1.1 Corporate Profile

Bayer is a Life Science company with a more than 150-year history and core competencies in the areas of health care and agriculture. With our innovative products, we are contributing to finding solutions to some of the major challenges of our time. The growing and increasingly aging world population requires improved medical care and an adequate supply of food. Bayer is improving people's quality of life by preventing, alleviating and treating diseases. And we are helping to provide a reliable supply of high-quality food, feed and plant-based raw materials.

We develop new molecules for use in innovative products and solutions to improve the health of humans, animals and plants. Our research and development activities are based on a profound understanding of the biochemical processes in living organisms.

Our goal is to achieve and sustain leadership positions in our markets, thus creating value for our customers, stockholders and employees. To this end, our strategy is designed to help solve some of the most pressing challenges facing humankind, and by doing this exceptionally well we aim to strengthen the company's earning power.

We are committed to operating sustainably and addressing our social and ethical responsibilities as a corporate citizen, while at the same time respecting the interests of all our stakeholders. Employees with a passion for innovation enjoy excellent development opportunities at Bayer.

All this goes to make up our mission – Bayer: Science For A Better Life.

EXCLUSIVE FOCUS ON THE LIFE SCIENCE BUSINESSES

Following the economic and legal independence of our former MaterialScience subgroup, now Covestro, Bayer has charted the course for its successful development as a Life Science company. Our businesses hold leading positions in innovation-driven growth markets. Together they make up a strong, attractive and balanced portfolio that is resistant to fluctuations in demand and to potential risks. The previous structure – comprising a strategic management holding company and operational subgroups – has thus been replaced by an integrated organization under the umbrella of the strong Bayer brand.

The chapters in this report dealing with corporate strategy and future perspectives are based on the new structure because they look ahead. All other chapters reflect the organizational structure in effect through December 31, 2015.

OUR VALUES

Bayer's values play a central role in our daily work and are intended to guide us in fulfilling our mission "Bayer: Science For A Better Life." They are represented by the acronym **LIFE**, which stands for **L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency.

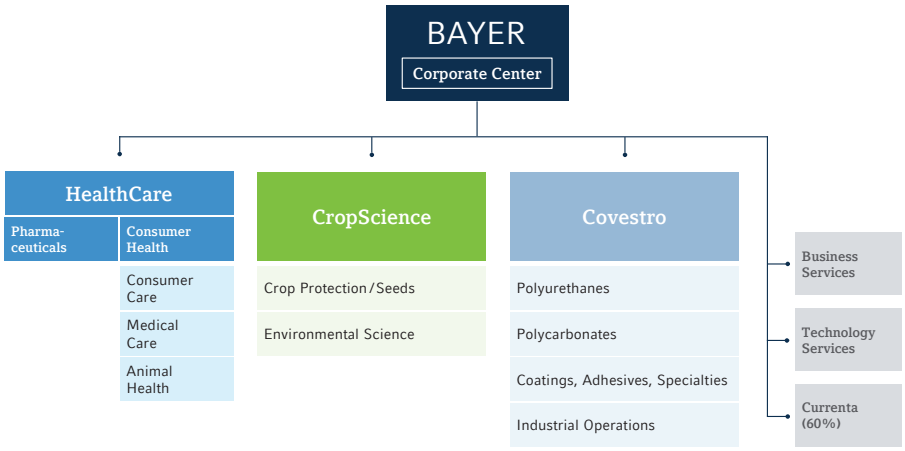
These values apply to everyone at Bayer and are firmly integrated into our global performance management system for managerial employees. Our value culture ensures a common identity throughout the enterprise across national boundaries, management hierarchies and cultural differences.

1.2 Corporate Structure

CORPORATE STRUCTURE IN 2015

Until December 31, 2015, Bayer AG, headquartered in Leverkusen, Germany, served as a strategic management holding company, defining common values, goals and strategies for the entire Bayer Group. It was also responsible for resource allocation and managerial appointments. Under its direction, the three subgroups – HealthCare, CropScience and Covestro (formerly MaterialScience) – conducted their business operations on their own responsibility in line with predefined goals, supported by three service companies. Following the signing of a sales agreement with Panasonic Healthcare Holdings, Ltd. on June 8, 2015, the Diabetes Care business is no longer reported under continuing operations.

Bayer Group Structure 2015 [Graphic 3.1.2]



Key Data by Subgroup and Segment [Table 3.1.1]

	Sales		EBIT		EBITDA before special items[1]	
	2014	2015	2014	2015	2014	2015
	€ million	€ million	€ million	€ million	€ million	€ million
HealthCare	**19,075**	**22,874**	**3,470**	**4,050**	**5,357**	**6,419**
Pharmaceuticals	12,052	13,745	2,371	2,807	3,699	4,195
Consumer Health	7,023	9,129	1,099	1,243	1,658	2,224
CropScience	**9,494**	**10,367**	**1,806**	**2,103**	**2,360**	**2,416**
Covestro	**11,651**	**11,982**	**555**	**635**	**1,187**	**1,659**
Reconciliation	**1,119**	**1,101**	**(436)**	**(538)**	**(219)**	**(228)**
Group	**41,339**	**46,324**	**5,395**	**6,250**	**8,685**	**10,266**

[1] For definition see Chapter 14.2 "Calculation of EBIT(DA) Before Special Items."

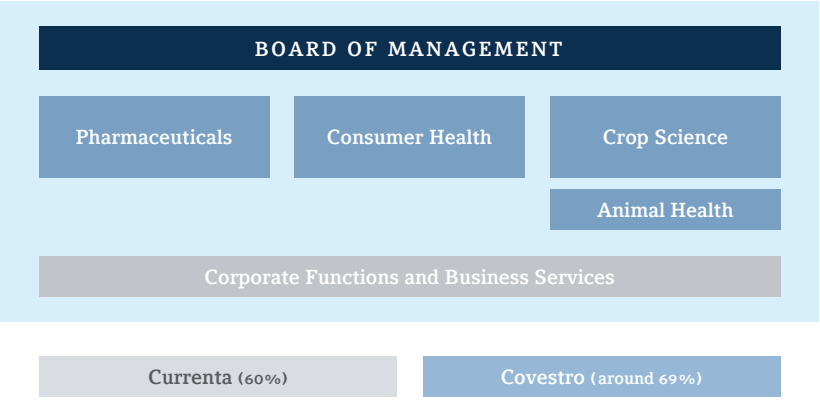
In 2015, the Bayer Group comprised 307 consolidated companies in 77 countries throughout the world.

NEW CORPORATE STRUCTURE EFFECTIVE 2016

With the company's focus now on the Life Science businesses, a new organizational structure was introduced effective January 1, 2016. The company's operations are now managed in three divisions – Pharmaceuticals, Consumer Health and Crop Science – and the Animal Health business unit. The former Bayer HealthCare subgroup has been dissolved. The Radiology and Pharmaceuticals businesses have been merged to form the Pharmaceuticals Division. The Consumer Health Division now consists entirely of the consumer care business. Animal Health has become a separate reporting segment. The Bayer CropScience subgroup is now the Crop Science Division. The former MaterialScience subgroup, renamed Covestro, became legally and economically independent on September 1, 2015. Covestro AG was floated on the stock market on October 6, 2015. Bayer currently still owns around 69% of Covestro AG. Covestro therefore remains a reporting segment of the Bayer Group because Bayer AG continues to exercise control.

Effective January 1, 2016, the Board of Management of Bayer AG was enlarged to include the heads of the new Pharmaceuticals, Consumer Health and Crop Science divisions. The business continues to be supported by Business Services and Currenta, while Technology Services is being integrated into Bayer AG, forming the Engineering & Technology function.

Bayer Group Structure in 2016 [Graphic 3.1.3]



Pro Forma Key Data by New Segment [Table 3.1.2]

	Sales		EBIT		EBITDA before special items[1]	
	2014	2015	2014	2015	2014	2015
	€ million	€ million	€ million	€ million	€ million	€ million
Pharmaceuticals	13,512	15,308	2,627	3,027	4,081	4,615
Consumer Health	4,245	6,076	609	769	991	1,456
Crop Science	9,494	10,367	1,806	2,103	2,360	2,416
Animal Health	1,318	1,490	234	254	285	348
Reconciliation[2]	1,119	1,101	(436)	(538)	(219)	(228)
Total Life Sciences[3]	**29,688**	**34,342**	**4,840**	**5,615**	**7,498**	**8,607**
Covestro	11,651	11,982	555	635	1,187	1,659
Group	**41,339**	**46,324**	**5,395**	**6,250**	**8,685**	**10,266**

[1] For definition see Chapter 14.2 "Calculation of EBIT(DA) Before Special Items."
[2] Reconciliation includes the Business Services and Currenta service companies ("Other segments") as well as the corporate functions and consolidation effects.
[3] Including service companies

The **Pharmaceuticals** Division focuses on prescription products, especially for cardiology and women's healthcare, and on specialty therapeutics in the areas of oncology, hematology and ophthalmology. The division also comprises the radiology business, which markets diagnostic imaging equipment together with the necessary contrast agents.

The **Consumer Health** Division markets mainly nonprescription products in the dermatology, dietary supplement, analgesic, gastrointestinal, cold, allergy, sinus and flu, foot care, sun protection and cardiovascular risk prevention categories. These products include globally known brands such as Claritin™, Aspirin™, Aleve™, Bepanthen™/Bepanthol™, Canesten™, Dr. Scholl's™[1] and Coppertone™.

The **Crop Science** Division has businesses in seeds, crop protection and nonagricultural pest control. It is organized into two operating units: Crop Protection/Seeds and Environmental Science. Crop Protection/Seeds markets a broad portfolio of high-value seeds along with innovative chemical and biological pest management solutions, while at the same time providing extensive customer service for modern and sustainable agriculture. Environmental Science focuses on nonagricultural applications, with a broad portfolio of pest control products and services designed for applications ranging from the home and garden sector to forestry.

The **Animal Health** Business Unit offers products and services for the prevention and treatment of diseases in companion and farm animals.

The corporate functions and Business Services operate as Group-wide competence centers in which business support services are bundled. Currenta is the service company responsible for managing and operating the Chempark sites in Leverkusen, Dormagen and Krefeld-Uerdingen.

Covestro is a leading supplier of high-tech polymer materials and develops innovative product solutions for a wide variety of everyday uses.

1.3 Group Strategy

Our mission "Bayer: Science For A Better Life" continues to guide our endeavors. The steadily growing and aging global population needs new and better medicines and an adequate food supply. With our Life Science innovations, we offer answers to these challenges.

