing operations, research and development and production and to enable an improvement in the ratio of trade working capital to sales. The cash cost of the restructuring program was forecast at approximately $900 million, including the costs of implementing new systems, but excluding related capital expenditures, and significant benefits began to be realized in 2015. Cumulative costs incurred for the program through December 31, 2018 totaled $929 million and cumulative spending totaled $891 million. In 2019, specific initiatives started under the AOL restructuring program were completed and restructuring activity focused on continuing efforts to simplify the management structures and various new productivity initiatives to improve information systems and drive operating efficiencies. Restructuring costs are discussed in further detail in section 6 "Restructuring" below.

Results of operations

2019 compared with 2018

Sales commentary

Syngenta's consolidated sales for 2019 were $13,582 million, compared with $13,569 million in 2018, flat year on year. At constant exchange rates sales increased by 4 percent. The analysis by product line is as follows:

($m, except change %)			Change				
Product line	**2019**	2018[1]	Volume %	Local price %	CER %	Currency %	Actual %
Selective herbicides	**2,619**	2,826	-7	+3	-4	-3	-7
Non-selective herbicides	**919**	863	+10	+1	+11	-5	+6
Fungicides	**3,269**	3,128	+7	+2	+9	-4	+5
Insecticides	**2,065**	1,909	+11	+2	+13	-5	+8
Seedcare	**1,128**	1,133	+2	+1	+3	-3	-
Professional solutions	**470**	504	-6	+1	-5	-2	-7
Other crop protection	**118**	91	-49	+75	+26	+3	+29
Total Crop Protection	**10,588**	10,454	+2	+3	+5	-4	+1
Corn and soybean	**1,632**	1,679	-	-1	-1	-2	-3
Diverse field crops	**619**	659	-	-1	-1	-5	-6
Vegetables	**621**	653	-4	+3	-1	-4	-5
Other seeds	**12**	18	-35	-	-35	-	-35
Flowers	**199**	200	+4	-	+4	-4	-
Total Seeds	**3,083**	3,209	-1	-	-1	-3	-4
Elimination[2]	**(89)**	(94)	n/a	n/a	n/a	n/a	n/a
Total Syngenta	**13,582**	13,569	+2	+2	+4	-4	-

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements
2 Crop Protection sales to Seeds

Crop Protection
Selective herbicides: major brands ACURON®, AXIAL®, CALLISTO® family, DUAL MAGNUM®, BICEP II MAGNUM™, FUSILADE® MAX, FLEX®, TOPIK®

Sales decreased by 7 percent, 4 percent at constant exchange rates, with a reduced planted area and severe adverse weather conditions in the US delaying the season. Lower sales in parts of Eastern Europe reflected difficult credit conditions.

Non-selective herbicides: major brands GRAMOXONE®, TOUCHDOWN®

Sales increased by 6 percent, 11 percent at constant exchange rates, with strong volume growth in Brazil and Argentina more than offsetting the impact of import restrictions in Thailand.

Fungicides: major brands ALTO®, AMISTAR®, BONTIMA®, BRAVO®, ELATUS™, MIRAVIS™ (based on ADEPIDYN™ fungicide) , MODDUS®, REVUS®, RIDOMIL GOLD®, SCORE®, SEGURIS®, UNIX®

Fungicide sales increased by 5 percent, 9 percent at constant exchange rates; volume growth across Latin America, but particularly in Brazil, where ELATUS™ volumes nearly doubled, was partly offset by the impact of channel de-stocking in Vietnam. Local currency sales price increases in Brazil fully offset the adverse exchange rate impact.

Insecticides: major brands ACTARA®, DURIVO®, FORCE®, KARATE®, PROCLAIM®, VERTIMEC®

Sales were 8 percent higher, 13 percent at constant exchange rates. Sales volume growth was driven by India and Brazil, supplemented by growth of DURIVO® in Russia.

Seedcare: major brands AVICTA®, CRUISER®, DIVIDEND®, CELEST®/MAXIM®, VIBRANCE™

Seedcare sales were flat, 3 percent higher at constant exchange rates, with strong growth in CRUISER® and FORTENZA® in Brazil offset by the loss of sales to a key account in the US following the industry consolidation.

Seeds
Corn and soybean: major brands AGRISURE™, GOLDEN HARVEST®, NK®

Sales decreased by 3 percent, 1 percent at constant exchange rates. Strong growth in corn sales in Brazil, India and ASEAN was offset by lower soybean sales in the US, where the market was impacted by reduced acreage and extreme adverse weather.

Diverse field crops: major brands NK® oilseeds

Sales reduced by 6 percent, 1 percent at constant exchange rates; a one-off royalty on cotton and further sunflower seed growth in Europe were slightly more than offset by a reduction on area planted with sunflower in Argentina and 2018 including some final sales of sugarbeet after the divestment of the business.

Vegetables: major brands ROGERS™, S&G®

Vegetables sales decreased by 5 percent, 1 percent at constant exchange rates. Sales volumes were lower in North and Latin America with a lower area planted with sweet corn, high inventories at distributors and the impact of US tariffs on sales in Mexico. Lower sales in China also reflected a reduced area planted with sweet corn. Local currency sales prices were 3 percent higher, with increases achieved in India and to offset a weaker lira in Turkey.

Flowers: major brands GOLDSMITH® SEEDS, YODER®, SYNGENTA® FLOWER

Flowers sales were flat, 4 percent higher at constant exchange rates, with volume growth in Europe North and North America.

Sales by region for Crop Protection are as follows:

($m, except change %)			Change				
Region	2019	2018[1]	Volume %	Local price %	CER %	Currency %	Actual %
Europe, Africa and Middle East	**2,665**	2,871	-2	+1	-1	-6	-7
North America	**2,534**	2,621	-8	+6	-2	-1	-3
Latin America	**3,450**	2,975	+17	+4	+21	-5	+16
Asia Pacific	**1,385**	1,404	-	+2	+2	-3	-1
China	**300**	291	+9	-1	+8	-5	+3
Other	**254**	292	n/a	n/a	n/a	n/a	n/a
Total Crop Protection	**10,588**	10,454	+2	+3	+5	-4	+1

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

Europe, Africa and Middle East
Sales decreased by 7 percent, 1 percent at constant exchange rates. Strong early season sales in North Europe and increased demand for use on cereals was offset by the deregistration of some older products within the EU and difficult credit conditions in parts of East Europe.

North America
Sales decreased by 3 percent, 2 percent at constant exchange rates. Demand was impacted by extreme weather, which severely delayed the start of the season and a reduced planted area. Seedcare sales were reduced by the loss of a key account following the industry consolidation.

Latin America
Sales increased by 16 percent, 21 percent at constant exchange rates. The strong positive momentum from 2018 in Brazil continued through 2019 supplemented by successful penetration of the mid-tier of the market. Overall, we estimate to have gained share in the growing market. Local currency sales price increases significantly offset the impact of real weakness in Brazil. Sales volume growth was also achieved in Argentina.

Asia Pacific
Sales decreased by 1 percent, but were 2 percent higher at constant exchange rates. Strong sales volume growth in India and Pakistan was offset by the impact of drought in Australia and Indonesia and reduction in sales to a key distributor in Vietnam to reduce channel inventories. Sales of paraquat in Thailand were impacted by an import restriction.

China
Sales were 3 percent higher, 8 percent at constant exchange rates. In a growing market, Syngenta achieved estimated share growth with successful in licensing and from leveraging Sinochem routes to market.

Sales by region for Seeds are as follows:

($m, except change %)			Change				
Region	2019	2018[1]	Volume %	Local price %	CER %	Currency %	Actual %
Europe, Africa and Middle East	**982**	1,038	+1	-	+1	-6	-5
North America	**738**	929	-20	-1	-21	-	-21
Latin America	**741**	737	+3	+1	+4	-3	+1
Asia Pacific	**308**	269	+12	+5	+17	-2	+15
China	**35**	28	+31	-3	+28	-2	+26
Other	**80**	8	n/a	n/a	n/a	n/a	n/a
Flowers	**199**	200	+4	-	+4	-4	-
Total Seeds	**3,083**	3,209	-1	-	-1	-3	-4

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

Europe, Africa and Middle East
Sales decreased by 5 percent, but were 1 percent higher at constant exchange rates. Growth in consumption on sunflower seeds in East Europe was partly masked by a sell-in to the distribution channels in 2018. Sales volumes in parts of East Europe were also impacted by difficult credit conditions.

North America
Sales decreased by 21 percent, also at constant exchange rates. 2018 included royalties of $100 million under a change of control clause. Extreme weather and reduced acreage reduced market demand, while adverse ENOGEN® fuel economics and some product performance issues with parts of the corn range also reduced volumes.

Latin America
Sales increased by 1 percent, 4 percent at constant exchange rates. Growth in the "Safrinha" season in Brazil and increased royalty income increased corn revenues and together with a full year of Nidera ownership more than offset the impact of a reduction in area planted with sunflower in Argentina.

Asia Pacific
Sales increased by 15 percent, 17 percent higher at constant exchange rates. Strong positive momentum in corn seed sales continued in ASEAN, driven by new product launches.

China
Sales were 26 percent higher, 28 percent at constant exchange rates, including the consolidation of the previous Sanbei joint venture after gaining control late in the year.

Operating income

Variances in the tables below reflect the profit impact of changes year on year. For example, an increase of sales or a decrease in costs is a positive variance and a decrease in sales or increase in costs is a negative variance.

Syngenta Operating Income	Total as reported under IFRS		Change		Restructuring and impairment		Before restructuring and impairment[2]		Change before restructuring and impairment[2]	
($m, except change %)	**2019**	2018[1]	**Actual %**	CER %	**2019**	2018	**2019**	2018[1]	Actual %	CER %
Sales	**13,582**	13,569	**-**	+4%	**-**	-	**13,582**	13,569	**-**	+4%
Cost of goods sold	**(7,383)**	(7,288)	**-1%**	-4%	**(1)**	(33)	**(7,382)**	(7,255)	**-2%**	-5%
Gross profit	**6,199**	6,281	**-1%**	+3%	**(1)**	(33)	**6,200**	6,314	**-2%**	+3%
as a percentage of sales	**46%**	46%					**46%**	47%		
Marketing and distribution	**(2,239)**	(2,216)	**-1%**	-6%	**-**	-	**(2,239)**	(2,216)	**-1%**	-6%
Research and development	**(918)**	(1,311)	**+30%**	+27%	**-**	-	**(918)**	(1,311)	**+30%**	+27%
General and administrative:										
Restructuring	**(364)**	(281)	**-30%**	-34%	**(364)**	(281)	**-**	-	**n/a**	n/a
Gains on divestments and disposals of non-current assets	**134**	434	**-69%**	-68%	**28**	365	**106**	69	**+55%**	+57%
Other general and administrative	**(885)**	(777)	**-14%**	-24%	**-**	-	**(885)**	(777)	**-14%**	-24%
Operating income	**1,927**	2,130	**-10%**	-7%	**(337)**	51	**2,264**	2,079	**+9%**	+11%
as a percentage of sales	**14%**	16%					**17%**	15%		

In 2019, Syngenta adopted revisions to its segment reporting to reflect changes in management structure. There are five operating segments, which have been aggregated into the global Crop Protection segment, including Professional Solutions (previously known as Controls) and the global Seeds segment, including Field Crops, Vegetables and Flowers. In 2018 there were six operating segments, which were aggregated into four geographic regions, which included the Crop Protection, Seeds and Controls businesses, and All other segments.

The segment information for the year ended December 31, 2018 has been restated in accordance with the new management structure.

Operating Income

($m, except change %)	**2019**	2018[1]	Change %
Crop Protection	**2,199**	2,022	+9%
Seeds	**65**	57	+13%
Total segments	**2,264**	2,079	+9%
Restructuring	**(337)**	51	n/a
Syngenta	**1,927**	2,130	-10%

The two tables above do not represent income statements prepared under IFRS. Please refer to the information reported in the consolidated financial statements.

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

2 Amounts before restructuring and impairment are non-GAAP measures. Please refer to Appendix A of the Operating and Financial Review for a more detailed description

Overall Syngenta operating income

Operating income in 2019 was 10 percent lower than 2018. 2019 included $344 million capitalized development costs (2018: $nil) and $28 million gains on mandated divestment of various Crop Protection products required following the acquisition of Syngenta by ChemChina (2018: $365 million). Excluding the divestment gains, restructuring charges including reversals of inventory step-ups charged to cost of goods sold were $51 million higher in 2019 and included higher impairment charges. Restructuring and impairment charges are described in more detail in Note 6 to the consolidated financial statements. Including the gains on mandated divestments, restructuring costs were $337 million in 2019 compared to a net income of $51 million in 2018. Excluding restructuring, operating income in 2019 was $2,264 million, $1,920 million excluding capitalized development costs, compared to $2,079 million in 2018. Sales were flat with 2018, though 4 percent higher at constant exchange rates. Excluding restructuring, gross profit margin was 0.9 percentage points lower, largely due higher raw material costs in Crop Protection. Higher other operating costs, excluding restructuring, cost of goods sold and capitalized development costs, reflected in an increase in charges for doubtful receivables, increased expenditure on digital programs and capabilities and higher litigation expenses. Currency exchange rate movements reduced 2019 operating profit by an estimated $53 million, including hedging losses of $38 million compared to $67 million in 2018.

For further discussion on Syngenta operating income, see Summary of results above.

Operating income by segment

Crop Protection	Total as reported under IFRS		Change	
($m, except change %)	2019	2018[1]	Actual %	CER %
Sales	**10,499**	10,360	**+1%**	+5%
Cost of goods sold	**(5,723)**	(5,515)	**-4%**	-6%
Gross profit	**4,776**	4,845	**-1%**	+4%
as a percentage of sales	**46%**	47%		
Marketing and distribution	**(1,503)**	(1,582)	**+5%**	-
Research and development	**(546)**	(747)	**+27%**	+24%
General and administrative:				
Gains on divestments and disposals of non-current assets	**88**	53	**+68%**	+70%
Other general and administrative	**(616)**	(547)	**-13%**	-24%
Operating income	**2,199**	2,022	**+9%**	+13%
as a percentage of sales	**21%**	20%		

This table does not represent an income statement prepared under IFRS. Please refer to the segmental information reported in Note 4 to the consolidated financial statements.

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

Reported sales were 1% higher than 2018, 5 percent at constant exchange rates with sales volumes 2 percent higher and local currency prices averaging 3 percent higher. See the Sales commentary section above for further information on sales.

Gross profit margin was 1 percentage point lower with approximately $45 million due to increased oil prices and approximately $100 million due to an increase in raw material costs for many products sourced from China due to supply constraints. Oil prices impact on Syngenta's cost of goods sold with a time lag in the region of a year due to supply contracts and the inventory holding period, with the adverse impact on 2019 reflecting the increase in oil prices between 2017 and 2018.

Marketing and distribution costs were 5 percent lower, but flat at constant exchange rates, with an increase in charges for provisions for doubtful receivables, particularly in Eastern Europe, offset by productivity gains and an overall reduction in the share of costs borne by Crop Protection in cases where Crop Protection and Seeds had shared sales and distribution resource.

Research and development costs were 27 percent lower, due partly to the capitalization of $151 million of internal product development costs. Capitalization commenced in 2019 as disclosed in Note 2. Excluding the amounts capitalized, costs were 7 percent lower than 2018, 3 percent at constant exchange rates.

Other general and administrative was 13 percent higher, 24 percent at constant exchange rates, including increased litigation expenses and higher costs of digital programs and capabilities.

Seeds	Total as reported under IFRS		Change	
($m, except change %)	**2019**	2018[1]	Actual %	CER %
Sales	**3,083**	3,209	**-4%**	-1%
Cost of goods sold	**(1,659)**	(1,740)	**+5%**	+1%
Gross profit	**1,424**	1,469	**-3%**	-
as a percentage of sales	**46%**	46%		
Marketing and distribution	**(736)**	(634)	**-16%**	-21%
Research and development	**(372)**	(564)	**+34%**	+30%
General and administrative:				
Gains on divestments and disposals of non-current assets	**18**	16	**+13%**	+15%
Other general and administrative	**(269)**	(230)	**-17%**	-26%
Operating income	**65**	57	**+13%**	-40%
as a percentage of sales	**2%**	2%		

This table does not represent an income statement prepared under IFRS. Please refer to the segmental information reported in Note 4 to the consolidated financial statements.

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

Sales were 4 percent lower in US dollars, 1 percent lower at constant exchange rates, with sales volumes 1 percent lower and flat local currency sales prices. See the Sales commentary section above for further information on Seeds sales. One-off royalty income under “change of control” agreements was approximately $80 million in 2019 compared to $100 million in 2018.

Gross profit margin was flat compared to 2018 at constant exchange rates.

Marketing and distribution costs were 16 percent higher in US dollars and 21 percent higher at constant exchange rates, with increased charges to provisions for doubtful receivables in Eastern Europe and higher spend on sales and “go-to-market” costs to support market share growth, including an increase in the share of costs borne by Seeds where Crop Protection and Seeds had shared sales and distribution resource.

Research and development expense was 34 percent lower, due to the capitalization of $193 million of internal product development costs. Capitalization commenced in 2019 as disclosed in Note 2. Excluding the amounts capitalized, costs were flat to 2018, approximately 4 percent higher at constant exchange rates.

General and administrative costs were 17 percent higher in 2019, 26 percent at constant exchange rates, with increased expenditure on IT and digital platforms and a higher share of costs where resources are shared with Crop Protection.

Defined Benefit Pensions

Defined benefit pension expense was $97 million in 2019 compared with $127 million in 2018. Syngenta expects 2020 defined benefit pension expense, excluding costs associated with restructuring, to be higher by a single digit percentage compared to the 2019 expense at constant exchange rates due to the impact of lower discount rates in 2019 that resulted in a slight deterioration in the funded status at the end of 2019. However, the final expense will be subject to the prevailing exchange rates in 2020.

Syngenta contributions to defined benefit pension plans were $128 million in 2019 compared with $241 million in 2018. These included early retirement contributions of $2 million in 2019 and $11 million in 2018 and 2018 lump sum payments that did not recur in 2019. In 2020, Syngenta expects contributions to defined benefit pension plans, excluding early retirement contributions associated with restructuring actions, to increase to approximately $160 million because of an additional $40m deficit reduction payment to be made to the UK Pension Plan before the end of 2020.

Restructuring and impairment

Restructuring and impairment charges for the years ended December 31, 2019 and 2018, broken down into the main restructuring initiatives, consist of the following:

($m)	2019	2018
Accelerating operational leverage programs:		
Cash costs	**61**	155
Non-cash costs	**-**	1
Acquisition, divestment and related costs:		
Other acquisition and related integration costs	**45**	46
Non-cash items	**9**	35
Other restructuring and impairment:		
Cash costs	**73**	-
Other non-current asset impairments	**177**	77
Total	**365**	314

In 2019, $1 million for the reversal of inventory step ups reported on acquisitions is presented within Cost of goods sold in the consolidated income statement (2018: $33 million). The other costs above for the years ended December 31, 2019 and 2018 are presented within Restructuring in the consolidated income statement.

In addition to the above, $28 million (2018: $365 million) of divestments gains were recognized on mandated product divestments as part of the anti-trust clearance of the ChemChina acquisition of Syngenta.

Analysis of restructuring costs

2019

Accelerating operational leverage and other productivity programs

Cash costs of $61 million, including $36 million of severance and pension charges, $12 million of consultancy and external services costs and $4 million for information systems projects, were incurred for the completion of projects started under the Accelerating Operational Leverage program and further productivity initiatives to simplify the layers of management, including at the global headquarters.

Acquisition, divestment and related costs

Cash costs for acquisition and related integration costs include $20 million for merger and acquisition projects and other transaction costs and $25 million for integration projects, particularly related to the Nidera acquisition completed in 2018. Non-cash costs include $8 million for the loss incurred to acquire control of Sanbei Seeds, previously an Associate, and $1 million for the reversal of inventory step ups reported on acquisitions.

Other restructuring

Cash costs consist of $39 million related to the closure of a manufacturing site in the USA announced in June 2019, including charges to provide for environmental remediation and severance, $24 million to provide for a seeds processing contract where forecast demand is less than minimum future commitments and $10 million of costs incurred to relocate the Seeds operations in the USA.

Other non-current asset impairments consist of $92 million for property, plant and equipment and $15 million for maintenance spares and other unusable inventories at the closing manufacturing site; $41 million for capitalized agreements related to a seed technology where future value is expected to be lower than previous projections due to increasing competition and a reduced market; $17 million for sites that are expected to be sold during 2020; $10 million for a licensing agreement that has been terminated, and $2 million of other small impairments.

2018

Accelerating operational leverage programs

Cash costs of $101 million, including $25 million for information systems projects, consisted of $35 million for initiatives to restructure marketing and commercial operations, $32 million for projects to improve the effectiveness of back office support, $23 million for Research and Development productivity projects, $8 million for activity to optimize production and supply and $3 million for project management. A further $54 million of severance and pension costs were incurred to simplify the layers of management, including at the global headquarters. Non-cash costs included tangible asset write-downs associated with the above projects.

Acquisition, divestment and related costs

A provision for $24 million was charged to the income statement for indirect tax exposures related to the Nidera acquisition. Other cash costs for acquisition and related integration costs included $12 million for merger and acquisition projects and other transaction costs and $10 million incurred for integration projects. Non-cash costs included $33 million for the reversal of inventory step ups reported on acquisitions and $2 million of inventory impairment provisions. Five acquisitions were completed during 2018 as further described in Note 3 to the consolidated financial statements.

Other restructuring

Other non-current asset impairments consisted of $70 million for an intangible asset impairment where further development of technologies held by Syngenta is not considered cost effective and activities have been suspended and $7 million for the impairment of a research collaboration agreement whose expected future benefit no longer supports its value.

Financial expense, net

Financial expense, net increased by $24 million in 2019 to $425 million. Net interest expense at $369 million was $89 million higher than 2018 due mainly to the $4,750 million of senior unsecured notes Syngenta issued during April 2018 with various maturities up to 30 years, the proceeds of which were largely paid as a dividend to Syngenta's shareholder, and higher average net debt following the acquisition of Nidera Seeds. Currency related financial expenses in 2019 of $26 million were $53 million lower than 2018 due to lower hedging costs following the change in the net Swiss franc exposure after the dividend.

Taxes

In 2019, Syngenta recorded net tax expenses of $47 million on a profit before taxes of $1,503 million, an effective tax rate of 3 percent. The 2019 effective rate reflects the effects of the Swiss tax reform. Syngenta's Swiss domestic statutory tax rate has changed due to the Swiss tax reform for some legal entities and ranges from 8 to 22 percent depending on the legal seat or qualification of the company.

In Basel-Stadt, the canton where Syngenta has its headquarters, the new ordinary effective tax rate is 13 percent in 2019 (2018: 22 percent). Certain intellectual property income is subject to tax at a reduced rate of 12 percent. As a result of these changes, Syngenta has revalued its Swiss deferred tax positions recording a $195 million favorable one-time impact (tax credit) within the income tax expense.

In 2018, Syngenta recorded net tax expenses of $ 280 million on a profit before taxes of $ 1,731 million (after the effects of the accounting policy changes and restatements described in Note 2 to the consolidated financial statements), an effective tax rate of 16 percent. A 1 percent rate change impact was seen in 2018 coming from the deferred tax accounting of US state taxes.

Income taxed at different rates increased the effective tax rate by 1 percent in 2019, compared with a decrease of 6 percent in 2018. The main reason for the difference of 7 percentage points is the different applicable tax rate as a starting point and a reduction in research and development expenses allocated to Switzerland in 2019 as Syngenta began to capitalize part of its development expenses as from January 1, 2019 as further described in Note 2 to the consolidated financial statements.

A 3 percent decrease in 2019 has been caused by non-tax-deductible expenditure and income not subject to tax. Changes to prior year income tax estimates and other tax items increased the tax rate by 4 percent in 2019.

Partial non-recognition of deferred taxes in the USA increased the tax rate by 3 percent whereas recognition of deferred tax assets in Argentina and a higher proportion of deferred tax assets in Brazil decreased the tax rate by 2 percent. In 2019, Syngenta was able to utilize previously unrecognized tax losses in the UK and Brazil. This lowered the tax rate by 1 percent.

The tax rate on restructuring and impairment was 21 percent in 2019. All charges are tax deductible and are mainly caused by expenses in the USA due to a production site closure. The tax rate on restructuring and impairment, including divestment gains, in 2018 was a negative tax rate of -23 percent, caused by the different mix of gains and losses included in the net income over the period and the varying tax treatments applied in different countries. Future rates applicable to restructuring and impairment will be dependent on the nature and size of the charges and may vary from year to year.

Net income for the period and other supplementary income data

Net income attributable to Syngenta shareholders in 2019 was $1,450 million, compared to $1,447 million in 2018. Excluding capitalized development costs and their related taxation, net income in 2019 was $1,159 million.

Sales in 2019 were flat with 2018 and operating income margin was 1.5 percentage points lower in 2019 than 2018 due to the divestment gains realized in 2018, described above. After the higher financial expense, income before taxes was 13 percent lower in 2019, 34 percent lower excluding the capitalized development costs. The 2018 tax rate was 16 percent, compared to 3 percent in 2019 as described above. After this lower tax rate, net income in 2019 was flat with 2018 and excluding the capitalized development costs was $288 million, 20 percent, lower.

After related taxation, restructuring and impairment expense was $330 million higher at $267 million in 2019 compared with income of $63 million in 2018, which reflected the gains on divesting various crop protection products as part of the anti-trust settlement.

Foreign operations and foreign currency transactions

Syngenta's subsidiaries use their local currency as their functional currency for accounting purposes except where the use of a different currency more fairly reflects their actual circumstances.

Syngenta operates worldwide and its business has grown significantly in emerging markets over the last years, with a broadening of the currency effects that need to be closely monitored. Syngenta regularly analyzes how currency fluctuations will impact its operating results and manages the impact with a combination of commercial actions, such as product pricing, and financial risk management strategies, such as hedging. Next to the Euro, the Swiss franc and the British pound, the Brazilian real gives rise to a major currency exposure due to the large size of Syngenta's business activities in Brazil. Sales prices to customers in Brazil largely are linked to the US dollar, which limits the impact of fluctuations in the US dollar/Brazilian real exchange rate. Similarly, Syngenta manages its currency exposure in Argentina and parts of the CIS, mainly Russia and particularly the Ukraine, by linking local currency sales prices to the US dollar to compensate for the fluctuations in sales value from the currency devaluation. During 2019, the Argentine peso devalued by 59 percent against the US dollar, while the Russian ruble appreciated by 11 percent and the Ukrainian hryvnia appreciated by 14 percent.

Syngenta regularly monitors receivables exposure in all countries in which it operates. In the Eurozone, Greece, Italy, Portugal and Spain have experienced weak macro-economic conditions since 2010. In Latin America, Argentina and Brazil have also been experiencing economic and financial difficulties and this has led to constraints in the availability of credit. In Brazil the collections performance improved substantially during 2018 and remained stable in 2019. In Argentina the economy has been hyperinflationary since the middle of 2018 putting pressure on liquidity and collections. In Venezuela, exchanging local currency into US dollars to pay for imported goods continues to be difficult.

The increase in gross trade receivables is mainly attributable to Argentina where declining collection performance is also reflected in a significantly increased provision for doubtful trade receivables. Receivables exposure from customers in Russia and the Ukraine increased during 2019, with 50 percent of 2019 sales in those countries having been collected as of December 31, 2019 compared with 57 percent of 2018 sales. The provision for doubtful trade receivables also increased for these countries.

Trade receivables past due for more than 180 days increased in all the above named countries, except Spain and Brazil where collections performance remained relatively stable compared to 2018.

The following table outlines for the above named countries the aggregate, gross trade receivables, those past due for more than 180 days and the related provision for doubtful receivables at December 31, 2019 and 2018.

($m)	**2019**	2018
Gross trade receivables	**2,616**	2,447
Past due for more than 180 days	**333**	305
Provision for doubtful trade receivables	**331**	259

At December 31, 2019, approximately 62 percent of Syngenta's cash and cash equivalents was held in US dollars, approximately 20 percent in Indian rupees, approximately 3 percent in Chinese renminbi and approximately 2 percent in Thai baht. No other individual currency made up more than 2 percent.

Liquidity and capital resources

Syngenta's principal source of liquidity is cash generated from operations.

Working capital fluctuations due to the seasonality of the business are supported by short-term funding available from a $2.5 billion Global Commercial Paper program and a $3 billion committed, revolving, multi-currency syndicated credit facility. Operating in a seasonal business, Syngenta typically obtains funds from its short-term facilities during the first half of the year to fund operations during the northern hemisphere growing season and repays these funds during the second half when receivables are collected. Longer-term capital resources include unsecured non-current bonds issued under a Euro Medium Term Note (EMTN) program, unsecured non-current Notes issued under a Note Purchase Agreement in the US Private Placement market and unsecured non-current bonds issued in the US public debt market. In April 2018, $ 4.75 billion of Rule 144/Regulation S under the U.S. Securities Act of 1933 notes were issued. In May 2018, Syngenta AG paid $4.71 billion of the proceeds of those notes to its shareholder as a dividend, allowing CNAC Saturn (NL) BV to pay back its outstanding acquisition debt.

See Capital markets and credit facilities for details of outstanding debt.

For information on Syngenta's funding and treasury policies and objectives in terms of the manner in which treasury activities are controlled, see Note 25 to the consolidated financial statements.

Syngenta reported cash and cash equivalents on December 31, 2019 and 2018 of $1,933 million and $1,563 million, respectively. At December 31, 2019 and 2018, Syngenta had current financial debt of $2,226 million and $925 million, respectively, and non-current financial debt of $7,329 million and $7,178 million, respectively.

Capital markets and credit facilities

Funds for Syngenta's working capital needs were available during the year from its $2.5 billion Global Commercial Paper program and a $3 billion committed, revolving, multi-currency syndicated credit facility, which was increased, extended and amended following the change of control related to the ChemChina takeover in May 2017. In 2019, the credit facility was extended by one year and will now mature in 2024. The amount drawn under the syndicated credit facility at December 31, 2019 was $nil (2018: $150 million). The average outstanding balance under the syndicated credit facility for the year 2019 was $32 million (2018: $564 million). The amount drawn under the Global Commercial Paper program at December 31, 2019 was $878 million (2018: $80 million). The average outstanding balance under the Global Commercial Paper program for the year 2019 was $1,292 million (2018: $570 million).

Absent major acquisitions, Syngenta targets maintaining an investment grade credit rating, as recognized by major third-party rating agencies, which it currently believes provides an optimal balance between financial flexibility and the cost of capital. At December 31, 2019, Syngenta's credit ratings were as follows: Fitch Ratings Ltd BBB/F-3; Standard & Poor's Rating Services BBB-/A-3; and Moody's Investors' Services Limited Ba2/NP (December 31, 2018: Fitch Ratings Ltd BBB/F-3; Standard & Poor's Rating Services BBB-/A-3; and Moody's Investors' Services Limited Ba2/NP). There are no material legal or economic restrictions on the ability of subsidiaries to transfer funds to the Company in the form of cash dividends except as disclosed in the consolidated cash flow statement.

The table below summarizes Syngenta's unsecured notes in issuance at December 31, 2019:

($m)	Issuance date	Carrying amount	Value at issue
3.698% US dollar bond 2020	April 2018	**750**	**750**
5.110% US dollar private placement 2020	December 2005	**38**	**38**
1.875% Eurobond 2021	March 2014	**560**	**689**
3.933% US dollar bond 2021	April 2018	**748**	**750**
3.125% US dollar bond 2022	March 2012	**511**	**500**
4.441% USD bond 2023	April 2018	**997**	**1,000**
1.625% CHF bond 2024	March 2014	**258**	**283**
4.892% USD bond 2025	April 2018	**747**	**750**
5.350% US dollar private placement 2025	December 2005	**55**	**55**
1.250% Eurobond 2027	March 2015	**557**	**559**
5.182% USD bond 2028	April 2018	**996**	**1,000**
2.125% CHF bond 2029	March 2014	**155**	**170**
5.590% US dollar private placement 2035	December 2005	**11**	**11**
4.375% US dollar bond 2042	March 2012	**248**	**250**
5.676% USD bond 2048	April 2018	**498**	**500**
Total		**7,129**	**7,305**

Other than refinancing future maturing bonds over the short to medium term, management is of the opinion that, absent a major business acquisition or a very significant deterioration in working capital or the rate of receivables collections from that currently expected, the funding available from the sources described above will be sufficient to satisfy Syngenta's working capital, capital expenditures and debt service requirements for the foreseeable future, including cash expenditures relating to restructuring programs. In the event of a major business acquisition, Syngenta would seek additional funding from capital markets or other sources. Syngenta regards as sufficiently remote the likelihood that a very significant deterioration in working capital or unexpected decline in the rate of receivables collections will occur as not to require the development of a detailed contingency funding plan.

Cash flow

The following table sets out certain information about cash flow for each of the periods indicated:

	Year ended December 31,	
($m)	**2019**	2018
Cash flow from operating activities	**838**	1,367
Cash flow used for investing activities	**(248)**	(1,641)
Cash flow used for financing activities	**(204)**	(350)

Cash flow from operating activities

2019 compared with 2018

Cash flow from operating activities decreased by $529 million to $838 million in 2019 including the payment of $1,110 million related to the settlement of the US litigation (2018: $450 million). Income before taxes after the reversal of non-cash and other reconciling items was $2,805 million in 2019 compared to $2,662 million in 2018; non-cash items were $371 million higher at $1,302 million, with $97 million new depreciation on right-of-use assets and a $311 million lower adjustment for the gain on disposal of non-current assets, where 2019 is largely the gain on disposal of property, plant and equipment and 2018 largely the gain on mandated divestments. Cash paid in respect of other provisions, which included the above litigation amounts, was $619 million higher than 2018. Interest paid increased by $119 million to $385 million largely as a result of the issuance of $4.75 billion bonds during 2018. Other financial payments were also higher in 2019. Change in net working capital was an inflow of $27 million in 2019 compared to an outflow of $69 million in 2018. Change in inventories was an outflow of $701 million in 2019 compared to $230 million in 2018, with an inventory build in Crop Protection in 2019 in anticipation of sales volume growth in 2020. Change in trade and other working capital assets was an inflow of $125 million in 2019 compared to an outflow of $529 million in 2018, partly due to an increase in non-recourse factoring. Change in trade and other working capital liabilities was an inflow of $603 million in 2019 after an inflow of $690 million in 2018, with an increased build in trade accounts payable due to standardizing supplier terms and the increased inventories offset by a lower build in rebates payable following the reduced US sales.

Cash flow used for investing activities

2019 compared with 2018

Cash flow used for investing activities was $248 million in 2019, $1,393 million less than in 2018. Additions to property, plant and equipment were $73 million higher; a similar level of expenditure is currently expected in 2020. Purchases of intangible assets were $215 million higher, due to capitalization of $362 million of internal product development costs which commenced in 2019; 2018 included $80 million related to the acquisition of Nidera. Purchases of investments in associates and other financial assets were $202 million lower mainly due to net sales of marketable securities in 2019, compared to net purchases in 2018. Proceeds from disposals of property, plant and equipment were $395 million higher including the sale and leaseback of buildings in Switzerland and the UK, while proceeds from disposals of intangible and financial assets decreased by $299 million mainly due to the mandated Crop Protection product divestments in 2018. Cash for business acquisitions was an inflow of $8 million in 2019 due to cash acquired with Sanbei Seeds, compared to an outflow of $1,375 million in 2018 which included the acquisition of Nidera Seeds.

Cash flow used for financing activities

2019 compared with 2018

Cash flow used for financing activities of $204 million was $146 million lower than in 2018. Net cash received from interest-bearing debt decreased by $3,661 million due mainly to the $4.75 billion of new bonds issued in 2018; in 2019 a term loan of $500 million was raised from two banks, while a CHF350 million bond was repaid at maturity. The dividend paid to shareholders in 2019 was $900 million, within the previously signaled 60 to 65 percent of previous year net income; in 2018, a dividend of $4.71 billion was paid after the above bond issue to redeem debt in Syngenta's immediate holding company.

Research and development ("R&D")

Syngenta's Research and Development organization is dedicated to developing quality crop protection and seeds products, as well as crop-focused solutions which integrate multiple technologies. R&D focuses on taking a holistic approach to help customers grow their specific crop using the best technology to address their needs, be it a single technology, a combination of technologies, or technologies and services.

Syngenta is committed to improving crop yield and quality in a sustainable way and, through its global product safety group and global regulatory team, is committed to developing and registering products that are safe and effective. Syngenta maximizes its innovation potential by leveraging its industry expertise and partnering with other technology leaders across the globe.

The total spent on research and development was $1,262 million in 2019 and $1,311 million in 2018. In 2019, this included $344 million of internal product development costs that were capitalized, as further discussed in Note 2 to the consolidated financial statements. For the attribution of research and development costs to reported operating segments, see Note 4 to the consolidated financial statements.

There are no off-balance sheet financing transactions associated with research and development activity.

Contractual obligations, commitments and contingent liabilities

At December 31, 2019 Syngenta had contractual obligations to make future payments in the periods indicated in the following:

($m)	Notes to the financial statements reference	Total	Less than 1 year	1–3 years	3–5 years	5–10 years	More than 10 years
Financial debt	17, 19	**8,976**	2,123	1,831	1,755	2,510	757
Interest on fixed rate financial debt	25	**2,111**	262	429	314	440	666
Other liabilities		**56**	7	48	1	-	-
Capital lease payments	19	**579**	103	134	70	104	168
Capital expenditures	20	**117**	64	53	-	-	-
Pension contribution commitments	22	**249**	90	98	61	-	-
Unconditional purchase obligations	20	**1,969**	1,240	435	220	74	-
Long-term research agreements and other long-term commitments	20	**116**	78	31	7	-	-
Total		**14,173**	**3,967**	**3,059**	**2,428**	**3,128**	**1,591**

Of the total financial debt, floating rate financial debt is $1,347 million (mainly local bank loans and overdraft facilities), all of which is due within one year. No interest obligation in respect of this debt is included in the table above. There is no contractual obligation to renew this debt. The debt amount, and the interest payments associated with it, will vary over time according to Syngenta's funding requirements and future interest rates.

Fixed rate debt of $7,629 million is comprised primarily of the outstanding Eurobonds, Swiss franc domestic bonds, $ bonds and private placement notes. Fixed rate interest payments of $2,111 million on these are included above.

Other liabilities arise from deferred payments related to acquisitions and license agreements.

Provisions for long-term liabilities totaling $792 million shown in Syngenta's consolidated balance sheet have not been included in the above table because the timing of their payment is not contractually fixed and cannot be estimated with sufficient certainty within the context of the time periods in the table. This applies particularly to those amounts which are not expected to be paid during 2020. Note 20 to the consolidated financial statements presents the components of the estimated $183 million of provisions that are expected to be paid during 2020.

The supply agreements for materials giving rise to the unconditional purchase obligations are entered into by Syngenta to ensure availability of materials meeting the specifications required by Syngenta. Where suppliers have made significant capital investment, these agreements generally provide for Syngenta to pay penalties in the event that it terminates the agreements before their expiry dates.

Pension contribution commitments totaling $249 million represent unconditional fixed payments to the UK pension fund according to the revised schedule of contributions agreed during 2018. Contributions for future service in the UK and Switzerland which are calculated as a fixed percentage of employees' pensionable pay are not included in the above table. The rules of the Swiss pension fund commit Syngenta to contributing a fixed percentage of employees' pensionable pay to the fund.

As disclosed in Note 22 to the consolidated financial statements, Syngenta expects to pay $160 million of contributions to its defined benefit pension plans in 2020, excluding restructuring costs and excluding any accelerated payments which Syngenta may decide to make as business and financial market conditions develop during 2020. $90 million of those contributions are included as commitments in the table above. The remaining $70 million represents 2020 service contributions, which are not included as commitments in the table above.

The above table excludes income tax liabilities of $458 million in respect of uncertain tax positions. These are presented within current income tax liabilities in the consolidated balance sheet because it is not possible to make a reasonably reliable estimate of the actual period of cash settlement with the respective taxing authorities.

Off-balance sheet arrangements

Syngenta had no off-balance sheet arrangements as at December 31, 2019, other than the above contractual obligations, commitments and contingent liabilities. Syngenta has no unconsolidated special purpose entities that are likely to create material contingent obligations.

Critical accounting estimates

Critical accounting estimates and new accounting pronouncements are discussed in Notes 2 and 27 to the consolidated financial statements.

Recent developments

Note 28 to the consolidated financial statements provides details of events which occurred between the balance sheet date and February 13, 2020 that would require adjustment to or disclosure in the consolidated financial statements.

Trend and Outlook

2019 sales in the United States were reduced in both Crop Protection and Seeds by extreme weather in the early part of the season that delayed planting and also by reduced planted acres, partly as a result of the trade dispute with China. Given more normal weather and an initial resolution to the dispute, sales in the United States are expected to recover over 2020 and 2021. Conversely, strong sales growth in Latin America in 2019, which partly benefited from the trade dispute, is expected to slow in 2020. Crop Protection sales in Europe are expected to continue to be impacted by challenges with the re-registration of certain older products, but the impact is currently expected to be mitigated by more recently launched products. In Seeds, sales in 2019 included royalty income of approximately $80 million relating to change of control clauses. Individually, these will not recur in 2020; further royalties may be received, but are not foreseen currently to be at a similar level. Underlying sales revenue is currently expected to grow by low mid-single digits in crop protection and seeds markets that are both expected to continue to show low single digit growth in 2020.

Based on exchange rates prevailing at the date of publication, currency movements are expected to have only a minor impact on 2020 sales relative to 2019. The impact of exchange rate movements on operating income is discussed below.

Syngenta will continue to focus on and drive productivity savings in 2020. In Research and development, development costs of $344 million were capitalized in 2019 as described above. Adding back this amount, Research and development expenditure was approximately 9.3 percent of sales; overall, before capitalizing development costs, expenditure as a percentage of sales is expected to be at a broadly similar level in 2020 at constant exchange rates: Capitalized costs are currently expected at a similar level as 2019. Marketing and distribution costs in 2019 included approximately $70 million higher charges for provisions for doubtful receivables than 2018; currently charges in 2020 are expected to be closer to the 2018 level. Otherwise, marketing and distribution costs are expected broadly to grow in line with sales, with productivity savings reinvested to support market share growth in Seeds and also in developing the mid-tier go to market growth in Crop Protection in Latin America and China. General and administrative costs (excluding restructuring) in 2019 included gains on the sale and leaseback of buildings at its Basel headquarters and at other sites in the UK and Switzerland totaling approximately $100 million; similar gains are not currently expected to recur in 2020.

In 2019, Syngenta recorded a pre-tax gain of $28 million on the divestment of various crop protection products in India required to be divested under anti-trust agreements; no similar gain is expected to be recorded in 2020. Restructuring charges in 2019 included a fixed asset impairment of $92 million, other impairments of $15 million and cash costs of $39 million due to the closure of a Crop Protection manufacturing site; no equivalent charges are currently expected in 2020. Other impairments in 2019 totaled approximately $70 million; it is generally not possible to forecast future non-cash impairments. Other cash restructuring costs in 2019 totaled $140 million. Further productivity and other restructuring programs will continue in 2020 and charges currently are foreseen at a broadly similar level. However, in general, the timing of the recognition of charges for particular restructuring events, which is dependent on when irreversible commitments to the events occur, makes it difficult to predict such costs with certainty

In 2017, oil prices (Brent) traded in a range of $45 to $70 per barrel, being towards the upper end of the range in the latter part of the year. In 2018, prices were volatile and traded in a range between $50 to $85 per barrel, increasing towards the top of the range in the period through to October and then falling back to the bottom of the range around the end of the year. In 2019 prices traded in a range between $50 and $75 per barrel, with the peak in April. The average of monthly prices in 2019 was approximately $62, compared to approximately $68 per barrel in 2018 and approximately $53 in 2017. With its current product mix, Syngenta estimates that each $10 movement in the price of a barrel of oil impacts its Cost of goods sold by approximately $30 to $35 million. However, due to supplier production chains and Syngenta's own inventory, it can take from nine to 12 months for movements in the oil price to feed through into Cost of goods sold, so that the impact of oil prices on Cost of goods sold in 2020 is largely driven by changes between 2018 and 2019. Subsequent price movements take time to pass through to Syngenta's cost of goods but increases ultimately may have an adverse impact if Syngenta is not able to pass on the increase through increased sales prices. In addition, in 2019, supply constraints of raw material chemicals sourced from China led to cost increases of several raw material and intermediate chemicals used by Syngenta. The impact of these cost increases is currently estimated to have been approximately $100 million in 2019 compared to 2018. As supply pressures have eased, no significant further impact is currently forecast, however it is not possible at this time to reasonably assess the impacts of the coronavirus on the supply of raw materials from China and other countries.

In 2019, 57 percent of Syngenta's sales were in emerging markets. Emerging markets continue to have higher long-term growth potential because significant crop yield gaps exist versus developed markets; this growth potential is further supported by ongoing technology adoption. Managing volatility in such markets, in particular credit and currency exposures, is integral to Syngenta's business model.

Overall, Syngenta has significant currency exposures, which at a high level can be summarized as:

- a short position against the US dollar in Swiss francs and British pounds;
- a net long position in Euros over the course of a full year, relatively minor compared with sales in Euros, but with a long position in the first half selling season and a short position in the second half from more evenly spread Euro-based operating costs including raw material costs;
- a long position in Japanese yen, Australian and Canadian dollars and many emerging market currencies.

in Brazil and Argentina, a significant portion of sales are effectively priced in US dollars, resulting in a net short local currency exposure, though the linkage has weakened in Brazil and there can be a time lag before local currency prices are adjusted. Syngenta has also acted to link local currency pricing of sales in Russia and particularly the Ukraine (both of which export grain to the global market) to US dollars to reduce the long exposure to these currencies.

Forecast transaction exposures in the major currencies are hedged under a rolling 12 month program, largely through forward contracts. In 2019, Syngenta estimates the net impact on underlying sales and operating costs of exchange rate movements to have been approximately $82 million adverse to 2018, which together with a net hedging cost of $38 million compared with a cost of $67 million in 2018, resulted in an adverse year-on-year impact on operating income from exchange rate movements of approximately $53 million when compared with 2018. The largest driver of the adverse underlying net impact was a weaker Brazilian real; accordingly, the negative exchange movement impact was significantly offset by local currency sales price increases as noted above. At rates prevailing in January 2020, Syngenta expects only a minor impact on sales and operating income from the currency movements relative to 2019. A significant portion of emerging market currency exposures in particular are unhedged, so the actual impact may differ positively or negatively from the above estimate. The net hedging result is reported within General and administrative in the consolidated income statement.

Syngenta paid $1.1 billion related to the US litigation settlement in the second quarter of 2019. No similar payments are currently expected in 2020.

Appendix A

Reconciliation of non-GAAP measures to equivalent GAAP measures

A non-GAAP measure is a numerical measure of financial performance, financial position or cash flows that either:

- includes, or is subject to adjustments that have the effect of including, amounts that are excluded in the most directly comparable measure calculated and presented under IFRS; or
- excludes, or is subject to adjustments that have the effect of excluding, amounts that are included in the most directly comparable measure calculated and presented under IFRS.

Syngenta uses non-GAAP measures in this report where they are regarded by management as important for the investor to fully understand Syngenta's performance. The non-GAAP measures presented in this report are measures adjusted for exchange rate movements and to exclude restructuring gains and losses, impairment losses and divestment gains and losses. The Company presents these measures because:

- movements in exchange rates historically have had, and in the future are expected to have, a significant impact on sales and operating income from period to period; and
- restructuring and impairment charges historically have fluctuated, and in the future are expected to fluctuate, significantly from period to period and thereby have a volatile impact on results.

Syngenta has been engaged in significant restructuring activities since the formation of the Company in 2000, including programs to integrate and extract synergies from the combined operations of the Zeneca agrochemicals business and the Novartis agribusiness, the integration of business combinations, the Operational Efficiency programs, the implementation of the integrated crop strategy and, beginning in 2014, the AOL program. The incidence of restructuring charges is periodic and volatile, reflecting the timing of irrevocable commitments related to specific sites and operations. Therefore the impact on reported performance varies from period to period and there is limited continuity in the specific composition or size of such charges. Internal financial reporting and management and employee incentive plans are substantially based on financial measures excluding the charges for restructuring and impairment so that management is incentivized to deliver the benefits of the associated restructuring and not to achieve short-term financial targets by deferring implementation of restructuring plans. Restructuring programs typically deliver benefits with a payback over several years, similar to capital investments, and control over restructuring expenditures is performed on a similar project basis to that applied with capital investments.

Syngenta presents non-GAAP measures on operating income before restructuring and impairment at both the segmental and Syngenta AG group levels. Restructuring and impairment charges have had a material effect on operating income in the period covered by the review. In the opinion of management, reporting operating performance excluding restructuring and impairment in addition to the GAAP measures provides a more thorough understanding of business performance. Together with disclosure of the material elements within restructuring and impairment and of the overall anticipated size and timeframe of restructuring programs, these measures may assist investors in forecasting future operating performance.

Syngenta presents non-GAAP information on income before taxes excluding restructuring and impairment together with income tax expense before restructuring and impairment to assist investors to calculate the Syngenta tax rate both including and excluding the impact of restructuring and impairment charges. The tax rate on restructuring and impairment charges has been volatile and different from the tax rate on income before taxes excluding restructuring and impairment, due in part to many categories of restructuring or impairment charges not being deductible for tax purposes.

In addition to GAAP measures, Syngenta uses these measures excluding restructuring and impairment in internal reporting to management and the Board of Directors, and these measures are used in the incentive plans for Syngenta management and other employees. Restructuring and impairment charges have been incurred in all the periods covered by the review and are expected to continue to arise and have a material effect on operating performance in future periods. Consequently, non-GAAP measures of operating income before restructuring and impairment do not present a complete picture of operating performance and these measures should be seen only as supplementary to the GAAP measure.

For improved clarity, the definitions of these non-GAAP measures and reconciliations of non-GAAP measures to the appropriate GAAP measure are provided below. The tables below are included to show the reconciliation of the GAAP measures to the non-GAAP measures used in the report and do not represent income statements prepared under IFRS.

Reconciliation of net income excluding restructuring and impairment (non-GAAP measure) to profit for the period (GAAP measure)

2019 ($m, except percentage, share and per share amounts)	**Total**	**Restructuring and impairment**	**Before restructuring and impairment**
Operating income/(loss)	**1,927**	**(337)**	**2,264**
Income from associates and joint ventures	**1**	**-**	**1**
Financial expense, net	**(425)**	**-**	**(425)**
Income/(loss) before taxes	**1,503**	**(337)**	**1,840**
Income tax (expense)/benefit	**(47)**	**70**	**(117)**
Net income/(loss)	**1,456**	**(267)**	**1,723**
Attributable to non-controlling interests	**(6)**	**-**	**(6)**
Net income/(loss) attributable to Syngenta AG shareholder	**1,450**	**(267)**	**1,717**
Tax rate	**3%**	**21%**	**6%**

2018[1] ($m, except percentage, share and per share amounts)	Total	Restructuring and impairment	Before restructuring and impairment
Operating income	2,130	51	2,079
Income from associates and joint ventures	2	-	2
Financial expense, net	(401)	-	(401)
Income before taxes	1,731	51	1,680
Income tax (expense)/benefit	(280)	12	(292)
Net income	1,451	63	1,388
Attributable to non-controlling interests	(4)	-	(4)
Net income attributable to Syngenta AG shareholder	1,447	63	1,384
Tax rate	16%	(24)%	17%

1 After effects of accounting policy changes and restatements described in Note 2 to the consolidated financial statements

2017 ($m, except percentage, share and per share amounts)	Total	Restructuring and impairment	Before restructuring and impairment
Operating income/(loss)	54	(453)	507
Income from associates and joint ventures	8	-	8
Financial expense, net	(178)	-	(178)
Income before taxes	(116)	(453)	337
Income tax (expense)/benefit	20	92	(72)
Net income/(loss)	(96)	(361)	265
Attributable to non-controlling interests	(2)	-	(2)
Net income/(loss) attributable to Syngenta AG shareholders	(98)	(361)	263
Tax rate	17%	20%	21%

2016 ($m, except percentage, share and per share amounts)	Total	Restructuring and impairment	Before restructuring and impairment
Operating income/(loss)	1,647	(477)	2,124
Income from associates and joint ventures	5	-	5
Financial expense, net	(291)	-	(291)
Income/(loss) before taxes	1,361	(477)	1,838
Income tax (expense)/benefit	(180)	87	(267)
Net income/(loss)	1,181	(390)	1,571
Attributable to non-controlling interests	(3)	-	(3)
Net income/(loss) attributable to Syngenta AG shareholders	1,178	(390)	1,568
Tax rate	13%	18%	15%

2015 ($m, except percentage, share and per share amounts)	Total	Restructuring and impairment	Before restructuring and impairment
Operating income/(loss)	1,841	(388)	2,229
Income from associates and joint ventures	7	-	7
Financial expense, net	(256)	-	(256)
Income/(loss) before taxes	1,592	(388)	1,980
Income tax (expense)/benefit	(248)	88	(336)
Net income/(loss)	1,344	(300)	1,644
Attributable to non-controlling interests	(5)	-	(5)
Net income/(loss) attributable to Syngenta AG shareholders	1,339	(300)	1,639
Tax rate	16%	23%	17%

Constant exchange rates
Syngenta compares results from one period to another period in this report using variances calculated at constant exchange rates (“CER”). To present that information, current period results for entities reporting in currencies other than US dollars are converted into US dollars at the prior period’s exchange rates, rather than the exchange rates for the current year. See Note 24 to the consolidated financial statements for information on average exchange rates in 2019 and 2018. For example, if a European entity reporting in CHF sold CHF 100 million of products in 2019 and 2018, Syngenta’s financial statements would report $101 million of revenues in 2019 (using 0.99 as the rate, which was the average exchange rate in 2019) and $102 million in revenues in 2018 (using 0.98 as the rate, which was the average exchange rate in 2018). The CER presentation would translate the 2019 results using the 2018 exchange rates and indicate that underlying revenues were flat. Syngenta presents this CER variance information in order to assess how its underlying business performed before taking into account currency exchange fluctuations. Syngenta also presents its actual reported results in order to provide the most directly comparable data under GAAP.

Consolidated Income Statement

(for the years ended December 31, 2019 and 2018)

($m)	Notes	2019	2018[1]
Sales	4, 5	**13,582**	13,569
Cost of goods sold		**(7,383)**	(7,288)
Gross profit		**6,199**	6,281
Marketing and distribution		**(2,239)**	(2,216)
Research and development		**(918)**	(1,311)
General and administrative:			
Restructuring	6	**(364)**	(281)
Divestment gains	3	**134**	434
Other general and administrative		**(885)**	(777)
Operating income		**1,927**	2,130
Income from associates and joint ventures		**1**	2
Interest income	26	**98**	99
Interest expense	26	**(467)**	(379)
Other financial expense		**(30)**	(42)
Currency losses, net	26	**(26)**	(79)
Financial expense, net		**(425)**	(401)
Income before taxes		**1,503**	1,731
Income tax expense	7	**(47)**	(280)
Net income		**1,456**	1,451
Attributable to:			
Syngenta AG shareholder		**1,450**	1,447
Non-controlling interests		**6**	4
Net income		**1,456**	1,451

1 After effects of accounting policy changes and restatements described in Note 2

The accompanying notes form an integral part of the consolidated financial statements.

All activities were in respect of continuing operations.

Consolidated Statement of Comprehensive Income

(for the years ended December 31, 2019 and 2018)

($m)	Notes	2019	2018[1]
Net income		**1,456**	1,451
Components of other comprehensive income (OCI)			
Items that will not be reclassified to profit or loss:			
Gains on equity investments at fair value through OCI	26	**9**	15
Actuarial (losses)/gains of defined benefit post-employment plans	15, 22	**(45)**	18
Income tax relating to items that will not be reclassified to profit or loss	7	**(53)**	(12)
		(89)	21
Items that may be reclassified subsequently to profit or loss:			
Unrealized (losses)/gains on derivatives designated as cash flow and net investment hedges and related hedging costs	25	**(54)**	31
Currency translation effects		**(174)**	(653)
Income tax relating to items that may be reclassified subsequently to profit or loss	7	**47**	(24)
		(181)	(646)
Total OCI		**(270)**	(625)
Total comprehensive income		**1,186**	826
Attributable to:			
Syngenta AG shareholder		**1,182**	824
Non-controlling interests		**4**	2
Total comprehensive income		**1,186**	826

1 After effects of accounting policy changes and restatements described in Note 2

The accompanying notes form an integral part of the consolidated financial statements.

All activities were in respect of continuing operations.

Consolidated Balance Sheet

(at December 31, 2019 and 2018 and January 1, 2018)

($m, except share amounts)	Notes	**Dec 31, 2019**	Dec 31, 2018[1]	Jan 1, 2018[1]
Assets				
Current assets:				
Cash and cash equivalents	26	**1,933**	1,563	2,253
Trade receivables	9, 26	**4,358**	4,447	4,119
Other accounts receivable	26	**546**	536	836
Inventories	11	**4,973**	4,292	4,174
Derivative and other financial assets	26	**314**	425	343
Other current assets	10	**324**	385	198
Income taxes recoverable		**96**	145	168
Total current assets		**12,544**	11,793	12,091
Non-current assets:				
Property, plant and equipment	12	**3,251**	3,362	3,460
Right-of-use assets	23	**430**	-	-
Intangible assets	13	**4,201**	4,117	2,973
Deferred tax assets	7	**1,187**	1,086	1,089
Financial and other non-current assets	14, 26	**608**	492	550
Investments in associates and joint ventures	15	**147**	192	192
Total non-current assets		**9,824**	9,249	8,264
Assets held for sale	10	**29**	140	-
Total assets		**22,397**	21,182	20,355
Liabilities and equity				
Current liabilities:				
Trade accounts payable	16, 26	**(4,146)**	(3,623)	(3,176)
Contract liabilities	16	**(542)**	(445)	(480)
Current financial debt and other financial liabilities	17, 26	**(2,453)**	(1,195)	(1,141)
Income taxes payable		**(551)**	(539)	(474)
Other current liabilities	18, 26	**(870)**	(895)	(773)
Provisions	20	**(183)**	(1,268)	(676)
Total current liabilities		**(8,745)**	(7,965)	(6,720)
Non-current liabilities:				
Financial debt and other non-current liabilities	19, 26	**(7,611)**	(7,415)	(3,064)
Deferred tax liabilities	7	**(778)**	(905)	(613)
Provisions	20	**(792)**	(753)	(1,938)
Total non-current liabilities		**(9,181)**	(9,073)	(5,615)
Total liabilities		**(17,926)**	(17,038)	(12,335)
Shareholder's equity:				
Issued share capital 2019 and 2018: 92,578,149 ordinary shares	8	**(6)**	(6)	(6)
Retained earnings		**(2,782)**	(2,398)	(5,649)
Other reserves		**(1,609)**	(1,781)	(2,408)
Treasury shares: 2019: nil; 2018: 195,676 ordinary shares	8	**-**	67	67
Total shareholder's equity		**(4,397)**	(4,118)	(7,996)
Non-controlling interests		**(74)**	(26)	(24)
Total equity		**(4,471)**	(4,144)	(8,020)
Total liabilities and equity		**(22,397)**	(21,182)	(20,355)

1 After effects of accounting policy changes and restatements described in Note 2

The accompanying notes form an integral part of the consolidated financial statements.

Consolidated Cash Flow Statement

(for the years ended December 31, 2019 and 2018)

($m)	Notes	2019	2018[1]
Income before taxes		**1,503**	1,731
Reversal of non-cash and other reconciling items	21	**1,302**	931
Cash (paid)/received in respect of:			
Interest received		**64**	94
Interest paid		**(385)**	(266)
Other financial receipts		**115**	99
Other financial payments		**(238)**	(166)
Income taxes		**(248)**	(183)
Restructuring costs	20	**(55)**	(73)
Contributions to pension plans, excluding restructuring costs	20	**(126)**	(229)
Other provisions	20	**(1,121)**	(502)
Operating cash flow before change in net working capital		**811**	1,436
Change in net working capital:			
Change in inventories		**(701)**	(230)
Change in trade and other working capital assets		**125**	(529)
Change in trade and other working capital liabilities		**603**	690
Cash flow from operating activities		**838**	1,367
Additions to property, plant and equipment	12	**(521)**	(448)
Proceeds from disposals of property, plant and equipment		**522**	127
Purchases of intangible assets and capitalized development costs	13	**(408)**	(193)
Purchases of investments in associates and other financial assets		**(37)**	(239)
Proceeds from disposals of intangible and financial assets		**187**	486
Business acquisitions	3	**8**	(1,375)
Business divestments, net of cash divested		**1**	1
Cash flow used for investing activities		**(248)**	(1,641)
Proceeds from increase in third party interest-bearing debt	21	**1,616**	4,936
Repayments of third party interest-bearing debt	21	**(920)**	(579)
Distributions paid to shareholder		**(900)**	(4,707)
Cash flow used for financing activities		**(204)**	(350)
Net effect of currency translation on cash and cash equivalents		**(16)**	(66)
Net change in cash and cash equivalents		**370**	(690)
Cash and cash equivalents at the beginning of the year		**1,563**	2,253
Cash and cash equivalents at the end of the year		**1,933**	1,563

1 After effects of accounting policy changes and restatements described in Note 2

Of total cash and cash equivalents of $1,933 million (2018: $1,563 million), $36 million (2018: $119 million) is required to meet insurance solvency requirements of Syngenta's insurance subsidiaries. These amounts therefore were not readily available for the general purposes of Syngenta. There are no other significant restrictions on Syngenta's ability to use assets or settle liabilities.

At December 31, 2019 cash equivalents totaled $1,618 million (2018: $1,059 million) and consisted of bank and money market fund deposits.

The accompanying notes form an integral part of the consolidated financial statements.

Consolidated Statement of Changes in Equity

(for the years ended December 31, 2019 and 2018)

($m)	Par value of ordinary shares	Additional paid-in capital	Treasury shares, at cost	Fair value reserves	Cumulative translation adjustment	Retained earnings	Total share-holder's equity	Non-controlling interests	Total equity
	Attributable to Syngenta AG shareholder								
January 1, 2018	6	3,416	(67)	(66)	(942)	5,629	7,976	24	8,000
Accounting policy changes and restatements (Note 2)	-	-	-	-	-	20	20	-	20
January 1, 2018 as restated	6	3,416	(67)	(66)	(942)	5,649	7,996	24	8,020
Net income[1]	-	-	-	-	-	1,447	1,447	4	1,451
OCI[1]	-	-	-	36	(668)	9	(623)	(2)	(625)
Total comprehensive income[1]	-	-	-	36	(668)	1,456	824	2	826
Transactions with owner as owner:									
Distributions paid to shareholder	-	-	-	-	-	(4,707)	(4,707)	-	(4,707)
Other	-	-	-	5	-	-	5	-	5
December 31, 2018	6	3,416	(67)	(25)	(1,610)	2,398	4,118	26	4,144
Net income	**-**	**-**	**-**	**-**	**-**	**1,450**	**1,450**	**6**	**1,456**
OCI	**-**	**-**	**-**	**14**	**(186)**	**(96)**	**(268)**	**(2)**	**(270)**
Total comprehensive income	**-**	**-**	**-**	**14**	**(186)**	**1,354**	**1,182**	**4**	**1,186**
Transactions with owner as owner:									
Distributions paid to shareholder	**-**	**-**	**-**	**-**	**-**	**(900)**	**(900)**	**-**	**(900)**
Distribution in kind: Treasury shares	**-**	**-**	**67**	**-**	**-**	**(67)**	**-**	**-**	**-**
Non-controlling interest in Sanbei Seeds Co. Ltd. on acquisition	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**44**	**44**
Other	**-**	**-**	**-**	**-**	**-**	**(3)**	**(3)**	**-**	**(3)**
December 31, 2019	**6**	**3,416**	**-**	**(11)**	**(1,796)**	**2,782**	**4,397**	**74**	**4,471**

1 After effects of accounting policy changes and restatements described in Note 2

The accompanying notes form an integral part of the consolidated financial statements.

The amount available for dividend distribution is based on Syngenta AG's shareholder's equity determined in accordance with the legal provisions of the Swiss Code of Obligations. On April 12, 2019, a dividend of $900 million ($9.74 per share) was declared. On April 24, 2019, $450 million was paid to Syngenta's parent company, CNAC Saturn (NL) B.V. On November 15, 2019, the remaining $450 million was paid. On May 7, 2018, a dividend of $4,707 million ($50.95 per share) was paid to Syngenta's parent company, CNAC Saturn (NL) B.V.

In June 2019, Syngenta distributed the remaining 195,676 Treasury shares as an in-kind dividend to its parent company, CNAC Saturn (NL) B.V.

Included within the fair value reserves are (i) cash flow hedge reserves, which comprise the effective portion of the cumulative net change in the fair value of cash flow hedging instruments related to hedged items that have not yet been recognized in profit or loss, and (ii) fair value reserves, which comprise the cumulative net change in the fair value of equity investments at fair value through OCI. Movements in the cash flow hedge reserves are shown in Note 25. Movements in the fair value reserves for equity investments are shown in Note 26. Amounts within OCI related to actuarial gains and losses of defined benefit post-employment plans are presented within retained earnings.

The cumulative translation adjustment comprises all foreign currency differences arising from the translation of the financial statements of foreign operations, as well as from the translation of long-term monetary items that are part of net investments in foreign subsidiaries.

During 2019, Syngenta acquired control of Sanbei Seeds Co. Ltd. Further details are given in Note 3.

1. Basis of preparation of the consolidated financial statements

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS or IFRSs) as issued by the International Accounting Standards Board (IASB). The consolidated financial statements have been prepared on an historical cost basis, except for items that are required by IFRSs to be measured at fair value, principally certain financial instruments and biological assets, which are valued at fair value less costs to sell.

The consolidated financial statements incorporate the financial statements of Syngenta AG, a company domiciled and incorporated in Switzerland, and all of its more than 150 subsidiaries globally (together referred to as "the Syngenta AG group") and the Syngenta AG group's interests in associates and joint ventures. Approximately 40 subsidiaries are considered to be significant legal entities. There are no material non-controlling interests, except for Sanbei Seeds Co. Ltd.as disclosed in Note 3, and no material structured entities. The Syngenta AG group's main research and development facilities are located in Switzerland, UK and USA and its main production sites are in Switzerland, UK, USA, France, China and Brazil. Syngenta AG's principal executive offices are at Rosentalstrasse 67, 4002 Basel, Switzerland.

The parent of Syngenta AG is CNAC Saturn (NL) B.V., a private company incorporated in the Netherlands. The ultimate parent of Syngenta AG is China National Chemical Corporation (ChemChina), a state-owned enterprise of the People's Republic of China.

The consolidated financial statements are presented in United States dollars ("$") as this is the major currency in which revenues are denominated. "$m" refers to millions of United States dollars. With effect from January 1, 2019 the functional currency of Syngenta AG changed from the Swiss franc to the $, which is now the main currency in which its funding, receipts and payments are denominated.

The Syngenta AG group is a world leading agribusiness operating in the crop protection, seeds, professional solutions and flowers markets. Crop protection chemicals include herbicides, insecticides, fungicides and seed treatments to control weeds, insects and diseases in crops, and are essential inputs enabling growers around the world to improve agricultural productivity and food quality. In Seeds, the Syngenta AG group operates in the high value commercial sectors of field crops (including corn, oilseeds and cereals) and vegetables. The Professional Solutions business (previously known as Controls) provides turf and landscape and professional pest management products, and the Flowers business provides flower seeds, cuttings and young plants, to professional growers and consumers.

The preparation of financial statements requires management to exercise judgment when applying accounting policies and to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimated. Note 2 below includes further discussion of certain critical accounting estimates.

2. Significant accounting policy changes, judgments and estimates

This note describes the impact on Syngenta's consolidated financial statements of significant accounting judgments made when applying IFRSs and critical assumptions and accounting estimates.

Adoption of IFRS 16

IFRS 16 "Leases" requires a lessee to account for all leases, unless exempt as described below, by recognizing a lease asset (right-of-use asset) for the right to use the asset underlying the lease (underlying asset) and a corresponding liability for lease payments during the lease term, defined as the non-cancellable period of the lease and any additional periods for which the lessee has an option to use the asset that it is reasonably certain to exercise. In assessing whether such periods are reasonably certain, Syngenta considers the length of the non-cancellable lease period in each lease, contractual terms and conditions relating to the optional period(s) and to exercising the option(s), recent or planned future leasehold improvements, the impact of terminating the lease on its operations and associated termination costs, and whether Syngenta is reasonably certain to continue unchanged all other significant terms in the current lease. The lease liability includes payment for an option to purchase the underlying asset if, and only if, Syngenta is reasonably certain to exercise that option.

As permitted by IFRS 16:

- Syngenta has included in the lease liability payments for services associated with leases of cars, but not with leases of other types of asset.
- Syngenta accounts for short term and low value item leases by expensing costs on a straight-line basis over the lease term, without recognizing right-of-use assets and liabilities. Short term leases are all leases with a term of less than one year on inception. Low value item leases are all leases of underlying assets worth $5,000 or less when new and which are independent of other assets.

For all other leases, on their commencement Syngenta recognizes:

- a liability equal to the present value of payments required over the lease term for the use of the asset, excluding contingent payments, discounted at Syngenta's incremental borrowing rate (IBR). Syngenta's IBR is comprised of a reference rate based on cash and swap curves for the currency and maturity of the lease payments and a financing spread adjustment which differentiates between asset classes based on the value of the collateral offered by the nature of the underlying asset. The spread adjustment for leases of land and buildings is derived from market data for spreads on debt funded transactions to purchase commercial real estate. The spread adjustment for leases of other assets is derived from the spread on Syngenta's senior unsecured notes.
- a right-of-use asset equal to the lease liability, adjusted by lease payments made or incentives received, by initial direct costs of obtaining the lease and by an estimate of costs associated with obligations to decommission or restore the underlying asset or the site where it is located.

Where Syngenta sells an asset to a third party and then subsequently leases back the asset, the transaction is accounted for as a sale-and-leaseback transaction in accordance with IFRS 16. Each sale and leaseback transaction is accounted for either as a sale or a financing. Syngenta applies the revenue recognition guidance in IFRS 15 to determine whether control of the underlying asset passes to the buyer-lessor, in which case Syngenta accounts for the transaction as a sale. IFRS 15 guidance is also applied to any variable consideration in the sale contract to determine the amount of proceeds to recognize immediately on completion of the transaction. Where the sale of the asset is considered to have satisfied the performance obligation requirements of IFRS 15, the original asset is derecognized, a lease liability is recognized for the leaseback as described in the paragraph immediately above, and the right-of-use asset arising from the subsequent leaseback is recognized at the proportion of the previous carrying amount of the asset that relates to the right of use retained. Accordingly, only part of the gain or loss on disposal of the underlying asset is recognized immediately as any gain or loss arising on the transaction relates to the rights transferred. The deferred gain is therefore recognized through reduced depreciation charges for the right-of-use asset over the lease term. Where the sale of the asset is not considered to have satisfied the performance obligation requirements of IFRS 15, then no disposal of the original asset is considered to have taken place and none is accounted for. Syngenta instead recognizes a financial liability equal to the proceeds received from the buyer-lessor.

After commencement, the right-of-use asset is amortized systematically over the lease term, except where Syngenta is reasonably certain to exercise a purchase option in the lease agreement, in which case the asset is amortized over the same useful life that Syngenta would use to depreciate an item of Property, plant and equipment similar to the underlying asset, and is subject to review for impairment. The lease liability is accounted for at amortized cost using the IBR at lease commencement. The resulting interest cost is presented within Interest expense in the consolidated income statement. Lease payments which are contingent on use of the underlying asset are not included in the lease liability, and are expensed as incurred.

Syngenta has adopted IFRS 16 "Leases" with effect from January 1, 2019, using the modified retrospective application method, together with all applicable permitted practical expedients. Under these transition methods, IFRS 16 requires that:

- comparative amounts for 2018 and prior years are not restated, and continue to reflect application of the previous standard, IAS 17;
- all existing agreements at January 1, 2019 which are or contain a lease in accordance with the IAS 17 lease definition are treated as a lease for IFRS 16;
- for each lease previously accounted for as an IAS 17 operating lease that had a remaining term of more than one year at January 1, 2019 and does not qualify for the low value asset exemption, a lease liability has been recognized, measured by discounting the lease payments remaining at January 1, 2019 using Syngenta's IBR at that date. A right-of-use asset is recognized for the same amount, ignoring any initial direct costs of obtaining the lease, and assuming no impairment since no material leases were considered onerous contracts by Syngenta at December 31, 2018 in accordance with IAS 37;
- the above policy is also applied to each lease arising from sale-and-leaseback transactions completed before January 1, 2019 that was previously accounted for as an IAS 17 operating lease. No other changes or restatements are made on transition to the accounting for sale and leaseback transactions that completed before January 1, 2019;
- Syngenta's finance lease assets and liabilities at December 31, 2018 in accordance with IAS 17 ($63 million and $61 million respectively) are not restated at January 1, 2019.

Under these methods, at January 1, 2019 right-of-use assets and lease liabilities of $200 million were recognized in addition to the amounts shown above for finance leases, based on Syngenta's 3.4 percent weighted average IBR at that date, and there was no impact on retained earnings. In the December 31, 2019 consolidated balance sheet, $430 million right-of-use assets are presented in a separate line within non-current assets, and $103 million lease liabilities are presented within Current financial debt and other financial liabilities and $476 million within Financial debt and other non-current liabilities, depending on the due dates of lease payments. For the year ended December 31, 2019, right-of-use asset depreciation expense was $97 million and interest expense on lease liabilities was $11 million. IFRS 16 adoption did not have a significant impact on impairment testing because Cash Generating Unit (CGU) book values tested for impairment include both right-of-use assets and lease liabilities and CGU recoverable amounts already included operating lease payments in accordance with IAS 17 and are reduced by the same lease liabilities in accordance with IFRS 16.

The valuation of the lease liabilities and right-of-use assets requires judgments to be made on each relevant lease contract regarding an assessment of whether any lease options that give Syngenta the right to extend the lease term are reasonably certain of being exercised. This assessment is based on whether there are any identified economic incentives that Syngenta would benefit from if the lease was extended, together with consideration of past practice and any other known factors that may impact upon the decision to extend the lease. At December 31, 2019, Syngenta's assessment of lease options gives rise to an increase in lease assets and lease liabilities of $14 million (2018: $nil) as a result of options that are considered to be reasonably certain of being extended.

Disclosures for leases after transition are given in Note 23 for right-of-use assets and Notes 17, 19 and 23 for lease liabilities. Other required IFRS 16 disclosures, including a reconciliation of Syngenta's commitments for IAS 17 operating leases at December 31, 2018 to the corresponding lease liability amounts recognized on transition to IFRS 16 at January 1, 2019, are given in Note 23.

Application of critical accounting policies

Royalty and license income
Individual agreements licensing to third parties the right to use Syngenta technology can and do have unique terms and, consequently, the accounting judgments required to apply IFRS 15 to each such agreement can differ significantly. Syngenta recognizes revenue for non-refundable lump sum and guaranteed minimum license income at the start of a license only when the license is distinct from any related Syngenta obligations to supply licensed products during the license term and Syngenta has performed any obligations related to the license grant. For licenses of seed germplasm and trait technology, Syngenta considers that these criteria are met when the license has become effective, the licensee either has control of biological material from which it can independently breed, produce and sell seeds containing the technology Syngenta has licensed to it under the agreement or can obtain any seed purchase requirements in the market from producers other than Syngenta. For licenses of crop protection technology, Syngenta considers that these criteria are met when the license grants the right to manufacture and sell chemical products containing the licensed technology, the right to obtain related manufacturing and formulation know-how and the right to use existing regulatory data necessary for the licensee to establish its own independent registration to sell the licensed products.

Research and development expense
Research costs are expensed as incurred. Costs arising from internal product development projects are recognized as intangible assets if, and only if, Syngenta is able to, has sufficient resources to and intends to complete and use or sell the technology or product being developed, and such completion and use or sale is technically feasible and commercially viable. Government grants, including tax credits accounted for

as government grants, that are directly related to development projects are accounted for in the same way as the project costs to which they relate. Following the organizational changes mentioned below (‘New segment reporting’) and in Note 4, in 2019 Syngenta introduced enhanced project planning and reporting processes that have enabled it to measure reliably, and hence to capitalize, the costs of intangible assets arising from development undertaken after January 1, 2019. The amount of development costs capitalized in 2019 is disclosed in Note 13 and is determined by reconciling project cost analyses in development planning systems to actual costs incurred that are recorded in the related accounting cost centers in the period.

Costs of projects to develop new crop protection chemical active ingredients that have not yet obtained regulatory approval are expensed as incurred because their technical feasibility and commercial viability cannot be demonstrated until such approval has been obtained. Costs of projects to develop new formulations or extend the use of existing formulations of active ingredients that have regulatory approval, or widen product label indications of existing products already on the market to include additional uses of such products, are capitalized as intangible assets throughout the duration of the projects, which is approximately 3 to 5 years, and are amortized over the useful economic lives of the related new products, starting from the date they are ready for use or sale. Useful economic lives are disclosed under ‘Intangible Assets’ in Note 27. Costs capitalized for a project are immediately and fully impaired if the project is discontinued before completion. Costs of projects to re-register active ingredients with existing approvals are expensed as incurred because such projects are considered to maintain existing intangible assets rather than generate new intangible assets.

Costs of seed breeding programs that include genetically modified traits that require regulatory approval are expensed as incurred because their technical feasibility and commercial viability cannot be demonstrated until such approval has been obtained. Costs of other seed breeding programs are capitalized starting from the breeding stage in which new seed hybrids or varieties are identified as potential candidates for commercialization until the launch of the output of the related breeding program, which is approximately 5 to 7 years. Breeding costs are recorded by crop and region and, for the purposes of identifying when to start amortization, the year in which each specific breeding program started and the year in which it will complete. Breeding program costs taken into account for capitalization include costs of all functions within Research and development that are directly attributable to the breeding activity. Capitalized costs are impaired before completion of breeding if product launches are no longer expected as a result of major changes to Syngenta’s seed crop portfolio. Costs capitalized for a breeding year are amortized over the average commercial life of a new seed product, as disclosed in Note 27, starting from launch.

Impairment
For purposes of testing goodwill for impairment, goodwill is allocated to cash generating units (CGUs). Syngenta generally defines each crop protection product active ingredient and each seed crop as a CGU. However, where one active ingredient is sold in mixture with other active ingredients to a significant extent, the active ingredients concerned are grouped together into a single CGU because independent cash inflows only exist at this higher level. Each CGU is generally defined on a global basis, reflecting the international nature of the business, and contains tangible assets such as property, plant and equipment (PP&E) as well as intangible assets such as product and patent rights.

North America corn and soybean seeds are defined as a single CGU because of common intellectual property and other interdependencies between these two crops, which do not apply to other crops. Goodwill on certain major acquisitions, principally Zeneca agrochemicals business goodwill of $548 million, was allocated to each Syngenta operating segment in proportion to each such segment’s relative value at the time Syngenta established its current basis of segmentation, and is tested for impairment at those levels by relating the allocated amount for each segment to the total cash flows of the respective segment. The goodwill amounts allocated to segments and significant other CGUs are disclosed in Note 13.

For CGUs to which no goodwill is allocated, a reduction in forecast sales within management’s five-year forecast horizon compared with the previous year’s five-year forecast cycle, combined with a reduction in latest forecasts of current year sales compared with the current year budget, is generally considered an indicator of market related impairment and results in the performance of detailed impairment tests. Syngenta also performs detailed impairment tests when there are asset specific indicators of impairment such as withdrawal of or restrictions placed upon product registrations, plans to divest products or, for property, plant and equipment, plans to restructure or close a site. Higher discount rates are used to test property, plant and equipment for impairment in the case of restructuring because of the higher risk associated with remaining cash flows when operations are being physically relocated. The value in use calculation takes account of cash flows from the remaining period of operations and includes decommissioning costs.