OUR OBJECTIVE: PROFITABLE GROWTH

Our corporate strategy is aligned toward profitable growth that will increase the company's value in the long term. As well as expanding in growth markets, we attach special importance to the development of new products that create significant value for our stakeholders.

THE FOUNDATION FOR OUR SUCCESS: INNOVATION

Science-based innovations have made us the globally successful company we are today. Going forward, we will continue to strengthen this important foundation for our success. In 2016 alone, we plan to invest around €4.5 billion in research and development – more than ever before. Our scientists will continue to collaborate across divisional boundaries, supported in part by the new Bayer Life Science Center, which has been created to identify innovative technologies developed by startups and universities and make them available for our fields of activity. We are also driving forward new business models that include utilizing the opportunities offered by digitization for our company and our customers.

[1] Trademark rights and distribution only in certain countries outside the European Union

A FUNDAMENTAL PREMISE: SUSTAINABILITY

Sustainable business practices are essential to our company's future viability. We apply our scientific expertise and innovation strength to help solve global challenges. Our goal in developing, manufacturing and marketing our products is to balance commercial success with societal and ecological requirements while increasing enterprise value. We aim to ensure broad social acceptance for our business through responsible practices in areas such as product stewardship, environmental protection, safety, compliance, supplier management and human resources policy, taking into account the expectations of relevant stakeholders.

OUR MOST IMPORTANT RESOURCE: THE EMPLOYEES

Our employees are the key to our company's success. We therefore create a working environment in which each employee can unfold his or her full potential, drive forward innovations and achieve performance excellence. Our objective as an employer is to partner an employee throughout his or her career and not just at a certain phase. We live up to this aspiration with flexible worktime models, a firm commitment to social responsibility and the provision of wide-ranging development opportunities across the company. A diverse employee structure is also vital for our company's future competitiveness. We therefore strive for a good cultural and gender balance in all areas.

1.4 Targets and Performance Indicators

To consistently implement our strategy, we have set ambitious targets for our company and measure their attainment annually in terms of selected performance indicators. This program encompasses not only financial targets and innovation goals, but also sustainability objectives that are aligned to important areas along the value chain. Our aim is to make clear the challenges we have identified in our core business in the context of sustainable development, and at the same time to highlight the continuous improvements we are committed to making across the enterprise.

Following the legal independence and stock market flotation of Covestro, this company is not included in the new innovation, sustainability and employee targets. Where necessary, we have adjusted the reference data for unchanged targets to eliminate the contributions for Covestro.

The current status of our progress in respect of our targets and performance indicators is documented in the following table and the respective chapters.

Bayer Group Targets (Graphic 3.1.4)

Target	Target attainment (as of 2015)	New or adjusted target
Profitable Growth		
Increase in Group sales (Fx & portfolio adj.); forecast issued in February 2015: low-single-digit percentage increase to approx. €46 billion	2.7% increase to €46.3 billion	Low-single-digit percentage increase (Fx & portfolio adj.) to more than €47 billion
Increase in EBITDA before special items; forecast issued in February 2015: low- to mid-teens percentage increase	18.2% increase	Mid-single-digit percentage increase
Increase in core earnings per share; forecast issued in February 2015: low-teens percentage increase	16.0% increase	Mid-single-digit percentage increase
Innovation		
Group: increase in R&D investment to over €4.0 billion (2015)	€4.3 billion	Increase in R&D investment to €4.5 billion (2016)
HealthCare: transition of more than 10 new molecular entities (NMEs) into development (2015)	12 new molecular entities (NMEs) transferred	**Pharmaceuticals:** transition of 10 new molecular entities (NMEs) into development (2016) **Consumer Health:** transition of 20 consumer-validated concepts into early development (2016)
CropScience: transfer of 2 new molecular entities (NMEs) or plant traits into confirmatory technical proof-of-concept field studies (2015)	Start of field studies on 1 new plant trait, 1 new molecular entity (NME) and 2 new biologics	Transfer of 3 new molecular entities (NMEs), plant traits or biologics into confirmatory technical proof-of-concept field studies
Covestro (formerly MaterialScience): improvement in production process technology to achieve better energy efficiency (2015)	Further use of improved production technologies (e.g. in TDI, MDI and chlorine production)	-
Sustainability		
SUPPLIER MANAGEMENT		
Evaluation of all strategically important suppliers (2017)	84%	Target unchanged
Evaluation of all potentially high-risk suppliers with significant Bayer spend (2020)	73%	Target unchanged
Development and establishment of a new sustainability standard for our supply base (2020)	In implementation	Target unchanged

See Chapters 4 and 10 for more information

See Chapter 7 for more information

Bayer Group Targets (Graphic 3.1.4 [continued])

Target	Target attainment (as of 2015)	New or adjusted target
RESOURCE EFFICIENCY		
Improvement of 10% in Group-wide energy efficiency (2020); reference year 2012: 3.50 MWh/t	3.34 MWh/t (4% improvement)	Target unchanged; new reference value (2012): 8.86 MWh/t
Reduction of 20% in Group-wide specific greenhouse gas emissions (2020); reference year 2012: 0.98 t CO_2/t	1.09 t CO_2/t (+11%)	Reduction of 15% in Group-wide specific greenhouse gas emissions (2020); new reference value (2012): 1.88 t CO_2/t
Establishment of water management at all sites in water-scarce areas	Approx. 58%	Target unchanged
See Chapter 10 for more information		
SAFETY		
Reduction of 35% in occupational safety incident rate (2020); reference year 2012: RIR (Recordable Incident Rate) 0.49	RIR 0.42 (– 14%)	Target unchanged; new reference value (2012): RIR 0.50
Reduction of 30% in transport incidents (2020); reference year 2012: 6 incidents	12 (+100%)	Target not being continued
Reduction of 30% in process and plant safety incidents (2020); reference year 2012: LoPC-IR (Loss of Primary Containment Incident Rate) 0.38	LoPC-IR 0.22 (– 42%)	Target unchanged; new reference value (2012): LoPC-IR 0.21
See Chapter 9 for more information		
PRODUCT STEWARDSHIP		
Conclusion of assessment of hazard potential of all substances (>99%) used in quantities exceeding one metric ton per annum (2020)	66%	Target unchanged
See Chapter 8 for more information		
COMPLIANCE		
Conducting of precautionary risk assessments in all three subgroups (2015)	Successfully completed	–
Annual compliance training for all Bayer managers (>99%)	97%	Annual compliance training for close to 100% of Bayer managers
See Chapter 16.3 for more information		

Employees

Continuous improvement in employee engagement; reference year 2012: 85%	87%	Target unchanged
Increase in the proportion of women in senior management to 30% (2015); reference year 2010: 21%	28%	Increase in the proportion of women in senior management to 35% (2020); reference value remains
Increase in the proportion of senior managers from outside the European Union, the United States or Canada to 25% (2015); reference year 2013: 18%	21%	Increase in the proportion of senior managers from outside the European Union, the United States or Canada to 25% (2020)
See Chapter 6 for more information		

Details of further key financial data are found in Chapter 18 "Future Perspectives." Information on Bayer Group targets is also provided in the relevant chapters, indicated by "Bayer Group Target" in the margin.

See Chapter 18

1.5 Internal Management System

The economic planning and steering for the business units is carried out within a framework laid down by the Board of Management that is refined during the strategic planning process. Operational planning then translates this framework into specific, measurable targets. Continuous monitoring of business developments complements the planning and management process, and key management and performance indicators are regularly updated. This process also involves tracking the implementation of the strategic objectives and adopting countermeasures in the event of deviations from the budget.

One of the prime objectives of the Bayer Group is to steadily increase enterprise value. We use the following steering parameters to plan, steer and monitor the development of our business.

The key performance indicators at the strategic level are cash value added (CVA), which is a value-based steering parameter, and cash flow return on investment (CFROI). These indicators support management in its decision-making, especially in the areas of strategic portfolio optimization and the allocation of resources for acquisitions and capital expenditures. In fiscal 2015, Bayer achieved a positive CVA of €1,285 million and a CFROI of 9.6%. (See Chapter 14.4 "Value Management" for further details.)

See Chapter 14.4

The principal economic steering parameters within the Bayer Group at the operational level are sales and earnings figures. With regard to earnings, special attention is paid to EBITDA (EBIT plus the amortization of intangible assets and the depreciation of property, plant and equipment, plus impairment losses and minus impairment loss reversals, recognized in profit or loss during the reporting period) before special items. The EBITDA margin before special items, which is the ratio of EBITDA before special items to sales, serves as a relative indicator for the internal and external comparison of operational earning power. In 2015, EBITDA before special items amounted to €10,266 million, resulting in an EBITDA margin before special items of 22.2%. (See Chapter 14.2 "Calculation of EBIT(DA) Before Special Items" for further details.)

See Chapter 14.2

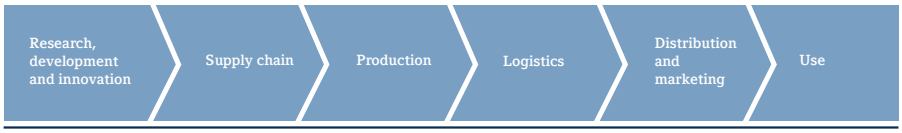
The Board of Management and the relevant committees steer the sustainable alignment of the company, defining responsibilities and framework conditions by way of Group directives, for example. Operations are steered using defined targets and performance indicators in areas such as innovation, supplier management, safety, product stewardship and environmental protection. On the basis of a materiality analysis, Bayer has determined the principal activities in these areas and established the relevant management systems, committees and working groups, which have been implemented by the subgroups. The ongoing review and revision of guidelines and regular internal audits ensure that our management systems are continuously improved and aligned to the specific requirements at any given time.

1.6 Value Creation

Bayer creates sustainable value in various ways for its stakeholders at all stages of the value chain (Graphic 3.1.5) by focusing on innovative products and solutions in its core businesses. Moreover, we operate production sites throughout the world, invest in research and development, work with international and local suppliers and contribute to the economic development of our target markets. As an employer, we provide jobs in industrialized, emerging and developing economies and create purchasing power through the salaries we pay. We also support public infrastructure through the payment of taxes and other contributions.

See Chapter 5 for more information about our areas of activity along the value chain.

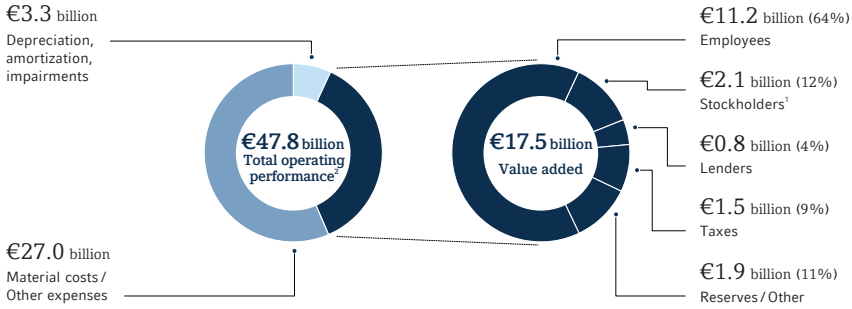
Value Chain Stages [Graphic 3.1.5]



The value added statement shows Bayer's direct contribution to public and private incomes and is a measure of the direct financial value created for stakeholders by its business activities. We define value added as the company's total operating performance in the previous fiscal year less the costs of procured and consumed goods and services, depreciation and amortization.

The total operating performance of the Bayer Group in 2015 was €47.8 billion. Value added amounted to €17.5 billion. Of the value added, €11.2 billion (64%) was distributed to employees, €2.1 billion (12%) to stockholders, €0.8 billion (4%) to lenders and €1.5 billion (9%) to governments. The remainder was allocated to reserves.

Bayer Group Value Added 2015 [Graphic 3.1.6]



[1] Bayer AG dividend proposal for 2015
[2] Total operating performance = sales + other operating income + financial income/equity-method income (loss)

1.7 Corporate Environment

Bayer's business activities are impacted by economic and social conditions. At the same time, the company contributes to shaping these conditions.

ECONOMIC ENVIRONMENT

In 2015, the global economy grew at a slightly slower pace than in the previous year. Momentum decreased in the emerging economies in particular; growth in China declined further but remained strong while economic output in Russia and Brazil contracted significantly. By contrast, growth in the European Union accelerated, supported by very low interest rates, an exchange rate favorable to the eurozone and sinking oil prices. At the same time, the United States continued its robust recovery, driven above all by private consumption and rising employment.

Economic Environment [Table 3.1.3]

	Growth[1] 2014	Growth[1] 2015
World	+2.7%	+2.5%
European Union	+1.4%	+1.8%
of which Germany	+1.6%	+1.5%
United States	+2.4%	+2.4%
Emerging Markets[2]	+4.4%	+3.7%

2014 figures restated
[1] Real GDP growth, source: IHS Global Insight
[2] Including about 50 countries defined by Global Insight as Emerging Markets in line with the World Bank
As of February 2016

For more information on the economic environments of our subgroups in 2015, see Chapter 3 "Economic Environments of the Subgroups."

See Chapter 3

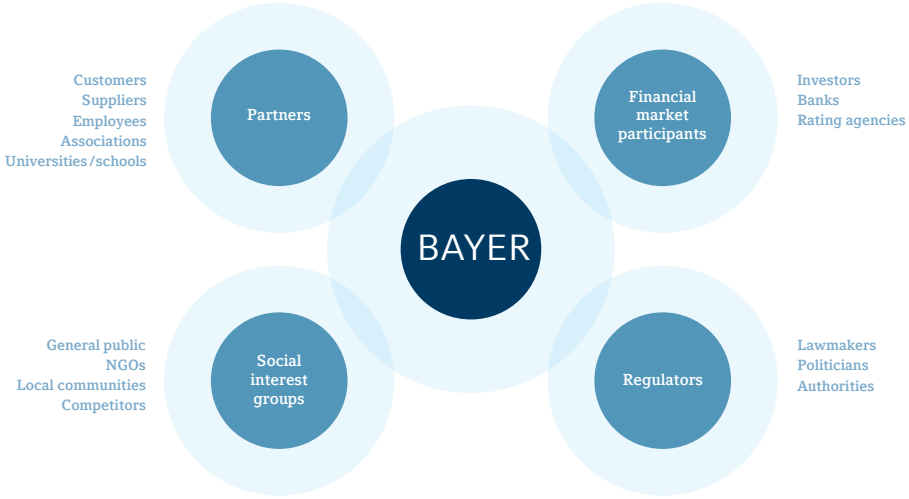
SOCIAL ENVIRONMENT

Our economic activity is closely linked with the social environment. Certain stakeholders have become increasingly significant to our business operations in recent years. Their expectations affect public acceptance of Bayer and thus our commercial success. They provide important input for the continuing development of our business processes, risk management and reporting. We therefore take the wide-ranging requirements of our stakeholders seriously and consider them wherever possible in our business activities. At the same time, open dialogue with our stakeholders gives us an opportunity to explain the value of our products and services for society. This is of growing importance for the success of our business model.

GRI
G4-25, G4-26, G4-27

GRI
G4-24

Stakeholder Dialogue: Our Most Important Interest Groups [Graphic 3.1.7]



See Chapter 5

Read more about Bayer's commitment to its stakeholders in Chapter 5 "Sustainability Management and Governance."

2. Strategies of the Segments

PHARMACEUTICALS

See Chapter 1.3 for Bayer Group strategy

At Pharmaceuticals, our largest division in terms of sales, we focus on researching, developing and marketing innovative medicines with a positive cost-benefit ratio primarily in the therapeutic areas of cardiology, oncology, gynecology, hematology and ophthalmology. In this way, we are addressing the growing requirements of patients, physicians, health care payers and regulatory agencies.

As part of the Bayer Group's reorganization, we have dissolved the Medical Care Division and integrated the Radiology business unit into our Pharmaceuticals Division.

To achieve our medium-term growth targets, we are continuing to rely on marketing our recently launched products Xarelto™, Eylea™, Stivarga™, Xofigo™ and Adempas™. We plan to steadily expand the indications for these medicines through comprehensive study programs – some of them in collaboration with other pharmaceutical companies – and thus make them available to further patient groups.

To safeguard long-term growth, we will further increase our investment in research and development. Besides expanding early research, we are concentrating on the clinical development of active drug substance candidates in the therapeutic areas of cardiology, oncology, hematology and gynecology. In addition, we are selectively expanding and supplementing our development portfolio through licensing agreements and acquisitions.

To improve access to our products in developing and emerging countries (Access to Medicine), we augment our philanthropic activities (see Chapter 11 for more information) with economically feasible concepts.

www.bayer.com/atm

ONLINE ANNEX: 3-2-1:

As an innovation company, we aim to address current challenges in order to improve people's quality of life in the areas of disease prevention and therapy. Within the scope of our entrepreneurial possibilities in a dynamic market environment, we seek to make a responsible contribution for the benefit of society. Through our Access to Medicine (ATM) activities, we aim to enable access to our products for certain patients, aligning these efforts to our company's expertise and our specific product portfolio. Here we distinguish between not-for-profit and economically feasible activities. The former include our efforts in respect of neglected tropical diseases (NTDs). In this connection, we provide the WHO free of charge with two of our active ingredients to treat African sleeping sickness and Chagas disease. Other activities in this area are our education programs and the development of products to treat NTDs.

Our family planning programs are economically feasible and facilitate improved access to hormonal contraceptives for women in developing countries. These programs, which are anchored in our business strategy, provide international development partners with our products at preferential prices.

In some countries, where sections of the population have no access to innovative medicines via health care systems, we have established patient assistance programs for selected products. These aim particularly to provide access to oncology and cardiovascular products and products to treat chronic diseases such as multiple sclerosis and hemophilia. Such programs exist in, for example, the United States and China as well as a number of countries in South and Southeast Asia and Southeastern Europe.

CONSUMER HEALTH

As part of the Bayer Group's reorganization, the Consumer Care Division will be renamed Consumer Health. The strategy of the new Consumer Health Division is aimed at building on our strong position in the market for over-the-counter (OTC) products, nutritional supplements and other self-care products in selected consumer health categories.

We aim to strengthen our established brands, such as Aspirin™, Aleve™, Bepanthen™, Berocca™, Canesten™, Claritin™, Coppertone™, Dr. Scholl's™, Elevit™, MiraLAX™ and Supradyn™, by driving organic growth through product innovation and geographical expansion. We are also seeking to expand our position in important markets such as the United States, Brazil, Russia and China.

Alongside the ongoing integration of the consumer care businesses acquired in 2014 from Merck & Co., Inc., United States, and Dihon Pharmaceutical Group Co. Ltd., China, we continue to pursue external growth opportunities arising from the progressive global consolidation of the OTC industry. In this way, we aim to further expand in selected categories and markets where it makes strategic sense to do so and can contribute to increasing Bayer's enterprise value.

CROP SCIENCE

We are aligning our Crop Science business to the long-term trends of the agricultural markets, from which we have derived three focuses for our strategy:

- Improvement in agricultural sustainability – in other words the most responsible possible deployment of our resources
- Increase in agricultural productivity through innovation – in other words higher crop yields and quality
- Full leveraging of digitization opportunities to help farmers make the right decisions and to make product applications even safer

Our aim is to help shape the future of the agricultural industry with innovative offerings that increase its productivity, thus generating profitable and sustainable growth for Crop Science and our customers and enabling the production of sufficient food, animal feed and renewable raw materials for a growing world population despite the limited amount of available arable land. Crop Science's strategy is built on four key elements:

- Enhancing the Crop Protection and Environmental Science portfolio
- Expanding the Seeds business
- Increasing customer centricity along the entire value chain
- Leading the way in innovation

We aim to enhance our Crop Protection and Environmental Science portfolios by adding new and improved products, concentrating on core brands and offering integrated solutions in major crops. Support for this endeavor is provided by our innovative technology platform for both chemical and biological crop protection. We are continuously investing in the expansion of our production capacities to meet rising demand for our products.

We continue to work on the expansion of our Seeds business. We plan to further strengthen our positions in our established crops – cotton, oilseed rape/canola, rice and vegetables – and to establish competitive positions in soybeans and wheat. We intend to gain long-term access to high-quality breeding material through acquisitions, in-licensing and partnerships and to steadily expand our existing breeding expertise.

Another major part of our strategy is to strengthen customer centricity along the entire value chain and continuously optimize distribution. We are steadily expanding our successful food chain partnerships. In these projects, Crop Science works with all participants in the food chain to safeguard and increase yields, and to improve the quality of harvested produce. With the Bayer Forward Farming initiative, Crop Science cooperates with farmers to demonstrate innovative crop solutions and services for sustainable agriculture to interested stakeholders. Crop Science will also increasingly concentrate on developing solutions especially tailored to help smallholder farmers increase their profitability while ensuring environmentally friendly cultivation, thus lastingly improving their standard of living.