If a CGU becomes impaired, the impairment loss is allocated first to any goodwill in the CGU, and then to reduce the CGU’s other assets pro rata.

Critical accounting estimates

Acquisition accounting
Applying the acquisition method of accounting requires significant management judgment to estimate the fair values and useful lives of the acquired assets, in particular intangible assets such as intellectual property (IP) related to currently marketed products and in-process research and development (IPR&D). In 2019, Syngenta recognized new intangible assets, excluding goodwill, of $44 million (2018: $737 million) resulting from acquisitions, principally Sanbei Seeds Co., Ltd. These acquisitions and the fair values recognized for the acquired intangible assets are set out in Note 3. Key valuation assumptions include market size and share, sales pricing trends and competitors’ reaction, cost and efficiency of the production process for the products; and the period over which the products are likely to generate economic benefits. Forecast cash flows for each asset are discounted using a rate developed from the estimated Weighted Average Cost of Capital (WACC) of the acquired company. Where Syngenta considers the risks applicable to an asset are not fully reflected in the forecast data available, it incorporates a risk premium into the discount rate. If actual cash flows are materially different from those used in calculating fair values, this may lead to changes in amortization expense or asset specific impairment losses in future periods.

For Nidera Seeds, from the February 6, 2018 acquisition date onwards, Syngenta has charged to the consolidated income statement amortization of acquired intangible assets based on estimated useful lives of 18 to 20 years on a straight-line basis, consistent with its cash flow forecasts for these assets, its accounting policy and the useful lives for other Syngenta intangible assets of a similar nature. Had useful lives of 15 years been applied instead for acquired Nidera intangible assets, annualized amortization expense would have increased by approximately $10 million. Fair value measurements of identifiable intangible assets are based on the forecast cash flows which Syngenta believes a typical potential buyer would use to value the assets, excluding Syngenta specific synergy benefits which consequently increase the amount of goodwill recognized on acquisition. Syngenta includes forecast cost synergies from integrating the acquired entity in the fair value measurements of the assets, as a typical buyer would generally be able to realize these synergies. Significant judgment is required to determine which revenue synergies are relevant to the valuation of each asset, which of these are Syngenta specific and which could be also realized by a typical buyer. Many of Syngenta's forecast synergies for the Nidera Seeds acquisition relate to expected new product introductions from breeding Syngenta's proprietary traits into Nidera's seed germplasm portfolio. In the opinion of Syngenta, trait technology and germplasm technology are separate and, as Nidera Seeds had no significant rights to Syngenta traits at the acquisition date, Syngenta has excluded trait related synergies from the valuation of Nidera's IP for current products and its IPR&D. In deciding to what extent to include revenue synergies in the fair value of Nidera's brand name and customer relationships, Syngenta has reflected its belief that a minority of potential buyers would be able to realize lower synergies than Syngenta's forecasts, and that the majority of buyers would not be able to realize any synergies. If Syngenta had considered that all its forecast synergies could also be realized by typical buyers, the fair value of intangible assets and deferred tax liabilities recognized would have been approximately $400 million and $120 million higher respectively, goodwill on acquisition would have been $280 million lower, and annual amortization expense since the acquisition would have been approximately $20 million higher, than the amounts actually recognized.

Adjustments to revenue and trade receivables

Syngenta's products are consumed mainly by growers, but Syngenta invoices the majority of its sales to distributors. The timing and amount of cash inflows received by growers is impacted by a broad range of economic and political risks, including crop yields and prices, the availability of credit, and the cost of agricultural inputs such as the products sold by Syngenta and its competitors. The cash flows of distributors that supply Syngenta's products to growers and represent the majority of Syngenta's customers are also impacted by these factors. These distributors vary in size and nature from large publicly owned entities to small or medium sized owner-managed businesses. Syngenta's customer base reflects the geographical diversity of its operations, which encompass more than 90 countries and all significant agriculture areas. Considerable management effort and judgment is applied to actively manage and mitigate the risks to Syngenta from these factors and to determine the accounting estimates associated with them, which are set out below:

- the estimated cost of incentive programs that provide rebates and discounts is dependent upon achievement of sales targets, as well as cash discounts for punctual payment of accounts receivable. Syngenta records the estimated cost of these programs when the related sales are made, based on the programs' terms, market conditions and historical experience. At December 31, 2019, trade accounts payable include $1,542 million (2018: $1,604 million after effects of accounting policy changes and restatements described below) of accruals for customer rebates and incentive programs.
- commercial terms in certain markets also provide a right of return, subject to eligibility restrictions by product and either an annual cap equal to a percentage of sales in the immediately prior year, or a return period typically extending up to the end of the agricultural season in which the product was originally sold, which can be 9 months. Accruals for estimated product returns are based on contractual sales terms and on historical experience of actual returns where Syngenta considers these to be reliable estimates of future returns. At December 31, 2019, trade accounts payable includes $305 million (2018: $258 million after effects of accounting policy changes and restatements described below) of accruals for sales returns. Actual returns can vary significantly from estimates in market segments where the distribution channel holds several months' sales of Syngenta products at the reporting date; forecast consumption of those products by growers could be materially affected if market or weather conditions after the reporting date were significantly different from those expected and the volume of products returned by distributors varies with changes in grower consumption. This is especially relevant to Brazil and certain other markets in the southern hemisphere given Syngenta's financial reporting year-end falls in the middle of the peak demand season for Syngenta's crop protection products. Actual sales returns in 2018 in Brazil of crop protection products Syngenta sold during 2017 were $137 million, representing 11 percent of relevant sales. This was less than the $171 million provided at December 31, 2017. Actual sales returns in 2019 in Brazil of crop protection products Syngenta sold during 2018 were $82 million, representing 5 percent of relevant sales. This is less than the $113 million provided at December 31, 2018. In accordance with IFRS 15, sales subject to returns are recognized only to the extent that it is highly probable that a significant reversal in the amount of revenue recognized will not occur when the uncertainty associated with the amount of returns is subsequently resolved. Syngenta expects slightly higher levels of sales returns in 2020 compared to 2019 for the following reasons:
    - Adverse weather patterns in Southern and Northeastern Brazil that are expected to impact soybean production.
    - Credit challenges for growers in the regions affected by the adverse weather patterns.

  The effect of these negative factors is expected to be partly offset by the consumption of the crop protection products in the 2019/20 season that is expected to be higher than in 2018/19 by a single digit percentage. At December 31, 2019, Syngenta has recorded a $130 million allowance for sales returns of crop protection products in Brazil, representing 7 percent of relevant sales in 2019.
- allowances for doubtful receivables, which are estimated by critically analyzing individual receivable account balances, taking into account historical levels of recovery and the value of any security held or agreed barter programs which mitigate credit exposure, the economic condition of individual customers, and the overall economic and political environment in relevant countries. As shown in Note 9, the provision for doubtful receivables at December 31, 2019 amounted to $465 million, or 10 percent (2018: $375 million or 8 percent) of total trade receivables, of which $113 million, $60 million and $86 million (2018: $98 million, $60 million and $59 million) related respectively to sales made to the Brazilian, Venezuelan and Argentine markets. In 2019, Syngenta reported $106 million bad debt expense (2018: $33 million). The increase is mainly related to the deteriorating economic environment in Ukraine and Argentina, resulting in increased credit risk in those markets.

Syngenta records these estimates as separate allowances, but its estimation process recognizes their interdependency, as the level of credits to accounts receivable for discounts and product returns may affect the probability of receiving full payment of the net receivable balances.

Income Taxes

Deferred tax assets

At December 31, 2019, Syngenta's deferred tax assets are $1,187 million (2018: $1,086 million after the effects of accounting policy changes and restatements described below), as further analyzed in Note 7. Included in this balance are deferred tax assets for unused tax losses and tax credits of $89 million (2018: $101 million), of which $75 million (2018: $88 million) relates to tax losses. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible or in which tax losses can be utilized. The tax effect of unused tax losses is recognized as a deferred tax asset when it becomes probable that the tax losses will be utilized. In making assessments regarding deferred tax assets, management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies.

At December 31, 2019, based upon the level of historical taxable income and projections for future taxable income over the periods in which deferred tax assets are deductible, management believes that it is more likely than not that Syngenta will realize the benefits of these deductible differences. The amount of deferred tax assets considered realizable could however be reduced in subsequent years if estimates of future taxable income during their carry forward periods are reduced, or rulings by the tax authorities are unfavorable. Estimates are therefore subject to change due to both market-related and government related uncertainties, as well as Syngenta's own future decisions on restructuring and other matters. Syngenta is unable to accurately quantify the future adjustments to deferred income tax expense that may occur as a result of these uncertainties.

The principal jurisdictions where deferred tax assets have not been recognized at December 31, 2019 are Brazil and the USA (2018: Brazil, the USA and Argentina). At December 31, 2019, Syngenta has recognized $83 million (2018: $87 million) of net deferred tax assets in Brazil and has not recognized $46 million (2018: $77 million) of deferred tax assets. The improved 2019 business performance in Brazil resulted in a lower restriction of the amount recognized, decreasing 2019 deferred income tax expense by $32 million (2018: $4 million). Syngenta has assumed local profitability in 2020 and future years similar to the historical average. In making this assessment, the forecast horizon used for taxable profits is 5 years. Taxable profits that may arise beyond the 5-year horizon are subject to greater uncertainty and have not been considered.

Interpretation of the US tax law enacted in December 2017 indicates that stricter criteria limiting interest deductions will apply. At December 31, 2019, Syngenta has recognized $228 million (2018: $170 million) of net deferred tax assets in the USA, and has not recognized $92 million (2018: $48 million) of deferred tax assets relating to a temporary difference for interest carryforwards. Syngenta has performed an analysis in order to determine the amount of deferred tax asset it should recognize, taking into account the current plans of debt financing Syngenta's US subsidiaries.

At December 31, 2019 Syngenta has recognized all of the net deferred tax assets in Argentina due to tax law changes implemented in 2019 which accelerated Syngenta's ability to claim deductions for financing expenses.

Swiss Corporate Income Tax Reform

The Swiss public voted on May 19, 2019 to adopt the Federal Act on Tax Reform and AHV Financing ("TRAF") which reforms corporate taxation in Switzerland. The tax reform has several consequences including a change of the Swiss Cantonal and Communal Income Tax Harmonization Act ("CCITHA") which provides guidance on provisions in the cantonal tax laws for income and capital taxes. The changed CCITHA entered into force at federal level on January 1, 2020. To the extent that the tax reform measures relate to cantonal and communal income tax law changes, the measures will effectively be implemented through modification of the cantonal tax law. The main mandatory tax measures for the cantons to implement within TRAF include:

- Abolition of special tax regimes;
- Transitional measures to consider the taxation of untaxed reserves;
- Patent box - deduction of up to 90 percent of patent protected income from taxable income, with cantonal choice of percent deduction;
- Overall limitation of certain measures on cantonal level to 70 percent (or less, at the choice of the canton) in order to ensure minimal taxation.

IFRS requires income taxes to be measured as follows:

- current income taxes - using tax rates or laws substantively enacted at the reporting period end;
- deferred income taxes - at the rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates and laws substantively enacted at the reporting period end.

In Switzerland, after Federal parliament has approved a new law, Swiss citizens can initiate a referendum by collecting signatures within a specified timeframe. A similar process exists at cantonal level. Substantive enactment is typically the date at which the period for collecting signatures lapses or, in the case that a referendum is held, the date of the affirmative public vote. Syngenta has its headquarters in the canton of Basel-Stadt and has operations in several cantons including Aargau, Valais and Zurich.

On February 10, 2019, in a public vote, the population of the canton of Basel-Stadt accepted the revision of the cantonal tax law. As a result:

- the ordinary pre-tax statutory effective income tax rate (including Federal income tax) has been reduced to 13 percent in the canton of Basel-Stadt, effective as per January 1, 2019;
- at the same time a special statutory tax rate of 11 percent for the realization of previously untaxed reserves has been introduced;
- with effect as of tax year 2020, the canton of Basel-Stadt has introduced a patent box regime, taxing qualifying income from patent protected revenues at a privileged rate. The overall relief limitation has been set at 40 percent. Therefore, the minimum effective income tax rate after patent box relief and including Federal income tax amounts to 11 percent.

As a result of the above changes, Syngenta has measured its 2019 current Swiss tax liability using the 13 percent rate on its ordinary income and the 11 percent special rate on realized untaxed reserves. As the impact of the patent box regime on Syngenta is expected to be stable and consistent across periods, Syngenta has revalued its Swiss deferred tax positions that will be settled or realized in tax year 2020 onwards using the minimum tax rate after patent box relief, recording an estimated $195 million favorable one-time impact (tax credit) within income tax expense for the year ended December 31, 2019, and a $71 million unfavorable one-time impact (tax charge) within OCI for deferred tax positions related to pension actuarial losses charged to OCI.

While the cantons Aargau and Zurich have finalized their new tax legislation in 2019 without any material impact to Syngenta's overall tax position, the legislative process in Valais is still ongoing. Syngenta will consider tax changes in the canton Valais when it substantively enacts its changes.

Uncertain tax positions
Syngenta estimates and accrues taxes that will ultimately be payable when reviews or audits by tax authorities of tax returns are completed. These estimates include significant management judgments about the eventual outcome of the reviews and audits of all open years based on the latest information available about the positions expected to be taken by each tax authority. Actual outcomes and settlements may differ significantly from the estimates recorded in these consolidated financial statements. This may affect income tax expense reported in future years' consolidated income statements.

Syngenta has a global supply chain, and intellectual property rights owned by Syngenta are used internationally within the Syngenta AG group. Transfer prices for the delivery of goods and charges for the provision of services, which include contract research and development, contract manufacturing and internal financing arrangements, by one Syngenta subsidiary to another may be subject to challenge by the national tax authorities in any of the jurisdictions in which Syngenta operates. Syngenta has a global transfer pricing policy in place and applies, to the maximum extent possible, a consistent methodology on a global basis. Transfer pricing determination in general, and the benchmarking process in particular, involve significant judgment and therefore a certain level of uncertainty remains as to whether tax authorities will challenge the pricing applied in the light of the new, complex transfer pricing guidelines in connection with the Base Erosion and Profit Shifting (BEPS) initiative.

At December 31, 2019, Syngenta's balance sheet includes assets of $96 million (2018: $145 million), and liabilities of $551 million (2018: $539 million), for current income taxes. These liabilities include $458 million in respect of the uncertain tax positions described above (2018: $410 million).

Releases of uncertain tax liabilities during 2019 and 2018 related to changes in tax legislation, closure of previously open tax computations through expiry and settlement of tax audits. The liability for uncertain income tax positions that Syngenta expects will be resolved in 2020 is approximately 10 percent of total recognized current income tax liabilities.

Significant management judgment has been required to estimate the income tax benefits associated with the $1,500 million Viptera litigation settlement payments described in Note 20 because the Syngenta entities named as parties to the litigation are incorporated in different tax jurisdictions. Syngenta's estimates at December 31, 2019 and 2018 assume that all of the Viptera settlement costs will be deductible for income taxes but that deductions will be claimed in more than one jurisdiction. Syngenta estimated the benefit using an average of the tax rates of the relevant jurisdictions and the amounts it has recognized in 2019 and 2018 for both current and deferred income taxes reflect this estimate. The ultimate benefit realized may be different from this estimate and this difference may have a material effect on Syngenta's income tax expense for 2020 and/or future periods.

In Brazil, Syngenta received adverse rulings at administrative court level in transfer pricing disputes for fiscal years 2003 and 2011 and has filed appeals at civil court level. Additionally, Syngenta has appealed at administrative level against transfer pricing assessments for fiscal years 2013 to 2015. Syngenta believes these appeals will succeed and has recognized no liability for the estimated aggregate $170 million (2018: $104 million) contingent liabilities in these disputes.

Seeds inventory valuation and allowances
Inventories of $4,973 million (2018: $4,292 million) reported in Note 11 include $1,229 million (2018: $1,221 million) of seeds, which are subject to the risk of loss through physical deterioration at all stages of the operating cycle. Syngenta accounts for normal losses that occur during production, both in the pre-harvest growing and the post-harvest processing stages, as part of the cost of inventories of in-process and finished seeds. Normal losses in production, which include the cost of seeds discarded before processing because they do not meet Syngenta's quality standards, are therefore expensed when the related finished seed is sold to customers. Losses of finished seeds are expensed as incurred. Syngenta records allowances against the cost of seeds inventories for both quality and obsolescence. Syngenta records allowances for quality for finished seed which is currently of defective quality and for finished seed which is expected to deteriorate physically before sale, based on past experience. Syngenta records allowances for obsolescence for excess seed for which there is insufficient forecast customer demand over the expected remaining commercial life of each seed variety. For excess seeds that Syngenta is likely to be able to sell in the commodity market, the allowance is the cost of the seed minus its net realizable value, which is estimated as the expected net proceeds of commodity sale. If commodity sale is not probable, the allowance is the full cost of the excess seed inventories.

To determine the allowances required, management effort and judgment is applied to analyze at crop, variety and batch level seed inventory quantity, quality and forecast sales data, developing commercial practices, available markets and the speed of expected product portfolio changes. The rapidly evolving combination of corn seed genetics and trait stacks in North America and Latin America result in shorter commercial lives of a typical hybrid seed variety than in other crops and regions, with variation between actual and previously forecast sales and consequent greater risk of excess seed at individual hybrid level. Excess seed quantities are also affected by harvest yield, which is influenced by unpredictable weather and growing conditions. Seeds inventory allowance expense for 2019 was $196 million (2018: $174 million), with increased provision expense driven largely by lower sales volumes of vegetables seeds and the allowance balance at December 31, 2019 was $242 million (2018: $233 million), with higher seeds inventory provisions required for vegetables.

Impairment review
At December 31, 2019, Syngenta has reported intangible assets of $2,199 million (2018: $2,215 million) for goodwill and $2,002 million (2018: $1,902 million) for intangible assets other than goodwill, as reported in Note 13. The recoverable amount for goodwill has been determined based on value in use of the relevant operating segment, CGU or group of CGUs to which the goodwill is allocated. The recoverable amounts of all material intangible assets and property, plant and equipment (PP&E) have also been based on their value in use.

The main assumptions used in determining the recoverable amounts for operating segments and other CGUs include market size and Syngenta's market share, future sales prices and volumes, future development expenditures required to maintain products' marketability and registration in the relevant jurisdictions, and products' lives. At operating segment level, the key assumptions related to sales volume and value are expressed separately for each product line, market segment and crop. At CGU level, assumptions are expressed by product. The assumptions are reviewed annually as part of management's budgeting and strategic planning cycles. These assumptions can be subject to significant adjustment from such factors as changes in crop growing patterns in major markets (for example, as a result of movements in crop prices), changes in product registration, or pressure from competitor products. Estimated cash flows for operating segments and other CGUs are based on Syngenta management forecasts, cover a five-year horizon except where a longer horizon is required to reflect cash flows from the development and introduction of new products due to the length of the product development cycle, and include a terminal value which assumes a 2.0 percent long-term growth rate (2018: 2.0 percent). Syngenta's forecasts for the North America corn and soybean seed CGU also include the following key assumptions for revenue from seed sales:

- for each of the two crops, market size expressed as acres planted, Syngenta's market share, crop commodity prices, and licensing revenues;
- for new genetic traits, the timing of regulatory approval and marketing launch, and seed pricing compared with existing products.

Management believes, based on recent and expected future growth in agricultural markets, that there are long-term prospects for continued growth in Syngenta's business.

The key inputs used to calculate the pre-tax discount rates used to discount the estimated future cash flows included in the value in use calculations are as follows:

- post-tax weighted average cost of capital: 6.1 percent (2018: 7.2 percent);
- risk-free rate: 2.1 percent (2018: 3.2 percent) equal to market yields on 30-year government bonds at the date of performing the annual impairment test;
- equity risk premium: 5.0 percent (2018: 5.0 percent).

The discount rate determined in this way is considered to include market estimates of industry sector risk premium. Syngenta's CGUs generally reflect the global nature of its Crop Protection and Seeds product sales, and a country risk premium is applied only to those CGUs where the geographical scope of operations and cash flows is limited. The pre-tax discount rates used for all segments, CGUs and groups of CGUs ranged from 6.8 percent to 7.6 percent (2018: 7.9 percent to 14.9 percent).

At December 31, 2019, the largest amounts of goodwill were allocated to the Crop Core operating segment ($943 million), the North America corn and soybean CGU ($316 million) and the Rest of World (excluding North America) corn and soybean CGU ($502 million) and the pre-tax discount rates used were 7.2 percent for Crop Core, 7.2 percent for the North America corn and soybean CGU and 7.1 percent for the Rest of World corn and soybean CGU. At December 31, 2018, the largest amounts of goodwill were allocated to the Asia Pacific operating segment ($326 million), the North America corn and soybean CGU ($318 million) and the Rest of World (excluding North America) corn and soybean CGU ($526 million). The pre-tax discount rates used for goodwill impairment testing were 8.4 percent for Asia Pacific, 8.5 percent for the North America corn and soybean CGU and 8.6 percent for the Rest of World corn and soybean CGU. The forecast terminal growth rate was 2.0 percent (2018: 2.0 percent) for all the above CGUs.

For the year ended December 31, 2019, impairment losses for intangible assets were $52 million, of which $41 million relates to a seeds crop CGU where further development of certain technologies held by Syngenta is not considered cost effective and activities have been reduced. At December 31, 2019, the recoverable amount of this CGU was $2,519 million and its carrying amount included non-current assets of $745 million. For the year ended December 31, 2018, impairment losses for intangible assets were $77 million relating mainly to a different seeds crop CGU where further development of certain technologies held by Syngenta was terminated. At December 31, 2018, the recoverable amount of that CGU was $56 million and its carrying amount included non-current assets of $39 million.

For the year ended December 31, 2019, impairment losses for property, plant and equipment were $110 million (2018 $nil) relating mainly to the announced closure of a US manufacturing site.

Environmental provisions

At December 31, 2019, Syngenta reported in Note 20 provisions for environmental remediation of $180 million (2018: $176 million), some of which are included within restructuring provisions. Remediation of environmental damage at sites with which Syngenta is associated typically takes a long time to complete due to the substantial amount of planning and regulatory approvals normally required before remediation activities can begin. The assumptions used by Syngenta to estimate its environmental provisions may change significantly before or during the remediation period due to changes in the extent of remediation required or the method used to remediate the damage. In addition, increases in or releases of environmental provisions may be necessary whenever new developments occur or additional information becomes available. The major uncertainties that impact the outcome of remediation are:

- the extent of the contaminated land area, which is not always limited to land occupied by the Syngenta site. Ongoing monitoring or remediation work may identify changes in the area believed to be contaminated;
- the nature of the work Syngenta will be obliged to perform or pay for. This depends upon the current or proposed use of contaminated land, substantively enacted legislation, and land zoning by and negotiation with the relevant regulatory authorities. In Switzerland, proposed remediation plans at certain sites may be subject to public referenda;
- sharing of costs with other past and present occupiers of Syngenta's sites. At certain shared sites, Syngenta is responsible for an agreed proportion of remediation costs, which may change following discussions with authorities and the affected third parties. At other sites, third parties have agreed to reimburse Syngenta for some or all of the costs it incurs.

Consequently, environmental provisions can change significantly. Because of the inherent uncertainties in estimating such long-term future obligations, Syngenta periodically supplements its internal expertise with external expertise when determining environmental provisions.

In 2019, $13 million of environmental provisions were recognized related to remediation triggered by the announced closure of a US manufacturing site and $8 million of provisions were released due to regulatory and other indications that remediation requirements at various sites were substantially complete. Otherwise, in 2019 and 2018, except for $9 million (2018: $12 million) of cash outflows reflecting remediation activity, there were no significant changes to environmental provisions.

Proposals have been made suggesting remediation of the existing contamination on certain shared sites in preference to monitoring and containment. Syngenta will negotiate the proposals with the relevant authorities but the final adopted solution is subject to regulatory uncertainty and the ultimate liability may be higher or lower than the amount provided. Taken together, the provisions at December 31, 2019, for these shared sites comprise approximately 25 percent of total environmental provisions. The top ten exposures at the end of 2019 comprise approximately 80 percent of the total environmental provisions. In the opinion of management, reasonably possible increases in the provisions related to these top 10 exposures would not exceed 80 percent of the total environmental provision recognized at December 31, 2019.

At Syngenta's Monthey, Switzerland, production site, the majority of the work currently needed to remediate groundwater and soil contamination at the site has been carried out. During 2019, assessments indicated additional costs and a longer timeframe to complete remediation were likely and an additional $4 million was provided. No significant change to the provision was made in 2018. Future expenditure will be related to the ongoing remediation of contamination hot spots and the groundwater treatment programs. The responsibility for these activities lies with Syngenta and one other chemical enterprise. In management's opinion, based on its current knowledge, Syngenta's environmental provisions are adequate to cover Syngenta's share of the expected costs to perform this remediation, however, the final extent of the remediation work required, the cost estimates and their allocation continue to be subject to uncertainty.

Defined benefit post-employment benefits

At December 31, 2019, Syngenta has reported other non-current assets of $1 million (2018: $nil) and provisions of $455 million (2018: $421 million) as net defined benefit (DB) pension assets and liabilities, respectively, as set out in Note 22. These amounts may change significantly from one accounting period end to another due not only to expense recognized in profit and loss and cash payments, but also to changes in the actuarial assumptions used to measure the defined benefit obligation (DBO) and to variances between those assumptions and actual outcomes ("experience variances"), both of which are recognized in OCI. Significant judgment is required when selecting key assumptions for measuring post-employment benefit expense for a period and the DBO at the period end for each defined benefit plan. The specific assumptions used and experience variances are disclosed in Note 22. These variances were caused principally by external financial market movements in corporate bond yields used to benchmark the discount rate, and in asset prices affecting the actual return on assets. These factors are outside Syngenta's direct control, and it is reasonably possible that future variances will be at least as great as past variances.

At December 31, 2019 and 2018, for each of Syngenta's three largest defined benefit pension plans, the sensitivity of the DBO to a change in each significant actuarial assumption is as follows:

($m)	2019			2018		
Increase (decrease) in DBO	**Switzerland**	**UK**	**USA**	Switzerland	UK	USA
Discount rate – 25 basis point decrease in rate	**112**	**119**	**26**	96	106	23
Discount rate – 25 basis point increase in rate	**(105)**	**(116)**	**(25)**	(90)	(103)	(22)
Pension increase – 25 basis point increase in rate	**n/a**	**107**	**n/a**	n/a	94	n/a
Pension increase – 25 basis point decrease in rate	**n/a**	**(105)**	**n/a**	n/a	(92)	n/a
Interest credit rate – 25 basis point increase in rate	**18**	**n/a**	**n/a**	17	n/a	n/a
Interest credit rate – 25 basis point decrease in rate	**(17)**	**n/a**	**n/a**	(16)	n/a	n/a
Life expectancy[1]	**76**	**119**	**10**	63	107	8

1 The life expectancy sensitivity is calculated using the difference between the reported DBO amount and the DBO amount projected using a one year increase, compared with the assumptions actually used, in the life expectancy for each plan member. This alternative projection is calculated using mortality rates that produce an immediate increase of one year for a plan member at normal retirement date, with corresponding changes at other ages.

Each sensitivity amount is calculated assuming that all other assumptions are held constant. It should be noted that economic factors and conditions often affect multiple assumptions simultaneously. For the UK pension plan, the discount rate and pension increase sensitivities shown are relative to price inflation, because limited price indexation of pensions in payment and deferred pension rights is required both by the Syngenta UK pension plan rules and by UK statutory pension regulations. For Syngenta's Swiss and US plans, the sensitivities are for changes in the nominal discount rates, because the rules and statutory regulations applicable to those plans contain no inflation linkage and indexation of benefits to inflation is not general market practice in those countries. Syngenta is not able to predict the extent of likely future changes in the discount rate or life expectancy assumptions, but based on past experience, the discount rate for each plan could change by up to 150 basis points (bp) within a twelve month period. Pensionable pay is now permanently frozen for the UK DB pension plan as explained below, and the sensitivity of the DBO to the assumed rate of increase in pensionable pay is not material for the Swiss or US plans.

To select the discount rate, Syngenta uses yields of AA rated corporate bonds. The relevant yield is determined either by analyzing a population of bonds whose cash flows collectively approximate the estimated cash flow profile of benefit payments by a Syngenta plan (UK and USA), or by using the yield of a published bond index and adjusting it in line with the relevant market yield curve to the extent that the average maturity of the bonds in the index is different from that of the relevant Syngenta benefits (Switzerland). In 2018, Syngenta excluded government guaranteed bonds from the bond population used to estimate its UK discount rate as these bonds were not considered to meet the definition of corporate bonds and have a lower yield that is influenced by the government guarantee. The effect of this change in estimate was to increase the discount rate by approximately 15 bp. Nominal discount rates at December 31, 2019 are as follows:

Switzerland	0.25 percent	(2018: 0.75 percent)
UK	1.99 percent	(2018: 2.80 percent)
USA	3.30 percent	(2018: 4.25 percent)

In valuing the UK DBO at December 31, 2019, the UK long-term rate of retail price inflation (RPI) is assumed to be 2.99 percent (2018: 3.23 percent). Future statutory pension increases are based on consumer price inflation (CPI). Most Syngenta UK pension plan members have benefits specifically linked to RPI in accordance with the plan rules, but some members will see increases linked to CPI. CPI is assumed to be 70 basis points (2018: 100 basis points) below RPI.

Over the last 20 years, life expectancy estimates steadily increased in all major countries in which Syngenta sponsors pension plans, although available data for the UK and USA for the two most recent years indicates a slowing of the rate of increase compared to previous projections, and Syngenta's projections of future life expectancy improvement have reduced accordingly. Syngenta sets mortality assumptions after considering the most recent statistics practicable. Syngenta uses generational mortality tables to estimate probable future mortality improvements. These tables assume that the trend of increasing life expectancy will continue, resulting in pension benefit payments to younger members being likely to be paid for longer time periods than older members' pensions, given that assumed retirement ages are those defined in the rules of each plan. At December 31, 2019, the UK DBO was estimated using mortality rates based on the UK Institute and Faculty of Actuaries' CMI SAPS Pensioner Amounts Light Tables with 1.75 percent per annum long term trend from 2008-2018 (2018: CMI SAPS Pensioner Amounts Light tables with 1.75 percent per annum long term trend from 2008-2018), with assumed future improvement of 1.25 percent (2018: 1.25 percent) per annum in line with the CMI Core Projections model 2018 (2018: CMI Core Projections model 2017). The default smoothing parameter which determines how much importance should be given to evidence of more recent mortality improvement data as opposed to longer-term historical data changed in the CMI 2018 model from 7.5 in CMI 2017 to 7.0. Syngenta adopted the default value of 7.0 as mortality experience suggests more weight should be placed on recent data. This reduced the DBO by $31 million. Mortality assumptions were updated in 2018 following the most recent triennial valuation for UK statutory purposes at March 31, 2018, reducing the DBO by $54 million (2.2 percent). The next statutory valuation of the plan will be performed at the latest at March 31, 2021.

At December 31, 2019 and 2018 Syngenta valued the benefit obligation for its Swiss pension plan using mortality, disability and employee turnover assumptions from the BVG 2015 generational table. When Syngenta began to apply that table in 2016, the Swiss DBO increased by $75 million (3.4 percent). At December 31, 2019, Syngenta valued the benefit obligation for its US pension plan using mortality assumptions from the PRI-2012 generational mortality table together with Scale MP-2019 mortality improvements starting with base year 2012 (2018: base year 2017). This resulted in no material change in the benefit obligation compared to the assumptions previously used.

Syngenta's major pension plans give members lump sum or annuity benefit payment options. Syngenta values its pension liabilities on the assumption that the choices made by members who will retire in the future will be consistent with choices made by members who have retired recently.

For calculating benefits of UK plan members, pensionable pay will remain frozen at January 1, 2016 levels. The plan remains open to benefit accrual for existing members, and pay increases awarded after January 1, 2016, which are not part of defined benefit pensionable pay, are pensionable under the Syngenta Group Personal Pension (GPP), a separate defined contribution plan, for those who choose to join. Employees who choose to leave the defined benefit section of the UK pension plan are able to join the GPP. Recent regulatory changes allow members aged at least 55 to transfer their benefits out of the plan into arrangements which allow flexible cash withdrawals, in contrast to the previous requirement that members take at least 75 percent of their benefit in annuity form. Market conditions in recent years have resulted in transfer values favorable to members. These factors resulted in $46 million (2018: $203 million) of benefit payments out of the UK plan as certain members withdrew all their benefits. Syngenta has not made any allowance for future transfers out in connection with the regulatory changes. Available data indicates that if transfers were to continue at the current rate until the next statutory valuation, this would not cause Syngenta to recognize a material actuarial gain or loss in its consolidated financial statements.

Certain UK pension plans, including the Syngenta UK plan, were required by legislation in force between 1978 and 1997 to accrue part of their members' pension ("GMP") in a way that gave rise to inequalities between men and women, but also had a formula independent of GMP for the total pension, resulting in the non-GMP part of total pension also being unequal. The European Court of Justice in *Barber v Guardian Royal Exchange Assurance Group* [1991] ruled that pensions earned from that point onwards must treat men and women equally. However, given GMP benefits were unequal but were prescribed in legislation, it was unclear what would need to be equalized or how. This remained the case until the October 2018 UK High Court decision in *Lloyds Trustees vs Lloyds Bank PLC and Others* (the Lloyds case), which confirmed that pension plans are required to equalize the non-GMP part of members' benefits earned between 1990 and 1997, when legislation changed so that GMPs ceased to accrue. The Lloyds case decision also indicated that the employers could require the plan trustees to choose a particular approach to equalization, "Method C2", which requires comparison of the pension payable to each member with the pension that would be payable to a notional member identical to the member in all respects except gender, and retrospective payment of accumulated pension equal to the higher of the unequalized male or female benefit, together with interest on the underpaid amount. Syngenta has increased the UK DBO in 2018 by $22 million to reflect the effect of applying Method C2 as set out in the Lloyds case decision using estimates based on current aggregate member data, accounting for this as an actuarial loss. This estimate is subject to significant uncertainty because certain points remain to be clarified following the court judgment, detailed calculations by member are not yet available and the actual effect of equalizing benefits may differ.

IFRSs require Syngenta to estimate the economic benefit it can obtain from the amount by which the fair value of assets held in a DB plan exceeds the DBO measured in accordance with IAS 19 ("surplus"), and recognize a reduction in the net DB asset to the extent that the future economic benefit is lower than the actual surplus at the reporting date, or an increase in the net DB liability if the future economic benefit is lower than the projected future surplus that would arise when Syngenta meets an existing minimum funding obligation. Accounting recognition of a surplus in Syngenta's UK defined benefit pension plan is supported by the economic benefit of future contribution savings and, when that benefit is less than the surplus, also by the future refund, net of applicable taxes, which will be unconditionally available to Syngenta when all liabilities have been settled. At December 31, 2019, Syngenta recognized $28 million (2018: $72 million) additional liability, mainly because the projected surplus decreased due to lower discount rate assumptions (2018: mainly because the projected surplus increased due to higher discount rate and lower mortality rate assumptions). This additional liability represents taxes Syngenta would suffer on the portion of the projected surplus supported by Syngenta's refund rights. Benefit accrual for existing members of Syngenta's main US pension plan was frozen as from December 31, 2018, as further described in Note 22 below. At December 31, 2019, Syngenta has recognized $nil (2018: $nil) of the $2 million (2018: $5 million) surplus as an asset, because without future service cost there is no economic benefit from future contribution savings, and US pension regulations do not permit a refund. At December 31, 2019 and 2018, there was no surplus in Syngenta's Swiss pension plan.

Litigation provisions
Syngenta's accounting estimates related to provisions for litigation are disclosed in Note 20.

Changes to accounting policies and other retrospective changes

Syngenta has made the following changes to its accounting policies, segmental reporting, classification of items in its consolidated financial statements and accounting estimates with effect from January 1, 2019. The effect of each change on comparative amounts presented for 2018 is shown separately in the tables below, except for those changes that have not been restated for the reasons indicated below.

Brazil implicit interest
Until December 31, 2018, in accounting for revenue from contracts with customers, in all markets except Brazil, Syngenta applied the permitted IFRS 15 practical expedient not to discount revenue where the agreed credit period is one year or less. From January 1, 2019, Syngenta has applied this expedient also to revenue in Brazil, where Syngenta had previously deferred the implicit interest amount and recognized it over the credit period, as interest income. Syngenta believes that this change results in its consolidated financial statements providing more relevant information about the effects of transactions in Brazil, as it is expected to make the financial statements more

comparable with those of other companies and aligns the accounting for the effects of trade credit in all Syngenta's markets. In these consolidated financial statements, the deductions from trade accounts receivable that previously represented deferred unearned interest at January 1 and December 31, 2018 and associated amounts recognized as interest income for the year ended December 31, 2018 have been removed. The effect of restating revenue for the year ended December 31, 2018 to recognize all of the associated net sales consideration in the periods in which products were transferred to customers in accordance with IFRS 15, was to increase sales by $46 million, decrease marketing and distribution expense by $16 million, increase financial expense, net by $48 million, increase income before taxes by $14 million and increase net income by $9 million. For the year ended December 31, 2019, this change had the effect of increasing sales by $50 million, increasing financial expense, net by $63 million, reducing income before taxes by $13 million and reducing net income by $9 million.

Net interest on pension and other post-employment benefit assets and liabilities
Until December 31, 2018, Syngenta reported net interest on its defined benefit pension and other post-employment benefit plans in Other general and administrative expense. From January 1, 2019, Syngenta reports interest cost in Financial expense, net. Syngenta believes that this change in income statement classification results in its consolidated financial statements providing more relevant information about the effects of its defined benefit plans. Most members of those plans either no longer work for Syngenta or no longer accrue benefits under the plans, the latter being the case for all members of Syngenta's main US pension plan with effect from January 1, 2019. The benefits of these members represent most of Syngenta's defined benefit assets and liabilities and no longer give rise to service cost. Consequently, net interest is no longer relevant to understanding the expenses of each function. The amounts of net interest were not material in the years ended December 31, 2019 and 2018, and for that reason Syngenta has not restated 2018 for this change. The amounts of net interest in future years may be larger, as they will vary in line with the discount rate and the net defined benefit asset or liability determined in accordance with IAS 19 at the end of each year. This change has no impact on income before taxes or retained earnings.

New segment reporting
In 2019, Syngenta adopted revisions to its segment reporting to reflect changes in management structure. There are five operating segments, which have been aggregated into the global Crop Protection segment, including Professional Solutions (previously known as Controls), and the global Seeds segment, including Field Crops, Vegetables and Flowers. In 2018 there were six operating segments, which were aggregated into four geographic regions, which included the Crop Protection, Seeds and Controls businesses, and All other segments.

The comparative segment information presented in Note 4 below for the year ended December 31, 2018 has been restated in accordance with the new management structure.

Reclassification of fleet costs
Syngenta has reclassified the expenses of its car fleet in the consolidated income statement. Until December 31, 2018, all Syngenta's car fleet costs were managed at corporate level and reported in Other general and administrative. From January 1, 2019, the cost of each car is reported in the same function as the personnel cost of the employee who uses the car. This change is purely a reclassification between income statement lines and has no effect on operating income or retained earnings.

Nidera Seeds goodwill and intangible asset fair value adjustments and currency translation thereof
As further described below in Note 3, Syngenta acquired Nidera Seeds on February 6, 2018. The initial accounting for the Nidera acquisition was completed in 2019 and no changes have been made in 2019 to the acquisition date amounts recognized at December 31, 2018 for acquired assets, liabilities and consideration in Syngenta's 2018 annual consolidated financial statements. However, in 2019 Syngenta allocated Nidera Seeds goodwill and fair value adjustments as of the acquisition date into the currencies of the acquired Nidera Seeds legal entities, which could not be performed until the initial accounting was complete. Movements in the Brazilian real exchange rate from the acquisition date until December 31, 2018 reduced other comprehensive income for 2018 and the carrying amount of Nidera Seeds goodwill and intangible assets at December 31, 2018, together with the related deferred tax effect. The comparative 2018 amounts presented for those items have been retrospectively adjusted in the consolidated statement of comprehensive income and consolidated balance sheet to reflect this allocation by currency. The currency translation effects of this allocation on other consolidated balance sheet line items and on the 2018 consolidated income statement and cash flows were not material and have not been adjusted.

The following tables present the effect of the reclassifications and other changes in accounting policies and estimates on the consolidated financial statements:

Changes to the consolidated income statement for the year ended December 31, 2018

($m)	As reported	Brazil interest	Fleet costs	As restated
Sales	13,523	46	-	13,569
Cost of goods sold	(7,288)	-	-	(7,288)
Gross profit	6,235	46	-	6,281
Marketing and distribution	(2,190)	16	(42)	(2,216)
Research and development	(1,300)	-	(11)	(1,311)
General and administrative:				
Restructuring	(281)	-	-	(281)
Divestment gains	434	-	-	434
Other general and administrative	(830)	-	53	(777)
Operating income	2,068	62	-	2,130
Income from associates and joint ventures	2	-	-	2
Interest income	147	(48)	-	99
Interest expense	(379)	-	-	(379)
Other financial expense	(42)	-	-	(42)
Currency losses, net	(79)	-	-	(79)
Financial expense, net	(353)	(48)	-	(401)
Income before taxes	1,717	14	-	1,731
Income tax expense	(275)	(5)	-	(280)
Net income	1,442	9	-	1,451
Attributable to:				
Syngenta AG shareholder	1,438	9	-	1,447
Non-controlling interests	4	-	-	4
Net income	1,442	9	-	1,451

Changes to the consolidated statement of comprehensive income for the year ended December 31, 2018

($m)	As reported	Brazil interest	Nidera Seeds intangible assets	As restated
Net income	1,442	9	-	1,451
Components of other comprehensive income (OCI)				
Items that will not be reclassified to profit or loss	21	-	-	21
Items that may be reclassified subsequently to profit or loss:				
Unrealized gains on derivatives designated as cash flow and net investment hedges and related hedging costs	31	-	-	31
Currency translation effects	(566)	(3)	(84)	(653)
Income tax relating to items that may be reclassified subsequently to profit or loss	(24)	-	-	(24)
	(559)	(3)	(84)	(646)
Total OCI	(538)	(3)	(84)	(625)
Total comprehensive income	904	6	(84)	826
Attributable to:				
Syngenta AG shareholder	902	6	(84)	824
Non-controlling interests	2	-	-	2
Total comprehensive income	904	6	(84)	826

Changes to the consolidated balance sheet as at December 31, 2018

($m)	As reported	Brazil interest	Nidera Seeds intangible assets	As restated
Assets				
Current assets:				
Trade receivables	4,398	49	-	4,447
Other current assets	7,346	-	-	7,346
Total current assets	11,744	49	-	11,793
Non-current assets:				
Intangible assets	4,221	-	(104)	4,117
Deferred tax assets	1,099	(13)	-	1,086
Other non-current assets	4,046	-	-	4,046
Total non-current assets	9,366	(13)	(104)	9,249
Assets held for sale	140	-	-	140
Total assets	21,250	36	(104)	21,182
Liabilities and equity				
Current liabilities:				
Trade accounts payable	(3,613)	(10)	-	(3,623)
Other current liabilities	(4,342)	-	-	(4,342)
Total current liabilities	(7,955)	(10)	-	(7,965)
Non-current liabilities:				
Deferred tax liabilities	(925)	-	20	(905)
Other non-current liabilities	(8,168)	-	-	(8,168)
Total non-current liabilities	(9,093)	-	20	(9,073)
Total liabilities	(17,048)	(10)	20	(17,038)
Shareholder's equity:				
Total shareholder's equity	(4,176)	(26)	84	(4,118)
Non-controlling interests	(26)	-	-	(26)
Total equity	(4,202)	(26)	84	(4,144)
Total liabilities and equity	(21,250)	(36)	104	(21,182)

Changes to the consolidated balance sheet as January 1, 2018

($m)	As reported	Brazil interest	As restated
Assets			
Current assets:			
Trade receivables	4,087	32	4,119
Other current assets	7,972	-	7,972
Total current assets	12,059	32	12,091
Non-current assets:			
Intangible assets	2,973	-	2,973
Deferred tax assets	1,099	(10)	1,089
Other non-current assets	4,202	-	4,202
Total non-current assets	8,274	(10)	8,264
Assets held for sale	-	-	-
Total assets	20,333	22	20,355
Liabilities and equity			
Current liabilities:			
Trade accounts payable	(3,174)	(2)	(3,176)
Other current liabilities	(3,544)	-	(3,544)
Total current liabilities	(6,718)	(2)	(6,720)
Non-current liabilities:			
Deferred tax liabilities	(613)	-	(613)
Other non-current liabilities	(5,002)	-	(5,002)
Total non-current liabilities	(5,615)	-	(5,615)
Total liabilities	(12,333)	(2)	(12,335)
Shareholder's equity:			
Total shareholder's equity	(7,976)	(20)	(7,996)
Non-controlling interests	(24)	-	(24)
Total equity	(8,000)	(20)	(8,020)
Total liabilities and equity	(20,333)	(22)	(20,355)

Changes to the consolidated cash flow statement for the year ended December 31, 2018

($m)	As reported	Brazil interest	As restated
Income before taxes	1,717	14	1,731
Reversal of non-cash and other reconciling items	883	48	931
Cash (paid)/received in respect of:			
Interest received	142	(48)	94
Other cash (paid)/ received, net	(1,320)	-	(1,320)
Operating cash flow before change in net working capital	1,422	14	1,436
Change in net working capital:			
Change in inventories	(230)	-	(230)
Change in trade and other working capital assets	(507)	(22)	(529)
Change in trade and other working capital liabilities	682	8	690
Cash flow from operating activities	1,367	-	1,367

3. Acquisitions, divestments and other significant transactions

The following significant transactions occurred during 2019 and 2018.

2019

Acquisitions
On August 30, 2019, Syngenta acquired The Cropio Group, an agricultural technology company with a primary focus in Eastern Europe. The Cropio platform is an equipment-integrated, end-to-end software solution that provides imaging, recordkeeping, and equipment tracking. Significant opportunities for collaboration across Syngenta's other digital agriculture platforms are expected.

On June 6, 2019, Syngenta acquired the cyclamen flowers business of Varinova, a specialized breeding company based in the Netherlands, in order to enhance Syngenta's portfolio and breeding pipeline.

The acquisition-date fair values of assets, liabilities and consideration for these 2019 business combinations are immaterial, both individually and in aggregate.

On November 1, 2019, Syngenta obtained control of Sanbei Seeds Co. Ltd., China ("Sanbei"), a former associate in which Syngenta has held a 49 percent equity ownership since 2008, for no consideration, as a result of the transactions and agreements involving China National Agrochemical Corporation (CNAC), a ChemChina group subsidiary and a related party of Syngenta. These are further described in Note 15.

Due to Syngenta's previous 49 percent non-controlling ownership interest in Sanbei, the acquisition is considered to have occurred in stages, requiring Syngenta to fair value its existing Sanbei investment immediately prior to the acquisition date. This resulted in a reduction in the carrying value of the investment value in Sanbei by $8 million, with a corresponding loss recognized in Restructuring in the income statement, as shown in Note 6.

Additionally, following the acquisition Sanbei is now controlled by Syngenta but CNAC holds a significant interest of 51 percent. In accordance with IFRS 3, the fair value of CNAC's interest at the acquisition date is reported as a non-controlling interest within Syngenta's equity and will be reflected as a non-controlling interest in the calculation of Syngenta's goodwill arising on acquisition. At the date of acquisition the fair value of CNAC's interest amounted to $44 million. Because of the timing of the acquisition, the amounts recognized at December 31, 2019 for all Sanbei's assets and liabilities are provisional. The assets and liabilities recognized for this business combination were as follows.

($m)	Total
Cash and cash equivalents	25
Inventories	24
Trade receivables and other current assets	1
Property, plant and equipment	13
Intangible assets	2
Deferred tax and other non-current assets	10
Trade and other liabilities	(35)
Net assets acquired	**40**
Fair value of non-controlling interest	44
Fair value of 49 percent equity interest previously held by Syngenta	33
Unallocated purchase price	**37**

Cash flow from acquisitions amounted to a net $8 million cash inflow due to the acquired cash and cash equivalents of Sanbei Seeds with no corresponding outflow for consideration, offset by the cash consideration for Cropio and the Varinova cyclamen business and deferred consideration payments on acquisitions completed in prior years.

Divestment of remedy assets
On January 3, 2019, Syngenta divested certain crop protection products in India, pursuant to commitments given to the Indian antitrust authority Competition Commission of India relating to ChemChina's acquisition of Syngenta. The gain on this disposal was $28 million. The proceeds are reported as Proceeds from disposals of intangible and financial assets in the consolidated cash flow statement. With this transaction, Syngenta has now completed all remedy divestments it committed to make in connection with ChemChina's acquisition of Syngenta.

Sale and leaseback transactions
On January 3, 2019, Syngenta completed the sale and leaseback transaction for the remaining buildings and land at its Basel site which were not disposed of in 2018. The total gain on this 2019 disposal was $128 million, of which $87 million is recognized as a gain at the disposal date and $41 million, corresponding to the value of the retained leaseback, is deferred in accordance with IFRS 16, through reduction in the amount recognized for the right-of-use asset, and is being amortized over a 10-year period from the disposal date. The proceeds are reported as Proceeds from disposals of property, plant and equipment in the consolidated cash flow statement.

During December 2019, as part of Syngenta's real estate portfolio monetization strategy, Syngenta completed a sale and leaseback transaction for two of its global research and development sites. The sale of the sites resulted in $19 million aggregate divestment gains and $238 million cash inflows, reported as Proceeds from disposals of property, plant and equipment, together with the recognition of $202 million of lease liabilities, of which $119 million is repayable over 30 years and $83 million is repayable over 20 years, and $90 million right-of-use assets, of which $69 million will be depreciated over 30 years and $21 million over 20 years.

2018

Acquisition of Nidera Seeds
On February 6, 2018, Syngenta completed the acquisition of the global seeds business of Nidera from Nidera B.V., a subsidiary of COFCO International Ltd., by acquiring 100% of the issued shares of Nidera Seeds Holding B.V. The acquisition of Nidera Seeds will strengthen Syngenta's position in the Latin American seeds market and create value by leveraging Nidera's corn and soybean seed germplasm, strong research and development pipeline and broad footprint in Latin America.

Other acquisitions
On February 1, 2018, Syngenta acquired 100% of the stock of FarmShots, Inc., a US-based innovator of high-resolution satellite imagery that, *inter alia*, detects plant health by analyzing absorbed light from field images. This platform with proprietary processing and multiple plant health index capabilities provides actionable insights normally acquired by walking through a farm and visually inspecting plants. It enables growers to reduce field scouting by as much as 90 percent and helps them focus on areas of need. The acquisition will enhance Syngenta's offer to growers.

On March 30, 2018, Syngenta purchased the business of Abbott & Cobb, a US-based privately owned global breeder and seller of proprietary hybrid vegetable seeds. The acquisition will strengthen Syngenta's sweet corn vegetable seeds business.

On April 30, 2018, Syngenta purchased 100% of the quotas of Strider Desenvolvimento de Software Ltda ("Strider"), a company incorporated in Brazil. Strider is an important participant in the Latin American digital agriculture market. Strider develops and markets technological tools and digital farm management solutions. The acquisition will enhance Syngenta's digital agriculture capability, and hence its offer to growers, in Latin America and globally.

On July 26, 2018 Syngenta acquired 100% of the shares of Icepage Limited, the holding company of Floranova, a respected UK based flower and home garden vegetable seeds breeder. The acquisition covers some important gaps in Syngenta's portfolio of flower seeds crops and enhances its flower business in fast growing Asian markets.

The final acquisition-date fair values of assets, liabilities and consideration for 2018 business combinations are as follows:

($m)	Nidera	Other	Total
Cash and cash equivalents	23	1	24
Inventories	97	10	107
Trade receivables and other current assets	240	5	245
Property, plant and equipment	79	5	84
Intangible assets	710	27	737
Deferred tax and other non-current assets	6	2	8
Trade and other liabilities	(74)	(3)	(77)
Deferred tax liabilities	(197)	(5)	(202)
Net assets acquired	884	42	926
Purchase price	1,473	85	1,558
Goodwill	589	43	632

The purchase price of other acquisitions includes $9 million of contingent and deferred consideration. Transaction costs related to all the above acquisitions were $6 million. Syngenta currently does not expect to be able to claim significant tax deductions in respect of the above goodwill.

Cash flow from these acquisitions was as follows:

($m)	Nidera	Other	Total
Total cash paid	(1,473)	(76)	(1,549)
Net cash acquired	23	1	24
Net cash outflow	(1,450)	(75)	(1,525)

A deposit of $150 million was paid into escrow in 2017 for the acquisition of Nidera Seeds.

For the Nidera acquisition, amounts included in the 2018 consolidated income statement were sales of $315 million and net loss of $58 million. The net loss includes both the purchase accounting impacts of $30 million for releases of inventory step up and $19 million of amortization of intangible assets and the provision for indirect tax exposures of $24 million described in Note 6. The amounts that would be included in a 2018 consolidated income statement on a proforma basis, as though the acquisition had occurred on January 1, 2018 are sales of $326 million and net loss of $80 million. The gross contractual amounts of acquired receivables were $203 million and the estimate of uncollectible amounts was $17 million. For the other acquisitions the amounts are immaterial.

Divestment of remedy assets

On October 24, 2017, Syngenta announced that Adama Agricultural Solutions Ltd ("Adama") and Syngenta had entered into binding agreements with Nufarm Limited ("Nufarm") to sell a portfolio of crop protection product rights for a total agreed transaction value of $490 million, of which $95 million related to Syngenta product rights. Syngenta, Adama and Nufarm completed these transactions on March 16, 2018. The combined portfolio of products divested includes off-patent crop protection formulations in the herbicides, fungicides, insecticides and other categories in the European Economic Area (EEA), and related inventories. No other physical assets or personnel were transferred by Syngenta as part of the transaction. The transaction was carried out in accordance with the commitments given to the European Commission relating to ChemChina's acquisition of Syngenta.

In connection with this transaction, Syngenta agreed to divest and license to Adama certain of its crop protection products, and Adama agreed to grant Syngenta distribution rights to certain of its crop protection products in EAME. The parties also entered into necessary transitional supply agreements. In relation to all the transactions mentioned above, Adama agreed to transfer to Syngenta the cash consideration, net of taxes and transaction costs, which it received for the divestment of its crop protection products, amounting to $313 million, together with the distribution rights to Adama products mentioned above, the fair value of which Syngenta has estimated at $26 million.

The $365 million gain recognized by Syngenta in 2018 on the above transactions is reported within Divestment gains in the consolidated income statement. The proceeds are reported as Proceeds from disposals of intangible and financial assets in the consolidated cash flow statement.

Sale and leaseback of Syngenta headquarters

On December 31, 2018, Syngenta completed a sale and leaseback transaction for two buildings at its Basel headquarters site, recognizing a $69 million gain on disposal within Divestment gains in the consolidated income statement. Syngenta classified the leases as operating leases in accordance with IAS 17. The proceeds are reported as Proceeds from disposals of property, plant and equipment in the consolidated cash flow statement.

4. Segmental breakdown of key figures for the years ended December 31, 2019 and 2018

As further described in Note 2, Syngenta has adopted new segment reporting in 2019. Segment reporting for 2018 has been restated accordingly. There are five operating segments consisting of the Crop Core, Professional Solutions, Field Crops, Vegetables and Flowers businesses. These have been aggregated into the global Crop Protection reporting segment, consisting of Crop Core and Professional Solutions, and the global Seeds reporting segment, consisting of Field Crops, Vegetables and Flowers. Aggregation is based on internal management structures and underlying economic similarity. Crop Core and Professional Solutions have been aggregated because the similarities in their products, production processes, distribution methods and regulatory environments are much more significant than the differences in the market segments to which their respective customer bases sell, and they each have similar economic performance. Field Crops, Vegetables and Flowers have been aggregated because the extensive similarities which each of these businesses has with the others in their products and customers, their production and distribution processes and the regulatory environment for their products are much more significant than their respective differences, which relate to regulatory processes for GM traits used in certain Field Crops products and to the differences in a proportion of their respective customer bases. Also, the economic performance of these businesses is expected to be similar. Segment performance is managed based on segment operating income before restructuring costs and divestments, which is the measure of segment profit or loss presented, and is based on the same accounting policies as consolidated operating income.

Transactions between segments are generally priced based on the third party selling prices achieved by the purchasing segment less an allowance for selling and distribution profit margins for the purchasing segment.

2019 ($m)	Crop Protection	Seeds	Total segments	Restructuring	Syngenta
Product sales - to third parties	10,492	2,795	13,287	-	13,287
Royalty and license income - from third parties	7	288	295	-	295
Total segment sales	10,499	3,083	13,582	-	13,582
Cost of goods sold	(5,723)	(1,659)	(7,382)	(1)	(7,383)
Gross profit	4,776	1,424	6,200	(1)	6,199
Marketing and distribution	(1,503)	(736)	(2,239)	-	(2,239)
Research and development	(546)	(372)	(918)	-	(918)
General and administrative:					
Restructuring	-	-	-	(364)	(364)
Gains on divestments and disposals of non-current assets	88	18	106	28	134
Other general and administrative	(616)	(269)	(885)	-	(885)
Operating income/(loss) - continuing operations	2,199	65	2,264	(337)	1,927
Included in the above operating income from continuing operations are:					
Personnel costs	(2,008)	(869)	(2,877)	(39)	(2,916)
Depreciation of property, plant and equipment and right-of-use assets	(287)	(125)	(412)	-	(412)
Amortization of intangible assets	(129)	(121)	(250)	-	(250)
Impairment of property, plant and equipment, intangible and financial assets	-	-	-	(162)	(162)
Other non-cash items including charges in respect of provisions	(6)	(10)	(16)	(54)	(70)
Gains/(losses) on hedges reported in operating income	23	(7)	16	-	16

Operating income reconciles to consolidated income before taxes as follows:

2019 ($m)	
Operating income	1,927
Income from associates and joint ventures	1
Financial expense, net	(425)
Income before taxes	1,503

2018[1] ($m)	Crop Protection	Seeds	Total segments	Restructuring	Syngenta
Product sales - to third parties	10,332	2,913	13,245	-	13,245
Royalty and license income - from third parties	28	296	324	-	324
Total segment sales	10,360	3,209	13,569	-	13,569
Cost of goods sold	(5,515)	(1,740)	(7,255)	(33)	(7,288)
Gross profit	4,845	1,469	6,314	(33)	6,281
Marketing and distribution	(1,582)	(634)	(2,216)	-	(2,216)
Research and development	(747)	(564)	(1,311)	-	(1,311)
General and administrative:					
Restructuring	-	-	-	(281)	(281)
Divestment gains	53	16	69	365	434
Other general and administrative	(547)	(230)	(777)	-	(777)
Operating income - continuing operations	2,022	57	2,079	51	2,130
Included in the above operating income from continuing operations are:					
Personnel costs	(2,039)	(799)	(2,838)	(55)	(2,893)
Depreciation of property, plant and equipment	(245)	(101)	(346)	-	(346)
Amortization of intangible assets	(138)	(115)	(253)	-	(253)
Impairment of property, plant and equipment, intangible and financial assets	5	-	5	(78)	(73)
Other non-cash items including charges in respect of provisions	(108)	5	(103)	287	184
Losses on hedges reported in operating income	(36)	(8)	(44)	-	(44)

1 After effects of accounting policy changes and restatements described in Note 2

Operating income reconciles to consolidated loss before taxes as follows:

2018[1] ($m)	
Operating income	2,130
Income from associates and joint ventures	2
Financial expense, net	(401)
Income before taxes	1,731

1 After effects of accounting policy changes and restatements described in Note 2

The analysis of revenue by major product line for the years ended December 31, 2019 and 2018 is as follows:

($m)	**2019**	2018[1]
Selective herbicides	**2,619**	2,826
Non-selective herbicides	**919**	863
Fungicides	**3,269**	3,128
Insecticides	**2,065**	1,909
Seedcare	**1,128**	1,133
Professional solutions	**470**	504
Other crop protection	**118**	91
Total Crop Protection before interbusiness eliminations	**10,588**	10,454
Elimination of Crop Protection sales to Seeds	**(89)**	(94)
Total Crop Protection	**10,499**	10,360
Corn and soybean	**1,632**	1,679
Diverse field crops	**619**	659
Vegetables	**621**	653
Other seeds	**12**	18
Flowers	**199**	200
Total Seeds	**3,083**	3,209
Total Syngenta	**13,582**	13,569

1 After effects of accounting policy changes and restatements described in Note 2

The analysis of revenue by primary geographical market for the years ended December 31, 2019 and 2018 is as follows:

($m)	2019	2018[1]
Europe, Africa and Middle East (EAME)	3,953	4,263
North America	3,355	3,591
Latin America	4,234	3,711
Asia Pacific	2,040	2,004
Total sales	**13,582**	13,569

1 After effects of accounting policy changes and restatements described in Note 2

Summarized additional information on the nature of expenses for the years ended December 31, 2019 and 2018 is as follows:

($m)	2019	2018
Salaries, short-term employee benefits and other personnel expense	2,761	2,710
Pension and other post-employment benefit expense	155	183
Total personnel costs	**2,916**	2,893
Depreciation of property, plant and equipment and right-of-use assets	412	346
Impairment of property, plant and equipment	110	1
Amortization of intangible assets	250	253
Impairment of intangible assets	52	77

5. Regional breakdown of key figures for the years ended December 31, 2019 and 2018

The following countries individually accounted for more than 5 percent of one or more of the respective Syngenta totals for the years ended December 31, 2019 and 2018.

($m, except %)	Sales[1]				Total non-current assets[2]			
Country	2019	%	2018[3]	%	2019	%	2018[3]	%
Argentina	588	4	557	4	541	6	526	7
Brazil	2,905	22	2,509	19	958	11	867	11
Switzerland	54	-	73	1	2,712	32	2,695	33
UK	175	1	184	1	547	6	476	6
USA	2,932	22	3,141	23	1,956	23	1,960	24
Rest of world	6,928	51	7,105	52	1,817	22	1,555	19
Total	**13,582**	**100**	13,569	100	**8,531**	**100**	8,079	100

1 Sales by location of third party customer
2 Excluding deferred tax assets, defined benefit pension assets and derivative financial assets
3 After effects of accounting policy changes and restatements described in Note 2

No single customer accounted for 10 percent or more of Syngenta's total sales.

6. Restructuring

Restructuring for the years ended December 31, 2019 and 2018, broken down into the main restructuring initiatives, consists of the following:

($m)	2019	2018
Accelerating operational leverage and other productivity programs:		
Cash costs		
Charged to provisions	**36**	54
Expensed as incurred	**25**	101
Non-cash costs	**-**	1
Acquisition, divestment and related costs:		
Cash costs		
Charged to provisions	**3**	24
Other, expensed as incurred	**42**	22
Non-cash items	**9**	35
Other restructuring:		
Cash costs	**73**	-
Other non-current asset impairments	**177**	77
Total restructuring	**365**	314

In 2019, $1 million for the reversal of inventory step ups reported on acquisitions is presented within Cost of goods sold in the consolidated income statement (2018: $33 million). The other costs above for the years ended December 31, 2019 and 2018 are presented within Restructuring in the consolidated income statement.

Analysis of restructuring costs

2019

Accelerating operational leverage and other productivity programs

Cash costs of $61 million, including $36 million of severance and pension charges, $12 million of consultancy and external services costs and $4 million for information systems projects, were incurred for the completion of projects started under the Accelerating Operational Leverage program and further productivity initiatives to simplify the layers of management, including at the global headquarters.

Acquisition, divestment and related costs

Cash costs for acquisition and related integration costs include $20 million for merger and acquisition projects and other transaction costs and $25 million for integration projects, particularly related to the Nidera acquisition completed in 2018. Non-cash costs include $8 million for the loss incurred to acquire control of Sanbei Seeds, previously an Associate (see Note 15), and $1 million for the reversal of inventory step ups reported on acquisitions.

Other restructuring

Cash costs consist of $39 million related to the closure of a manufacturing site in the USA announced in June 2019, including charges to provide for environmental remediation and severance, $24 million to provide for a seeds processing contract where forecast demand is less than minimum future commitments and $10 million of costs incurred to relocate the Seeds operations in the USA.

Other non-current asset impairments consist of $92 million for property, plant and equipment and $15 million for maintenance spares and other unusable inventories at the closing manufacturing site in the USA; $41 million for capitalized agreements related to a seed technology where future value is expected to be lower than previous projections due to increasing competition and a reduced market; $17 million for sites that are expected to be sold during 2020 (see Note 10); $10 million for a licensing agreement that has been terminated, and $2 million of other small impairments.

2018

Accelerating operational leverage programs

Cash costs of $101 million, including $25 million for information systems projects, consisted of $35 million for initiatives to restructure marketing and commercial operations, $32 million for projects to improve the effectiveness of back office support, $23 million for Research and Development productivity projects, $8 million for activity to optimize production and supply and $3 million for project management. A further $54 million of severance and pension costs were incurred to simplify the layers of management, including at the global headquarters. Non-cash costs included tangible asset write-downs associated with the above projects.

Acquisition, divestment and related costs

A provision for $24 million was charged to the income statement for indirect tax exposures related to the Nidera acquisition. Other cash costs for acquisition and related integration costs included $12 million for merger and acquisition projects and other transaction costs and $10 million incurred for integration projects. Non-cash costs included $33 million for the reversal of inventory step ups reported on acquisitions and $2 million of inventory impairment provisions. Five acquisitions were completed during 2018 as further described in Note 3.

Other non-cash restructuring

Other non-current asset impairments consisted of $70 million for an intangible asset impairment where further development of technologies held by Syngenta is not considered cost effective and activities have been suspended and $7 million for the impairment of a research collaboration agreement whose expected future benefit no longer supports its value.

7. Income taxes

Income before taxes from continuing operations for the years ended December 31, 2019 and 2018 consists of the following:

($m)	2019	2018[1]
Switzerland	952	932
Foreign	551	799
Total income before taxes	**1,503**	1,731

1 After effects of accounting policy changes and restatements described in Note 2

Income tax (expense)/benefit on income from continuing operations for the years ended December 31, 2019 and 2018 consists of the following:

($m)	2019	2018[1]
Current income tax (expense):		
Switzerland	(104)	(109)
Foreign	(235)	(139)
Total current income tax (expense)	**(339)**	(248)
Deferred income tax (expense)/benefit:		
Switzerland	170	(6)
Foreign	122	(26)
Total deferred income tax (expense)/benefit	**292**	(32)
Total income tax (expense)/benefit:		
Switzerland	66	(115)
Foreign	(113)	(165)
Total income tax (expense)/benefit:	**(47)**	(280)

1 After effects of accounting policy changes and restatements described in Note 2

The components of current income tax (expense)/benefit on income from continuing operations for the years ended December 31, 2019 and 2018 are:

($m)	2019	2018
Current tax (expense) relating to current years	(361)	(348)
Adjustments to current tax for prior periods	22	100
Total current income tax (expense)	**(339)**	(248)

The components of deferred income tax (expense)/benefit on income from continuing operations for the years ended December 31, 2019 and 2018 are:

($m)	2019	2018[1]
Origination and reversal of temporary differences	152	64
Changes in tax rates or legislation	180	(11)
Other adjustments to deferred tax for prior periods	(21)	(6)
Utilization of tax losses previously recognized as deferred tax assets	(10)	(11)
Benefit of previously unrecognized deferred tax assets	35	12
Non-recognition of deferred tax assets	(44)	(80)
Total deferred income tax (expense)/benefit	**292**	(32)

1 After effects of accounting policy changes and restatements described in Note 2

OCI and Income tax relating thereto, for each component of equity, for the years ended December 31, 2019 and 2018 are as follows:

	2019			2018[1]		
($m)	**Pre-tax**	**Tax**	**Post-tax**	Pre-tax	Tax	Post-tax
Items that will not be reclassified to profit or loss:						
Fair value reserves: Equity investments at fair value through OCI	**9**	**(2)**	**7**	15	(3)	12
Retained earnings: Actuarial gains/(losses)	**(45)**	**(51)**	**(96)**	18	(9)	9
Items that may be reclassified to profit or loss:						
Fair value reserves: Cash flow and net investment hedges	**(54)**	**61**	**7**	31	(8)	23
Currency translation effects	**(174)**	**(14)**	**(188)**	(653)	(16)	(669)
Total	**(264)**	**(6)**	**(270)**	(589)	(36)	(625)

1 After effects of accounting policy changes and restatements described in Note 2

Due to the enacted Swiss tax rate change (as referred to in Note 2), there is a $71 million unfavorable deferred tax impact within OCI related to pension actuarial losses charged to OCI.

Income tax (charges)/credits recognized in OCI on cash flow and net investment hedges were $63 million (2018: $1 million). Income tax charges/(credits) reclassified to profit or loss were $(2) million (2018: $(9) million).

No income tax was (charged)/credited to shareholder’s equity for the years ended December 31, 2019 and 2018.

Analysis of tax rate

The table below presents the main elements causing Syngenta’s effective tax rate to differ from the statutory tax rate for the years ended December 31, 2019 and 2018. Syngenta’s statutory tax rate consists of the ordinary tax rate applicable in the canton of Basel Stadt, where Syngenta is headquartered. Syngenta applies the domestic Swiss tax rate as it believes this is more meaningful than using a weighted average tax rate.

The domestic Swiss tax rate has changed. The new Swiss domestic rate applicable in the canton of Basel Stadt from 2019 onwards is 13 percent and has been used for the tax rate reconciliation (2018: 22 percent).

	2019 %	2018 %
Statutory tax rate	**13**	22
Effect of income taxed at different rates	**1**	(6)
Effect of other disallowed expenditures and income not subject to tax	**(3)**	(2)
Tax deduction for amortization and impairments not recognized for IFRS	**-**	(1)
Effect of changes in tax rates and laws on previously recognized deferred tax assets and liabilities	**(12)**	1
Effect of recognition of previously unrecognized deferred tax assets	**(2)**	-
Effect of recognition of previously unrecognized tax losses	**(1)**	(1)
Changes in prior year estimates and other items	**4**	(2)
Effect of non-recognition of deferred tax assets	**3**	5
Effective tax rate	**3**	16

In 2019, effect of changes in tax rates and laws on previously recognized deferred tax assets and liabilities includes among other effects a $195 million deferred tax benefit as a result of the remeasurement of deferred tax liabilities in Switzerland due to the enacted Swiss tax rate change.

In 2018, effect of income taxed at different rates includes rate differences from the domestic Swiss tax rate attributable to income generated from intellectual property that was taxed at reduced rates and the effect of lower tax rates in certain countries with regard to treasury, investment, group funding and regional management activities as well as logistical operations management. In most of these countries, Syngenta has entered into advance pricing agreements.

The movements in deferred tax assets and liabilities during the year ended December 31, 2019 are as follows:

2019 ($m)	January 1	Recognized in net income	Recognized in equity and OCI	Currency translation effects	Other movements and acquisitions	December 31
Assets associated with:						
Inventories	**362**	**134**	**(14)**	**(18)**	**-**	**464**
Accounts receivable	**253**	**46**	**-**	**(18)**	**-**	**281**
Pensions and employee costs	**132**	**38**	**(51)**	**(1)**	**-**	**118**
Provisions	**469**	**(28)**	**-**	**(2)**	**-**	**439**
Unused tax losses and tax credits	**101**	**(10)**	**-**	**(2)**	**-**	**89**
Financial instruments, including derivatives	**16**	**19**	**-**	**-**	**-**	**35**
Other	**51**	**22**	**-**	**-**	**-**	**73**
Deferred tax assets	**1,384**	**221**	**(65)**	**(41)**	**-**	**1,499**
Liabilities associated with:						
Property, plant and equipment	**(299)**	**68**	**(1)**	**-**	**-**	**(232)**
Intangible assets	**(405)**	**20**	**-**	**21**	**1**	**(363)**
Inventories	**(115)**	**(39)**	**-**	**(1)**	**-**	**(155)**
Financial instruments, including derivatives	**(49)**	**-**	**25**	**-**	**-**	**(24)**
Other provisions and accruals	**(279)**	**32**	**-**	**(2)**	**-**	**(249)**
Other	**(56)**	**(10)**	**-**	**(1)**	**-**	**(67)**
Deferred tax liabilities	**(1,203)**	**71**	**24**	**17**	**1**	**(1,090)**
Net deferred tax asset/(liability)	**181**	**292**	**(41)**	**(24)**	**1**	**409**

The movements in deferred tax assets and liabilities during the year ended December 31, 2018 are as follows:

2018[1] ($m)	January 1	Recognized in net income	Recognized in equity and OCI	Currency translation effects	Other movements and acquisitions	December 31
Assets associated with:						
Inventories	418	(27)	(18)	(13)	2	362
Accounts receivable	326	(46)	-	(33)	6	253
Pensions and employee costs	148	2	(9)	(8)	(1)	132
Provisions	453	27	-	(11)	-	469
Unused tax losses and tax credits	31	79	-	(9)	-	101
Financial instruments, including derivatives	14	2	-	(1)	1	16
Other	46	8	-	(2)	(1)	51
Deferred tax assets	1,436	45	(27)	(77)	7	1,384
Liabilities associated with:						
Property, plant and equipment	(300)	(12)	-	6	7	(299)
Intangible assets	(245)	16	-	23	(199)	(405)
Inventories	(132)	18	-	10	(11)	(115)
Financial instruments, including derivatives	(41)	(4)	(5)	1	-	(49)
Other provisions and accruals	(176)	(102)	-	(1)	-	(279)
Other	(66)	7	-	3	-	(56)
Deferred tax liabilities	(960)	(77)	(5)	42	(203)	(1,203)
Net deferred tax asset/(liability)	476	(32)	(32)	(35)	(196)	181

1 After effects of accounting policy changes and restatements described in Note 2

The deferred tax assets and liabilities at December 31, 2019 and 2018 reconcile to the amounts presented in the consolidated balance sheet as follows:

($m)	2019	2018[1]
Deferred tax assets	**1,499**	1,384
Adjustment to offset deferred tax assets and liabilities[2]	**(312)**	(298)
Adjusted deferred tax assets	**1,187**	1,086
Deferred tax liabilities	**(1,090)**	(1,203)
Adjustment to offset deferred tax assets and liabilities[2]	**312**	298
Adjusted deferred tax liabilities	**(778)**	(905)

1 After effects of accounting policy changes and restatements described in Note 2

2 Deferred tax assets and liabilities relating to income taxes levied by the same taxation authority on the same taxable entity or on entities which intend to settle current tax assets and liabilities on a net basis or to realize the assets and settle the liabilities simultaneously are offset for presentation on the face of the consolidated balance sheet where a legal right of set-off exists

The gross value at December 31, 2019 and 2018 of unused tax loss carry forwards and other deductible temporary differences for which no deferred tax asset has been recognized, by expiration date, is as follows:

($m)	2019	2018
One year	**5**	1
Two years	**-**	-
Three years	**-**	9
Four years	**1**	2
Five years	**1**	1
More than five years	**10**	518
No expiry	**173**	554
Total	**190**	1,085

The above losses for 2019 consist mainly of Brazil and Belgium tax loss carry forwards. The above losses from 2018 consist mainly of US state tax losses, with an applicable tax rate of 0.1 percent of the gross amounts.

A $367 million (2018: $190 million) temporary difference for deferred deduction of interest paid in one jurisdiction had not been recognized.

Deferred tax assets, other than those related to unused tax losses, are not subject to expiry except as follows:

– A $54 million (2018: $52 million) unrecognized tax credit carry forward in one jurisdiction will expire in more than five years

A deferred tax liability has not been recognized at December 31, 2019 and 2018 on the following items:

($m)	2019	2018
Temporary differences associated with investments in subsidiaries for which deferred tax liabilities have not been recognized	**873**	989

There are no income tax consequences for Syngenta of paying a dividend to its shareholder.

8. Share capital

Each Syngenta ordinary share carries one vote at the shareholder's meetings of Syngenta. Voting rights may be exercised only after a shareholder has been registered in Syngenta's share register. Registration as a shareholder with voting rights is subject to certain declarations on the ownership of Syngenta shares. The number of ordinary shares of par value CHF 0.10 that were authorized, issued, fully paid and outstanding at, and the movements during the years ended, December 31, 2019 and 2018 are presented in the table below.

	2019		2018	
(Millions of shares)	**Shares in issue**	**Treasury shares held**	Shares in issue	Treasury shares held
January 1	**92.5**	**(0.2)**	92.5	(0.2)
In-kind dividend distribution	**-**	**0.2**	-	-
December 31	**92.5**	**-**	92.5	(0.2)

9. Trade and other accounts receivable

Trade receivables at December 31, 2019 and 2018 are as follows:

($m)	2019	2018[1]
Trade receivables, gross	**4,823**	4,822
Provision for doubtful trade receivables	**(465)**	(375)
Trade receivables, net	**4,358**	4,447

1 After effects of accounting policy changes and restatements described in Note 2

Information relating to Syngenta's credit risk exposure at December 31, 2019 and 2018 and movements in the provision for expected credit losses (ECL) on trade and other receivables and amortized cost financial assets in accordance with IFRS 9 for the years ended December 31, 2019 and 2018 are as follows:

	2019		2018[1]	
($m)	12-month ECL	Lifetime ECL (collectively assessed)	12-month ECL	Lifetime ECL (collectively assessed)
Maximum exposure to credit risk	**545**	**4,823**	506	4,822
Collateral held	**-**	**170**	-	179
Impairment provisions				
January 1	**(7)**	**(375)**	(13)	(448)
Additions due to business acquisitions	**-**	**-**	-	(18)
Amounts credited/(charged) to income	**-**	**(106)**	5	(33)
Amounts written off	**2**	**18**	-	87
Currency translation effects and other	**-**	**(2)**	1	37
December 31	**(5)**	**(465)**	(7)	(375)
Carrying value, net	**540**	**4,358**	499	4,447

1 After effects of accounting policy changes and restatements described in Note 2

The analysis of gross carrying amount by internal rating grades for the years ended December 31, 2019 and 2018 is as follows:

	2019	2018[1]
($m)	Lifetime ECL (collectively assessed)	Lifetime ECL (collectively assessed)
Amounts not yet due	**3,890**	3,891
Amounts past due:		
0-90 days	**363**	375
90-180 days	**102**	148
180 days-1 year	**248**	220
More than 1 year	**220**	188
Maximum exposure to credit risk	**4,823**	4,822

1 After effects of accounting policy changes and restatements described in Note 2

The carrying amount of trade receivables includes $29 million (2018: $15 million) that are due more than one year from the balance sheet date.

The carrying amount of trade receivables transferred in full and partial recourse factoring arrangements, but not derecognized is $66 million (2018: $52 million). Related current liabilities of $58 million (2018: $52 million) are disclosed in Note 17 and related non-current liabilities of $8 million (2018: $nil) are included within Liabilities to banks and other financial institutions in Note 19. The amount of these receivables before the transfer transactions was $66 million (2018: $67 million).

10. Other current assets and assets held for sale

Other current assets at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
Prepaid expenses	**271**	305
Assets held under barter agreements	**50**	49
Other	**3**	31
Total other current assets	**324**	385
Assets held for sale	**29**	140
Combined total	**353**	525

Assets held for sale at December 31, 2019, which are classified separately on the balance sheet, relate to various sites planned for disposal under integration and site rationalization plans in EAME and LATAM.

Assets held for sale at December 31, 2018, which are classified separately on the balance sheet, relate principally to the buildings and land at the Syngenta headquarters in Basel, Switzerland other than those disposed of in 2018. Syngenta entered into binding contracts to sell and lease back the parts of the headquarter site which were still owned by Syngenta at December 31, 2018. The buildings, other than those disposed of in 2018, have been leased back for an initial term of ten years. Further information about the disposals and leasebacks of this land and these buildings that took place in 2019 and 2018 is disclosed in Note 3.