To lead the way in innovation and develop holistic solutions, we aim to build on our expertise in the integration of seed technology with chemical and biological crop protection and to support our customers with new and improved solutions. New areas of innovation, such as digitization in agriculture, account for another major part of this. We intend to support this development in the future by making use of proprietary digital platforms and data models that can enable us to give farmers special agronomic recommendations. The aim here is to make agriculture more sustainable.

ANIMAL HEALTH

Our Animal Health business aims to strengthen its position in the already heavily consolidated market for veterinary medicines. Here we rely on organic growth through the expansion of our R&D activities and the increased use of our existing distribution channels, particularly specialist retail chains. We also intend to strengthen our position with targeted in-licensing and acquisitions.

COVESTRO

Covestro helps to address global challenges

As a global supplier of high-tech polymer materials and application solutions for many areas of modern life, Covestro aims to generate profitable growth in the long term. Over the coming five years, the company aims to build on its leading positions in its industry sectors and participate in the growth that experts are predicting for its customer industries. Covestro supplies key industry sectors worldwide such as the automotive, construction and electronics industries. It develops and manufactures components for polyurethane foams, the high-tech plastic polycarbonate and raw materials for coatings, adhesives and sealants, as well as specialty products such as films and elastomers.

Growth impetus is expected to come from macro trends such as climate change, the diminishing availability of fossil resources, the expanding global population, urbanization and increasing mobility. Through its products, Covestro aims to help master these challenges in line with its vision "To make the world a brighter place." In keeping with this, the company's activities are embedded in a comprehensive sustainability strategy.

Covestro's large-scale facilities around the world have been extended and are capable of serving the anticipated growth in demand. Therefore, the company does not predict any greater need for expansion in the foreseeable future.

At the same time, Covestro intends to further optimize its network of sites and its cost structures. To this end, the company has initiated a structured profitability program.

Covestro is focusing on continuous product and process innovation as a means of safeguarding and building its competitive position in the global marketplace. Research and development is steered by targets aligned to the needs of the company's customer industries.

The **Polyurethanes (PUR) business unit** intends to further expand its strong position as an integrated raw material and systems supplier, mainly for rigid and flexible foams. While flexible foam ensures added comfort in everyday life through its use in products such as mattresses and upholstery, rigid foam serves above all as an insulating material for buildings and refrigerated appliances, and thus helps to lower energy consumption and greenhouse gas emissions.

In the automotive, electronics and construction sectors, in particular, rising demand is anticipated for polycarbonate, an engineering thermoplastic characterized by positive properties such as low weight, transparency, stability and design flexibility. The **Polycarbonates (PCS) business unit** aims to further strengthen its technological leadership and is focusing on, for example, polycarbonate-based composite materials as a low-cost substitute for solutions based on glass and metal.

The **Coatings, Adhesives, Specialties (CAS) business unit** develops and manufactures mainly polyurethane-based raw materials primarily for coatings and adhesives. The main areas of application are automotive and transportation, infrastructure and construction, wood processing and furniture. The business unit aims to secure and build its position in its core business and to achieve accelerated growth in specialties.

3. Economic Environments of the Subgroups

See Chapter 1.7 for corporate environment

The economic environments in which the subgroups operated are outlined below.

Economic Environments of the Subgroups [Table 3.3.1]

	Growth[1] 2014	Growth[1] 2015
HealthCare		
Pharmaceuticals market	+9%	+9%
Consumer care market	+4%	+5%
Medical care market[2]	−1%	+1%
Animal health market	+5%	+5%
CropScience		
Seed and crop protection market	+7%	≤0%
Covestro (main customer industries)		
Automotive	+3%	+2%
Construction	+3%	+2%
Electrical/electronics	+4%	+3%
Furniture	+4%	+4%

2014 figures restated
[1] Bayer's estimate, except pharmaceuticals. Source for pharmaceuticals market: IMS Health., IMS Market Prognosis. Copyright 2015. All rights reserved, currency-adjusted
[2] Excluding the diabetes care market
As of February 2015

HEALTHCARE

Growth in the **pharmaceuticals market** in 2015 was flat with the prior year. In the United States in particular, new products especially continued to drive ongoing growth. In Japan and Europe, growth rates increased slightly, whereas demand in the emerging markets was unchanged against the previous year.

The global **consumer care market** saw somewhat stronger growth than a year earlier. In the medical care category, slight growth was seen in the market for contrast agents and medical equipment. The **animal health market** expanded at the same rate as in the prior year.

CROPSCIENCE

Overall, the global **seed and crop protection market** receded in 2015. While the demand for high-value seeds remained at the previous year's level, worldwide crop protection sales declined.

Market volumes decreased in Latin America, particularly in Argentina and Brazil, primarily as a result of political uncertainties, macroeconomic developments and lower pest pressure. The market also declined in North America, mainly due to a reduction in corn and cotton acreages and because of lower overall price levels for agricultural commodities than in the previous year. Positive growth impetus for the seed and crop protection market in 2015 came from the Asia/Pacific and Europe regions. Growth rates in the Mediterranean area were above average.

COVESTRO

Growth in the principal customer industries for Covestro (automotive, construction, electrical/electronics and furniture) in 2015 was slightly weaker than in the previous year. One of the main reasons for this was slower demand in China and other emerging economies, which could not be compensated by positive stimuli such as the expansionary monetary policy of the industrialized countries and the lower oil price.

4. Research, Development, Innovation

Scientifically founded innovations and the skills of our employees form the basis for our success as a company. To drive innovation in the future as well, we continuously develop new molecules, technologies and business models in the research-intensive fields of medicine and modern agriculture, invest in research and development projects and expand our activities through targeted acquisitions and collaborations with external partners (open innovation). We plan to invest around €4.5 billion in research and development in 2016 alone. We also promote our culture of innovation in all areas of the company to face the challenges of our time and safeguard profitable growth for our company.

Group target 2015: increase in R&D investment to over €4 billion

See also Chapter 1.4 for Group targets

Bayer maintains a global network of research and development locations in which 14,673 researchers around the world focus on improving the health of people, animals and plants. The focuses of the research projects are determined by the R&D strategies of the subgroups. On this basis, projects are set up that are managed in the development pipeline through defined processes and targets. The budgets requested for this purpose are checked annually and allocated per area. In 2015, we raised our research and development spend by 15.9% (Fx adj.) to €4,281 million. Adjusted for special items of €67 million (2014: €2 million), this represented a 14.1% increase (Fx adj.) and was equivalent to 9.1% of sales. The following table shows the development of R&D key data in the individual segments:

Research and Development Expenses Full Year 2015 [Table 3.4.1]

	Research and development expenses		Research and development expenses before special items		Share of R&D expenses		R&D expenses before special items/sales		R&D employees	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
	€ million	€ million	€ million	€ million	%	%	%	%	FTE	FTE
HealthCare	**2,264**	**2,834**	**2,260**	**2,768**	**64.0**	**66.2**	**11.8**	**12.1**	**7,968**	**8,594**
Pharmaceuticals	1,878	2,333	1,876	2,285	53.1	54.5	15.6	16.6	7,066	7,741
Consumer Health	386	501	384	483	10.9	11.7	5.5	5.3	902	853
CropScience	**974**	**1,089**	**974**	**1,089**	**27.5**	**25.4**	**10.3**	**10.5**	**5,004**	**5,073**
Covestro	**210**	**262**	**213**	**261**	**5.9**	**6.1**	**1.8**	**2.2**	**923**	**1,005**
Group[1]	**3,537**	**4,281**	**3,535**	**4,214**	**.**	**.**	**8.6**	**9.1**	**13,900**	**14,673**

2014 figures restated
[1] Sum of the segments plus reconciliation

We augment our own research capacities through collaborations and strategic alliances with industrial and academic research partners around the world. These include leading universities, public research institutes, partner and start-up companies, and science and innovation centers established by Bayer to give young companies access to features such as suitable laboratory and office infrastructure in the direct vicinity of Bayer's own research facilities. These are supplemented by our crowdsourcing platforms through which researchers around the world can offer their expertise for collaboration with Bayer. With the newly established strategic innovation unit, the Bayer LifeScience Center (BLSC), we additionally want to drive the development of decisive interspecies research with the aid of a network of external partnerships. On the initiative of BLSC we signed an agreement at the end of 2015 with the biotech company CRISPR Therapeutics AG based in Basel, Switzerland, with the goal of discovering, developing and marketing new treatment methods for blood disorders, blindness and heart disease based on the CRISPR-Cas9 technology for gene editing.

More information on this can be found in the sections for the individual subgroups.

We also invest in venture capital funds that finance promising Life Science start-up companies, among other projects. In this way we support the development of new therapies in areas with a high unmet medical need and drive innovation in the Life Sciences.

GRI
G4-26

ONLINE ANNEX: 3-4-1

Scientists from our company are involved in constant dialogue with renowned research institutes and support partnership projects in the public and private sectors. Of these, more than 50 projects worldwide were supported in 2015 by public funding worth around €5 million. This is equivalent to roughly 0.1% of our annual R&D expenses.

We also participate in industry associations, hold professorships at universities worldwide and regularly invite scientists, university students and schoolchildren to attend events such as symposiums on health topics or research days for school students. We view this as an investment in the future, because as a research-based company, we rely on the availability of talented and highly trained people and on society's acceptance of technology.

We promote our innovation capability not just by increasing our research and development budget and expanding external collaborations, but also by strengthening our internal innovation culture, which promotes fascination, creativity, willingness to experiment, customer centricity and cooperation among all disciplines. In this connection, we have launched a number of programs and initiatives in recent years to honor the achievements of our scientists and provide them with suitable platforms and projects for scientific discourse and cross-subgroup cooperation in scientific matters, as well as to give employees throughout all organizational units the opportunity to help jointly generate ideas or solve problems.

ONLINE ANNEX: 3-4-2

The following table lists the most important programs/initiatives for strengthening the innovation culture at Bayer:

Programs/Initiatives for Strengthening Bayer's Innovation Culture [Table 3.4.1-1]

Program	Objective	Approach
Life Sciences Fund	Strengthen interdisciplinary research in the Life Sciences	Since 2012, supports scientists at HealthCare and CropScience involved in interdisciplinary projects aimed at achieving a better understanding of diseases, identifying mechanisms of action, individualizing therapies or explaining resistance mechanisms
Expert Career	Strengthen recognition for scientific success	Initiative by the Board member responsible for Innovation aimed at fostering the cross-company scientific exchange between leading experts in research and development
Otto Bayer Medals	Awards for scientific success	Research prize for outstanding development work that is awarded biennially to teams of Bayer scientists
Hype	Collaborative definition of ideas in information technology	Intranet-based platform for the collaborative generation of ideas by our employees; the most promising ideas are allocated an initial budget which is used by an interdisciplinary team to elaborate the concept within just a few weeks.
WeSolve	Collaborative problem-solving	Current problems in research and development, marketing and production are publicized via the internal WeSolve platform for discussion by employees from all subgroups and service companies; the best solutions are then identified.
Bayer Ideas Pool employee suggestion program and Ideas Forum	Promotion of innovative ideas from the working environment	Application and honoring of employee suggestions for the improvement of processes, occupational safety and health protection. In total, 5,446 ideas were submitted in 2015. Around 46% of the suggestions for improvement evaluated in 2015 were implemented. In the first year of implementation alone, more than €9 million was saved through those improvements that allowed calculation. In 2015, Bayer distributed bonuses of around €2 million to employees for the implemented proposals.

Globally reliable protection of intellectual property rights is essential for an innovation company like Bayer. The Bayer Group endeavors to obtain patent protection for its products and technologies in the major markets. The degree of protection a patent provides varies from one country to another and depends on the type and scope of the patent claim and the options available for enforcing our rights. At the end of 2015, we owned approximately 66,700 valid patent applications and patents worldwide relating to some 7,200 protected inventions.

ONLINE ANNEX: 3-4-3

Patent terms vary according to the laws of the country granting the patent. In view of the high investment required for product research and development, the European Union member states, the United States, Japan and some other countries extend patent terms or issue supplementary protection certificates to compensate for the shortening of the effective patent protection period due to regulatory approval processes for new drugs. We endeavor to obtain such extensions wherever possible.

www.bayer.com/political-position-ip

The term of a patent is normally 20 years. Since it takes an average of 12 years to develop a new medicine, for example, only eight years of patent protection generally remain following the product's approval. In most cases it would be impossible to cover the substantial costs incurred in the research and development of innovative medicines or of new indications or dosage forms for existing drugs without patent protection. We are therefore committed to protecting both the international patent system and our own intellectual property worldwide. Further details are given in the political positions posted on our website.

4.1 HealthCare

PHARMACEUTICALS

Research areas and sites

Drug discovery in the Pharmaceuticals segment focuses on indications with high medical need in the areas of cardiology, oncology, ophthalmology, hematology and gynecology. We conduct research and development activities at several locations, the most important of which are as follows:

Research and Development Sites [Table 3.4.2]

Site	Country	Focus
Berlin	Germany	R&D in oncology, gynecology and non-indication-specific areas
Wuppertal	Germany	R&D in cardiology, ophthalmology and non-indication-specific areas
Mission Bay, San Francisco	U.S.A.	Research in the areas of hematology and biologicals
Berkeley	U.S.A.	Development in the areas of hematology and biologicals
Turku	Finland	Development of hormone-releasing intrauterine devices and implants for contraception
Oslo	Norway	Research on thorium conjugates for the treatment of cancer

Cooperation

We augment our own research capacities through collaborations and strategic alliances with external industrial and academic research partners. In this way we gain access to complementary technologies and external innovation potential. A number of examples are listed in the table on the following pages:

Pharmaceuticals Cooperation Partners [Table 3.4.3]

Partner	Cooperation objective
Cardiology	
Broad Institute	Strategic partnership in the field of genome and drug research in cardiology aimed at using findings from human genetics to develop new cardiovascular therapies
Ionis Pharmaceuticals, Inc.	Development of an antisense molecule for the prevention of thrombosis
Janssen Research & Development, LLC of Johnson & Johnson	Development of Xarelto™ (rivaroxaban)
Ludwig Boltzmann Institute	Research into lung vascular disease, especially pulmonary hypertension
Merck & Co., Inc.	Development collaboration in the field of soluble guanylate cyclase (sGC) modulation
Oncology	
Amgen Research GmbH	Access to BiTE™ antibodies for developing novel tumor therapies
Ardea Biosciences Inc. of Astra Zeneca	Codevelopment of oncology products based on MEK (mitogen-activated ERK kinase) inhibitors
Broad Institute	Strategic partnership in oncology to discover and develop active substances that specifically target tumor-specific gene mutations
Compugen Ltd.	Collaboration for the research and development of new immunotherapy approaches in oncology
German Cancer Research Center	Strategic partnership for the research and development of new therapeutic options in oncology, especially in immunotherapy
Dyax Corp.	Access to antibody library with the option to in-license antibodies for the development and commercialization of novel tumor therapies
ImmunoGen Inc.	Development of antibody-drug conjugates (ADCs) for novel tumor therapies
OncoMed Pharmaceuticals Inc.[1]	Discovery and development of novel therapeutics relating to cancer stem cells
Onyx Pharmaceuticals Inc. of Amgen Inc.	Codevelopment of Nexavar™ (sorafenib) for various types of cancer
Orion Corporation	Development of ODM-201 for the treatment of patients with prostate cancer
Qiagen Manchester Ltd.	Development of diagnostic tests in personalized oncology treatment
Seattle Genetics Inc.	Access to technology for antibody-drug conjugates (ADCs) for novel tumor therapies
Sprint Bioscience	Research and development of oncological drug candidates
Ophthalmology	
Inception 4, Inc.	Research into new approaches for the treatment of various eye diseases
Johns Hopkins University	Research and development of innovative drug products to treat serious back-of-the-eye diseases
Regeneron Pharmaceuticals Inc.	Development of Eylea™ (aflibercept) to treat various eye diseases Development of a PDGFR-beta antibody for ophthalmology
Hemophilia	
Dimension Therapeutics, Inc.	Development of a novel gene therapy for hemophilia A
Gynecology	
Evotec AG	Research collaboration to identify and validate development candidates in endometriosis
University of Oxford	Strategic research alliance for the development of novel gynecological therapies
Infectious diseases	
Merck & Co., Inc.	Codevelopment of tedizolid to treat various infections
Novartis AG	Development of a targeted antibiotic inhalation therapy for lung infections (ciprofloxacin DPI)
Nektar Therapeutics	Codevelopment of a targeted antibiotic inhalation therapy for lung infections (amikacin inhale)
General	
BioInvent International AB	Access to antibody library with in-licensing of antibodies
Peking University	Research cooperation and establishment of a research center for joint projects
Tsinghua University	Research cooperation and establishment of a research center for joint projects

[1] Bayer is not active in the area of human embryonic stem cell research.

We also operate our own science and innovation centers. We coordinate primarily our research partnerships in Asia through our science hubs in Beijing, China; Singapore; and Osaka, Japan. In Berlin, Germany, and San Francisco, California, United States, we operate the "CoLaborator™," an incubator model for young life science companies. The objective of the global CoLaborator™ concept is to offer these companies suitable laboratory and office infrastructure in the direct vicinity of Bayer's own research facilities. In the area of crowdsourcing, we are very successfully continuing our "Grants4Targets™" program. We supplemented "Grants4Leads™," which concentrates on small molecules, with "PartnerYourAntibodies™," a program that focuses on the evaluation of biological actives. Furthermore, the "Grants4Apps™ Accelerator Program" offers mentoring to start-up companies that can offer innovative solutions relevant to health care and therapy. In the area of venture capital, we are active with the "High-Tech Gründerfonds" and Versant Ventures.

Clinical trials

Clinical trials account for a major portion of the development process for medicines. They are an essential tool for determining the efficacy and compatibility of new developmental products before they can be used to treat diseases. The benefits and potential risks of new medicines must always be scientifically proven and well documented. All studies at Bayer satisfy strict international guidelines and quality standards, as well as the respective applicable national laws and standards.

ONLINE ANNEX: 3-4.1-1

Bayer publishes information about clinical trials in line with the respective applicable national laws and according to the principles of the European (EFPIA) and North American (PhRMA) pharmaceutical associations, these principles being defined in a joint position paper.

HealthCare publishes information on its own clinical trials both in the publicly accessible register www.ClinicalTrials.gov and in its own "Trial Finder" database. In the case of approved products, summarized results of Phase II, III and IV clinical trials are accessible online through the "Trial Finder." Upon request, scientists can receive access to anonymized data at the patient level via the portal www.clinicalstudydatarequest.com.

Further information on our globally uniform standards, the monitoring of studies and the role of the ethics committees can be found on the internet.

www.bayer.com/ethics-in-rnd

Activities in 2015

In line with our targets for 2015 we transferred 12 new molecular entities from our research pipeline into preclinical development in the reporting year. We define a new molecular entity (NME) as a new chemical or biological substance that has not been in development to date. In preclinical trials these substances are examined further in various models with respect to their suitability for clinical trials and linked "first-in-man" studies. In 2015, we conducted clinical trials with several drug candidates from our research and development pipeline. We strengthened products that were already on the market through life cycle management activities to improve their application and/or expand their spectrum of indications.

Group target 2015: HealthCare – transition of more than 10 new molecular entities (NMEs) into development

More details on our drug candidates can be found in Table 3.4.6

We are investigating some of our development candidates with respect to their potential for the treatment of rare diseases, also known as orphan diseases. In February 2015, copanlisib received orphan drug designation from the U.S. Food and Drug Administration (FDA) for the treatment of follicular lymphoma, a histological subtype of non-Hodgkin lymphoma.

The following tables show our most important drug candidates currently in Phase II or III of clinical testing:

Research and Development Projects (Phase II)[1] [Table 3.4.4]

Phase II projects	Indication
Anetumab ravtansine (mesothelin ADC)	Cancer
BAY 1067197 (partial adenosine A1 agonist)	Heart failure
BAY 1007626 (progestin IUS)	Contraception
BAY 1142524 (chymase inhibitor)	Heart failure
BAY 2306001 (IONIS-FXIRx)	Prevention of thrombosis[2]
BAY 98-7196 + anastrozole (intravaginal ring)	Endometriosis
Copanlisib (PI3K inhibitor)	Recurrent/resistant non-Hodgkin lymphoma (NHL)
Molidustat (HIF-PH inhibitor)	Renal anemia
PDGFR-beta + aflibercept	Wet age-related macular degeneration[3]
Radium-223 dichloride	Bone metastases in breast cancer
Radium-223 dichloride	Cancer, various studies
Refametinib (MEK inhibitor)	Cancer
Regorafenib	Cancer
Riociguat	Pulmonary hypertension (IIP)
Riociguat	Diffuse systemic sclerosis
Riociguat	Cystic fibrosis
Rivaroxaban	Secondary prevention of acute coronary syndrome (ACS)[4]
Roniciclib (CDK inhibitor)	Small-cell lung cancer (SCLC)
Vericiguat (BAY 1021189, sGC stimulator)	Chronic heart failure
Vilaprisan (S-PRM)	Symptomatic uterine fibroids
Vilaprisan (S-PRM)	Endometriosis

[1] As of January 27, 2016
[2] Sponsored by Ionis Pharmaceuticals, Inc.
[3] Sponsored by Regeneron Pharmaceuticals, Inc.
[4] Sponsored by Janssen Research & Development, LLC
The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and / or commercial reasons and will not result in commercialized products. It is also possible that the requisite Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds.