11. Inventories

Inventories at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
Raw materials and consumables	**598**	519
Biological assets	**39**	37
Work in progress	**1,972**	1,105
Finished products	**2,364**	2,631
Total	**4,973**	4,292

Finished products includes $150 million (2018: $120 million) of inventory held by customers under a sale with a right of return.

Movements in inventory write-downs for the years ended December 31, 2019 and 2018 are as follows:

($m)	2019	2018
January 1	**(308)**	(308)
Additions charged to income	**(262)**	(256)
Reversals of inventory write-downs	**22**	52
Amounts utilized on disposal of related inventories	**178**	190
Currency translation effects and other	**18**	14
December 31	**(352)**	(308)

Reversals of inventory write-downs arise in the normal course of business when actual outcomes are more favorable than assumptions made in prior periods about Syngenta's future ability to sell inventories that are subject to risks of degradation and obsolescence, such as germination of seeds.

Movements in biological assets for the years ended December 31, 2019 and 2018 are as follows.

($m)	2019	2018
January 1	**37**	36
Changes in fair value	**132**	133
Additions to cost	**9**	16
Sales and harvest	**(138)**	(147)
Currency translation effects and other	**(1)**	(1)
December 31	**39**	37
Of which: carried at fair value less costs to sell	**37**	34

Syngenta's inputs for measuring the fair value of those assets that are carried at fair value less costs to sell include both market data from actual sales and inputs based on the stage of growth of immature assets, which is not observable in the market. The fair values therefore represent a level 3 measurement in the fair value hierarchy as defined by IFRS 13. Their sensitivity to changes in the unobservable inputs is not material to the consolidated financial statements.

Quantities of biological assets in inventories at December 31, 2019 and 2018 are:

	2019	2018
(Millions of plants)		
Plants	**68**	76
Cuttings	**559**	529
(Thousands of hectares cultivated)		
Growing crops	**1**	1

12. Property, plant and equipment

Movements in property, plant and equipment for the year ended December 31, 2019 are as follows:

2019 ($m)	Land	Buildings	Machinery and equipment	Assets under construction	Total
Cost					
January 1	156	2,065	5,154	386	7,761
Reclassified on implementation of IFRS 16	-	(9)	(116)	-	(125)
Additions	-	49	185	289	523
Additions due to acquisitions	1	6	6	-	13
Disposals	(4)	(232)	(155)	(1)	(392)
Classified as held-for-sale	(23)	(20)	(11)	-	(54)
Transfers between categories	-	106	142	(248)	-
Currency translation effects and other	(8)	(2)	43	(14)	19
December 31	122	1,963	5,248	412	7,745
Accumulated depreciation and impairment losses					
January 1	-	(1,088)	(3,311)	-	(4,399)
Reclassified on implementation of IFRS 16	-	1	61	-	62
Depreciation charge	-	(69)	(246)	-	(315)
Impairment losses	-	(25)	(59)	(26)	(110)
Depreciation on disposals	-	140	122	-	262
Classified as held-for-sale	-	19	8	-	27
Currency translation effects and other	-	3	(24)	-	(21)
December 31	-	(1,019)	(3,449)	(26)	(4,494)
Net book value – December 31	122	944	1,799	386	3,251

Additions to property, plant and equipment of $523 million (2018: $479 million) comprise $521 million (2018: $448 million) of cash purchases and $2 million (2018: $31 million) of other additions made up of capitalized borrowing costs and, in 2018 only, initial recognition of finance leases. In 2019, finance leases are reported as right-of-use assets in Note 23 following the adoption of IFRS 16.

Movements in property, plant and equipment for the year ended December 31, 2018 were as follows:

2018 ($m)	Land	Buildings	Machinery and equipment	Assets under construction	Total
Cost					
January 1	152	2,169	5,283	317	7,921
Additions	1	44	193	241	479
Additions due to acquisitions	10	37	37	-	84
Disposals	(2)	(85)	(251)	-	(338)
Classified as held-for-sale	(1)	(88)	(84)	-	(173)
Transfers between categories	-	33	86	(119)	-
Currency translation effects and other	(4)	(45)	(110)	(53)	(212)
December 31	156	2,065	5,154	386	7,761
Accumulated depreciation and impairment losses					
January 1	-	(1,112)	(3,349)	-	(4,461)
Depreciation charge	-	(70)	(277)	-	(347)
Depreciation on disposals	-	62	223	-	285
Classified as held-for-sale	-	10	27	-	37
Currency translation effects and other	-	22	65	-	87
December 31	-	(1,088)	(3,311)	-	(4,399)
Net book value – December 31	156	977	1,843	386	3,362

The net book value of property, plant and equipment accounted for as finance lease assets at December 31, 2018 was $63 million, of which $54 million is classified as Machinery and equipment and $9 million is classified as Buildings.

13. Intangible assets

Movements in intangible assets for the year ended December 31, 2019 are as follows:

2019 ($m)	Goodwill	Product rights	Trademarks	Patents	Software	Other intangibles[2]	Total
Cost							
January 1[1]	**2,486**	**3,451**	**162**	**40**	**562**	**685**	**7,386**
Additions from business combinations	**13**	**1**	**1**	**-**	**2**	**40**	**57**
Additions from internal development	**-**	**-**	**-**	**-**	**-**	**362**	**362**
Other additions	**-**	**13**	**-**	**1**	**14**	**4**	**32**
Retirements and disposals	**-**	**(31)**	**-**	**-**	**(7)**	**(2)**	**(40)**
Currency translation effects	**(29)**	**(3)**	**(4)**	**1**	**6**	**(7)**	**(36)**
December 31	**2,470**	**3,431**	**159**	**42**	**577**	**1,082**	**7,761**
Accumulated amortization and impairment losses							
January 1	**(271)**	**(2,345)**	**(49)**	**(28)**	**(353)**	**(223)**	**(3,269)**
Amortization charge	**-**	**(150)**	**(8)**	**(2)**	**(53)**	**(37)**	**(250)**
Impairment losses	**-**	**(10)**	**-**	**-**	**(1)**	**(41)**	**(52)**
Retirements and disposals	**-**	**10**	**-**	**-**	**7**	**1**	**18**
Currency translation effects	**-**	**(4)**	**-**	**-**	**(4)**	**1**	**(7)**
December 31	**(271)**	**(2,499)**	**(57)**	**(30)**	**(404)**	**(299)**	**(3,560)**
Net book value – December 31	**2,199**	**932**	**102**	**12**	**173**	**783**	**4,201**

1 After effects of accounting policy changes and restatements described in Note 2
2 Includes $362m (2018: $ nil) of capitalized product development costs

Additions in 2019 and 2018 include intangible assets arising from license agreements involving non-monetary exchanges or where the cash flows related to the acquisition of the asset are payable over several years. For 2018, internally developed intangible assets of $52 million were included within Additions. Cash paid to acquire and develop intangible assets was $408 million (2018: $193 million).

Amortization is included partly within Cost of goods sold and partly within general and administrative expenses.

Other intangibles consist principally of values assigned to development costs, supply contracts, production know-how and customer relationships acquired in business combinations.

Movements in intangible assets for the year ended December 31, 2018 were as follows:

2018[1] ($m)	Goodwill	Product rights	Trademarks	Patents	Software	Other intangibles	Total
Cost							
January 1	1,933	3,077	74	41	564	425	6,114
Additions from business combinations	632	337	111	-	8	281	1,369
Additions	-	218	-	-	37	16	271
Retirements and disposals	(1)	(143)	(12)	(1)	(39)	(1)	(197)
Currency translation effects	(78)	(38)	(11)	-	(8)	(36)	(171)
December 31	2,486	3,451	162	40	562	685	7,386
Accumulated amortization and impairment losses							
January 1	(274)	(2,248)	(53)	(27)	(344)	(195)	(3,141)
Amortization charge	-	(154)	(9)	(2)	(52)	(36)	(253)
Impairment losses	-	(77)	-	-	-	-	(77)
Retirements and disposals	-	123	12	1	39	2	177
Currency translation effects	3	11	1	-	4	6	25
December 31	(271)	(2,345)	(49)	(28)	(353)	(223)	(3,269)
Net book value – December 31	2,215	1,106	113	12	209	462	4,117

1 After effects of accounting policy changes and restatements described in Note 2

As further described in Note 4, Syngenta has adopted new segment reporting in 2019. The net book value at December 31, 2019 of goodwill is allocated to Syngenta's new operating segments and other CGUs as summarized below:

($m)	2019
Allocated to operating segments:	
Crop Core	**943**
Professional Solutions	**39**
Field Crops	**24**
Vegetables	**67**
Flowers	**14**
Total allocated to operating segments	**1,087**
Allocated to other individual CGUs:	
North America Corn and Soybean seed	**316**
Corn and Soybean seed rest of world	**502**
Other, not individually significant	**294**
Total allocated to other individual CGUs	**1,112**
Total goodwill	**2,199**

The total amount of goodwill attributable to the Field Crops operating segment is $988 million, consisting of $24 million allocated at the operating segment level and a further $964 million allocated to other individual CGUs that form part of the overall operating segment as follows: Corn and Soybean rest of world ($502 million), North America Corn and Soybean seed ($316 million) and $146 million allocated to Other, not individually significant CGUs.

The total amount of goodwill attributable to the Crop Core operating segment is $1,091 million, consisting of $943 million allocated at the operating segment level and a further $148 million allocated to Other, not individually significant CGUs that form part of the overall operating segment.

The net book value at December 31, 2018 of goodwill is allocated to Syngenta's previous operating segments and other CGUs as summarized below:

($m)	2018[1]
Allocated to operating segments:	
Europe, Africa and Middle East	241
North America	220
Latin America	178
Asia Pacific	326
Flowers	14
Total allocated to operating segments	979
Allocated to other individual CGUs:	
North America Corn and Soybean seed	318
Corn and Soybean seed rest of world	526
Other, not individually significant	392
Total allocated to other individual CGUs	1,236
Total goodwill	2,215

1 After effects of accounting policy changes and restatements described in Note 2

14. Financial and other non-current assets

Financial and other non-current assets at December 31, 2019 and 2018, are as follows:

($m)	2019	2018
Equity securities at fair value through OCI	**140**	123
Precious metal catalysts	**44**	59
Royalties receivable	**125**	81
Long-term marketable securities	**31**	-
Other non-current receivables	**163**	145
Post-employment benefit assets (Note 22)	**68**	54
Long-term derivative financial assets (Note 26)	**37**	30
Total financial and other non-current assets	**608**	492

15. Associates, Joint ventures and transactions and agreements with related parties

Associates and joint ventures

Investments in associates and joint ventures at December 31, 2019 are $147 million (2018: $192 million).

None of Syngenta's investments in associates and joint ventures are publicly quoted. At December 31, 2019, these investments consist mainly of $113 million (2018: $114 million) for a 50 percent ownership of the joint venture CIMO Compagnie Industrielle de Monthey SA, Switzerland (CIMO), which provides utility services to Syngenta and other occupants of the Monthey manufacturing site and $30 million (2018: $29 million) for a 40 percent ownership of the associate Maisadour Semences SA, France (Maisadour). Maisadour produces and sells seeds, with Syngenta being one of Maisadour's customers.

Effective November 1, 2019, Syngenta obtained control of Sanbei, a former associate in which Syngenta has held a 49 percent equity ownership since 2008. On May 22, 2019, CNAC, a ChemChina group subsidiary, acquired the 51 percent controlling equity interest in Sanbei not owned by Syngenta, with Syngenta's 49 percent interest remaining unchanged. Subsequently, following a revision to Sanbei's articles of association that gives Syngenta 67 percent of the voting rights at Shareholders' Meetings, together with Syngenta's continuing rights to variable returns from its commercial and technical relationships with Sanbei, Syngenta obtained the ability to control Sanbei in accordance with IFRS 10 *"Consolidated financial statements"* without the exchange of any consideration with CNAC. Accordingly, Sanbei is now considered to be a subsidiary of Syngenta and Syngenta began to consolidate it from November 1, 2019.

During 2019, Syngenta's share of CIMO's actuarial losses recognized in OCI is $4 million (2018: gain of $2 million). Other effects on Syngenta's consolidated income statement for the periods presented, or any financial statement line items of the above associates and joint ventures themselves, are not material.

Transactions between Syngenta and its associates and joint ventures during the year ended December 31, 2019 are as follows:

- Goods and services provided by Syngenta to its associates and joint ventures $6 million (2018: $9 million)
- Goods and services provided by associates and joint ventures to Syngenta $73 million (2018: $87 million)
- Non-current assets and research and development provided by Syngenta to an associate of $nil (2018: $2 million)

At December 31, 2019 Syngenta has accounts receivable and accrued income from associates and joint ventures of $nil (2018: $6 million) and accrued liabilities to associates and joint ventures of $4 million (2018: $6 million).

A bank overdraft guarantee of $6 million (2018: $8 million) has been provided to an associate.

On November 12, 2013 Syngenta agreed to advance EUR 9 million ($10 million at December 31, 2019 currency translation rates) to Maisadour for 7 years to help finance the planned expansion of corn seed processing capacity in Maisadour Ukraine LLC, a subsidiary of Maisadour, which is a supplier of corn seeds to Syngenta. This current account advance will be made in instalments when called by Maisadour and bears a market rate of interest. At December 31, 2019 the balance outstanding was $7 million (2018: $7 million). By a deed between Syngenta, Maisadour and the European Bank for Reconstruction and Development (EBRD), repayment of the principal is subordinated to a loan between the EBRD and Maisadour Ukraine LLC which is guaranteed by Maisadour.

Key management personnel

Key management personnel are considered to be the members of the Syngenta Executive Team and the Board of Directors. Their compensation is as follows for the years ended December 31, 2019 and 2018:

($m)	**2019**	2018
Fees, salaries and other short-term benefits	**27**	23
Post-employment benefits	**1**	1
Payments to end of contractual notice period	**-**	1
Total	**28**	25

Members of the Syngenta Executive Team and Board of Directors receive their cash compensation in Swiss francs, except one member of the Executive Team who is based in the US and is paid in US dollars. The compensation amounts presented above have been converted into US dollars using the average currency exchange rate in effect during each year reported. The average Swiss franc per US dollar exchange rate for the year ended December 31, 2019 is 0.99 (2018: 0.98).

Post-employment benefits include healthcare, disability, death in service and pension costs.

ChemChina and its subsidiaries

The Transaction Agreement between ChemChina, its subsidiary China National Agrochemical Corporation (CNAC) and Syngenta AG provides that after the first settlement of the ChemChina Tender Offer, 4 out of 10 members of Syngenta's Board of Directors shall be persons who have no affiliation with ChemChina or its affiliates (each, an Independent Director). Certain matters will require the affirmative vote of at least two Independent Directors, including, among others, (i) any change in the location of Syngenta's headquarters, (ii) any raising of new debt or making of distributions which would lower the rating of Syngenta to a level below investment grade (by Moody's and Standard & Poor's), (iii) any reduction in Syngenta's Research and Development budget in any given year to a level below 80 percent of the average Research and Development spend in the years 2012– 2015, (iv) any material change in the agricultural sustainability programs or reduction of funding of the Syngenta Foundation for Sustainable Agriculture to a level below 80 percent of the average funding per year 2012–2015, (v) any material change to Syngenta's Health, Safety and Environment Policy and Standards and (vi) any material change to Syngenta's Code of Conduct. Approval by the Independent Directors will also be required, subject to certain exceptions, for any transaction between any member of the ChemChina group, on the one hand, and any member of the Syngenta AG group, on the other hand, if the transaction is not made at market terms. The above corporate governance arrangements shall remain in place until the earlier of (i) five years following the first settlement of the ChemChina Tender Offer and (ii) a re-listing of Syngenta shares through an initial public offering.

Transactions between Syngenta and fellow subsidiaries of ChemChina, its ultimate parent company, during the year ended December 31, 2019 are as follows:

- Goods and services provided to fellow subsidiaries of ChemChina $80 million (2018: $151 million)
- Goods and services provided by fellow subsidiaries of ChemChina to Syngenta $79 million (2018: $32 million)

At December 31, 2019, Syngenta has accounts receivable from fellow subsidiaries of ChemChina of $36 million (2018: $51 million) and accounts payable to fellow subsidiaries of ChemChina of $22 million (2018: $7 million).

In respect of the 2018 transaction with Adama described in Note 3 for the divestment of remedy assets, each product transfer agreement also contains an ongoing supply agreement, whereby Syngenta agrees to provide the divested active ingredients and formulated products to various subsidiaries of Adama to their required level of demand for the duration of the non-compete period in each agreement, none of which exceed five years. During the year ended December 31, 2019, Syngenta made sales under these agreements of $73 million (2018: $88 million).

On June 12, 2017 Syngenta divested and licensed the U.S. rights to certain products to Adama Celsius B.V., a fellow subsidiary of ChemChina, for cash consideration of $8 million, settled on the same date. As part of this agreement, Syngenta entered into a non-compete undertaking and under related agreements, will supply each of the products for the U.S. market to Makhteshim Agan of North America Inc., another fellow subsidiary. The terms of these agreements do not exceed five years. Pursuant to the agreements, sales of inventory totaling $13 million were made by Syngenta to Adama Celsius B.V. in the year ended December 31, 2019 (2018: $8 million).

Other related party transactions

Transactions and balances between Syngenta and its employee post-retirement benefit plans are disclosed in Note 22.

16. Trade accounts payable and contract liabilities

The contractual maturities of trade accounts payable at December 31, 2019 and 2018 are as follows:

($m)	Total	0–90 days	90–180 days	180 days–1 year
2019	**4,146**	**2,431**	**235**	**1,480**
2018[1]	3,623	2,036	435	1,152

1 After effects of accounting policy changes and restatements described in Note 2

The carrying amount of trade accounts payable includes $83 million (2018: $nil) that are due more than one year from the balance sheet date.

Included within trade accounts payable are rebates payable and provisions for sales returns. Movements in these liabilities with customers for the years ended December 31, 2019 and 2018 are as follows:

($m)	2019	2018[1]
January 1	**1,862**	1,647
Changes in liabilities recognized in the period from:		
Products supplied in the period	**2,619**	2,917
Prior period estimates	**(42)**	(43)
Rebates settled and product returns received	**(2,569)**	(2,574)
Currency translation effects and other	**(23)**	(85)
December 31	**1,847**	1,862

1 After effects of accounting policy changes and restatements described in Note 2

Contract liabilities consist of advance payments from customers and deferred revenue, mainly from customer loyalty programs.

Movements in contract liabilities for the years ended December 31, 2019 and 2018 are as follows:

($m)	2019	2018
January 1	**445**	480
Advance payments received from customers	**1,548**	1,144
Performance obligations recognized in the period	**204**	59
Revenue recognized in the period from:		
Amounts included in the contract liability at the beginning of the period	**(484)**	(482)
Contract liabilities applied to current period	**(1,222)**	(744)
Currency translation effects and other	**51**	(12)
December 31	**542**	445

At December 31, 2019, contract liabilities for customer loyalty programs are $95 million (2018: $52 million) and will be recognized as revenue as the promised goods and services are transferred to the customers, which is expected to occur over the next three years.

17. Current financial debt and other financial liabilities

The analysis of current financial debt and other financial liabilities has been reclassified to show the current portion of long-term financial debt by class. Current financial debt and other financial liabilities at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
Short-term financial debt:		
Bank and other financial debt	**1,273**	501
Receivables factored with recourse	**58**	52
Total short-term financial debt	**1,331**	553
Current portion of long-term financial debt:		
Unsecured bonds	**788**	356
Liabilities to banks and other financial institutions	**4**	1
Lease liabilities	**103**	15
Total current portion of long-term financial debt (Note 19)	**895**	372
Total current financial debt	**2,226**	925
Short-term derivative and other financial liabilities	**227**	270
Total	**2,453**	1,195

The contractual maturities of current financial debt at December 31, 2019 and 2018 are as follows:

($m)	Total	0–90 days	90–180 days	180 days–1 year
2019	**2,226**	**1,208**	**873**	**145**
2018	925	454	60	411

The maturities of short-term derivatives are presented in Note 25. The maturities of other financial liabilities are as follows: $33 million 0-90 days; $42 million 90-180 days and $5 million 180 days-1 year (2018: $74 million 0-90 days; $41 million 90-180 days and $39 million 180 days-1 year).

Information about fair values of financial liabilities is presented in Note 26.

18. Other current liabilities

Other current liabilities at December 31, 2019 and 2018 consist of the following:

($m)	2019	2018
Accrued short-term employee benefits	**447**	406
Taxes other than income taxes	**121**	129
Accrued utility costs	**59**	83
Social security and pension contributions	**52**	59
Other payables	**67**	116
Other accrued expenses	**124**	102
Total	**870**	895

The maturities of other current liabilities are as follows. For liabilities without a contractual maturity date, the analysis represents the estimated timing of cash outflows.

($m)	Total	0–90 days	90–180 days	180 days–1 year
2019	**870**	**542**	**87**	**241**
2018	895	501	58	336

19. Financial debt and other non-current liabilities

In April 2019, Syngenta raised a $500 million loan with a floating interest rate and a term of 5 years. This loan is reported within Liabilities to banks and other financial institutions in the table below.

Financial debt and other non-current liabilities at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
0.750% CHF bond 2019	-	356
3.698% USD bond 2020	750	748
$ private placement notes	104	105
1.875% Eurobond 2021	560	571
3.933% USD bond 2021	748	747
3.125% $ Notes 2022	511	501
4.441% USD bond 2023	997	996
1.625% CHF bond 2024	258	253
4.892% USD bond 2025	747	747
1.250% Eurobond 2027	557	568
5.182% USD bond 2028	996	995
2.125% CHF bond 2029	155	152
4.375% $ Notes 2042	248	248
5.676% USD bond 2048	498	498
Unsecured bond issues and US private placement notes	**7,129**	7,485
Liabilities to banks and other financial institutions	516	4
Lease liabilities (Note 23)	579	61
Less: current portion of financial debt (Note 17)	(895)	(372)
Total non-current financial debt	**7,329**	7,178
Non-current derivative financial liabilities	139	90
Other non-current liabilities and deferred income	143	147
Total	**7,611**	7,415

Information about fair values of financial liabilities is presented in Note 26.

Other non-current liabilities and deferred income relates to license and acquisition agreements with several counterparties and long-term incentive programs. Of the $143 million, related cash flows of $50 million (2018: $55 million) are payable between one and five years, $83 million (2018: $92 million) of deferred income will be recognized as related licensed product sales occur and $10 million (2018: $nil) of deferred income will be recognized as related intangible assets are amortised.

Interest paid on non-current financial debt was $288 million (2018: $169 million). All non-current debt ranks equally.

Syngenta AG has fully and unconditionally guaranteed on a senior unsecured basis the due and punctual payment of the principal of and any premium and interest on the debt securities issued by Syngenta Finance AG, which is a direct, wholly-owned finance subsidiary, and Syngenta Finance N.V., which is an indirect, wholly-owned finance subsidiary. The guarantees will rank equally with all of Syngenta's other unsecured and unsubordinated debt. No other subsidiary of Syngenta guarantees such debt securities.

20. Provisions, commitments and contingencies

Provisions

Provisions at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
Restructuring provisions	**103**	77
Employee benefits:		
Pensions (Note 22)	**451**	421
Other post-retirement benefits (Note 22)	**19**	18
Other long-term employee benefits	**61**	57
Environmental provisions	**164**	173
Provisions for legal and product liability settlements	**92**	1,210
Other provisions	**85**	65
Total	**975**	2,021

($m)	2019	2018
Current portion of:		
Restructuring provisions	**75**	63
Employee benefits	**61**	61
Environmental provisions	**7**	8
Provisions for legal and product liability settlements	**9**	1,112
Other provisions	**31**	24
Total current provisions	**183**	1,268
Total non-current provisions	**792**	753
Total	**975**	2,021

The timing of payment in respect of non-current provisions is, with few exceptions, not contractually fixed and cannot be estimated with certainty. Key assumptions and sources of estimation uncertainty are discussed in Note 2.

At December 31, 2019, Syngenta recognized $14 million (2018: $17 million) in Financial and other non-current assets in respect of virtually certain reimbursements related to the above provisions.

Syngenta has recorded provisions for environmental liabilities at some currently or formerly owned, leased and third party sites throughout the world. These provisions are estimates of amounts payable or expected to become payable and take into consideration the number of other potentially responsible parties at each site and the identity and financial positions of such parties in light of the joint and several nature of certain of the liabilities. The material components of Syngenta's environmental provisions are based on a risk assessment involving investigation of the various sites.

It is reasonably possible that Syngenta may be required to make expenditures in excess of the established provisions to remediate environmental liabilities at some currently or formerly owned, leased and third party sites throughout the world. Further, in cases where it is not possible to estimate reliably the remediation costs that may be incurred in the future for environmental damage that has occurred at sites currently in operation and having no present obligation for environmental damage remediation, no provisions have been made. This is because it is neither possible to determine a time limit beyond which the sites will no longer be operated, nor what remediation costs may be required upon their eventual closure.

In the USA, Syngenta and/or its indemnitors or indemnitees, have been named under federal legislation (the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended) as a potentially responsible party ("PRP") in respect of several sites. Syngenta expects to be indemnified against a proportion of the liabilities associated with a number of these sites by the sellers of the businesses associated with such sites and, where appropriate, actively participates in or monitors the clean-up activities at the sites in respect of which it is a PRP.

Provisions for legal and product liability settlements included the settlement fund discussed under the VIPTERA™ heading below. Other provisions for legal and product liability settlements, all of which are individually immaterial, relate to various legal proceedings incidental to the normal conduct of Syngenta's business, including proceedings involving product liability claims, commercial claims, employment and wrongful termination claims, patent infringement claims, competition law claims, indirect tax assessment claims, regulatory compliance claims, waste disposal claims and tort claims relating to the release of chemicals into the environment.

Other provisions mainly comprise provisions for long-term contractual obligations under license and other agreements.

Movements in provisions for the year ended December 31, 2019 are as follows:

($m)	January 1	Charged to income	Release of provisions credited to income	Payments	Actuarial (gains)/ losses, net	Transfers offset in defined benefit pension assets	Currency translation effects/ other	December 31
Restructuring provisions:								
Employee termination costs	26	41	1	(44)	-	-	5	29
Other third party costs	51	42	(4)	(11)	-	-	(4)	74
Employee benefits:								
Pensions	421	98	(1)	(126)	58	(4)	5	451
Other post-retirement benefits	18	2	(2)	1	-	(1)	1	19
Other long-term employee benefits	57	2	(2)	1	-	-	3	61
Environmental provisions	173	6	(8)	(9)	-	-	2	164
Provisions for legal and product liability settlements	1,210	19	(4)	(1,113)	-	-	(20)	92
Other provisions	65	9	(6)	(1)	-	-	18	85
Total	**2,021**	**219**	**(26)**	**(1,302)**	**58**	**(5)**	**10**	**975**

Provisions for employee termination costs include severance, pension and other costs directly related to affected employees.

Provisions for other third party costs principally include payments for early termination of contracts with third parties related to redundant activities.

Commitments

Commitments for the purchase of property, plant and equipment at December 31, 2019 are $117 million (2018: $112 million).

At December 31, 2019 and 2018, Syngenta had entered into long-term commitments to purchase minimum quantities of certain raw materials, long-term research agreements with various institutions to fund various research projects, and other commitments. The estimated timing of minimum future committed payments is as follows:

	2019		2018	
($m)	Materials purchases	Other	Materials purchases	Other
Within one year	1,240	78	1,090	70
From one to two years	287	21	301	16
From two to three years	148	10	163	7
From three to four years	104	5	66	5
From four to five years	116	2	72	4
After more than five years	74	-	1	2
Total	**1,969**	**116**	1,693	104

Syngenta has no material contingent liabilities related to associates and joint ventures.

Syngenta's sales are made subject to normal warranties, which cover product technical specifications and, in some cases, products' performance effect on grower crop yields. Certain license agreements indemnify the other party against liabilities arising from claims related to the intellectual property licensed to or by Syngenta. Leases may require indemnification for liabilities Syngenta's actions may create for the lessor or lessee. Syngenta has also issued warranties to purchasers of businesses or product lines relating to events that arose before the sales. It is not possible to predict the maximum future payments possible under these or similar provisions because it is not possible to predict whether any of these contingencies will occur.

Syngenta has obtained licenses from others for the rights to sell certain products, or products containing certain technology, under agreements which require Syngenta to pay royalties based on its future sales of those products or that technology.

Contingencies

Litigation matters

Litigation is subject to many uncertainties, and the outcome of individual matters cannot be predicted with certainty. Consequently, it is reasonably possible that the final resolution of some of these matters could require Syngenta to make expenditures in excess of the established provisions that are reported above. Further, the range of amounts involved, as well as the period of time over which many of these expenditures may be made, cannot be reasonably estimated.

Syngenta maintains general liability insurance, including product liability insurance, covering claims on a worldwide basis with coverage limits and retention amounts which management believes to be adequate and appropriate in relation to Syngenta's businesses and the risks to which it is subject.

Significant recent or on-going legal proceedings are described below.

VIPTERA™

Beginning on September 12, 2014, several thousand lawsuits were filed against Syngenta in state and federal courts in the United States by plaintiffs seeking damages from Syngenta for commercializing its AGRISURE VIPTERA® (MIR162) and DURACADE™ corn seed in the United States without having obtained import approval from China for those products. Many of these lawsuits were filed by individual plaintiffs (including growers, grain elevators and exporters such as Cargill, Archer Daniels Midland ("ADM") and Louis Dreyfus), and approximately 107 by putative classes of growers and others allegedly affected, including ethanol plants, on the theory that China's 2013 rejection of U.S. corn based on the alleged presence of MIR162 caused increased costs and U.S. commodity prices to drop. The cases were pending in multiple jurisdictions, including (1) cases that were initially filed in federal court that were consolidated for pre-trial proceedings in a federal multi-district litigation ("MDL") action in the District of Kansas; (2) a consolidated state court proceeding in Hennepin County, Minnesota; (3) federal court in the Southern District of Illinois; and (4) various state courts in Illinois, Indiana, Iowa, Louisiana, Nebraska, Michigan, and Ohio. In September 2016, the federal MDL court certified a nationwide class of corn growers alleging violations of the Lanham Act and eight statewide classes of corn growers, and in November 2016, the court presiding over the Minnesota state court consolidated proceedings certified a class of Minnesota corn growers. In April 2017, the federal MDL court granted significant portions of Syngenta's motion for summary judgment, including by dismissing plaintiffs' Lanham Act claim and thereby eliminating the sole basis for a nationwide class, while allowing plaintiffs' state-law negligence claims to proceed. In September 2017 plaintiffs and Syngenta reached a pending settlement to resolve all claims on behalf of all U.S. non-Viptera and Viptera producers as well as grain elevators and ethanol plants. On April 10, 2018, preliminary court approval was granted in respect of the pending settlement, and the establishment of a Qualified Settlement Fund of $1.51 billion was granted for the submission of claims by eligible claimants who contracted to price corn or DDGs (distillers dried grains with solubles) after September 2013. Syngenta was directed to make the first and second installments of $200 million each into an escrow account. Final approval of the settlement was provided by court order dated December 7, 2018, dismissing the claims of producers, grain elevators, and ethanol plants on a class wide basis except for sixteen individual producers and one ethanol plant that timely and validly opted out of the settlement. Syngenta made its final payment of $1.1 billion to the settlement fund on March 29, 2019. Objectors to the settlement appealed the court's final approval order. That appeal has now been resolved (by the MDL plaintiffs and the objectors) and the settlement is now final.

The settlement of the producer cases does not cover claims of the exporter plaintiffs such as Cargill, ADM, Louis Dreyfus, Trans Coastal Supply Company, Inc. ("Transcoastal") and Agribase International, Inc. ADM and Syngenta reached in December 2017 a settlement of the Viptera litigation that ADM had brought against Syngenta in Louisiana Court, which was paid during 2018. Louis Dreyfus and Syngenta reached a settlement in May 2019. These settlements do not resolve the lawsuits brought by other grain exporters such as Cargill (the court indicated that a trial date will be scheduled for Spring 2020) and Transcoastal (trial date June 2020) which will continue. Cargill claims to have suffered damages relating to delayed, rejected and re-routed shipments of U.S. corn to China of over $90 million and additional lost profits. Transcoastal's claimed damages are significantly smaller than those sought by Cargill. Syngenta strongly believes that the claims in these cases are without merit and will vigorously defend the lawsuits.

In December 2015, a claim was filed in Ontario, Canada by a proposed representative plaintiff on behalf of a putative class comprising all farmers in Canada against Syngenta Canada Inc. and Syngenta AG seeking damages from Syngenta for commercializing its AGRISURE VIPTERA® (MIR162) and DURACADE™ corn seed in the North American corn market without having obtained import approval from China for those products. The causes of action referred to in the lawsuit include negligence and negligent misrepresentations. The allegations include claims that Syngenta actively misled farmers about the importance of the Chinese market, the timing and substance of the application for approval in China, its ability to channel VIPTERA™ corn into non-Chinese markets and its ability to contain the infiltration of VIPTERA™ corn to the North American corn supply. The proposed representative plaintiff is seeking on behalf of the putative class general and special damages of 300 million Canadian dollars ($231 million at December 31, 2019 exchange rates), punitive and aggravated damages of 100 million Canadian dollars ($77 million at December 31, 2019 exchange rates), the costs of distributing all monies awarded to class members, pre-judgment interest, and costs on a substantial indemnity basis. Syngenta's motion to strike this action was argued in April 2018, and on November 28, 2018, the judge dismissed the plaintiff's action in its entirety. The plaintiff has appealed this decision. The appeal was heard in June 2019 and while the Court of Appeal denied plaintiff's appeal of the lower court's decision dismissing the claim as to the negligent misrepresentation and Competition Act claims, it granted the appeal as to the premature commercialization claim which would allow the lawsuit to continue as to that claim alone. Syngenta has filed the documents necessary to seek leave to appeal the Court of Appeal's decision to the Supreme Court of Canada.

On February 14, 2017, a similar action was filed in Quebec against Syngenta Canada Inc. and Syngenta AG. The Petitioners are seeking essentially the same relief as in the Ontario action on behalf of all corn producers conducting business in Quebec who sold corn for commercial purposes after November 18, 2013. They allege that Syngenta was negligent and engaged in illegal commercial practices, contrary to the Competition Act and the Civil Code of Quebec, and that damages (amount unspecified) will continue to accrue until the corn business between North America and China is re-established at the levels that existed before Syngenta's negligence occurred. Punitive damages, pre-judgment interest and costs are also claimed. Syngenta has entered an appearance in the action. No other steps have been taken. Syngenta is continuing to vigorously defend against the Canadian actions and strongly believes that they are without merit.

Canada beekeeper lawsuits

In September 2014, a claim was filed in Ontario, Canada by two proposed representative members on behalf of a putative class comprising all beekeepers who have owned or continue to own and operate honey producing, pollinating, and/or queen bee rearing businesses in Canada since January 1, 2006, against a number of Syngenta legal entities together with certain entities of a second manufacturer of neonicotinoid insecticides. Plaintiffs allege negligence through the sale by that manufacturer and by Syngenta of products containing such insecticides in the knowledge that they would be injurious to bees and by virtue of misrepresentations and concealment relating thereto. Plaintiffs claim 400 million Canadian dollars ($308 million at December 31, 2019 exchange rates) general and 50 million Canadian dollars ($38 million at December 31, 2019 exchange rates) punitive damages. The pleadings in the Ontario proceedings were subsequently amended by plaintiffs' counsel to add waiver of tort and unlawful conspiracy to the single cause of action, negligence, which was previously pleaded. Both of the additional causes of action are ancillary to and largely dependent on the negligence claim. The class has not yet been authorized.

In October 2014, a Motion for Authorization was filed by the same firm of plaintiffs' counsel in Montréal, Quebec seeking permission to bring a similar class proceeding in that province. The proposed representative plaintiff operates a family business specialized in the breeding of queen bees. The Quebec litigation closely resembles the original Ontario lawsuit claiming negligence except that, rather than a nationwide class, it alleges a class limited to Quebec. At this early stage damages are unspecified. The Motion for Authorization was argued in November 2017. The Quebec class has been authorized on August 20, 2018, and notices have been sent to potential class members. Plaintiffs' motion to add Syngenta AG as a defendant has been granted.

Syngenta will defend these lawsuits, the claims in which are without foundation.

Atrazine related litigation
In August 2013, a personal injury complaint relating to atrazine was filed under seal in St. Clair County, Illinois state court, on behalf of a minor and his parents against Syngenta Crop Protection LLC, Syngenta AG, a third party distributor, and three local dealers. The Court granted the minor permission to proceed in the public record under the fictitious name "James Doe" - and for his parents to use the names "Jane Doe" and "John Doe". The lawsuit alleges that James Doe's congenital birth defect, hypospadias, was caused by his mother consuming atrazine-contaminated drinking water while she was pregnant. The Complaint alleges public nuisance, strict liability and negligence, and seeks unspecified damages together with the costs of suit. Answers and Affirmative Defenses were filed on behalf of the defendants in January and February 2014. Fact discovery in the litigation started in early 2014 and is continuing. No trial date has been fixed to date. No further claims have been filed. Syngenta strongly believes that the claims are without merit and is vigorously defending against the action.

Paraquat Parkinson's disease litigation
In early 2016, the law firm which is prosecuting the atrazine personal injury litigation notified Syngenta Crop Protection, LLC that they intended to file suit on behalf of numerous plaintiffs who allege that the herbicide paraquat caused them to develop Parkinson's disease. Counsel for Syngenta spoke with and, in one instance, met with that law firm regarding the firm's allegations, its proposal for litigating them, and its purported clients. No agreements with the firm were reached. In September 2017, a complaint was filed in St. Clair County, Illinois state court on behalf of plaintiffs Thomas Hoffman and Diana Hoffman against Syngenta Crop Protection, LLC, Syngenta AG, and Growmark, Inc. The complaint alleges that Mr. Hoffman suffers from Parkinson's disease caused by chronic exposure to paraquat while working as a farmer in Illinois. On October 6, 2017 an amended complaint was filed in the same court on behalf of 12 plaintiffs (seven men who are said to have been diagnosed with Parkinson's disease and five of their wives), including Mr. and Mrs. Hoffman who were named in the initial complaint, against Syngenta Crop Protection, LLC, Syngenta AG, Chevron Phillips Chemical Company, and Growmark, Inc. The amended complaint alleges the following counts: (1) Strict Liability - Design Defect; (2) Strict Liability - Failure to Warn; (3) Negligence; (4) Public Nuisance; (5) Consumer Fraud & Deceptive Business Practices Act; and (6) Breach of Implied Warranty of Merchantability. Syngenta's Motion to Dismiss was denied in July 2018. Syngenta filed its answer to the amended complaint in October 2018. In that case, the parties are now engaged in discovery. On December 13, 2018, the same counsel filed a further complaint in St. Clair County, Illinois state court on behalf of plaintiffs Marvin Wendler and his wife against Syngenta Crop Protection, LLC, Syngenta AG, and various third parties. An additional complaint was filed by the same counsel in St. Clair County, Illinois state court on December 21, 2018, on behalf of plaintiffs Lloyd Pulcher and his wife against Syngenta AG and Growmark, Inc. These new complaints assert the same claims as the Hoffman complaint. Syngenta AG was served with these two complaints, Wendler and Pulcher, in March 2019 and filed Answers to both complaints in March 2019. In April 2019, the same plaintiffs' counsel filed ten complaints in California state court (five in San Francisco County and five in Contra Costa County) on behalf of 16 plaintiffs (including ten men who are said to have been diagnosed with Parkinson's disease and six of their wives). The complaints name Syngenta AG and Syngenta Crop Protection LLC, and various distributors as additional defendants. The ten California complaints allege the following counts: (1) Strict Products Liability; (2) Negligence; (3) Public Nuisance; (4) California Consumer Legal Remedies Act; and (5) Breach of Implied Warranty of Merchantability. Syngenta Crop Protection, LLC and Syngenta AG have been served with the complaints. The California plaintiffs' petition to coordinate these California actions for pre-trial purposes has been granted and the cases remain at an early stage. Syngenta strongly believes that the claims are without merit and is vigorously defending against the actions.

Tax matters
Significant management judgment is required to estimate the tax liabilities related to the eventual outcome of reviews and audits by tax authorities of tax returns filed by Syngenta's subsidiaries. Tax returns filed by many of Syngenta's subsidiaries during the past several years are either currently under examination by tax authorities or are open for future examination until expiry under statutes of limitation. In Syngenta's opinion, the likelihood is remote that a material amount in excess of recorded provisions will result from the resolution of any such examination or case. Syngenta is also subject to certain tax claims pending before the judiciary. See Note 2 "Uncertain tax positions" for detail regarding two on-going transfer pricing disputes in Brazil. Syngenta believes it will successfully defend its position in these disputes. However, it is reasonably possible that actual outcomes and settlements may differ significantly from the estimated liabilities shown in the consolidated balance sheet for income taxes and in Note 18 for other taxes.

Contingencies summary
Given the inherent difficulties in estimating liabilities relating to litigation, tax, environmental and certain other matters due to uncertainty concerning both the amount and timing of future expenditures, it is reasonably possible that additional costs may be incurred materially in excess of provisions recorded for such liabilities. Such expenditures, in excess of established provisions, could have a material effect on Syngenta's consolidated operating results and cash flows for a particular reporting period, but management does not believe they will have a materially adverse effect on Syngenta's consolidated financial position or liquidity, although there can be no assurances in this regard.

21. Notes to the consolidated cash flow statement

Non-cash and other reconciling items included in income before taxes

The following table analyzes non-cash and other reconciling items included in income before taxes for the years ended December 31, 2019 and 2018:

($m)	2019	2018[1]
Depreciation, amortization and impairment of:		
Property, plant and equipment (Note 12)	**425**	347
Right-of-use assets (Note 23)	**97**	-
Intangible assets (Note 13)	**302**	330
Financial assets	**-**	(5)
Deferred revenue and other gains and losses	**10**	2
Gains on disposal of non-current assets	**(133)**	(444)
Charges in respect of pension provisions (Note 20)	**97**	127
Charges in respect of other provisions (Note 20)	**96**	131
Financial expense, net	**425**	401
(Gains)/losses on hedges reported in operating income	**(16)**	44
Income from associates and joint ventures	**(1)**	(2)
Total	**1,302**	931

1 After effects of accounting policy changes and restatements described in Note 2

Change in liabilities arising from financing activities

Movements in assets and liabilities arising from financing activities for the year ended December 31, 2019 are as follows:

			Non-cash changes			
2019 ($m)	**January 1**	**Cash flows**	**Changes in fair value**	**Other**	**Currency translation effects**	**December 31**
Bonds and US private placement notes (Note 19)	**7,485**	**(354)**	**9**	**6**	**(17)**	**7,129**
Lease liabilities (Note 19)	**61**	**(105)**	**-**	**613**	**10**	**579**
Other long-term debt (Note 19)	**4**	**513**	**-**	**-**	**(1)**	**516**
Short-term debt (Note 17)	**553**	**806**	**-**	**-**	**(28)**	**1,331**
Total financial debt	**8,103**	**860**	**9**	**619**	**(36)**	**9,555**
Bond hedges net liability	**95**	**(42)**	**91**	**(37)**	**13**	**120**
Margin deposit liability	**44**	**(27)**	**-**	**-**	**-**	**17**
Margin deposit asset	**(111)**	**(95)**	**-**	**-**	**-**	**(206)**
Net liabilities arising from financing activities	**8,131**	**696**	**100**	**582**	**(23)**	**9,486**

Other non-cash changes include $200 million lease liabilities recognized on implementation of IFRS 16, as disclosed in Note 2, and $412 million new leases in the year.

The table of movements in assets and liabilities arising from financing activities for the year ended December 31, 2018 has been reclassified so that each class of debt is shown separately, as follows:

			Non-cash changes			
2018 ($m) (reclassified)	January 1	Cash flows	Changes in fair value	Other	Currency translation effects	December 31
Bonds and US private placement notes (Note 19)	2,820	4,726	(6)	5	(60)	7,485
Lease liabilities (Note 19)	55	(22)	-	28	-	61
Other long-term debt (Note 19)	1	2	-	1	-	4
Short-term debt (Note 17)	1,006	(375)	-	-	(78)	553
Total financial debt	3,882	4,331	(6)	34	(138)	8,103
Bond hedges net liability	49	-	74	(35)	7	95
Margin deposit liability	25	19	-	-	-	44
Margin deposit asset	(118)	7	-	-	-	(111)
Net liabilities arising from financing activities	3,838	4,357	68	(1)	(131)	8,131

Other non-cash changes include $28 million new leases in the year.

See Note 25 for a description of bond hedges and margin deposits. Bond hedges are presented in the consolidated balance sheet as follows: non-current assets of $19 million (2018: $30 million) are included within “Financial and other non-current assets”, current liabilities of $nil (2018: $35 million) are included within “Current financial debt and other financial liabilities” and non-current liabilities of $139 million (2018: $90 million) are included within “Financial debt and other non-current liabilities”.

Margin deposit liabilities are included within “Current financial debt and other financial liabilities”, and margin deposit assets are included within “Derivative and other financial assets”.

Cash flows are presented in the consolidated cash flow statement as follows:

($m)	**2019**	2018
Proceeds from increase in third party interest-bearing debt	**1,616**	4,936
Repayments of third party interest-bearing debt	**(920)**	(579)
Net	**696**	4,357

22. Post-employment benefits

Syngenta has, apart from legally required social security arrangements, numerous independent pension plans, which are either “defined contribution” plans where company contributions and resulting benefit costs are a set percentage of employees’ pay or “defined benefit” plans where benefits are generally based on employees’ length of service and pensionable pay. Syngenta’s contributions to defined contribution plans were $58 million for the year ended December 31, 2019 (2018: $54 million). Approximately 35 percent of Syngenta’s employees are members of defined benefit plans and a significant proportion of these are members of both defined benefit and defined contribution plans. All of Syngenta’s major defined benefit plans are funded through legally separate trustee administered funds. The cash funding of these plans, which may from time to time involve special payments, is designed to ensure that present and future contributions should be sufficient to meet future liabilities. Syngenta’s main defined benefit pension plans are in the UK, Switzerland and the USA.

UK

In accordance with its rules, Syngenta’s UK Pension Fund (the UK Fund) is governed by a company (the Trustee) that is controlled by a publicly listed independent professional trustee corporation. That corporation appoints the Trustee’s directors, including its own representative, Syngenta nominated and member nominated directors. The Trustee manages the UK Fund and appoints professional advisers independently to assist it in doing so. The UK Fund is subject to UK pensions legislation, is regulated by the UK Pensions Regulator and is exempt from most UK taxation through its registered status. The defined benefit section of the UK Fund has been closed to new members since 2002. New employees since 2002 instead joined a defined contribution pension plan also within the UK Fund. This was open to new members until August 31, 2013. After that date, new employees join a separate defined contribution plan. The defined benefit section of the UK Fund is open to future accrual for employees who were members before 2002; however, effective January 1, 2016, pensionable pay for these employees has been frozen, as described in Note 2. At retirement date, defined benefit members have the right to take up to 25 percent of the value of their benefits as a lump sum, with the balance being paid as an annuity. Alternatively, after taking appropriate advice, members may transfer their defined benefits to a different authorized pension arrangement.

The Trustee is required by the UK Fund’s rules to increase pensions in payment and accrued deferred pension rights each year by the lower of 5 percent and price inflation, as measured by the UK Retail Price Index (RPI) or Consumer Price Index (CPI), as applicable.
An independent actuary is required to value the UK Fund’s liabilities in accordance with UK pension regulations and certify the required contributions, both for future service and elimination of any deficit, at least every three years. Following each such valuation, employer contribution amounts must be formally agreed between Syngenta and the Trustee, subject to review by the Pensions Regulator, and remain binding until re-assessed in the following valuation. The solvency of the UK Fund, defined as its ability to pay benefits as they fall due, is guaranteed by the sponsoring subsidiary, Syngenta Ltd., and by Syngenta AG. In addition, certain benefits under the UK Fund are guaranteed by the UK Pension Protection Fund.

The Trustee agrees the investment strategy for the UK Fund’s assets and implements it through an investment sub-committee (the UK Investment Committee) it appoints from among the Trustee directors. The investment objectives are to ensure the assets are appropriately diversified and liquid to generate sufficient returns to meet the benefit liability and control the long term costs of the UK Fund. These objectives are achieved through appointing and monitoring a number of third party investment managers, each with specific investment mandates that collectively cover a wide range of investment classes and geographical markets and utilize both asset liability matching and return seeking strategies. Asset liability matching is achieved both through underlying investment class selection (e.g. fixed interest) and through using derivatives to limit the potential impact of changes in interest rates, price inflation and foreign currency exchange rates on the benefits payable by and assets of the UK Fund. The Trustee continues to reshape the investment portfolio reducing the overall investment risk and hence expected return. This is in line with the funding agreement between the Trustee and Syngenta Limited. As a result, the Trustee invested certain of the plan’s assets to purchase an insurance policy with a UK local insurer to cover around 10% of the pension liabilities. The insurer pays the Trustee an income flow to match a defined set of benefit payments.

Switzerland

The Swiss federal law on occupational old age, survivors’ and disability pensions (“BVG”) sets minimum standards for occupational pension plans, which Syngenta’s Swiss pension fund (the Swiss Fund) exceeds. All employees having had an employment contract for more than three months with any of Syngenta’s Swiss subsidiaries or with its CIMO joint venture entity (see Note 15) and whose age and income exceed the minimum stipulated by BVG are automatically insured in the Swiss Fund. The benefits payable on retirement are calculated according to the capital sums that each member accumulates through transfer of benefits from previous employments, employer and employee contributions during service with Syngenta or with CIMO, interest and member voluntary contributions. Disability and survivors’ death in service benefits are defined on the basis of the member’s insured remuneration. Leavers before retirement are required to transfer their accumulated retirement and capital savings to the occupational pension plan of their new employment. The Swiss Fund is governed by a twelve member Board of Trustees. Six members, including the President, are nominated by Syngenta (five members) and CIMO (one member), and six are elected by insured plan members from among the employees. Its decisions regarding certain items, including rates of retirement credits for service and interest credits, conversion rates on retirement and plan asset investment strategy require a two-thirds majority vote. Legal conformity of the Swiss Fund's regulations is verified by the Swiss Pension Inspectorate. Syngenta's legal obligations, including required employer contributions, are defined in the pension fund rules which are agreed by the Board of Trustees.

Employer and employee contributions are payable according to an age related scale of percentages of pay. Under BVG, the Swiss Fund guarantees the vested benefit amount as confirmed annually to members. Interest may be added to member balances at the discretion of the Board of Trustees. Members have the right to take their retirement benefit as a lump sum, an annuity or part as a lump sum with the balance converted to a fixed annuity at the rates defined in the Fund's rules. The Board of Trustees may increase the annuity at their discretion subject to the Swiss Fund's funded status including sufficient free funds as determined according to Swiss statutory valuation rules. Syngenta accounts for the Swiss Fund as a defined benefit pension plan.

An actuarial balance sheet is usually drawn up annually by the Swiss Fund's actuary. If the balance sheet reveals a deficit, the Board of Trustees defines appropriate measures to eliminate the deficit. If necessary, and after consultation with the actuary, the contributions payable by employees and by Syngenta may be increased or the benefits, including current pensions, may be adjusted to the funds available. The Board of Trustees manages the Swiss Fund's assets in conformity with the investment policy rules laid down by Swiss law, with the objectives of achieving investment that is secure, produces an appropriate yield and meets the liquidity needs of the Swiss Fund. This is implemented through an investment sub-committee similar to the UK Investment Committee mentioned above.

In March 2017, in order to secure the financial stability of the Swiss Fund, the Board of Trustees of the Syngenta Pension Fund adopted revised rules. The principal changes effective from January 1, 2018 were to reduce the technical interest rate (discount rate) applied on savings belonging to the retirees from 2.5 per cent to 2.0 per cent and to reduce the annuity conversion rates applicable from age 60 onwards. The conversion rates at retirement reduce gradually from 6.1 per cent (age 65) in 2017 to 5.3 per cent (age 65) in 2021. To mitigate the impact of these changes, Syngenta made a one - off contribution to active member balances within the Fund of $34 million in January 2018.

USA

Syngenta's main US defined benefit pension plan (the US Plan) is a non-contributory defined benefit pension plan subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA) and the US Internal Revenue Code of 1986, as amended (Code). In addition, certain benefits under the US Plan are guaranteed by the US Pension Benefit Guaranty Corporation. The US Plan was closed to new members effective January 1, 2009. Employees joining Syngenta after that date participate in a defined contribution pension plan. The defined benefits of existing members of the US Plan were not affected by this change. The US Plan offers members the choice of taking their retirement benefits, which are generally based on their age, pay and years of service, as a full lump sum at retirement date or as a fixed annuity. In these consolidated financial statements, the benefit obligation has been valued assuming that 80 percent of current eligible members will take the lump sum option at normal retirement or other permissible commencement dates. This assumption is consistent with historical and expected future member choices.

US plan assets are held in a separate trust with State Street Bank and Trust Company as trustee and custodian. The assets must generally remain in the trust until all pension benefits are paid. An Investment Committee of Syngenta employees (the US Investment Committee), appointed by the Board of Directors of Syngenta Corporation, a wholly owned subsidiary of Syngenta AG, oversees the investment of the plan assets, either directly or through the appointment of investment managers. The US Investment Committee develops and implements an investment strategy that takes into account the liability profile of the US Plan. Asset classes are selected that include equities, fixed income and alternative assets. Interest rate derivatives may be used to hedge the interest rate risk of the US Plan. The Plan's key risks include interest rate risk that impacts the value of the liability and the fixed income assets of the US Plan, investment performance volatility, and to a lesser degree inflation and longevity risk. An actuarial valuation is required each year and is used to determine the valuation and characteristics of the liability of the US Plan.

Syngenta Corporation's funding policy is to contribute to the US Plan amounts necessary on an actuarial basis to at least satisfy the minimum funding requirements of the Code. Additional discretionary contributions above the minimum funding requirements can be made and are generally based on the annual administrative expense of the plan, along with an adjustment for any over/under funding.

Benefits under the plan were frozen effective December 31, 2018, and no participants shall accrue additional benefits after that date. Syngenta has accounted for this change as a plan amendment.

Defined benefit plan disclosures

The status of Syngenta's defined benefit plans at December 31, 2019 and 2018 using actuarial assumptions determined in accordance with IAS 19 is summarized below. The following tables provide reconciliations of benefit obligations, plan assets and funded status of the defined benefit pension plans to the amounts recognized in the consolidated balance sheet at December 31, 2019 and 2018:

($m)	2019	2018
Benefit obligations		
January 1	**5,826**	6,451
Current service cost	**90**	121
Employee contributions	**33**	35
Interest cost	**122**	112
Actuarial losses/(gains):		
From changes in demographic assumptions	**(37)**	(43)
From changes in financial assumptions	**559**	(275)
From actual experience compared to assumptions	**(15)**	57
Benefit payments	**(300)**	(436)
Currency translation effects and other	**147**	(196)
December 31	**6,425**	5,826
Of which arising from:		
Funded plans	**6,256**	5,666
Wholly unfunded plans	**169**	160

($m)	2019	2018
Plan assets at fair value		
At January 1	**5,496**	5,933
Actual return on plan assets	**517**	(92)
Employer contributions	**128**	241
Employee contributions	**33**	35
Benefit payments	**(300)**	(436)
Currency translation effects and other	**141**	(185)
December 31	**6,015**	5,496

Actual return on plan assets can be analyzed as follows:

($m)	2019	2018
Interest on plan assets	**115**	106
Actuarial gains/(losses)	**402**	(198)
Total	**517**	(92)

Funded status	**(410)**	(330)
Effect of asset ceiling	**(44)**	(91)
Net accrued benefit liability	**(454)**	(421)
Amounts recognized in the balance sheet:		
Prepaid benefit costs (Note 14)	**1**	-
Accrued benefit liability	**(455)**	(421)
Net amount recognized	**(454)**	(421)

All material changes in the amount shown for the asset ceiling arose from the effect of applying the ceiling at each period end. Changes in the asset ceiling amount due to interest and foreign currency translation during 2019 and 2018 were immaterial.

Of the accrued benefit liability for pensions of $455 million at December 31, 2019, $451 million is included in Note 20 as pension provisions and $4 million as restructuring provisions (2018: $421 million as pension provisions; $nil as restructuring provisions).

The following table shows the estimated undiscounted future defined benefit payments that are projected to occur within ten years from the balance sheet date. Actual payments may differ from those shown because of uncertain future events, including members' choice of benefit options as described above.

($m)	
2020	**305**
2021	**286**
2022	**293**
2023	**289**
2024	**298**
Years 2025-2029	**1,466**
Total 2020-2029	**2,937**

Syngenta's estimate of employer contributions to be paid to defined benefit plans in 2020 is $160 million, excluding restructuring costs. Actual payments could differ materially from this estimate if any new funding regulations or laws are enacted or due to business and market conditions, which may result in Syngenta prepaying contributions. Additional contributions, the amount and timing of which are uncertain, may also be required as Syngenta's restructuring programs are implemented.

In accordance with UK pension regulations, Syngenta has agreed with the Trustee to pay fixed contributions to meet the valuation deficit determined at each valuation date, administration costs and part of the costs of employee service. The balance of the costs of employee service is payable as a percentage of pensionable pay in each year. In 2019 and 2018, $36 million and $95 million of fixed contributions were paid respectively. On November 30, 2017, and subsequently on October 4, 2018 during the 2018 valuation, Syngenta agreed revised pension funding arrangements with the Trustee. Under these arrangements, as long as the Fund is in deficit on a UK statutory basis, in addition to future service contributions, the fixed contributions required to repair the deficit in the Fund are $34 million per annum from October 1, 2018 until March 31, 2024, and two additional payments of $62 million by January 31, 2018 and $40 million by December 31, 2020. This agreement will apply until March 30, 2021.

The fair values of assets and liabilities of the major defined benefit pension plans, together with aggregated data for other defined benefit plans, are as follows. Unquoted investments represent investments in pooled funds in which the underlying investments are unquoted or those where the pooled fund does not have liquidity on at least a weekly basis:

	Fair value ($m, except assumptions and percentages)					
At December 31, 2019	Switzerland	UK	USA	Other plans	Total	%
Investments quoted in active markets:						
Equities	567	103	56	14	740	12
Real estate funds	422	-	-	-	422	7
Bonds	802	598	526	33	1,959	33
Other assets	27	71	-	10	108	2
Unquoted investments:						
Equities	59	180	18	-	257	4
Real estate	38	451	-	-	489	8
Bonds	-	368	-	-	368	6
Insurance policies	43	267	-	-	310	5
Other assets	434	431	90	5	960	16
Cash and cash equivalents	154	225	19	4	402	7
Fair value of assets	2,546	2,694	709	66	6,015	100
Benefit obligation	(2,727)	(2,768)	(725)	(205)	(6,425)	
of which:						
Active members	(1,403)	(440)	(392)			
Deferred members	n/a	(622)	(89)			
Pensioners and dependants	(1,324)	(1,706)	(244)			
Funded status	(181)	(74)	(16)	(139)	(410)	
Effect of asset ceiling	-	(28)	(2)	(14)	(44)	
Net pension liability	(181)	(102)	(18)	(153)	(454)	
Net periodic benefit cost	67	18	3	9	97	
Significant actuarial assumptions:						
Discount rate (%)	0.3	2.0	3.3	-	2.1	
Inflation (RPI) (%)	n/a	3.0	n/a			
Pensionable pay increase (%)	1.3	-	-			
Pension increase (%)	-	3.0	n/a			
Interest credit rate (%)	1.0	n/a	n/a			
Remaining life expectancy (years)						
male aged 63 in 2019	24.5	25.0	22.3			
female aged 63 in 2019	26.6	26.5	24.3			
male aged 63 in 2039	26.3	26.4	23.9			
female aged 63 in 2039	28.4	28.1	25.9			
Weighted average duration of benefit obligation (years)	16	17	15			

At December 31, 2018	Switzerland	UK	USA	Other plans	Total	%
	Fair value ($m, except assumptions and percentages)					
Investments quoted in active markets:						
Equities	579	259	67	16	921	17
Real estate funds	305	-	-	-	305	6
Bonds	834	632	374	32	1,872	34
Other assets	57	78	-	14	149	3
Unquoted investments:						
Equities	61	247	30	-	338	6
Real estate	37	340	-	-	377	7
Bonds	-	331	-	-	331	6
Other assets	358	489	147	1	995	18
Cash and cash equivalents	41	153	14	-	208	3
Fair value of assets	2,272	2,529	632	63	5,496	100
Benefit obligation	(2,456)	(2,532)	(642)	(196)	(5,826)	
of which:						
Active members	(1,277)	(378)	(347)			
Deferred members	n/a	(559)	(78)			
Pensioners and dependants	(1,179)	(1,595)	(217)			
Funded status	(184)	(3)	(10)	(133)	(330)	
Effect of asset ceiling	-	(72)	(5)	(14)	(91)	
Net pension liability	(184)	(75)	(15)	(147)	(421)	
Net periodic benefit cost	75	25	14	13	127	
Significant actuarial assumptions:						
Discount rate (%)	0.8	2.8	4.3	-	1.8	
Inflation (RPI) (%)	n/a	3.2	n/a			
Pensionable pay increase (%)	1.4	-	-			
Pension increase (%)	-	3.2	n/a			
Interest credit rate (%)	1.0	n/a	n/a			
Remaining life expectancy (years)						
male aged 63 in 2018	24.4	25.3	22.4			
female aged 63 in 2018	26.5	26.8	24.5			
male aged 63 in 2038	26.3	26.7	24.1			
female aged 63 in 2038	28.4	28.3	26.1			
Weighted average duration of benefit obligation (years)	16	16	14			

Other assets include investments in private equity funds, diversified hedge funds, infrastructure funds, insurance funds and inflation, interest rate and foreign currency derivatives.

The following table provides an analysis of the benefit costs recorded in the consolidated income statement for the defined benefit pension plans for the years ended December 31, 2019 and 2018:

($m)	**2019**	2018
Current service cost	**90**	121
Interest on the net defined benefit liability/(asset)	**7**	6
Net periodic benefit cost	**97**	127

Amounts recognized in OCI were as follows for the years ended December 31, 2019 and 2018:

($m)	**2019**	2018
Actuarial losses/(gains)	**105**	(63)
Effect of asset ceiling	**(51)**	46

The sensitivity of the benefit obligation to the significant actuarial assumptions is discussed in the "Critical accounting estimates" section of Note 2.

Other post-retirement benefits

Syngenta's most significant other post-retirement benefit plan is the retiree medical plan in the USA. The plan is self-insured and the principal benefit for the majority of eligible participants is a subsidy of their medical insurance premiums after retirement. The subsidy amount varies based on age and service at retirement. Retirees who are eligible for Medicare enroll in individual Medicare plans available in the open market or public exchange, and are responsible for paying the full cost of coverage in excess of the subsidy. The assumed healthcare cost trend rate for this plan at December 31, 2019 was 6.5 percent, decreasing in each successive year from 2019 onwards, to reach an ultimate rate of 5.0 percent in 2026 (December 31, 2018: 6.75 percent decreasing to 5.0 percent in 2026).

Syngenta had a net benefit asset for other post-retirement benefits at December 31, 2019 of $67 million (2018: $54 million) reported within Defined benefit post-employment benefit asset in Note 14 and a net benefit liability of $19 million (2018: $18 million) reported within Other post-retirement benefits provision in Note 20. Actuarial gains recognized in OCI for the period were $13 million (2018: $nil). Expense recognized in the consolidated income statement, contributions to the other post-retirement benefit plans and benefit payments by the plans were not material for 2019 and 2018.

23. Leases

As detailed in Note 2, Syngenta has adopted IFRS 16 "Leases" with effect from January 1, 2019, using the modified retrospective application method, together with all applicable permitted practical expedients. Comparative information is not required to be restated under IFRS 16, and is therefore presented using the recognition and disclosure requirements of IAS 17 "Leases".

Lease activities

Land and buildings
Syngenta leases land and buildings for use in its manufacturing, warehousing and administration activities. The terms for these leases are negotiated on an individual basis to reflect Syngenta's requirements for the underlying asset and to ensure Syngenta complies with any relevant legal regulations and range from 1 to 77 years in length, with a weighted average lease term of 18 years. Lease payments are usually agreed in advance, with some leases providing for additional payments that are based on changes in local price indices, or upon rent reviews conducted to periodically align rental payments with the prevailing market rate. Additionally, in order to allow operational flexibility some land and building leases also grant Syngenta options to extend the lease beyond its initial term or to terminate the lease early. The likelihood of exercising these options is assessed by Syngenta on a lease by lease basis and if the option is considered to be reasonably certain it directly impacts upon the lease term used in calculating the right-of-use asset and lease liability values.

During the year ended 2019, Syngenta entered into a number of sale and leaseback arrangements on its land and buildings as disclosed in Note 3.

Machinery and equipment
Machinery and equipment leases relate primarily to Syngenta's car fleet, which is used by the management and sales functions. The average contract duration for fleet assets is 3 years.

Right-of-use assets

Movements in right-of-use assets for the year ended December 31, 2019 are as follows:

2019 ($m)	Land	Buildings	Machinery and equipment	Total
Cost				
January 1	-	-	-	-
Reclassified on implementation of IFRS 16 (Note 12)	-	8	55	63
Recognized on implementation of IFRS 16	35	121	44	200
Other additions	-	214	48	262
Disposals	-	(2)	(2)	(4)
Currency translation effects	-	4	(2)	2
December 31	35	345	143	523
Accumulated depreciation				
January 1	-	-	-	-
Depreciation charge	(3)	(50)	(44)	(97)
Depreciation on disposals	-	3	1	4
December 31	(3)	(47)	(43)	(93)
Net book value – December 31	32	298	100	430

Lease liability maturity

The maturities of lease liabilities as at December 31, 2019 are as follows:

($m)	2019
Within one year	113
One to two years	89
Three to five years	150
More than five years	336
Total	**688**
Present value (Note 19)	579

As detailed in Note 2, the value of the lease liability is dependent upon a number of judgments around the duration of the lease terms applied to individual leases, together with an assessment as to whether any purchase options contained within leases are reasonably certain of being excercised. The current lease liability represents Syngenta's current assessment of these judgmental areas, with the range of hypothetical lease liabilities that Syngenta's lease portfolio could give rise to being $565 million to $950 million.

Other lease disclosures

The amounts charged to the income statement in respect of leases are as follows:

($m)	2019
Interest on lease liabilities	(11)
Expenses relating to variable lease payments	(4)
Expenses relating to short-term leases	(33)
Expenses relating to leases of low value assets	(1)

Total cash outflows included in the cash flow statement as at December 31, 2019 in respect of leases amount to $143 million.

Lease commitments under IAS 17

Minimum future lease payments at December 31, 2018 for finance leases were $63 million, of which $19 million was due within one year, $37 million after more than one but less than five years and $7 million thereafter.

Fixed-term, non-cancelable operating lease commitments totaled $241 million at December 31, 2018 of which $68 million was due within one year, $126 million after more than one and less than five years and $47 million thereafter. Operating lease payments related to leases of buildings, office equipment and vehicles. Operating lease expense in 2018 was $88 million. As detailed in Note 2, on transition to IFRS 16 Syngenta recognized additional right-of-use assets and lease liabilities as detailed above. When measuring leases that were previously classified as operating leases under IAS 17, Syngenta discounted future lease payments using its incremental borrowing rate as at January 1, 2019.

The difference in value between the operating lease commitments previously reported under IAS 17 as at December 31, 2018 and the lease liabilities recognized on initial adoption on January 1, 2019 can be summarized as follows:

($m)	2019
Undiscounted future payments under operating lease commitments as at December 31, 2018	241
Discounted using Syngenta's incremental borrowing rates in effect at January 1, 2019	220
Finance lease liabilities recognized as at December 31, 2018	61
Recognition exemption for leases of low-value assets	(3)
Recognition exemption for leases with less than 12 months of lease term at transition	(47)
Extension options reasonably certain to be exercised	30
Lease liabilities recognized at January 1, 2019	261

24. Principal currency translation rates

Year end rates used for the consolidated balance sheets at December 31, to translate the following currencies into $, are:

	2019 per $	2018 per $
Swiss franc	**0.97**	0.98
British pound sterling	**0.76**	0.78
Euro	**0.89**	0.87
Brazilian real	**4.03**	3.87
Argentinian peso	**59.79**	37.60
Russian ruble	**62.17**	69.61
Ukrainian hryvnia	**23.69**	27.69

Average rates during the years ended December 31, used for the consolidated income and cash flow statements, to translate the following currencies into $, are:

	2019 per $	2018 per $
Swiss franc	**0.99**	0.98
British pound sterling	**0.78**	0.75
Euro	**0.89**	0.85
Brazilian real	**3.94**	3.65
Argentinian peso	**48.19**	28.03
Russian ruble	**65.11**	62.01
Ukrainian hryvnia	**26.04**	27.32

25. Risk management of financial risks

Risk management framework

The nature of Syngenta's business and its global presence exposes it to a range of financial risks. These risks include (i) market risks, which include potential unfavorable changes in foreign exchange rates, interest rates, commodity prices and other market prices (equities, credit spreads etc.), (ii) counterparty risk and (iii) liquidity and refinancing risk.

A financial risk management framework is in place in the form of a Treasury policy approved by the Board of Directors. This policy provides guidance over all Treasury and finance related matters, is underpinned by delegated authority guidelines and is additionally supported by detailed procedures in place across Syngenta. In accordance with its Treasury policy, Syngenta actively monitors and manages financial risk with the objectives of reducing fluctuations in reported earnings and cash flows from these risks and providing economic protection against cost increases. These objectives are achieved through (a) a monthly assessment of the impact of market risks against defined risk limits (see following section), which take into account the risk appetite of Syngenta and (b) the use of a variety of derivative and non-derivative financial instruments.

Financial instruments available for use to mitigate these risks are selected by Syngenta according to the nature of the underlying risk. These instruments are designed to economically hedge underlying risks arising from operational activities and from funding and investment positions. Syngenta does not enter into any speculative financial transactions.

The fair values and the volumes of the derivatives (including the time periods being hedged) used to manage financial market risks at December 31, 2019 and 2018 are below, classified by accounting treatment: CF and FV indicate derivatives where cash flow hedge and fair value hedge accounting is applied, respectively; and M2M indicates derivatives that are marked to market through profit or loss and hedge accounting is not specifically required. The transactions are managed to minimize the potential adverse movement for the entire portfolio of the net transactional flows, rather than on an individual currency basis. As such, for some derivatives there is no single average strike or price of the derivatives.

2019			**Fair value of outstanding derivatives[1]**		**Maturity profile in $m**			
Risk	**Accounting treatment**	**Quantity**	**Assets $m**	**Liabilities $m**	**0-90 days**	**90-days -1 year**	**1-5 years**	**>5 years**
Foreign exchange risk ($m)								
Trading transaction – committed	**M2M**	**12,300**	**38**	**(134)**	**(56)**	**(40)**	**-**	**-**
Trading transaction – uncommitted	**CF**	**1,772**	**30**	**(12)**	**3**	**15**	**-**	**-**
Trading transaction – uncommitted	**M2M**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Issued financial debt and interest	**CF**	**1,494**	**3**	**(124)**	**-**	**-**	**(110)**	**(11)**
Interest rate risk	**FV**	**1,000**	**16**	**(15)**	**-**	**-**	**1**	**-**
Commodity price risk								
Gas[2]	**CF**	**6**	**-**	**(1)**	**-**	**(1)**	**-**	**-**
Soft commodities[3]	**M2M**	**270**	**23**	**-**	**-**	**5**	**-**	**18**
Soft commodities[4]	**CF**	**89**	**12**	**-**	**8**	**4**	**-**	**-**
Total		**16,931**	**122**	**(286)**	**(45)**	**(17)**	**(109)**	**7**

2018			Fair value of outstanding derivatives[1]		Maturity profile in $m			
Risk	Accounting treatment	Quantity	Assets $m	Liabilities $m	0-90 days	90-days -1 year	1-5 years	>5 years
Foreign exchange risk ($m)								
Trading transaction – committed	M2M	10,400	75	(53)	4	18	-	-
Trading transaction – uncommitted	CF	1,012	11	(6)	2	3	-	-
Trading transaction – uncommitted	M2M	-	-	-	-	-	-	-
Issued financial debt and interest	CF	1,890	25	(126)	-	(36)	(66)	1
Interest rate risk	FV	500	6	-	-	-	6	-
Commodity price risk								
Gas[2]	CF	10	2	-	-	1	1	-
Soft commodities[3]	M2M	149	-	(21)	(2)	(9)	(3)	(7)
Soft commodities[4]	CF	84	10	-	3	7	-	-
Total		14,045	129	(206)	7	(16)	(62)	(6)

1 The fair values of derivatives are reported in the consolidated Balance Sheet as shown in Note 26
2 2,500,000 million (2018: 3,460,000 million) British thermal units
3 Mainly 188,493,398 lbs (2018: 112,469,001 lbs) of coffee
4 6,875,000 bushels (2018: 6,105,000 bushels) of soybean and 5,595,000 bushels (2018: 7,160,000 bushels) of corn

Of the derivatives listed in the table above, hedge accounting is applied wherever possible. Exceptions to this are derivatives where the fair value movements of the hedges and the retranslation of the underlying exposures are largely offset in profit or loss (hedging foreign exchange risk of committed monetary items); or derivatives placed, which do not fulfil the specific requirements of the accounting standard to achieve hedge accounting (hedging foreign exchange risk of uncommitted forecast transactions; commodity price risk: soft commodities, principally Brazil coffee purchases as part of barter programs).

For those transactions which are not designated for hedge accounting purposes where the transactions do not fulfil the specific requirements of the accounting standard to achieve hedge accounting, the gains and losses on those hedging instruments for the year 2019 were as follows:

- Foreign currency forward contracts that are effective economic hedges of forecast cash flows arising from anticipated sales and purchases between Syngenta affiliates and third parties. The amount recorded in profit or loss in 2019 is a loss of $18 million (2018: loss of $17 million).
- Commodity derivative contracts that are effective economic hedges of the anticipated purchases of raw materials or purchases, principally purchases related to corn and soybean in North America and Latin America, and the resale of various crops in barter arrangements. The amount recorded in profit or loss in respect of these derivatives in 2019 is a gain of $38 million (2018: gain of $11 million). The profit or loss impact from the corresponding forecasted transactions occurs when the related finished product inventories are sold, which is generally in the year following recognition of the gain or loss on the hedge.

Assessment of the impact of market risks

The impact of market risks is assessed using a variety of Value-at-Risk (VaR) and Earnings-at-Risk (EaR) methods. These methods are adjusted to reflect the nature of the exposures and the impact of the exposures on profit or loss of the financial year. The specific methods used to assess the impact of financial risks are described below:

Risk	Method	Exposure (financial statement item)	Time horizon (months)
Foreign exchange risk			
Trading transaction – committed	VaR	Monetary asset and liability carrying amounts	1
Trading transaction – uncommitted	EaR	Operating income	12
Issued financial debt and interest	VaR	Monetary liability carrying amounts	1
Translation	VaR	Cumulative translation adjustment in OCI	1
Interest rate risk	EaR	Interest expense	12
Commodity price risk	EaR	Operating income	12

VaR and EaR calculations are risk management tools designed to statistically estimate with a pre-set probability the maximum amount of potential losses in value (VaR) or earnings (EaR) over a specific (holding) time period given current and forecast positions and possible movements in market prices. The VaR and EaR methods used by Syngenta estimate the gross impact on the consolidated financial statements if the underlying items were not hedged and the net impact of the combined underlying hedged items and the related hedging instruments. VaR and EaR calculations attempt to recognize that holding different assets and liabilities or incurring different future cash flow exposures may reduce portfolio risk through diversification. Such diversification effects are captured within the calculations, which aim to present the risk based on Syngenta's currency exposure as a whole, rather than the sum of the exposures to the individual currency pairs within the portfolio of exposures. Using historical data, the VaR and EaR calculations are designed to predict possible changes in the markets in the future at a 99 percent confidence level, with a 1 percent probability that actual results will be worse than calculated. The time horizon used to calculate the VaR figures for each risk is determined by the time period over which management forecasts and monitors changes in the risk and in Syngenta's exposure to it and takes mitigating actions in response to those changes.

The assessment of the impact of market risks is performed monthly and the results are compared against annually defined risk limits. In cases where the net impact is higher than a risk limit, Syngenta enters into derivative financial instrument transactions in order to stay within the risk limits approved in the risk management policy. Breaches of risk limits, should they occur, are immediately reported to senior management.

Syngenta cannot predict future movements in risk variables precisely, therefore calculations of the impact of market risks neither represent actual losses nor consider the effects of potential favorable movements in underlying risk variables. Accordingly, these calculations may only be an indication of future movements to the extent the historic market patterns repeat in the future.

Foreign exchange risk
Operating worldwide exposes Syngenta to foreign exchange transaction and translation risk at both the Syngenta AG group and subsidiary level. Syngenta's policy is to hedge the effect of foreign exchange translation risk on shareholder's equity only in specific circumstances, for example to protect the value of temporary excess foreign currency denominated cash positions.

Foreign exchange transaction risk – committed
Syngenta's individual subsidiaries predominantly transact their operational activities in their respective functional currencies. However, the globally integrated nature of Syngenta's business results in its subsidiaries bearing some amount of transactional balance sheet risk, because some monetary items (including financial liabilities) are denominated in foreign currencies.

Such committed foreign currency exposures are largely generated by the routing of products from Syngenta's central manufacturing sites to its foreign locations. The risk management strategy is to ensure that these committed exposures are fully hedged, unless otherwise approved by Group Treasury, for example where not deemed cost-effective or where there is no forward market for a specific currency.

The derivative instruments that Syngenta's risk management policy allows to be used to manage the risk are foreign exchange forward contracts and cross currency swaps with the same risk (foreign exchange currency index), where the fair value movements of the hedges and the retranslation of the underlying committed exposures are largely offset in profit or loss.

The derivative instruments are placed with the same maturity as the expected cash flows of the hedged transactions so that the timing of the cash flows of the items within the hedged exposure effectively matches the timing of the cash flows of the derivative instrument.

Net committed transactional currency exposures are identified and reported on a monthly basis by business units. The impact of the hedging program can be illustrated in the below VaR calculations for committed exposures, which relate to the revaluation of exposures relative to spot rates over a monthly period. The impact of interest differentials and other factors is not included in these calculations.

($m, except risk reduction %)	December 31, 2019 Value-at-Risk			December 31, 2018 Value-at-Risk		
Underlying currency (1-month holding period)	**Gross impact**	**Net impact**	**Risk reduction**	Gross impact	Net impact	Risk reduction
Swiss franc	**308**	**2**	**99%**	229	4	98%
Brazilian real	**12**	**4**	**67%**	6	1	83%
British pound sterling	**41**	**-**	**100%**	27	-	100%
Russian ruble	**29**	**-**	**100%**	40	-	100%
Argentine peso	**4**	**4**	**0%**	11	4	64%
Rest of world	**84**	**13**	**85%**	101	13	87%
Total undiversified	**478**	**23**	**95%**	414	22	95%
Diversification	**(146)**	**(17)**	**89%**	(151)	(15)	90%
Net VaR	**332**	**6**	**98%**	263	7	97%

At December 31, 2019, the Value-at-Risk for a one-month holding period, after hedges, at a 99 percent confidence level was $6 million (December 31, 2018: $7 million).

The largest exposures arise in Swiss franc, Russian ruble and British pound sterling. Switzerland and Great Britain house large research and manufacturing sites.

Foreign exchange transaction risk – uncommitted

Uncommitted transactions are expected, highly probable future transactions for which Syngenta does not yet have a contractual right or obligation (mainly sales and costs).