Research and Development Projects (Phase III)[1] [Table 3.4.5]

Phase III projects	Indication
Amikacin Inhale	Pulmonary infection
BAY 1841788 (ODM-201, AR antagonist)	Prostate cancer
Damoctocog alfa pegol (BAY 94-9027, long-acting rFVIII)	Hemophilia A
Ciprofloxacin DPI	Pulmonary infection
Copanlisib (PI3K inhibitor)	Various forms of non-Hodgkin lymphoma (NHL)
Finerenone (MR antagonist)	Chronic heart failure
Finerenone (MR antagonist)	Diabetic kidney disease
Radium-223 dichloride	Combination treatment of castration-resistant prostate cancer
Regorafenib	Refractory liver cancer
Riociguat	Pulmonary arterial hypertension (PAH) in patients who do not sufficiently respond to PDE-5i/ERA
Rivaroxaban	Prevention of major adverse cardiac events (MACE)
Rivaroxaban	Anticoagulation in patients with chronic heart failure[2]
Rivaroxaban	Long-term prevention of venous thromboembolism
Rivaroxaban	Prevention of venous thromboembolism in high-risk patients after discharge from hospital[2]
Rivaroxaban	Embolic stroke of undetermined source (ESUS)
Rivaroxaban	Peripheral artery disease (PAD)
Tedizolid	Pulmonary infection

[1] As of January 27, 2016
[2] Sponsored by Janssen Research & Development, LLC
The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and/or commercial reasons and will not result in commercialized products. It is also possible that the requisite Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds.

We regularly evaluate our research and development pipeline in order to prioritize the most promising pharmaceutical projects.

Following the completion of the required studies with a number of these drug candidates, we submitted applications to one or more regulatory agencies for approvals or approval expansions.

The most important drug candidates in the approval process are:

Products Submitted for Approval[1] [Table 3.4.6]

	Indication
Bay 81-8973 (rFVIII)	E.U., U.S.A., Japan; treatment of hemophilia A
LCS-16 (ULD LNG Contraceptive System)	E.U., U.S.A.; contraception
Radium-223 dichloride	Japan; treatment of prostate cancer patients with bone metastases
Rivaroxaban[2]	U.S.A.; secondary prophylaxis of acute coronary syndrome (ACS)

[1] As of February 4, 2016
[2] Submitted by Janssen Research & Development, LLC

In 2015, we achieved further progress in various therapeutic areas:

Cardiology

Xarelto™ (active ingredient: rivaroxaban) has been approved for more indications in the area of venous and arterial thromboembolism than any of the other non-vitamin-K-dependent oral anticoagulants. Xarelto™ is approved in more than 130 countries worldwide across all indications, its approval status varying from country to country. Xarelto™ is marketed in the United States by Janssen Pharmaceuticals, Inc., a subsidiary of Johnson & Johnson.

In May 2015, Xarelto™ was approved by the China Food and Drug Administration (CFDA) for the prevention of stroke and systemic embolism in patients with nonvalvular atrial fibrillation and for the treatment of deep vein thrombosis (DVT). The approval also includes the use of Xarelto™ to reduce the risk of recurrent DVT and pulmonary embolism following acute DVT. In September 2015, Xarelto™ was approved by the Japanese Ministry of Health, Labour and Welfare (MHLW) for the treatment and secondary prevention of pulmonary thromboembolism and deep vein thrombosis.

In addition to the already approved indications, the use of rivaroxaban is also being investigated in other cardiovascular diseases such as prevention of major adverse cardiac events, embolic stroke of undetermined source or peripheral artery disease.

Rivaroxaban was invented by Bayer and is being jointly developed with Janssen Research & Development, LLC, United States, a subsidiary of Johnson & Johnson.

Adempas™ (active ingredient: riociguat) is the first member of a new class of vasodilation agents known as soluble guanylate cyclase (sGC) modulators. Administered in tablet form, riociguat is currently being investigated as an innovative, specific approach for the treatment of various forms of pulmonary hypertension.

Adempas™ is approved in the United States and Europe for the treatment of particular forms of chronic thromboembolic pulmonary hypertension (CTEPH) and pulmonary arterial hypertension (PAH). In Japan, Bayer was granted marketing authorization for CTEPH in 2014 and for PAH in February 2015.

The trial program for riociguat also includes studies outside of the pulmonary hypertension indication. For example, riociguat is also in Phase II testing for the treatment of patients with diffuse systemic sclerosis.

Another representative of the sGC modulator class is vericiguat, currently in Phase IIb clinical testing to treat chronic heart failure.

The development and commercialization of sGC modulators is part of our strategic collaboration with Merck & Co., Inc., United States.

The active ingredient finerenone (BAY 94-8862) is a novel oral nonsteroidal mineralcorticoid receptor antagonist (MRA) that is currently in Phase III clinical development. In September 2015, two Phase III trials were initiated to investigate the efficacy and safety of finerenone in patients with diabetic kidney disease. Another Phase III trial is being prepared in the indication chronic heart failure.

The development candidate molidustat is being investigated for the treatment of patients with anemia accompanied by chronic kidney disease and/or end-stage kidney failure.

In March 2015, we expanded our partnership with the Broad Institute at the Massachusetts Institute of Technology (MIT) and Harvard University, United States, to include collaboration on cardiovascular genomics and drug discovery.

In April 2015, furthermore, we entered into an exclusive license agreement with Ionis Pharmaceuticals, Inc., United States, pertaining to IONIS-FXIRx (BAY 2306001), an antisense drug in clinical development for the prevention of thrombosis. Under the agreement, Bayer will further develop and commercialize BAY 2306001 in areas of high medical need. Antisense drugs bind to the mRNA molecules in the cell in a targeted way and inhibit the production of proteins that may become significant in the course of a disease. The novel mechanism of inhibiting Factor XI synthesis may offer an additional treatment option for patients for whom none is currently available.

Oncology

Stivarga™ (active ingredient: regorafenib) is an oral multikinase inhibitor. It inhibits various signal pathways that are responsible for tumor growth. Stivarga™ is approved in the United States, Europe, Japan and other countries for the treatment of patients with metastatic colorectal cancer (mCRC) and gastrointestinal stromal tumors (GIST).

In March 2015, we suspended enrollment in a Phase III trial with regorafenib due to insufficient patient recruitment at that time. The trial is investigating regorafenib as an adjuvant treatment option for patients with colorectal cancer following resection of liver metastases with curative intent. The results of a further Phase III trial with regorafenib as a second-line treatment for liver cancer are expected in 2016.

Stivarga™ was developed by Bayer. In 2011, Bayer and Onyx Pharmaceuticals, Inc., a subsidiary of Amgen Inc., United States, agreed that Onyx would receive royalties on global sales of Stivarga™ in the area of cancer treatment.

Xofigo™ (active ingredient: radium-223 dichloride) is approved in the E.U. and the United States for the treatment of adult patients with castration-resistant prostate cancer (CRPC) with symptomatic bone metastases but no known visceral metastases. In April 2015, we submitted an application to the Japanese health authority MHLW for marketing authorization for radium-223 dichloride for the treatment of prostate carcinoma with bone metastases. The active ingredient is being investigated in additional trials in prostate cancer and in Phase II trials involving breast cancer patients.

The active ingredient copanlisib is a novel, intravenous phosphatidylinositol 3-kinase (PI3K) inhibitor. In 2015, we expanded our global clinical development program. A new Phase II and two Phase III trials are designed to investigate the safety and efficacy of copanlisib in patients with recurring indolent non-Hodgkin lymphoma (NHL) and diffuse large B-cell lymphomas (DLBCL), an aggressive subtype of NHL.

Another active ingredient, BAY-1841788 (ODM-201), is being jointly developed with Orion Corporation, Espoo, Finland. This novel oral androgen receptor inhibitor is in Phase III clinical development for the treatment of patients with prostate cancer.

In July 2015, we entered into a collaboration and license agreement with Sprint Bioscience AB, Sweden, for the research, development and commercialization of oncological drug candidates. Under the agreement, we will receive the license for a research program currently undergoing preclinical development that is geared toward the inhibition of tumor cell metabolism.

Ophthalmology

Eylea™ (active ingredient: aflibercept) is our joint development project with Regeneron Pharmaceuticals, Inc., United States. Aflibercept blocks the natural growth factor VEGF (vascular endothelial growth factor), thus preventing the abnormal formation of new blood vessels that tend to leak fluid. The medication is administered directly into the eye. Regeneron Pharmaceuticals, Inc., United States, holds exclusive rights to the product in the United States, while in other countries it is marketed by Bayer.

Eylea™ is approved for the treatment of wet age-related macular degeneration (AMD), visual impairment due to macular edema secondary to central retinal vein occlusion (CRVO) and diabetic macular edema (DME). In Japan, Eylea™ is additionally approved for the treatment of myopic choroidal neovascularization (mCNV).

In February 2015, the European Commission extended marketing authorization for Eylea™ to include the treatment of patients with visual impairment due to macular edema secondary to branch retinal vein occlusion (BRVO). Eylea™ therefore can be used in Europe by all patients with visual impairment due to macular edema resulting from retinal vein occlusion (RVO). In June 2015, the product was approved in this indication in Japan. In October 2015, Eylea™ was approved by the European Commission for the treatment of myopic choroidal neovascularization (mCNV).

A Phase IIa clinical study with regorafenib eye drops did not show the desired results and the project is therefore being discontinued. The study investigated the use of regorafenib for the treatment of wet age-related macular degeneration (AMD).

In June 2015, we entered into a strategic research alliance with Johns Hopkins University, United States, concerning the discovery and development of innovative drugs for the treatment of serious back-of-the-eye diseases that affect many people worldwide. The five-year collaboration will aim to develop new ophthalmic therapies for various retinal diseases.