The US dollar represents the biggest single currency for both sales and costs. However, currency mismatches arise from Syngenta having a centralized cost base, denominated mainly in Swiss francs, British pounds and US dollars, against a local selling base, denominated mainly in US dollars, Euros and various other currencies, including those in emerging markets. In addition, due to the seasonality of Syngenta's business, the majority of sales occur during the first half of the year whereas costs tend to occur more linearly throughout the year.

The risk management objective is to minimize the impact of changes in foreign exchange rates on the operating income forecasted to result from these transactions. Syngenta considers hedging this exposure unless it can reliably expect that operating income could, without significant adverse economic impact, be protected by adjusting the pricing of forecast transactions for changes in foreign exchange rates before those transactions occur. Hedging transactions are managed to minimize the potential adverse movement for the entire portfolio of the net transactional flows, rather than on an individual currency basis. Transactions in a specific calendar year are managed cumulatively in separate portfolios.

The cumulative diversified risk of the whole portfolio can be reduced by entering into derivative transactions for a portion or the full amount of the individual transactions so that the remaining risk of the whole portfolio is at acceptable levels within clearly defined risk limits. The risk management objective is applicable for transactions in the following 24 months. Currently transactions for the next 12-month period are being hedged.

The derivative instruments that Syngenta's risk management policy allows to be used to manage the risk are:

- foreign exchange forward contracts and net purchased currency options with the same risk (foreign exchange currency index) which are eliminating or reducing the uncertainty in the cash flows.
- placed mainly with the same or (to a lesser extent) with shorter maturity than the timing of the cash flows being hedged so that the timing of the cash flows of the hedged transactions effectively matches the timing of the cash flows of the derivative instrument.

The impact of the hedging program on operating income can be illustrated in the Earnings-at-Risk calculation performed for anticipated net transactional currency flows for the following year taking into account related currency hedges.

($m, except risk reduction %)	December 31, 2019 Earnings-at-Risk			December 31, 2018 Earnings-at-Risk		
Underlying currency (12-month holding period)	**Gross impact**	**Net impact**	**Risk reduction**	Gross impact	Net impact	Risk reduction
Swiss franc	**101**	**73**	**27%**	76	43	43%
Argentine peso	**14**	**14**	**-**	35	35	-
Brazilian real	**75**	**30**	**60%**	72	72	-
Russian ruble	**15**	**7**	**51%**	16	14	13%
Euro	**24**	**24**	**-**	27	26	4%
British pound sterling	**50**	**45**	**11%**	20	15	25%
Rest of world	**137**	**116**	**15%**	164	154	6%
Total undiversified	**416**	**309**	**26%**	410	359	12%
Diversification	**(273)**	**(205)**	**25%**	(257)	(234)	9%
Net EaR	**143**	**104**	**27%**	153	125	18%

At December 31, 2019, the total potential adverse movement for 2020 net transactional flows after hedges relative to year-end, at a 99 percent confidence level, was $104 million (December 31, 2018: $125 million).

The largest exposures are to the Swiss franc, where Syngenta has a significant cost base in Switzerland with no material offsetting sales, and the Brazilian real, where a significant cost base is only partially offset by sales because sales in Brazil are largely dollarized.

Foreign exchange transaction risk – issued financial debt and interest

Syngenta has a funding strategy which involves securing a diversification of funding sources in different markets and maintaining an optimal currency mix of debt.

This additional foreign currency exposure arises from the debt issuances in Euro and in Swiss franc under the Euro Medium Term Note (EMTN) program. The risk management objective is to minimize the impact of changes in foreign exchange rates on these foreign currency denominated debt interest and principal repayments.

The foreign exchange risk on the foreign currency denominated debt is managed mostly by derivative instruments, and to a lesser extent within a portfolio of other committed transactions, so that no material foreign currency risk remains as a result of the foreign currency denominated debt.

The derivative instruments which Syngenta's risk management policy allows to be used to manage the risk are:

- cross currency swaps designated as hedges of foreign exchange risk of future interest and principal payments on foreign currency financial debt which are eliminating or reducing the uncertainty in the cash flows.
- placed mainly with the same terms as the items being hedged so that the timing of the interest and principal repayments of the hedged transactions effectively matches the timing of the cash flows of the derivative instrument.

Foreign exchange translation risk

Translation exposure arises from the consolidation of foreign currency denominated financial statements of Syngenta's subsidiaries. This is reported as currency translation effects in OCI.

Translation risk can be significant; however, Syngenta regards its equity base to be of sufficient magnitude generally to absorb the short- to medium-term impact of exchange rate movements.

Syngenta can use both foreign currency denominated debt and net investment hedging to manage this exposure. The latter incorporates specific actions to protect the value of temporary excess foreign currency denominated cash positions. No hedging was undertaken for exposures of this type during the years ended December 31, 2019 or 2018. The exposure is deemed to be mitigated by the large net asset base of Syngenta and consequently no additional management of the exposure was undertaken in 2019 or 2018.

The table below presents the 1-month translation Value-at-Risk:

($m)	**December 31, 2019 Value-at-Risk**	December 31, 2018 Value-at-Risk
Currency of net investment in subsidiary (1-month holding period)	**Gross impact**	Gross impact
Swiss franc	**222**	113
Brazilian real	**168**	168
Argentinian peso	**52**	8
Indian rupee	**39**	31
British pound sterling	**36**	42
Euro	**25**	46
Rest of world	**87**	87
Total undiversified	**629**	495
Diversification	**(297)**	(293)
Net VaR	**332**	202

At December 31, 2019, the Value-at-Risk for a one-month holding period at a 99 percent confidence level was $332 million (December 31, 2018: $202 million).

The two largest single currency exposures arise in the Brazilian real and Swiss franc, driven by the large operations and investments in facilities in Switzerland and Brazil.

Interest rate risk

Syngenta is exposed to fluctuations in interest rates on its borrowings (including forecasted borrowings) and excess cash. While the majority of Syngenta's borrowings have fixed interest rates, portions of Syngenta's net borrowings, including its short-term commercial paper program, drawings under the syndicated credit facility and local borrowings, are subject to changes in short-term interest rates.

Syngenta monitors its interest rate exposures and analyzes the potential impact of interest rate movements on net interest expense. The risk management strategy involves ensuring an efficient fixed/floating mix of total debt within approved interest rate limits.

The risk can be managed by the use of interest rate derivatives relating to future interest payments of financial debt liabilities. The derivative instruments are placed with the same maturity as the expected cash flows of the hedged transactions so that the timing of the cash flows of the hedged transactions effectively matches the timing of the cash flows of the derivative instrument.

At December 31, 2019, the net amount of Earnings-at-Risk on floating rate debt due to potential changes in interest rates (a parallel shift of 100 bps was applied) was $35 million (2018: $22 million). The net amount of Earnings-at-Risk on net debt, as defined under "Capital structure" below, due to potential changes in interest rates was immaterial at December 31, 2019 and 2018.

Commodity price risks

Operating in the agribusiness sector, changes in certain commodity prices affect Syngenta's reported operating results and cash flows. On a limited basis, Syngenta enters into derivative transactions to hedge the exposure of its cost base to commodity prices. This activity comprises oil and natural gas hedging in the UK and USA, as well as soft commodity hedging for corn and soybean purchases by the Seeds business in the USA, Canada, Brazil and Argentina, where Syngenta contracts to purchase various seed crops from growers and hedges the cost of the purchases. In barter arrangements where Syngenta sells products in exchange for receiving a certain amount of a commodity crop, Syngenta hedges the value of the crop. At December 31, 2019 and 2018, open hedging transactions for Brazil and Argentina corn and soybean price risk were not material.

Syngenta has indirect exposure to oil price fluctuations mainly through the impact of oil prices on the cost of both raw materials, especially chemical intermediates in the Crop Protection business, and distribution activities. At December 31, 2019, there was no hedge protection outstanding (December 31, 2018: 3 million barrels of long call options on oil). As the exposure to oil is indirect, Syngenta does not calculate the Earnings-at-Risk due to potential changes in oil prices.

Natural gas exposure occurs in Syngenta's primary manufacturing sites and Syngenta is managing the exposure by hedging the main risk component, which is the natural gas market price, contractually linked to the NYMEX natural gas benchmark price. The other risk components within the exposure are immaterial.

The main objective of managing commodity price risk is to reduce the impact of commodity price changes on operating income and to provide economic protection against future cost increases. Syngenta uses fixed price contracts and derivatives (both Over-the-Counter (OTC) and exchange traded instruments, including commodity option and futures contracts) to achieve this objective. The derivative instruments are placed with the same maturity as the expected cash flows of the hedged transactions so that the timing of the cash flows of the hedged transactions effectively matches the timing of the cash flows of the derivative instrument.

At December 31, 2019, the net amount of Earnings-at-Risk due to potential changes in natural gas prices was not material. Earnings-at-Risk due to potential changes in prices of soft commodities, principally corn and soybean, assuming a 12-month holding period are presented below.

($m, except risk reduction %)	**December 31, 2019 Earnings-at-Risk**			December 31, 2018 Earnings-at-Risk		
Soft commodities	**Gross impact**	**Net impact**	**Risk reduction**	Gross impact	Net impact	Risk reduction
Total undiversified[1]	**50**	**26**	**48%**	31	5	84%

1 As the main soft commodities are largely correlated to each other, the impact of diversification is immaterial

The Earnings-at-Risk of soft commodities is driven by their high price volatility compared to other asset classes. The hedging program reduces overall 12-month Earnings-at-Risk at December 31, 2019 to $26 million (December 31, 2018: $5 million). The increase in net risk in 2019 is due to higher exposures and lower hedge ratios at year end.

Derivatives and hedge accounting

Syngenta seeks to apply, wherever possible, hedge accounting to present its financial statements in accordance with the economic purpose of the hedging activity. Hedges for which hedge accounting is not adopted either (a) do not meet the requirements for hedge accounting treatment under IFRS or (b) when combined with the accounting for the underlying hedged items, impact the financial statements in a manner aligned with the economic purpose of the hedging transaction without the need to adopt hedge accounting treatment, for example hedges of monetary items denominated in foreign currency.

Syngenta determines the economic relationship between the hedged items and the hedging instruments by reviewing the critical terms of the hedged items and the hedging instruments. As a result Syngenta concludes that the risk being hedged for the hedged items and risk inherent in the hedging instruments are sufficiently aligned, there is no inherent mismatch in the hedging relationship and a 100 percent hedge ratio applies both for the actual quantities hedged and for the hedge accounting, except as described below. The impact of the critical terms is also assessed using historical scenario analysis supported by statistical methods (regression analysis).

For the hedging of foreign currency risk of uncommitted forecasted trading transactions, because the exposures are largely generated by the routing of products from Syngenta's central manufacturing sites to its foreign locations, the profit or loss impact from the corresponding transactions occurs when the related finished product inventories are sold to third parties. When entering into derivative hedging contracts, Syngenta selects maturity dates based on the forecast period for which Syngenta holds inventories of its products for each commercial market by hedged currency exposure. Limited variability in the holding period occurs mainly due to timing of the third party sales transactions ("inventory holding period mismatch").

For the hedging of commodity price risk of soy and corn, there is variability between the index being hedged (CBOT) and the drivers of the actual exposures (local soy elevator prices based on CBOT and Syngenta seeds production and selling prices based on CBOT). The variability is, however, limited to individual transactions within the group of transactions in this hedging program – and a hedge ratio of 100 percent is observed for the whole group of transactions.

The following table summarizes the accounting treatment, sources of ineffectiveness and the effectiveness assessment method for the identified financial market risks:

			Effectiveness assessment	
Risk	**Accounting treatment**	**Potential sources of ineffectiveness**	**Method**	**Frequency**
Foreign exchange risk:				
Trading transaction – uncommitted	CF	Lower volume of hedged items; inventory holding period mismatch	Critical terms match	Quarterly
Issued financial debt and interest	CF	Lower volume of hedged items	Critical terms match	Quarterly
Interest rate risk	FV	Lower volume of hedged items	Critical terms match	Quarterly
Interest rate risk	CF	Lower volume of hedged items	Critical terms match	Quarterly
Commodity price risk:				
Gas	CF	Lower volume of hedged items	Critical terms match	Semi-annually
Soft commodities	CF	Lower volume of hedged items; index mismatch	Regression analysis	Quarterly

Ineffectiveness is recognized in the consolidated income statement in Other general and administrative for hedges of uncommitted foreign currency forecast transactions, in Financial expense, net for hedges of committed foreign currency monetary items, in Financial expense, net for hedges of interest rate risk and in Cost of goods sold for hedges of commodity price risk. For the years ended December 31, 2019 and

2018 none of the above potential sources of ineffectiveness, individually or collectively, resulted in material amounts of actual ineffectiveness being reported for any hedge accounting relationships.

Fair Value Hedge Accounting
The amounts being reported in the statement of financial position for the fair value hedging relationships at December 31, 2019 and 2018 are as follows:

	Carrying amount of hedged item		Accumulated amount of fair value adjustment	
	Liabilities		Liabilities	
Risk ($m)	**2019**	2018	**2019**	2018
Interest rate risk – for continuing hedging relationships	**511**	501	**(12)**	(2)
Interest rate risk – for hedged items that have ceased to be adjusted	**39**	39	**(1)**	(2)
Total	**550**	540	**(13)**	(4)

The carrying amounts of the hedged items, including the fair value adjustments to the hedged items, are reported under Current financial debt and other financial liabilities and Financial debt and other non-current liabilities.

The decrease in the value of the hedged items during the period for hedge effectiveness purposes was $10 million (2018: increase of $6 million).

Cash flow hedges
The gains/(losses) on derivative instruments recognized in and classified out of the cash flow hedge reserve during the years ended December 31, 2019 and 2018 were as follows. The amounts shown exclude related income tax effects, which are disclosed in Note 7.

	Continuing hedging relationships					Hedge accounting no longer applied	
	Foreign exchange risk		Commodity price risk				
2019 ($m)	**Trading transaction – uncommitted**	**Issued financial debt and interest**	**Gas**	**Soft commodities**	**Subtotal**	**Foreign exchange risk – translation**	**Total**
Opening balance	**5**	**60**	**-**	**2**	**67**	**(69)**	**(2)**
(Losses)/gains recognized in OCI:							
on hedges as designated	**(9)**	**(113)**	**-**	**(1)**	**(123)**	**(1)**	**(124)**
Transferred directly to assets or liabilities	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Reclassifications to profit or loss:							
Losses/(gains) on hedges as designated:							
Cost of goods sold	**-**	**-**	**-**	**1**	**1**	**-**	**1**
General and administrative	**20**	**-**	**-**	**-**	**20**	**-**	**20**
Financial expense, net	**-**	**50**	**-**	**-**	**50**	**-**	**50**
Closing balance	**16**	**(3)**	**-**	**2**	**15**	**(70)**	**(55)**

	Continuing hedging relationships					Hedge accounting no longer applied	
	Foreign exchange risk		Commodity price risk				
2018 ($m)	Trading transaction – uncommitted	Issued financial debt and interest	Gas	Soft commodities	Subtotal	Foreign exchange risk – translation	Total
Opening balance	(17)	48	-	1	32	(70)	(38)
(Losses)/gains recognized in OCI:							
on hedges as designated	(28)	(77)	-	(5)	(110)	1	(109)
Transferred directly to assets or liabilities	-	-	-	5	5	-	5
Reclassifications to profit or loss:							
Losses/(gains) on hedges as designated:							
Cost of goods sold	-	-	-	1	1	-	1
General and administrative	50	-	-	-	50	-	50
Financial expense, net	-	89	-	-	89	-	89
Closing balance	5	60	-	2	67	(69)	(2)

Amounts reclassified from the cash flow hedge reserve into profit or loss are recognized in the consolidated income statement in Other general and administrative for hedges of uncommitted foreign currency forecast transactions, in Financial expense, net for hedges of committed foreign currency monetary items and for hedges of interest rate risk and in Cost of goods sold for hedges of commodity price risk.

Credit risk
Credit risk arises from the possibility that counterparties involved in transactions with Syngenta may default on their obligation, resulting in financial losses to Syngenta. Credit risk relates both to financial assets (including derivatives, marketable securities and money market contracts) as well as to operational assets managed by Syngenta's businesses (such as trade receivables).

Syngenta's maximum exposure to credit risk is the carrying values of its financial assets and receivables, including derivatives with positive market values. These amounts are disclosed in Note 26.

Syngenta has policies and operating guidelines in place to ensure that financial instrument transactions are only entered into with high credit quality banks and financial institutions. These include limits in respect of counterparties to ensure that there are no significant concentrations of credit risk. Syngenta continuously monitors the creditworthiness of its counterparties based on credit ratings and credit default swap data.

At December 31, 2019, Syngenta had no treasury or derivative transactions representing a significant concentration of credit risk. No credit losses have been incurred from investments in derivative financial instruments during the years ended December 31, 2019 and 2018.

To minimize its exposure to derivative positions, Syngenta enters into netting agreements under an International Swaps and Derivatives Association (ISDA) master agreement with its respective counterparties. In addition, for almost all derivative positions, Syngenta has entered into Credit Support Annex contracts (CSAs) under which cash is exchanged as collateral. The CSA contracts cumulatively limit either Syngenta's or the counterparty's aggregate credit risk exposure to no more than $1 million per counterparty on a weekly settlement basis for the positions for which CSA contracts have been agreed. There are no constraints on the cash exchanged and held between counterparties and the collateral can be used as part of operations. At December 31, 2019, an asset amounting to $206 million (2018: $111 million), and a liability amounting to $17 million (2018: $44 million) were recorded representing cash paid and received by Syngenta as collateral under these CSAs.

The impact of credit risk on the fair value of derivatives is considered through market observable credit default swap spreads for Syngenta and its counterparties. The impact on the fair value of Syngenta's derivative positions at December 31, 2019 and 2018 of the risk of default by financial counterparties was not material.

The credit risk to operational assets is managed through the use of credit limits and is partially mitigated through commercial activities, which include barter operations, cash sales incentives and obtaining other security from customers where appropriate.

The following tables show the effect of set off rights that apply to financial assets and liabilities under the above ISDA and CSA agreements at December 31, 2019 and 2018. Syngenta's rights under these arrangements would become enforceable in the event of a future default of the respective counterparty.

	2019		2018	
($m)	**Assets**	**Liabilities**	Assets	Liabilities
Gross recognized derivative financial instrument fair values (Note 26)	**122**	**(286)**	129	(206)
Amounts offset in consolidated balance sheet	**-**	**-**	-	-
Net amounts per consolidated balance sheet	**122**	**(286)**	129	(206)
Amounts subject to conditional set-off rights but not offset in consolidated balance sheet:				
ISDA Master netting agreements for derivative financial instruments	**(43)**	**43**	(46)	46
Collateral (received) / paid by Syngenta under CSA agreements	**(17)**	**206**	(32)	105
Net amounts in the event that all conditional set-off rights are applied	**62**	**(37)**	51	(55)

Liquidity risk and refinancing risk

Within Syngenta's risk management framework, liquidity risk is defined as the risk of being unable to raise funds to meet payment obligations when they fall due.

Refinancing or funding risk is defined as the risk of being unable, on an ongoing basis, to borrow in the market to fund actual or proposed commitments. Syngenta mitigates its liquidity and refinancing risk by: maintaining a committed unsecured funding facility; ongoing discussions with its core banks to best monitor its funding capacity; simulations; and diversification of its debt portfolio.

Syngenta's liquidity risk policy is to maintain at all times sufficient liquidity reserves both at the Syngenta AG Group and subsidiary level in order to meet payment obligations as they become due and also to maintain an adequate liquidity margin. The planning and supervision of liquidity is the responsibility of the subsidiaries and Group Treasury. Liquidity requirements are forecasted on a weekly basis. Syngenta operates regional or country cash pools to allow efficient use of its liquidity reserves.

Short-term liquidity

Two of Syngenta's largest markets are Europe, Africa and the Middle East and North America. Both sales and operating profit in these two regions are seasonal and are weighted towards the first half of the calendar year, reflecting the northern hemisphere planting and growing cycle. Latin America is another large market for Syngenta and sales and operating profit there are weighted towards the second half of the calendar year, reflecting the southern hemisphere planting and growing cycle. This seasonal operating activity results in seasonal working capital requirements.

Syngenta's principal source of liquidity consists of cash generated from operations. Working capital fluctuations due to the seasonality of the business are supported by short-term funding available from a $2.5 billion Global Commercial Paper program and a $3 billion committed, revolving, multi-currency syndicated credit facility. In 2019, the credit facility was extended by one year and will now mature in 2024. In May 2017, the existing syndicated credit facility was increased, extended and amended following the change of control related to the ChemChina takeover. The amount drawn under the syndicated credit facility at December 31, 2019 was $nil (2018: $150 million). The average outstanding balance under the syndicated credit facility for the year 2019 was $32 million (2018: $564 million).The amount drawn under the Global Commercial Paper program at December 31, 2019 was $878 million (2018: $80 million). The average outstanding balance under the Global Commercial Paper program for the year 2019 was $1,292 million (2018: $570 million).

The maturity analyses for Syngenta's current financial liabilities other than short-term derivative liabilities are presented in Notes 17 and 18.

The maturities of short term derivative liabilities are as follows:

($m)	Total	0–90 days	90–180 days	180 days–1 year
2019	**147**	**81**	**47**	**19**
2018	116	55	19	42

Long-term financing

Long-term capital employed is currently financed through twelve unsecured bonds and three unsecured notes issued under the Note Purchase Agreement in the US Private Placement market. In April 2019, Syngenta raised a $500 million loan with a floating interest rate and a term of 5 years.

In April 2018, $4.75 billion of Rule 144/Regulation S under the U.S. Securities Act of 1933 notes were issued. In May 2018, Syngenta AG paid $4.71 billion of the proceeds of those notes to its shareholder as a dividend, allowing CNAC Saturn (NL) B.V. to pay back its outstanding acquisition debt.

The following table shows Syngenta's contractually agreed (undiscounted) interest and principal repayments on long-term financing-related non-derivative financial liabilities and the related derivatives held at December 31, 2019 and 2018. Non-derivative financial liabilities are recorded at amortized cost (less related issuance costs) unless subject to fair value hedge accounting, in which case the liability is adjusted for the change in fair value of the hedged risk to the extent the hedge relationship is effective. Derivative financial liabilities are recorded at fair value. The table therefore shows the total carrying amount of Syngenta's financial debt adjusted for the effect, if any, of applying fair value hedge accounting.

	Non-derivative financial liabilities (Unsecured bonds and notes)				Derivative financial liabilities (Interest rate and cross-currency swaps)			
2019 ($m)	**Fixed rate interest**	**Variable rate interest**	**Principal repayment**	**Total**	**Fixed rate interest**	**Variable rate interest**	**Repayment[1]**	**Total**
Less than 1 year	**262**	**17**	**788**	**1,067**	**(20)**	**-**	**-**	**(20)**
1-3 years	**429**	**33**	**1,811**	**2,273**	**(33)**	**-**	**(90)**	**(123)**
3-5 years	**314**	**24**	**1,759**	**2,097**	**(24)**	**-**	**(24)**	**(48)**
5-10 years	**440**	**-**	**2,521**	**2,961**	**(21)**	**-**	**(15)**	**(36)**
More than 10 years	**666**	**-**	**761**	**1,427**	**-**	**-**	**-**	**-**
Total payments	**2,111**	**74**	**7,640**	**9,825**	**(98)**	**-**	**(129)**	**(227)**
Net carrying amount				**7,129**				**139**

	Non-derivative financial liabilities (Unsecured bonds and notes)				Derivative financial liabilities (Interest rate and cross-currency swaps)			
2018 ($m)	Fixed rate interest	Variable rate interest	Principal repayment	Total	Fixed rate interest	Variable rate interest	Repayment[1]	Total
Less than 1 year	278	-	356	634	(52)	-	(40)	(92)
1-3 years	522	-	2,110	2,632	(36)	-	(82)	(118)
3-5 years	396	-	1,500	1,896	(22)	-	-	(22)
5-10 years	587	-	2,631	3,218	(28)	-	(29)	(57)
More than 10 years	728	-	914	1,642	(4)	-	(17)	(21)
Total payments	2,511	-	7,511	10,022	(142)	-	(168)	(310)
Net carrying amount				7,485				126

1 The repayments above (and the net carrying amount of the derivative financial liabilities) do not include the amounts paid as collateral

Forecast data for liabilities that may be incurred in the future is not included in the table above. Amounts in foreign currency were translated to US dollars at the closing rate at the reporting date. Variable payments at each year end arising from financial instruments were calculated based on the forward interest rate yield curve and the spread that Syngenta pays on its outstanding debt and open derivatives at December 31, 2019 and 2018, respectively. Non-derivative financial liabilities, repayment of which can be demanded by the counterparty at any time, have been assigned to the earliest repayment period.

Capital structure

Absent major acquisitions, Syngenta targets maintaining an investment grade credit rating, as recognized by major third-party rating agencies, which it currently believes provides an optimal balance between financial flexibility and the cost of capital. At December 31, 2019, Syngenta's credit ratings were as follows: Fitch Ratings Ltd BBB/F-3; Standard & Poor's Rating Services BBB-/A-3; and Moody's Investors' Services Limited Ba2/NP.

Syngenta manages capital by monitoring levels of net debt, as calculated below, and equity against targets. Syngenta defines net debt as excluding financing-related derivatives and related collateral paid and received under CSA agreements as these balances offset each other. Capital is returned to the shareholder primarily through dividend payments.

The net debt to equity ratio was 172 percent at December 31, 2019 (154 percent at December 31, 2018 after the effects of accounting policy changes and restatements described in Note 2).

The components of net debt at December 31, 2019 and 2018 are as follows:

($m)	2019	2018
Current financial debt	2,226	925
Non-current financial debt	7,329	7,178
Cash and cash equivalents	(1,933)	(1,563)
Marketable securities[1]	(50)	(214)
Net debt at December 31	7,572	6,326

1 Included within 'Derivative and other financial assets' and 'Financial and other non-current assets'

The movements in net debt are as follows:

($m)	2019	2018
Opening balance at January 1	6,326	1,621
Initial recognition of lease liabilities on adoption of IFRS 16	200	-
New leases in the year	412	28
Other non-cash items	16	-
Cash (received)/paid under CSAs, net	122	(26)
Cash paid on financing-related derivatives	42	-
Foreign exchange effect on net debt	(163)	(148)
Dividends paid	900	4,707
Free cash flow	(283)	144
Closing balance at December 31	7,572	6,326

Syngenta defines free cash flow as cash flow from operating and investing activities, excluding investments in and proceeds from marketable securities, which are included in investing activities; excluding cash flows from and used for foreign exchange movements and settlement of related hedges on inter-company loans, which are included in operating activities; and including cash flows from acquisitions of non-controlling interests, which are included in financing activities.

26. Financial assets and liabilities

The following tables show the carrying amounts and fair values of financial assets and liabilities by category of financial instrument and reconciliation to where they are presented in the balance sheet at December 31, 2019 and 2018. The fair value hierarchy level is shown for those financial assets and liabilities that are carried at fair value in the balance sheet.

2019 ($m)	Carrying amount (based on measurement basis) Amortized cost	Fair value level 1	Fair value level 2	Fair value level 3[1]	Total	Comparison fair value
Cash and cash equivalents	1,933	-	-	-	1,933	1,933[2]
Trade receivables, net	4,358	-	-	-	4,358	4,358[2]
Other accounts receivable:						
Financial assets	156	-	-	-	156	156[2]
Non-financial assets	-	-	-	-	390	-[3]
Total					546	
Derivative and other financial assets:						
Derivative financial assets[4]	-	12	73	-	85	85
Other current financial assets	210	19	-	-	229	229[2]
Total					314	314
Financial and other non-current assets:						
Loans, receivables and pooled investments	174	58	31	-	263	263[5]
Equity investments at fair value through OCI	-	-	-	140	140	140[1]
Other, not carried at fair value	-	-	-	-	168	-[3]
Derivative financial assets[4]	-	-	37	-	37	37
Total					608	
Trade accounts payable	4,146	-	-	-	4,146	4,146[2]
Current financial debt and other financial liabilities:						
Lease liabilities	103	-	-	-	103	- [3]
Other non-derivative financial liabilities	2,203	-	-	-	2,203	2,203[2]
Derivative financial liabilities[4]	-	-	147	-	147	147
Total					2,453	
Other current liabilities:						
Financial liabilities	64	-	-	-	64	64[2]
Non-financial liabilities	-	-	-	-	806	-[3]
Total					870	
Financial debt and other non-current liabilities:						
Lease liabilities	476	-	-	-	476	-[3]
Other non-derivative financial liabilities	6,856	-	-	-	6,856	7,113[6]
Derivative financial liabilities[4]	-	-	139	-	139	139
Non-financial liabilities	-	-	-	-	140	-[3]
Total					7,611	

1 The main valuation input for these transactions is the price from their most recent shareholder financing transactions. Where the most recent shareholder financing transactions are not considered representative of fair value, pricing models are used

2 Carrying amount approximates the estimated fair value due to the short-term nature of the financial instruments

3 Fair value is not required to be disclosed for non-financial assets, including defined benefit pension assets, for non-financial liabilities and for lease liabilities

4 Derivative financial assets and liabilities are measured at fair value through profit or loss except that gains and losses on cash flow hedges of forecast transactions are not recognized in profit or loss until the hedged transaction is recognized in profit or loss

5 Fair values of these receivables are measured by discounting their cash flows at interest rates derived using observable yields on government bonds with maturities and currencies that match those of the respective receivable and the estimated credit risk of each receivable. The total fair value disclosed in respect of loans and receivables at amortized cost is due from counterparties that have not issued traded bonds and represents a level 3 fair value measurement

6 Financial liabilities represent both exchange traded bonds and non-exchange traded private placement notes issued by Syngenta. The fair value disclosed consists of level 2 fair value measurements derived from observable price quotations for these bonds

2018[6] ($m)	Carrying amount (based on measurement basis) Amortized cost	Fair value level 1	Fair value level 2	Fair value level 3[1]	Total	Comparison fair value
Cash and cash equivalents	1,563	-	-	-	1,563	1,563[2]
Trade receivables, net:						
At amortized cost	4,438	-	-	-	4,438	4,438[2,7]
Mandatorily measured at fair value through profit or loss	-	-	9	-	9	9
Total					4,447	4,447
Other accounts receivable:						
Financial assets	261	-	-	-	261	261[2]
Non-financial assets	-	-	-	-	275	-[3]
Total					536	
Derivative and other financial assets:						
Derivative financial assets[3]	-	10	89	-	99	99
Other current financial assets	115	211	-	-	326	326[2]
Total					425	425
Financial and other non-current assets:						
Loans, receivables and pooled investments	123	48	5	-	176	176[5]
Equity investments at fair value through OCI	-	-	-	123	123	123
Other, not carried at fair value	-	-	-	-	163	-[3]
Derivative financial assets[3]	-	-	30	-	30	30
Total					492	
Trade accounts payable	3,623	-	-	-	3,623	3,623[2,7]
Current financial debt and other financial liabilities:						
Non-derivative financial liabilities	1,079	-	-	-	1,079	1,079[2]
Derivative financial liabilities[3]	-	-	116	-	116	116
Total					1,195	1,195
Other current liabilities:						
Financial liabilities	169	-	-	-	169	169[2]
Non-financial liabilities	-	-	-	-	726	-[3]
Total					895	
Financial debt and other non-current liabilities:						
Non-derivative financial liabilities	7,185	-	-	-	7,185	6,778[6]
Derivative financial liabilities[3]	-	-	90	-	90	90
Non-financial liabilities	-	-	-	-	140	-[3]
Total					7,415	

1 The main valuation input for these transactions is the price from their most recent shareholder financing transactions. Where the most recent shareholder financing transactions are not considered representative of fair value, pricing models are used

2 Carrying amount approximates the estimated fair value due to the short-term nature of the financial instruments

3 Fair value is not required to be disclosed for non-financial assets, including defined benefit pension assets, for non-financial liabilities and for lease liabilities

4 Derivative financial assets and liabilities are measured at fair value through profit or loss except that gains and losses on cash flow hedges of forecast transactions are not recognized in profit or loss until the hedged transaction is recognized in profit or loss

5 Fair values of these receivables are measured by discounting their cash flows at interest rates derived using observable yields on government bonds with maturities and currencies that match those of the respective receivable and the estimated credit risk of each receivable. The total fair value disclosed in respect of loans and receivables at amortized cost is due from counterparties that have not issued traded bonds and represents a level 3 fair value measurement

6 Financial liabilities represent both exchange traded bonds and non-exchange traded private placement notes issued by Syngenta. The fair value disclosed consists of level 2 fair value measurements derived from observable price quotations for these bond, except for one private placement note with a fair value of $9 million, which is a level 3 measurement because market interest rates and credit rates were not observable for the full period through to its maturity date in 2035.

7 After effects of accounting policy changes and restatements described in Note 2

The levels of fair value hierarchy used above are defined as follows:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data.

Equity investments at fair value through OCI consist mainly of unquoted companies whose proprietary technologies are still at the development stage. The last round financing price is used as fair value for all classes of shares held by Syngenta if either:

- the round took place less than 12 months before the reporting date and there are no terms where any class of shares would not convert into common shares at the last round valuation; or
- Syngenta has information showing that the investee company has progressed according to plan in meeting its technological, operational and financial objectives.

Otherwise, fair value of each material investment is estimated using accepted valuation methodologies, consisting of the following steps:

1. calculation of the investee company's Enterprise Value (EV) from projected revenues using M&A transaction multiples and public company comparable revenue multiples
2. solving for the value of equity by adjusting EV for debt and applying a discount for lack of control
3. allocating the equity value to all shares of all classes:

- equally if investors' most likely exit is through an initial public offering (IPO) or if the total equity value is so high that all classes would convert to common shares;
- in other circumstances, using the Option-Pricing Method to model uncertainty regarding future exit outcomes. This method models common and preferred shares as call options on the future distributable value of the investee enterprise's equity, at exercise prices based on their liquidation preferences at specified liquidity events. Valuation inputs are estimated individually for each investee enterprise and vary based on the maturity of its business and stage of development of its proprietary technologies.

If an investee undergoes an IPO, the fair value of the investment at subsequent period ends is based on quoted market prices. Shareholdings subject to a lock-up period where the underlying shares are actively traded on a stock exchange are fair valued by applying a discount to the quoted price for lack of marketability and these measurements are classified as level 2. They are reclassified as level 1 on expiry of the lock-up period. In 2019 and 2018, there were no transfers between level 1 and level 2 or into or out of level 3 of the fair value hierarchy or between the fair value and amortized cost categories.

Movements in level 3 financial assets for the years ended December 31, 2019 and 2018 were as follows:

($m)	**2019**	2018
January 1	**123**	94
Unrealized gains recognized on equity instruments at fair value through OCI	**9**	15
Additions due to issues	**11**	13
Currency translation effects and other	**(3)**	1
December 31	**140**	123

Income, expense, gains and losses relating to financial instruments recognized in profit or loss during the years ended December 31, 2019 and 2018 are as follows:

2019 ($m)	**Amortized cost loans and receivables**	**Derivative assets and liabilities**	**Lease liabilities**	**Other liabilities carried at amortized cost**	**Total**
Recognized within Financial expense, net[2]:					
Interest income	**98**	**-**	**-**	**-**	**98**
Interest expense	**-**	**(37)**	**(11)**	**(419)**	**(467)**
Currency gains/(losses), net	**-**	**(26)**	**-**	**-**	**(26)**
Recognized within Marketing and distribution:					
Impairment charges	**(106)**	**-**	**-**	**-**	**(106)**
Total	**(8)**	**(63)**	**(11)**	**(419)**	**(501)**

2018[3] ($m)	Amortized cost loans and receivables[1]	Derivative assets and liabilities	Lease liabilities	Other liabilities carried at amortized cost	Total
Recognized within Financial expense, net[2]:					
Interest income	99	-	-	-	99
Interest expense	-	(33)	-	(346)	(379)
Currency gains/(losses), net	-	(79)	-	-	(79)
Recognized within Marketing and distribution:					
Impairment charges	(28)	-	-	-	(28)
Total	71	(112)	-	(346)	(387)

1 Includes immaterial amounts relating to financial assets classified as at fair value through profit or loss
2 Financial expense, net also includes $30 million of bank charges (2018: $42 million)
3 After effects of accounting policy changes and restatements described in Note 2

27. New IFRSs and accounting policies

Adoption of New IFRSs

In addition to IFRS 16, transitional disclosures for which are given in Note 2, Syngenta has adopted the following new or revised IFRSs from January 1, 2019. Except where indicated below, these IFRSs have not been early adopted and their adoption had no material impact on these condensed consolidated financial statements:

- IFRIC 23 “Uncertainty over Income Tax Treatments”;
- “Long-term Interests in Associates and Joint Ventures”, Amendments to IAS 28;
- “Prepayment Features with Negative Compensation”, Amendments to IFRS 9;
- “Annual Improvements to IFRS Standards” 2015-2017 Cycle;
- “Plan Amendment, Curtailment or Settlement”, Amendments to IAS 19,
- “Definition of a Business”, Amendments to IFRS 3, clarifies which transactions are accounted for as business combinations using the acquisition method, by amending the definition of a business for this purpose and by providing additional guidance clarifying the criteria that determine whether items that are purchased in a transaction constitute a business. Syngenta has early adopted the amendments which consequently apply to acquisitions Syngenta completed after January 1, 2019. The amendments had no material impact on the acquisitions made by Syngenta in the year ended December 31, 2019, which are disclosed in Note 3.

The relevant new or revised IFRSs that Syngenta has not yet adopted are the following:

- “Sale or Contribution of Assets between an Investor and its Associate or Joint Venture”, Amendments to IFRS 10 and IAS 28, was issued in September 2014 and requires Syngenta to recognize gains and losses on such sales or contributions only to the extent they relate to the interest in the Associate or Joint Venture that is held by investors other than Syngenta. In December 2015, the IASB postponed mandatory application of the amendments indefinitely. Based on the associates and joint ventures in which it has investments at December 31, 2019, Syngenta does not believe that the amendments will have a material impact on its consolidated financial statements.
- IFRS 17 “Insurance Contracts” was issued in May 2017 and establishes principles for accounting and disclosure of insurance contracts issued and reinsurance contracts held. Insurance contracts held as a policyholder are not within the scope of IFRS 17. The effective date of IFRS 17 is January 1, 2021. Syngenta does not believe that IFRS 17 will have a material impact on its financial statements.
- “Definition of Material”, Amendments to IAS 1 and IAS 8, was issued in October 2018 and clarifies existing guidance on materiality, adding the concept that information is material if obscuring that information by using unclear language or presentation, including inappropriate combination with dissimilar items or immaterial information or separation from similar items, could reasonably be expected to influence decisions made by the primary users of financial statements. Syngenta must apply the amendments prospectively with effect from January 1, 2020. Syngenta does not expect the revised definition to result in significant changes to its financial statement presentation and disclosure.
- “Interest Rate Benchmark Reform”, Amendments to IFRS 9, IAS 39 and IFRS 7, was issued in September 2019 and provides temporary exceptions from specific IFRS 9 hedge accounting requirements for hedging relationships where plans to reform a market-wide interest rate benchmark will affect either the hedged interest rate benchmark or the timing and amount of cash flows from the hedged item or hedging instrument, but the effect is uncertain. Applying the exceptions would enable hedge accounting to be applied until such uncertainty no longer exists. The amendments are effective as from January 1, 2020.
- “Classification of Liabilities as Current or Non-current”, Amendments to IAS 1, was issued in January 2020 and clarifies that:
    - financial debt is classified as non-current if there is a right to defer payment for more than 12 months after the end of the reporting period, even if management intend to repay the debt within 12 months;
    - financial debt for which the lender can demand repayment if conditions specified in covenants related to the debt are breached is classified as non-current if those conditions are met at the end of the reporting period; and
    - an equity conversion option that a counterparty has the right to exercise is ignored in determining the classification of a debt as current or non-current if the option is accounted for as an equity instrument, but is considered when determining classification if the option is accounted for as a liability.

  Syngenta must apply these amendments retrospectively as from January 1, 2022 at the latest. Syngenta’s existing accounting policy is consistent with the amendments.

Principles of consolidation

Subsidiaries
Subsidiaries are those entities which Syngenta controls. Syngenta controls all its subsidiaries through ownership of a majority of their voting rights. Syngenta fully consolidates the income, expenses, assets, liabilities and cash flows of subsidiaries from the date it acquires control up to the date control ceases. Intercompany transactions and balances are eliminated upon consolidation.

Associates and joint ventures
Syngenta has no interests in entities that it does not consolidate that would meet the definition of joint operations. Syngenta accounts for both associates and joint ventures using the equity method.

Business combinations
Syngenta accounts for business combinations in accordance with IFRS 3 (revised October 2018), using the acquisition method. For this purpose, a business is an integrated set of activities and assets that includes, as a minimum, an input and a substantive process and is capable of being conducted and managed for the purpose of providing goods or services to customers, generating investment income or

other income from ordinary activities, and the fair value of which does not consist substantially exclusively of a single identifiable asset or group of similar identifiable assets. At the date it acquires control of another business, Syngenta records the fair value of the agreed consideration payable, including the estimated fair value of any contingent consideration and of any pre-existing ownership interest it holds in the acquired entity. Directly attributable acquisition transaction costs are expensed as incurred. The assets and liabilities of acquired businesses are identified and recorded in the consolidated financial statements at their acquisition date fair values, with certain exceptions as set out in IFRS 3. Acquired intangible assets are generally valued based on the income approach: the relief from royalty method is generally used for brand names, the distributor method for customer relationships, and the residual income method for product technology rights. Acquired land and buildings are valued based on the market approach and specialized plant and equipment based on the cost approach. Non-controlling interests which consist of actively traded financial instruments, arise from transactions in which no consideration is transferred or do not represent a proportionate ownership interest in the acquired entity to which they relate are recorded at their fair value. All other non-controlling interests are recorded at their proportionate share of the fair value of the acquired business's net assets, measured using the non-controlling shareholders' share of equity ownership, which may differ from their share of the voting rights in the acquired business.

Other accounting policies

Foreign currencies and hyperinflation

Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the rate prevailing at the balance sheet date. Non-monetary assets and liabilities denominated in foreign currencies, stated at historical cost or fair value, are translated into the functional currency at the foreign exchange rate prevailing at the date of the transaction or the date the fair value was determined, respectively. Foreign currency transactions are translated into the relevant functional currency at the exchange rate prevailing at the date of the transaction. With exceptions for Syngenta AG and certain regional supply centers, holding and finance subsidiaries, which have the $ as their functional currency because their funding, receipts and payments are predominantly transacted in $, each Syngenta subsidiary uses the local currency of its country of operations as its functional currency. Unrealized gains or losses related to equity loans, designated cash flow and net investment hedging arrangements and gains and losses on remeasuring equity investments designated at fair value through OCI are recognized in OCI. All other resulting foreign exchange transaction gains and losses are recognized in profit or loss. Equity loans are intercompany loans to subsidiaries that are not expected to be repaid in the foreseeable future and therefore considered part of Syngenta's net investment in the subsidiary.

Income, expense and cash flows of foreign operations are translated into US dollars using average exchange rates prevailing during the period. Assets and liabilities of foreign operations are translated to US dollars using exchange rates prevailing at the balance sheet date. Foreign exchange differences arising on these translations are recognized directly in OCI. Upon disposal or loss of control of a foreign subsidiary, the cumulative currency translation difference relating to the subsidiary, including exchange gains and losses on equity loans to which the subsidiary is or has been a party, is reclassified from equity to profit or loss as part of the gain or loss on disposal.

The consolidated historical cost of inventories that have been transferred between Syngenta AG group entities since their initial purchase or manufacture is measured by translating the currencies in which the costs of purchase or manufacture were incurred into US dollars at the exchange rates prevailing at the date when those costs were incurred, and foreign exchange differences arising on retranslating these amounts to US dollars at the rates at the balance sheet date or the date the inventories were sold, as applicable, are recognized in OCI.

Syngenta considers the economy of a country to be hyperinflationary if reliable statistical evidence indicates that its cumulative consumer price inflation rate over the previous three years has exceeded 100% and is likely to continue to exceed 100% throughout the year following the balance sheet date. Syngenta subsidiaries whose functional currency is the currency of a hyperinflationary economy are consolidated as follows: amounts of non-monetary assets and liabilities and income and expense items in the subsidiaries' financial statements are indexed to current price levels at the balance sheet date using a recognized general consumer price index. The resulting financial statements, including income statement and cash flows, are translated into US dollars at the rate prevailing at the balance sheet date.

Revenue

Syngenta early adopted IFRS 15 “Revenue from Contracts with Customers” with effect from January 1, 2017 using the cumulative effect transition method. Under that method, Syngenta uses IFRS 15 to determine when revenue is recognized after January 1, 2017 for contracts with obligations to supply products or provide services that had not been fulfilled by that date. Syngenta uses IAS 18 to account for changes after January 1, 2017 in estimates of the amount of revenue for contracts under which Syngenta had supplied or provided all required products and services before that date.

Syngenta's main source of revenue is product sales. Control of products passes to Syngenta's customers, and revenue for product sales is recognized, at a point in time which is usually upon delivery, subject to reasonable assurance of collectability. Delivery is defined based on the terms of the sale contract. Syngenta also derives revenue from licensing the right to use its intellectual property (IP), principally its seeds germplasm and traits. Each licensing contract Syngenta enters into has unique terms and certain licensing contracts may involve significant upfront or milestone payments in addition to sales-based royalties.

Revenue is measured at the amount of consideration to which Syngenta expects to be entitled in exchange for the products or license rights it transfers to customers. If the consideration is receivable more than 12 months after the transaction date and the effect of discounting is material, the revenue amount recognized is discounted to its present value at the transaction date, using a discount rate which reflects customer risk, and the unwinding of this discount is recognized as financial income over the period until the date the consideration is due. Revenue in contracts with non-cash consideration is measured at the fair value of the consideration at contract inception.

The main forms of variable revenue for Syngenta are as follows and the judgments associated with estimating their amount are discussed in Note 2:

- cash incentive programs that provide rebates and discounts dependent on achievement of targets for purchase of Syngenta products, and cash discounts for punctual or early payment of invoices. Syngenta recognizes sales minus an allowance for rebates, and a refund liability presented within Trade accounts payable in the consolidated balance sheet. The allowance and liability are measured at the amount expected to be refunded or credited to customers, estimated based on the programs' terms, market conditions and historical experience.

- sales returns, which arise both in markets where the customer has a legal or contractual right of return and in markets where customers do not have such rights but Syngenta's commercial practice is to accept returns. In either case, Syngenta recognizes sales minus an allowance for expected returns, an estimated refund liability, and an asset for the right to recover its products corresponding to the expected returns. The refund liability and the asset are presented within Trade accounts payable and Inventories respectively in the consolidated balance sheet. The allowance and liability are measured at the amount expected to be refunded or credited to customers and the asset is measured at the standard purchase or production cost of the underlying Syngenta products, minus allowances for transportation and obsolescence where relevant.
- in certain markets, sales terms allow customers to exchange purchased products at a later date for other Syngenta products of their choice, to the same value. For these sales, Syngenta recognizes revenue upon delivery of the original products, minus a provision for products expected to be exchanged. This provision is released, and the corresponding revenue is recorded, when the substitute products are delivered or the customer's right to exchange the products expires, whichever is earlier.
- In licenses which grant the right to use Syngenta's IP as it exists when the license is granted, and in which Syngenta receives revenue for non-refundable lump sums and minimum guaranteed income amounts which can be reliably estimated and for which there are no related future Syngenta performance obligations or contingencies other than the passage of time, Syngenta recognizes that revenue on signature of or on the effective date of the license, whichever is later. Revenue for lump sum milestone payments which are contingent on product regulatory approvals is recognized only when the competent regulatory authorities have granted the relevant approvals. Sales-based royalty income is recognized in the period that the licensees make sales in respect of which the royalties are payable.

In certain markets, sales terms allow customers the option of a one-time, non-repeatable extension of credit, for a defined additional period, in respect of a defined proportion of purchases made during a defined period, if the customers still have the inventories on hand upon expiration of the initial agreed credit period. Customers have no right to return these inventories, and must pay unconditionally when the additional credit period expires. In accordance with IFRS 15, revenue for these sales is recognized upon product delivery.

Where third parties hold Syngenta inventories on a consignment basis, revenue is recognized in the period that inventories are withdrawn from consignment and delivered to customers.

For product sales which are qualifying purchases in customer loyalty incentive programs, Syngenta allocates revenue between its qualifying product sales and the incentive awards of additional free or discounted products or services ("incentives") based on the value of incentives to which customers are expected to be entitled, the relative stand-alone selling prices of the respective product sales and incentives and, where awards are subject to expiry, the extent to which customers are expected to redeem their rights based on historical experience of similar programs. Syngenta recognizes estimated liabilities for the incentives in the period in which it recognizes the associated product sales, and presents these liabilities as Contract liabilities in the consolidated balance sheet. In programs where the incentive is either a product normally sold by Syngenta, a third party product which Syngenta is primarily responsible for supplying to customers or for which Syngenta bears inventory risk, or a service provided to customers by a third party acting under Syngenta's direction, Syngenta obtains control of the incentives before transferring them to customers, and so supplies the incentives as a principal. For these programs, Syngenta recognizes the revenue allocated to the incentives when customers receive them or redeem their right to an award. Revenue related to these programs is presented as part of Sales, and associated costs are presented within Cost of goods sold or Marketing and distribution expense as appropriate. In other programs, Syngenta acts as agent for a third party who supplies the incentives, and Syngenta recognizes any net income from supply of the incentive when the third party becomes obliged to supply the awards.

Syngenta periodically enters into prepayment contracts with customers whereby it receives advance payments for products to be delivered in a future period. These advance payments are recorded as liabilities and presented as part of Contract liabilities in the consolidated balance sheet. Advance payment liabilities are released and revenues associated with such advance payment transactions are recognized when control of the prepaid products passes to the customer.

Syngenta has not presented a separate line in the consolidated balance sheet for Contract assets because all material relevant assets are presented either as Inventories or Trade receivables. Incremental costs of obtaining customer contracts with a term of one year or less are expensed. Except for payments made to customers at inception of contracts which are recognized as intangible assets and purchase and production costs recognized as inventories, Syngenta has no other material incremental costs of obtaining contracts or direct costs of fulfilling contracts that qualify for recognition as an asset.

For certain customers in certain markets, trade receivables are settled either with proceeds from sales by such customers of agricultural commodities or by delivery of commodities to Syngenta by such customers. For these arrangements, Syngenta recognizes revenue when it has a legally enforceable receivable, the amount of which is reliably measurable based on an agreed price for the Syngenta products. Where Syngenta has a contract with the customer for physical delivery of a commodity at a fixed price which is hedged using derivative financial instruments, an embedded derivative is recognized for the fair value of the contract until physical delivery. When Syngenta subsequently resells the commodity, it classifies additional revenue as sales only to the extent that the original contract for the sale of Syngenta products included revenue that was contingent upon the commodity sales proceeds. Any remaining gains or losses on the commodity sale are recorded in Marketing and distribution expense in the consolidated income statement.

Research and development

Research expenses are charged to the consolidated income statement when incurred. As disclosed in Note 2, internal development costs are capitalized as intangible assets only when there is an identifiable asset that can be completed and is expected to generate future economic benefits and when the cost of such an asset can be measured reliably. Costs incurred internally to develop new chemical or biological crop protection products based on active ingredients that have not yet obtained regulatory approval, or to develop new seed varieties containing genetically modified (GM) traits that have not yet obtained regulatory approval, are expensed as incurred because of the uncertainty inherent in the outcome of the regulatory approval process. Costs incurred in the design, development and testing of new or improved non-GM seed varieties and hybrids, of formulations of existing registered chemical active ingredients or projects to extend the application range of existing crop protection products, or of new and improved production processes that do not themselves require regulatory approval and that can be applied to products which have already obtained approval, are capitalized if the processes are technically feasible, Syngenta intends and has sufficient resources to complete the development, the product or process will generate future economic benefits, and expenditure attributable to developing the product or process can be measured reliably. Government grants received in respect of research and development costs, including tax credits treated as government grants for accounting purposes, are recognized in profit or loss in the same periods as the costs to which they relate. Development expenses Syngenta incurs to develop technology on behalf of a third party under a collaboration agreement are capitalized and amortized over the agreement term if Syngenta expects to recover the costs under the terms in that agreement.

Costs of purchasing distribution rights, patent rights and licenses to use or sell products, or technology or registration data are capitalized as intangible assets. Costs of applying for patents for internally developed products, costs of defending existing patents and costs of challenging patents held by third parties where these are considered invalid, are considered part of development expense and expensed as incurred.

Expenses by function

Cost of goods sold includes costs of purchasing and producing inventories that have been sold to third parties, inbound and inter-site distribution expenses, impairment of inventories, environmental remediation costs associated with ongoing Syngenta manufacturing sites, and general overhead expenses of Syngenta's Production and Supply function which are expensed as incurred. Marketing and distribution includes costs of selling products, providing technical support for products sold, marketing and promotional expenses, distribution of finished products to third party customers, and impairment of trade and other receivables. Research and development includes the expenses of Syngenta's research sites and third party research collaboration agreements, expenses incurred during the regulatory process for Syngenta products and the costs of Syngenta's global field trials organization. General and administrative includes expenses of general management, finance, human resources, information systems, legal affairs and taxes, corporate affairs and communications, business planning and corporate development functions. Services provided by these departments to the Production and Supply, Marketing and Distribution and Research and Development functions are allocated to and included within those other functions. Gains and losses arising on routine asset disposals and gains and losses reclassified from OCI when hedged forecast foreign currency trading transactions affect profit or loss are also reported within General and administrative. Restructuring is a separate general and administrative function as it is managed through a project management office which is accountable to the Executive Team. Impairment of property, plant and equipment that results from restructuring plans, rather than ongoing activities of the functions responsible for the assets, is included in Restructuring. Impairment of goodwill and intangible assets is also included in Restructuring unless a specific function is accountable for the impairment loss. Non-current asset depreciation and amortization are charged to the functions responsible for the related assets.

Restructuring

Restructuring represents the effect on reported performance of initiating and enabling business changes that are considered major and that, in the opinion of management, will have a material effect on the nature and focus of Syngenta's operations, and therefore require separate disclosure to provide a more thorough understanding of business performance. Restructuring includes the incremental costs of closing, restructuring or relocating existing operations, and gains or losses from related asset disposals. Restructuring also includes the effects of analyzing and preparing for potential industry consolidation transactions as well as completing and integrating significant business combinations and divestments, including related transaction costs, gains and losses. Recurring costs of normal business operations and routine asset disposal gains and losses, including those arising from sale and leaseback transactions carried out to optimize Syngenta AG group financing, are excluded.

Income taxes

Income taxes for the year comprise current and deferred taxes, calculated using rates enacted or substantively enacted at the balance sheet date. Current tax is the expected tax payable on taxable income for the year and any adjustments to tax payable in respect of previous years. Deferred tax is recognized using the liability method and thus is calculated on temporary differences between the tax bases of assets and liabilities and their respective carrying amounts in the consolidated balance sheet. Syngenta accounts for income tax credits as a reduction in income tax expense if they are receivable solely through offset against an income tax liability, and treats them as government grants for accounting purposes if they are receivable in cash if no income tax liability arises against which Syngenta is required or permitted to offset the tax credits. Deferred tax is provided on temporary differences arising on investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference can be controlled and it is probable that the difference will not reverse in the foreseeable future. Deferred tax liabilities are not recognized on the initial recognition of goodwill if the carrying amount of goodwill exceeds its tax base. Deferred tax assets, including those related to unused tax losses, are recognized to the extent that it is probable that future taxable profit will be available against which the assets can be utilized. Income tax expense, current and deferred, is recognized in profit or loss unless it relates to items recognized in OCI or in equity in which case the tax expense is also recognized in OCI or equity, respectively.

Syngenta's policy is to comply fully with applicable tax regulations in all jurisdictions in which Syngenta's operations are subject to income taxes. Syngenta's estimates of current income tax expense and liabilities are calculated assuming that all tax computations filed by Syngenta's subsidiaries will be subject to review or audit by the relevant tax authorities. Syngenta and the relevant tax authorities may have different interpretations of how regulations should be applied to actual transactions. Syngenta records provisions for taxes it estimates will ultimately be payable when the reviews or audits have been completed, including allowances for any interest and penalties which may become payable. Syngenta releases these provisions when the tax audit of the applicable year is completed or an Advance Pricing Agreement (APA) settlement is reached that impacts previous years' tax payments, or otherwise when the statute of limitations for the applicable year expires, unless there is evident reason for earlier release.

Leases

See "Adoption of IFRS 16" in Note 2.

Financial Instruments

Trade and other accounts receivable

Trade and other accounts receivable include invoiced amounts less adjustments for expected credit losses. Syngenta holds trade receivables to collect their contractual cash flows, and classifies and measures them at amortized cost, except for certain foreign currency sales transactions in which Syngenta offers to its customers a written exchange rate option embedded into the sales contract. Trade receivable/option contracts that result from these foreign currency sales transactions are classified as at fair value through profit or loss. The fair value of these trade receivables is measured by:

(a) remeasuring the embedded exchange rate option at fair value;

(b) retranslating the underlying trade receivable into the selling entity's functional currency using closing spot exchange rates at the balance sheet date; and

(c) adjusting the resulting carrying amount of the combined receivable contract to reflect changes in customer credit risk. Syngenta includes this adjustment in the provision for doubtful receivables.

Factoring arrangements transferring substantially all economic risks and rewards associated with accounts receivable to a third party are accounted for by derecognizing the accounts receivable upon receiving the cash proceeds of the factoring arrangement. Factoring arrangements that transfer to a third party some, but not substantially all economic risks and rewards are accounted for by continuing to recognize Syngenta's continuing rights over the receivable and by recognizing any related obligation to the third party factor.

Credit risk management practices

Syngenta's Corporate Financial Risk Group (CFFORG) monitors, proposes and coordinates country risk, credit management policies and processes including credit limit setting for major customers, approval of credit exceeding 360 days and credit insurance and risk transfer objectives. The CFFORG is supported by Regional, Territory and Country Trade Finance Credit Managers (TFCM) and Credit Committees (CC) with defined authority levels. The CC defines risk mitigation programs at country and customer level such as barter, collateral policy, payment terms, early payment rebates, and refinancing. The CC also defines the optimal credit risk level at customer and country level, approves customer credit facilities, credit scoring and payment terms, defines and reviews collection strategies including credit hold and release processes, treatment of critical customer cases and taking legal actions when collection efforts are insufficient to collect overdue balances, and sets yearly targets for accounts receivable performance. The TFCM coordinates the CC and is responsible for risk analysis, executing trade financing programs, collection negotiations and dispute resolution, and, where necessary, currency risk, export financing programs, documentary credits and commercial bank guarantees and credit risk insurance. The TFCM is supported by a Credit Operations team responsible for collection and dispute management.

Syngenta manages credit risk to operational assets through country and customer risk limits. Countries are assigned a risk rating based on external analysis of their economic, business and political risk and internal analysis of agricultural risk. Country exposure limits and minimum security requirements are applied in some defined high risk countries. A standardized credit scoring methodology is applied to all customers generating a creditworthiness score computed using a points-based system which takes into consideration financial and non-financial attributes and credit limits. Based on the total score achieved each customer is classified in a credit risk class which drives policy relating to sales order release, collection process and credit limit. Each customer's credit position is consolidated across all relevant systems to provide a total business view of credit status and history.

Collateral is an important part of the risk mitigation strategy. Collateral is based on a list of locally accepted securities which may include cash, other financial instruments, barter operations or third party credit enhancements such as guarantees or insurance, but normally excludes non-financial assets. Collateral is validated based on its probability of and time to legal enforcement.

Receivable balances are written off only when there is no realistic prospect of their being collected, after completion of related legal actions and permanent cessation of business activity with the defaulting customer. Write-offs are subject to defined authority levels and are not used to solve small payment differences or valid commercial disputes with continuing customers.

Estimation of expected credit losses

To estimate expected credit losses, trade receivables are grouped into portfolios by credit risk class and country and a provision matrix method is used. The principal inputs when determining matrix percentages are historical records of amounts written off in previous years, amounts currently subject to insolvency proceedings and the likelihood of eventual write offs of those amounts, the average credit period, past due information and historical experience. Assumptions are also made about forecast conditions for market credit, commodity price, currency and country risk, competition and regulation over the remaining credit period of the trade receivables outstanding at the balance sheet date. These assumptions are consistent with those used to prepare operational budgets for the following period. Rebate credits and validated collateral valued at its expected value are deducted from outstanding receivable balances when determining the maximum exposure to credit loss to which matrix percentages are applied. Expected recoveries under credit insurance policies which are not part of the agreement with the customer are accounted for separately from the expected credit losses and are recognized as assets when the insurer has agreed the claim.

Expected credit losses on other receivables and amortized cost financial assets are generally estimated by assessing each receivable individually. For balances reported as other receivables and current financial assets, lifetime expected credit losses are estimated. For balances reported as non-current financial assets, 12-month expected credit losses are estimated unless the credit risk has increased significantly since the asset was first recognized, in which case lifetime credit losses are estimated. Amounts more than 90 days past due are considered to be in default for this purpose.

Derivative and other financial instruments

Regular way purchases and sales of marketable securities are recognized at settlement date.

Financial assets and liabilities which have remaining contractual maturities of 12 months or less at the balance sheet date are presented within Total current assets and Total current liabilities, respectively. Financial assets and liabilities which have remaining contractual maturities of more than 12 months are presented within Financial and other non-current assets and Financial debt and other non-current liabilities, respectively.

Equity investments in other entities which are not subsidiaries, associates or joint ventures of Syngenta are included in Financial and other non-current assets. They are classified and measured at fair value through OCI and are revalued to fair value at each reporting date, with all changes in fair value recognized within OCI. In Syngenta's opinion, presenting gains and losses on these investments in OCI is more consistent with Syngenta's strategic investment objectives than presenting those gains and losses within profit and loss. The fair value of equity investments is measured as described in Note 26.

Other non-current receivables represent royalty and license receivables, loans to employees and other third parties, and amounts recoverable from third parties in reimbursement of environmental remediation and other costs. These receivables are stated at amortized cost, less provision for impairment where appropriate.

Financial debt is recognized initially at its fair value less transaction costs, which represents the net proceeds from issuing the debt. Subsequently, financial debt is stated at amortized cost using the effective interest method, except where subject to a fair value hedge relationship, in which case the carrying amount of the debt is adjusted by the change in the fair value of the hedged exposure during the hedge relationship.

Derivative financial instruments are recorded initially at their fair value when Syngenta becomes a party to the instrument. They are revalued to fair value at each reporting date and presented as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Fair values of publicly traded derivatives are based on quoted market prices of the specific instruments held at the balance sheet date.

Fair values of non-publicly traded derivatives are valued using accepted economic methodologies for pricing these financial instruments, such as discounted cash flow analysis or option pricing models. The valuation models seek to make maximum use of market inputs existing at the balance sheet date. The methods used to determine the fair value of specific types of non-publicly traded derivatives are as follows:

- Interest rate and cross-currency swaps are calculated as the present value of the estimated future cash flows. The future cash flows are determined using relevant market forward interest rates at the balance sheet date and are discounted using the zero-coupon rates with equivalent maturities for AA rated entities at the balance sheet date, as adjusted for the counterparty's credit risk. These discount rates incorporate the impact of net credit risk present in those derivative instruments. For cross-currency swaps, the discount rates reflect the impact of the currency basis on the future cash flows denominated in different currencies;
- Forward contracts are determined using relevant market exchange rates at the balance sheet date;
- Currency options are valued using the Black-Scholes-Merton option pricing model, which incorporates spot exchange rates, zero coupon rates with equivalent maturities for entities with credit ratings which approximate Syngenta's counterparty credit risk, and implied volatility in the market forward exchange rates at the balance sheet date; and
- Commodity options are valued using the Black-Scholes-Merton option pricing model, which incorporates future commodity price curves with equivalent maturities and implied volatilities in the commodities markets at the balance sheet date, adjusted for counterparty credit risk.

Realized gains and losses on disposal of amortized cost financial assets, revaluation gains and losses on derivatives not designated as accounting hedges, and gains and losses corresponding to the ineffective portion of derivatives designated as accounting hedges are recorded in profit or loss as they arise.

Syngenta applies hedge accounting as follows:

Fair value hedges
The designated hedging instruments are remeasured to fair value and the underlying hedged items are remeasured by the amount of change in the fair value of the hedged risk. The resulting remeasurement gains or losses are recognized in profit or loss as they occur.

Cash flow hedges
For the effective portion of the hedge, gains and losses on remeasuring designated hedging instruments to fair value are recognized in OCI as part of the cash flow hedge reserve. If the hedged transaction results in recognition of a non-financial asset such as inventories, the cumulative hedge gain or loss is reclassified as part of the carrying amount of the related inventories. For other hedged transactions, the cumulative hedge gain or loss is reclassified from OCI into profit or loss in the period (or periods) during which the underlying hedged cash flows affect profit or loss.

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for cash flow hedge accounting, any cumulative unrealized gain or loss on the hedging instrument remains in equity until the underlying hedged item affects profit or loss. However, if a hedged forecasted transaction is no longer expected to occur, the cumulative unrealized gain or loss on the hedging instrument is immediately reclassified into profit or loss.

Time value of options
When Syngenta designates a derivative financial instrument that is, or contains, an option as a hedging instrument in a hedge accounting relationship, the time value of the options as measured using the Black-Scholes-Merton option pricing model is excluded from the hedge designation and accounted for as a cost of hedging, as follows. The change in the fair value of the option during its term is recognized in OCI to the extent that the option terms are aligned with the attributes of the hedged exposure. If the hedged item is a transaction, the cumulative change in time value is included in the initial carrying amount of any non-financial asset or liability recognized when the hedged transaction occurs, or otherwise is recognized in profit and loss when the cash flows from the hedged transaction affect profit and loss. If the hedged item is a risk that may affect profit or loss during the option term, the cumulative amount recognized in OCI is amortized into profit and loss on a straight line basis over the option term.

Net working capital
For the purposes of presenting consolidated cash flows, the balance sheet items included in Net working capital are Inventories, Trade receivables, Other accounts receivable, Trade accounts payable, Contract liabilities, Other current assets, Other current liabilities, and similar items due after more than one year, such as minimum royalties from multi-year license agreements.

Inventories
Purchased products are recorded at acquisition cost while own-manufactured products are recorded at manufacturing cost including a share of production overheads based on normal capacity. Cost of inventories is determined on a first-in-first-out basis. Allowances are made for inventories with a net realizable value less than cost, or which are slow moving. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and costs to sell. Costs to sell include direct marketing, selling and distribution costs. Unsaleable inventories are fully written off.

Biological assets
Biological assets represent growing plants and cuttings in Syngenta's Flowers business and sugar cane seedlings within its Sugar cane business. In Flowers, young plants and cuttings are measured at fair value less costs to sell, with key inputs being current average third party net selling prices, actual average selling costs and, for immature assets, estimated stage of growth relative to mature assets. Sugar cane seedlings are measured at cost less impairment because fair value is not reliably measurable due to the nature of the asset not corresponding to traded assets or products in the market. The carrying amount of current consumable biological assets measured using the cost model is tested for impairment by comparing it with the assets' net realizable value determined in accordance with IAS 2, "Inventories". Syngenta

classifies gains and losses from remeasuring biological assets to fair value, and impairment losses for biological assets measured at cost less impairment, within Cost of goods sold.

Property, plant and equipment
Property, plant and equipment are recorded at acquisition or production cost, less accumulated depreciation and any impairment losses. Eligible borrowing costs are capitalized as part of the asset cost if construction is expected to take more than one year to complete. Capitalization ceases when the asset is ready for its intended use. Depreciation is charged on a straight-line basis to the income statement, starting from the date the asset is ready for use, over the following estimated useful lives:

Buildings	20 to 40 years
Machinery and equipment	10 to 25 years
Furniture and vehicles	5 to 20 years
Computer hardware	3 to 7 years

Land is recorded at acquisition cost and is not subject to depreciation. Bearer biological assets are accounted for as Property, plant and equipment using the cost model and depreciated over their productive lives.

Expenditures made for existing property, plant and equipment that will provide future economic benefit are capitalized and depreciated over the revised remaining useful life of the asset.

Intangible assets other than goodwill
Intangible assets, other than goodwill, are recorded at cost less accumulated amortization and any impairment losses. Currently, all such intangible assets are assigned a finite estimated useful life. The cost of acquired intangible assets other than goodwill consists of the purchase price including transaction costs. The cost of internally generated intangible assets consists of direct internal and external design, development, and testing costs incurred to make the asset ready for use in the manner intended by management. Borrowing costs associated with internal projects to develop new products or software are capitalized to the extent that the costs of the project itself are capitalized and the project is expected to take more than one year from inception to complete. Capitalization ceases when the products or software are ready for their intended uses.

Intangible assets are amortized starting from the date the asset is ready for use. In respect of product rights, this is when regulatory approval has been obtained. Asset lives are reviewed annually. The straight-line method of amortization is used except where another systematic basis better reflects the pattern of consumption of the economic benefits represented by the asset. Amortization is charged within the consolidated income statement to the function responsible for the asset, or to General and administrative.

Useful lives assigned to acquired product rights are based on the period over which Syngenta expects economic benefit from the product rights. Estimated lives assigned to most product rights upon acquisition are between 10 and 20 years and do not exceed 20 years for any asset.

Patents and trademarks are amortized over their estimated economic or legal life, whichever is shorter. Lives assigned are between 5 and 20 years.

Business combinations give Syngenta access to the distribution channels and customer relationships of the acquired business. These relationships normally continue to generate economic benefit to Syngenta following the acquisition. The useful lives of customer relationships are determined from management estimates of customer attrition rates. Estimated lives assigned are between 5 and 30 years.

Acquired in-process research and development (IPR&D), is valued at fair value at acquisition. It is assessed for impairment annually until it has been successfully developed and is available for use at which time it begins being amortized over its estimated useful life. Lives assigned are between 10 and 20 years.

Costs of successfully completed internal development projects which are capitalized because they meet the criteria described in Note 2 are amortized starting from launch of the related products, over periods that depend on the nature of the project, as follows:

New crop protection formulations	20 years
Extension of existing crop protection formulations	15 years
Extension of product label applications for existing crop protection products	10 years
Seed breeding costs	5 to 7 years

Assets attributable to long-term supply agreements are amortized as part of cost of goods sold over the period of the supply agreements. Premiums paid for land use rights are amortized over the period of the rights, which are between 30 and 50 years.

Purchased software licenses are amortized over their remaining license terms. Internally developed software is amortized from the date it is ready for use until the sooner of its expected replacement date or the date significant costs are expected to be incurred to upgrade it. Lives assigned are between 3 and 10 years.

Goodwill
Goodwill is the excess of the fair value of an acquired business over the fair value of its identifiable net assets at the acquisition date. Goodwill is recognized as an asset and presented within intangible assets. Goodwill is not amortized, but is tested annually for impairment and reduced by any impairment losses.

Impairment
Property, plant and equipment, right-of-use assets, intangible assets and investments in associates and joint ventures are tested for impairment ("tested") in accordance with IAS 36 unless classified as held-for-sale. Goodwill and intangible assets not yet ready for use are tested annually and are also reviewed at each interim and annual reporting date to determine whether conditions changed since the most recent review or annual test. Individual other non-current assets are reviewed at each reporting date to determine whether events or changes in conditions indicate that the carrying amount of each asset may not be recoverable. If any such indication exists, the asset is tested for impairment. Syngenta estimates an asset's recoverable amount as the higher of the asset's fair value less selling costs and its value in use, which is the present value of the cash flows expected from the asset's use and eventual disposal. An impairment loss is recorded in the consolidated income statement to the extent that the carrying amount of the tested asset exceeds its recoverable amount. Impairment losses are not reversed for goodwill, but are reversed for other assets if their recoverable amounts subsequently increase.

Non-current assets held-for-sale
Non-current assets and groups of assets are reclassified as held-for-sale when the assets are available for immediate sale in their present condition and a sale within one year is highly probable. Property, plant and equipment and intangible assets held-for-sale are remeasured at the lower of carrying amount and fair value less costs to sell at the date they meet the held-for-sale criteria at which time depreciation and amortization also ceases. Any resulting impairment loss is recognized in profit or loss. Fair value is measured based on bids received from potential buyers of the assets.

Provisions
A provision is recognized in the balance sheet when Syngenta has a legal or constructive obligation to a third party or parties as a result of a past event, the amount of which can be reliably estimated and it is probable that an outflow of economic benefits will be required to settle the obligation. The amount recognized as a provision is the best estimate of the expenditure required to settle the obligation at the balance sheet date. Syngenta self-insures or uses a combination of insurance and self-insurance for certain risks. Provisions for these risks are estimated in part by considering historical claims experience and other actuarial assumptions and, where necessary, counterparty risk.

Environmental provisions
Provisions for remediation costs are made when there is a present obligation, it is probable that expenditures for remediation work will be required within ten years (or a longer period if specified by a legal obligation) and the cost can be estimated within a reasonable range of possible outcomes. The costs are based on currently available facts: technology expected to be available at the time of the clean up; laws and regulations presently or virtually certain to be enacted; and prior experience in remediation of contaminated sites.

Environmental liabilities are recorded at the estimated amount at which the liability could be settled at the balance sheet date, and are discounted if the impact is material and if cost estimates and timing are considered reasonably certain.

Syngenta's restructuring programs have involved closure of several sites to date. Remediation liabilities recognized when site closures are announced are accounted for as restructuring provisions.

Legal and product liability settlements
For claims for which, according to Syngenta's assessment, it is not probable that a liability exists or that there will be a future cash outflow or other sacrifice of economic benefits, Syngenta provides for the costs of defense only. For claims where an outcome unfavorable to Syngenta is assessed as more likely than not, provision is made for the estimated amount of damages and settlement, including directly attributable legal costs. No provision is made where the legal procedures are at too early a stage to estimate the outcome with any reliability.

Restructuring provisions and costs
Restructuring costs are accrued (charged to provisions) when Syngenta has approved a detailed and formal restructuring plan and the restructuring has either commenced or been announced publicly and they qualify for recognition in accordance with IAS 37. Provisions for severance payments and related employment termination costs that do not depend on future service, are made in full when employees are given details of the restructuring plan and the termination benefits that will apply to individual employees should their contracts be terminated. Retention and other payments that depend on future service are recognized over the required service period. Restructuring costs relating to ongoing activities, such as relocation, training and information systems, do not qualify for provisioning under IAS 37 and are expensed when incurred.

Post-employment benefits
For defined benefit plans, plan assets are measured at fair value. The plans' holdings in publicly quoted investments are valued at closing prices at the balance sheet date. The plans' holdings in pooled investment vehicles (PIVs) that are not publicly quoted are valued at the respective investment managers' current estimate of fair value, on a basis consistent with each PIV's most recent audited financial statements. Derivative contracts entered into directly by the pension plans are included within plan assets. Exchange traded derivatives are valued at quoted balance sheet date bid prices for contracts which are assets, or offer prices for contracts which are liabilities, at the balance sheet date. Fair values of over the counter derivatives are measured using independent third party pricing services. Insurance policies under which the plan will receive payments that match the timing and amount of specific plan benefits and can be used only to fund those benefits are valued at the same amount as the linked benefits within the related defined benefit obligation. Defined benefit obligations are measured at the present value of future benefit payments attributable to employee service rendered up to the balance sheet date, according to the benefit formula set out in the relevant pension plan rules and employment terms at the balance sheet date. Where a surplus of plan assets over the benefit obligation exists at the balance sheet date or would arise upon payment of the minimum funding commitment applicable to the pension plan, Syngenta evaluates the extent to which it will be able to realize the surplus over time through refund rights and reductions in the present value of its future contributions to the plan. To the extent that Syngenta cannot realize the surplus, the net defined benefit asset is reduced and, where applicable, an additional liability for minimum funding contributions is recognized. Benefit expense charged to profit or loss comprises current service cost, which is the cost to Syngenta of the increase in benefits earned from employee service in the period, gains and losses arising from amendments to and settlements of benefits that occurred during the period, and interest on the net defined benefit asset or liability, which is the change in the present value of that asset or liability arising from the passage of time during the period, measured using the rate used to discount the defined benefit obligation at the previous period end. In the consolidated income statement, current service cost is presented within the same function line as the other personnel costs of the related employees, and net interest cost is presented within Financial expense, net. The benefit obligation and cost are attributed to periods using the projected unit credit actuarial method and are measured using long-term assumptions about expected future length of employee service, increases in pay and pensions, longevity, and for healthcare plans, medical costs. Assumptions are reviewed annually. Gains and losses arising from variances between assumptions and actual outcomes, and from changes to assumptions, are recognized in OCI in the period in which they arise, and are not subsequently reclassified to profit and loss.

Contributions to defined contribution pension plans are recognized as an expense in profit or loss when they are due.

Employee Incentive plans
Syngenta operates annual and long term cash incentive plans to reward employee performance. Under the long term plans, awards are subject to Syngenta performance over a three-year period. Syngenta accounts for annual and long term plans respectively as short-term and long-term employee benefits in accordance with IAS 19.

Dividends and capital distributions
Dividends payable to the shareholder of Syngenta AG are recorded as liabilities and as a reduction in shareholder's equity when they are approved by the shareholder of Syngenta AG and any conditions for payment are satisfied.

Treasury shares
Share capital includes the par value of treasury shares held by Syngenta that have not been canceled. Treasury shares are shown as a separate component of shareholder's equity and stated at the amount paid to acquire them. Differences between this amount and the amount received upon their disposal are recorded as a movement in consolidated shareholder's equity.

28. Subsequent events

On January 5, 2020, ChemChina announced a planned reorganization to bring together under a single holding company, Syngenta Group Co., Ltd., its Crop Protection and Seeds businesses, consisting of ChemChina's holdings in the Syngenta AG group and in Adama Ltd., as well as major agricultural assets to be acquired from Sinochem Group. Syngenta Group Co., Ltd and subsidiaries will have approximately 48,000 employees and $23 billion in annual sales, with a portfolio that includes crop protection products, seeds, fertilizers and the Modern Agriculture Platform technology. This will enable Syngenta Group Co., Ltd. to better execute growth plans that will bring an even broader portfolio to customers around the world to meet local farmer needs, and strengthen global capabilities in Research and Development, Production and Supply and digital agriculture technologies. Adama Ltd. and the Syngenta AG group will continue to operate independently outside China, maintaining their distinctive brands and competing in the market, but also exploring local collaboration opportunities where this makes sense to best serve customers. Syngenta AG will continue to be headquartered in Basel, and while Syngenta Group Co., Ltd. is domiciled in China, the operational headquarters of the expanded group will also be in Basel.

Approval of the Consolidated Financial Statements

These consolidated financial statements were approved by the Board of Directors on February 13, 2020.

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Statutory Auditor’s Report to the General Meeting of

Syngenta AG, Basel

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the consolidated financial statements of Syngenta AG and its subsidiaries (the Group), which comprise the consolidated balance sheet as at December 31, 2019 and the consolidated income statement, consolidated statement of comprehensive income, consolidated cash flow statement and consolidated statement of changes in equity for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at December 31, 2019, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS) and comply with Swiss law.

Basis for Opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISAs) and Swiss Auditing Standards. Our responsibilities under those provisions and standards are further described in the Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession, as well as the IESBA Code of Ethics for Professional Accountants, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibility of the Board of Directors for the Consolidated Financial Statements

The Board of Directors is responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRS and the provisions of Swiss law, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISAs and Swiss Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Swiss law, ISAs and Swiss Auditing Standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.
- Conclude on the appropriateness of the Board of Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the Board of Directors or its relevant committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on Other Legal and Regulatory Requirements

In accordance with article 728a para. 1 item 3 CO and Swiss Auditing Standard 890, we confirm that an internal control system exists, which has been designed for the preparation of the consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

KPMG AG

Michael Blume
Licensed Audit Expert
Auditor in Charge

Artem Chumakov

Basel, February 13, 2020

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Bringing plant potential to life