Hematology

In June 2015, we submitted an application to the Japanese MHLW for marketing authorization for the recombinant Factor VIII compound BAY 81-8973 for the treatment of hemophilia A. The approval process has been under way in the United States and Europe since the end of 2014. In December 2015, the European Committee for Medicinal Products for Human Use (CHMP) recommended approval. BAY 81-8973 is a further development of recombinant Factor VIII (rFVIII) which has demonstrated clinical evidence of efficacy when used for prophylaxis twice or three times per week, with standard dosages.

Damoctocog alfa pegol (BAY 94-9027) is a long-acting recombinant Factor VIII that is currently in Phase III clinical development.

Gynecology

Vilaprisan (sPRM) is a novel oral progesterone receptor modulator that is currently being investigated in Phase II trials for the treatment of uterine fibroids and endometriosis. In June 2015, an additional Phase II trial began that is investigating the efficacy of vilaprisan compared with its major competitor product.

In November 2015, we filed for marketing authorization for the new intrauterine system (IUS) LCS-16 in the European Union and the United States. This low-dose, levonorgestrel-releasing product enables contraception for a period of up to five years.

CONSUMER HEALTH

Research and development at Consumer Health is performed essentially at the following sites:

Research and Development Sites [Table 3.4.7]

Site	Country	Focus
Consumer Care		
Morristown	U.S.A.	Allergy, analgesic, cough & cold and dermatological products
Memphis	U.S.A.	Suncare, footcare and dermatological products; consumer research testing center
Gaillard	France	Nutritional supplements, dermatological and gastrointestinal products
Darmstadt	Germany	Herbal medicines
Chengdu	China	Over-the-counter (OTC) products and herb-based traditional Chinese medicines (TCM)
Medical Care (Radiology)		
Pittsburgh	U.S.A.	Medical devices, sterile disposables, informatics
Berlin	Germany	Contrast agents
Animal Health		
Monheim	Germany	Antiparasiticides, anti-infectives and pharmaceuticals
Shawnee	U.S.A.	Antiparasiticides, anti-infectives and pharmaceuticals
Auckland	New Zealand	Dairy cattle health
São Paulo	Brazil	Antiparasiticides

In **Consumer Care**, research and development activities focus on the development of nonprescription (over-the-counter = OTC) medications as well as skin and foot care products, sunscreens, dietary supplements and other self-medication products. Placing the consumer at the center of everything we do, our development strategies are geared toward expanding and improving our brand portfolio. We want to achieve this through new product developments, forms, formulations, claims, pack designs and other innovations. We introduced a number of new product line extensions to various markets in 2015. They included new delivery forms and uses and innovations for existing brands such as Aspirin™, Elevit™, Berocca™, Canesten™, Bepanthen™/Bepanthol™ and Coppertone™. We also actively pursue the reclassification of current prescription medicines as OTC products.

The goal of our research and development activities in **Medical Care** is steadily to improve our contrast agents and our contrast injection systems in order to build on our leadership position in the field of radiology.

In March 2015, we received approval in Japan for Gadovist™ (active ingredient: gadobutrol) injection for use with resonance imaging (MRI). Gadovist™ is the first high concentration/high relaxivity gadolinium-based contrast agent to be made available in Japan. In July 2015, Gadovist™ was approved by the European Commission for use in children under two years of age. This label extension applies to all indications that have already been approved.

In August 2015, the MRXperion injection system was approved by the FDA for the injection of contrast agents. Our system optimizes injection workflow, provides enhanced point-of-care capabilities and can be connected to our Radimetrics™ Enterprise platform.

In 2015, we also worked to expand the capabilities of our informatics product offerings by developing new software applications to improve contrast agent and radiation dosage management across CT, MRI and nuclear medicine modalities.

At **Animal Health** we focus our research and development activities on antiparasitics, antibiotics, medicines to treat noninfectious disorders and nonantibiotic alternatives for infectious diseases. Our central research activities are conducted as part of our Life Sciences platform in conjunction with pharmaceutical research and in close collaboration with our researchers at CropScience. We also reinforce the business by continually identifying further product development candidates through our existing collaborations.

Since August 2015, our innovative immunostimulant Zelnate™ has been available in the United States. It was approved by the United States Department of Agriculture (USDA) to aid in the treatment of bovine respiratory disease caused by *Mannheimia haemolytica* bacteria. The product offers veterinarians and farmers a new approach alongside vaccines and antibiotics for mitigating this complex infectious disease that has substantial negative impact on the cattle industry.

4.2 CropScience

Research fields and sites

CropScience maintains a global network of research and development facilities. Our largest R&D sites are as follows:

Research and Development Sites [Table 3.4.8]

Site	Country	Focus
Monheim	Germany	R&D of crop protection products, focus on insecticides
Frankfurt	Germany	R&D of crop protection products, focus on herbicides
Lyon	France	R&D of crop protection products
Sophia Antipolis	France	R&D of crop protection products
Raleigh/Research Triangle Park	U.S.A.	R&D of crop protection products; research center for seeds
Sacramento	U.S.A.	R&D of crop protection products
Ghent	Belgium	Research center for seeds
Nunhem	Netherlands	Research center for vegetable seeds
Lubbock	U.S.A.	Research center for seeds, focus on cotton
Morrisville	U.S.A.	Research center for seeds

While research is carried out centrally at a small number of sites, our development and plant breeding activities take place both at these sites and at numerous field testing stations across the globe. This ensures that future active ingredients and crop varieties can be tested according to specific regional and local requirements. The research centers of the Seeds unit focus on improving seed and targeted seed traits through seed technology and breeding.

In November 2015, CropScience opened three new institutes within the research and innovation center at Paulínia, Brazil: the company's first applications technology center outside of Germany, a resistance monitoring laboratory and a center for agriculture in tropical regions.

CROP PROTECTION / SEEDS

Research fields

In **Crop Protection/Seeds** our scientists working across the fields of improved seed traits, seed technology, seed breeding, agricultural chemistry and biologics closely collaborate as part of our integrated research approach. This optimally bundles the technical expertise acquired in chemical and biological research and field development, aligning it with our long-term research objectives and business strategies for the various crops.

In the Crop Protection unit, we pursue the goal of identifying and developing innovative, safe products for use as insecticides, fungicides, herbicides or seed treatments in sustainable agriculture. In the fields of chemistry, biology and biochemistry, modern technologies such as high-throughput screening and bioinformatics play an important role in identifying new chemical lead structures. In addition, we are broadening the range of uses for our active ingredients by developing new mixtures or innovative formulations to enable their application in additional crops or in different regions and make them easier to handle. Successful collaborations with external partners complement our own activities.

Research in our Seeds unit is devoted to optimizing plant traits. We are developing new varieties in our existing core crops – cotton, oilseed rape/canola, rice and vegetables. We have now expanded our research activities to include two further core crops – wheat and soybeans. Our work focuses on improving the agronomic traits of these crops. Our researchers are working to increase the quality and yield potential of crop plants – for example by improving the profile of rapeseed oil or enhancing the properties of cotton fibers. We are also targeting the development of plants that have high tolerance to external stress factors such as drought, and can more efficiently utilize water. Further areas of focus include developing new herbicide tolerance technologies based on alternative modes of action, and improving insect resistance and disease tolerance. To do this we employ modern breeding techniques ranging from marker-assisted breeding to plant biotechnology methods.

Technological advances offer farmers faster and more accurate methods of monitoring their plants. Such digital solutions can help them to better understand processes in their fields and enable them to make quicker and simpler decisions and calculate the risks more effectively. We would like to support this development in the future by giving farmers specific agronomic recommendations. Therefore, in addition to our conventional research projects, we are developing digital products in which we augment field analyses and statistical models with additional data that we can adapt or individualize for a certain field in order to help our customers to make decisions.

New products and registrations

In 2015, CropScience once again attained a series of important new registrations. In January 2015, for example, we received regulatory approval from the U.S. Environmental Protection Agency (EPA) for the new insecticide **Sivanto™**, which controls sucking pests on fruits and vegetables as well as most broadacre crops. Based on the active ingredient flupyradifurone, Sivanto™ is a novel systemic insecticide. CropScience received marketing authorization for this product in Mexico and South Korea in the spring of 2015, and flupyradifurone was approved by the European Commission in November 2015. We anticipate attaining the first national registrations for Sivanto prime™ in European countries in 2016; its market launch is planned for 2017.

The product **Council™** was already granted regulatory approval in South Korea in 2014 and it has been available there since the 2015 planting season. The new rice herbicide will considerably improve weed control, as it features a favorable environmental profile and outstanding compatibility – characteristics that make Council™ an environmentally friendly and future-oriented product in the Asian rice market.

In August 2015, CropScience received marketing authorization from the European Commission for terpenoid blend QRD 460, the active ingredient in the product **Requiem™**. This biological insecticide serves to control sucking pests. Its market launch in Europe is scheduled for 2017.

In September 2015, CropScience opened a new building for its European Wheat Breeding Center in Gatersleben, Germany. Our wheat activities focus primarily on the development of hybrid seed that promises considerably improved yield stability compared with conventional seed and is scheduled for launch after 2020. CropScience announced in September 2014 that it will invest a total of €1.5 billion in the research and development of wheat seed and crop protection between 2010 and 2020. Here CropScience combines the discovery and development of plant traits, molecular breeding and the latest IT applications in order to optimize the genetic potential of wheat seed in terms of increased yields. In 2015, we took the first step in this direction by launching our first conventional wheat seed in Ukraine.

With many crops, such as vegetables, major success can be achieved using conventional plant breeding methods. As vegetables are intended especially to be marketed and eaten fresh, merchants and consumers have particularly strict requirements regarding their appearance, nutrient content, taste and shelf life. We are launching a succession of new vegetable seed varieties that satisfy these requirements.

Acquisitions and cooperation

In February 2015, representatives of Bayer CropScience and GLOBALG.A.P. signed an agreement to further intensify their collaboration. The partners aim to implement sustainable cultivation methods and help fruit and vegetable growers worldwide to meet GLOBALG.A.P. certification standards.

Around the world, weed resistances to herbicides jeopardize agricultural efficiency and sustainability. CropScience has significantly expanded its herbicides research capacities in order to be able to more rapidly offer new solutions to global agricultural problems: in June 2015, CropScience and the Grains Research & Development Corporation (GRDC) entered into a five-year innovation partnership centered partly on the accelerated discovery and development of new active ingredients to manage major and resistant weed species. The GRDC will finance the expansion of existing capacities at the global herbicides research center of CropScience in Frankfurt to include some 40 additional scientists and technicians.

In June 2015, CropScience announced the acquisition of SeedWorks India Pvt. Ltd., headquartered in Hyderabad, India. The company is specialized in the breeding, production and marketing of hybrid seeds of tomato, hot pepper, okra and gourds. Existing and forthcoming varieties will be marketed under CropScience's Nunhems™ brand.

In September 2015, CropScience and the Round Table on Responsible Soy (RTRS) announced that they would jointly assist soybean producers in the certification of their crops according to RTRS standards. RTRS certification guarantees that soybeans – whether used as a raw material or in processed products – originate from environmentally friendly, socially compatible and economically viable production. This collaboration will initially be focused on Brazil.

Special mention should be made of our food chain partnerships, in which CropScience supports all the players in the food chain – from farmers and food processors to importers, exporters, wholesalers and retailers. CropScience has participated worldwide in food chain partnership projects for 10 years, particularly in Asia, Latin America and Europe. Some 7,400 Bayer experts advise farmers on sustainable cultivation methods – from seed selection and the controlled, eco-friendly use of crop protection products to the transparent monitoring of production and assistance in attaining certifications.

ONLINE ANNEX: 3-4.2-1

Our cooperation with partner organizations in these joint projects is now an internationally successful business model for all participants in the food chain. Smallholder farmers in developing countries and Emerging Markets draw particular benefit from the improved production and marketing structures. Since 2014, we have significantly expanded our partnership with Unilever. This includes a food chain partnership project in Kenya focused on rapeseed whose integrated solution comprises crop protection, seed and support in certification attainment and agronomic training measures. The goal of the project is to stabilize or even increase harvest yields and quality, and thus farmers' incomes.

CropScience is part of a global network of research and industry partners from diverse segments of the agriculture industry, chemical and biological research, and the food industry. An overview of the major research partnerships is contained in

ONLINE ANNEX: 3-4.2-2

CropScience: Important R&D Collaborations [Table 3.4.8-1]

Partner	Cooperation objective
CSIRO	Increase in wheat yields by means of native plant traits – discovery, validation and integration
Elemental Enzymes	Use of microbes to improve soil health and thereby increase crop productivity
GRDC	Herbicide Innovation Partnership for the discovery and development of innovative weed management solutions
IVCC	Joint development of new substances to control mosquitoes that transmit diseases such as malaria and dengue fever
Targenomix	Development and application of systems biology approaches to achieve a better understanding of metabolic processes in plants

Integrated research and development pipeline

Our integrated product pipeline for crop protection and seed technology contains numerous new crop protection products, seed varieties and enhanced products (life cycle management) that have estimated launch dates between 2014 and 2019. We believe these products have a combined peak sales potential in excess of €5 billion. In line with our Group target 2015 we launched confirmatory technical proof-of-concept field studies for one new molecular entity, one new plant trait and two new biologics. A new plant trait is a specific characteristic that has not yet been available or offered at Bayer for the crop plant in question.

Group target 2015: transfer of two new molecular entities (NMEs) or plant traits into confirmatory technical proof-of-concept field studies

See also Chapter 1.4 for Group targets

The table lists a selection of products launched in 2015 and market launches expected through 2019:

Innovation Pipeline[1] [Table 3.4.9]

Indication/crop	Product/plant trait	Product group	Market launch[2]
Insecticide	Sivanto™	Chemical crop protection	2015
Herbicide	Council™	Chemical crop protection	2015
Wheat	Conventional seed	Seeds	2015
Oilseed rape/canola	Dual herbicide tolerance	Seeds	2016
Insecticide	New active ingredient	Biological crop protection	2017
Cotton	Dual herbicide tolerance and insect resistance	Seeds	2017
Oilseed rape/canola	Dual herbicide tolerance	Seeds	2017
Oilseed rape/canola	Herbicide tolerance	Seeds	2017
Soybeans	Dual herbicide tolerance	Seeds	2017
Insecticide	New active ingredient	Chemical crop protection	2019
Fungicide	New active ingredient	Chemical crop protection	2019
Soybeans	Triple herbicide tolerance	Seeds	2019
Soybeans	Dual herbicide tolerance	Seeds	2019

[1] Selected new products
[2] 2016-2019: planned market launch
As of January 6, 2016

ENVIRONMENTAL SCIENCE

Research fields

Environmental Science offers consumers and professional users chemically and biologically based pest and weed control solutions by tailoring substances from our Crop Protection unit or external partners for use in the garden, on golf courses, on road- or railways or in forestry.

Activities in 2015

Environmental Science expanded its product range for professional users in the Middle East by introducing various innovative formulations of our insecticide Maxforce™. The new biological product Dedevap Green™ is available in Germany for use in granaries. Environmental Science also cooperates with companies in Brazil and Argentina to promote sustainable forestry – through the use of products such as our herbicide Esplanade Forest™, which enables reduced application of herbicides thanks to its long-lasting effect. We are continuously expanding our range of fungicides. Examples here include the launch of Dedicate™ in Europe, Chipco Signature Xtra™ in the United States and the biological nematicide Nortica™.

For consumers we continued to work in 2015 on the development of innovative and user-friendly packaging and the expansion of our range of biological solutions. We rounded out our range of pest and weed control products with the launch of the new fungicides Consento™ and Emerald™ in central Europe and Italy, the snail control product Dismo™ in France and Austria and new formulations of Decis Garten™ in Italy and the Benelux countries.

For more than 50 years, Bayer has played an active role in the fight against malaria, which remains one of the most dangerous tropical diseases to this day. Environmental Science is a leading supplier of indoor spray insecticides that control malaria-transmitting mosquitoes, protecting some 50 million people a year from the disease. In 2015, Environmental Science received support from the World Health Organization of the United Nations (WHO) for the use of the Fludora™ brand to combat malaria within the context of integrated pest management. Environmental Science is also currently developing a new outdoor spray, K-Othrine Polyzone™, to combat dengue fever in Southeast Asia. This product is targeted for launch in 2017.

4.3 Covestro

Covestro operates major Innovation Centers in Leverkusen, Germany; Pittsburgh, Pennsylvania, United States; and Shanghai, China. With its strong global presence, the company endeavors to account particularly for regional market trends and customer needs.

Essential in this context is also cooperation with external scientific institutions, start-up companies and academic spin-offs. These collaborations are mainly based in Germany, the United States, China or Japan. Our partners in Germany include RWTH Aachen University, while in China Covestro maintains a close alliance with Tongji University, and in the United States Covestro supports research activities at a number of renowned universities.

Research and development is a core element of Covestro's corporate strategy so that the company can maintain and build on its own competitive position. The company continuously works to evolve and improve its products and manufacturing, processing and business procedures. It is ensured through targeted management that ongoing projects and the project pipeline satisfy the current and future needs of customer industries and ultimately the consumer markets.

The thematic focus is on high-end applications, the enhancement of functionalities, design flexibility, cost-reducing production processes and sustainability, whereby the company also endeavors to find alternatives to petrochemical raw materials.

The **Polyurethanes (PUR) Business Unit** focuses among other things on driving forward new technologies such as microcellular foams that enable the development of even more efficient insulation of buildings and refrigeration chains. It also works to increase the flame-retardant properties of its materials. Another current theme is lightweight composite materials, including applications in the automotive industry that lead to weight savings and at the same time higher productivity and improved comfort.

In the area of process development, the business unit is progressing with the use of carbon dioxide as a new source of carbon in order to reduce dependence on petrochemical raw materials. The PUR Business Unit's first priority in 2016 is to launch an innovative CO_2-based form of the polyurethane component polyol.

Activities in the **Polycarbonates (PCS) Business Unit** are mainly geared to the development of products for the automotive and electrical/electronics industries. The focus here is on reducing weight, improving energy efficiency and safety, and enabling greater design freedom.

Light-emitting diodes contribute to sustainability in vehicles and in other applications, as they require less energy and last longer than traditional light sources. PCS has developed special materials for channeling, scattering and reflecting LED light and for discharging the generated heat. In addition, the business unit is channeling its focus on fiber-reinforced composites based on polycarbonates. These can improve performance in high-grade IT products and automotive components in particular.

The **Coatings, Adhesives, Specialties (CAS) Business Unit** is actively involved in the development primarily of polyurethane-based raw materials for high-performance coatings, colorants, adhesives, sealants and specialty products. One of the goals here is to open up new application possibilities and markets for the core products. CAS is also driving forward technologies such as processes that make use of sustainable raw materials, focusing consistently on the needs of the market here as well.

In April 2015, for example, the business unit presented an innovative curing agent for polyurethane coatings and adhesives for which 70% of the raw materials are derived from biomass that does not compete with food production. CAS has also developed a thermolatent curing agent for automotive coatings that can be applied at significantly lower temperatures than standard products. This in turn lowers energy consumption and shortens production times. For textiles and artificial leather, furthermore, CAS offers a new generation of polyurethane dispersions that also conserve natural resources and do not require the use of any organic solvents.

5. Sustainability Management and Governance

To us, sustainability basically means future viability and, as part of corporate strategy, is integrated into everyday procedures.

We underline our mission as a sustainably operating company through our commitment to the U.N. Global Compact with its internationally recognized 10 principles and to the Responsible Care™ initiative, and through our active global involvement in leading (industry) forums such as the World Business Council for Sustainable Development (WBCSD).

www.bayer.com/sustain-commitment

Bayer also expressly backs the comprehensive approach of the new Sustainable Development Goals (SDGs) agreed by the U.N. in September 2015 for the period to 2030. In our core business we support in particular the goals that focus on combating hunger and ensuring good health care provision across the globe. The other SDGs are also in line with our internal requirements relating to responsible business practices.

Responsibility for steering and aligning our Group-wide sustainability strategy lies with the Board of Management member responsible for Human Resources, Technology and Sustainability in his function as Chief Sustainability Officer, and with a Sustainability Council chaired by the Environment & Sustainability corporate function.

Structure of Sustainability Management [Graphic 3.5.1]

SUSTAINABILITY MANAGEMENT

Organization	Major areas of activity	Steering, measurement and documentation
Member of the Board of Management responsible for Human Resources, Technology and Sustainability	Product and process innovation	Group regulations on, for example, • Human Rights • Compliance • Sustainable Development • Responsible Marketing
Environment & Sustainability corporate function	Access to health care	Targets / Indicators
Group committees focusing on sustainability and HSEQ issues	Sustainable food supply	HSEQ management systems and audits
	Human capital	Opportunity and risk management
	Business ethics	Integrated Annual Report with independent auditing
	Product stewardship	
	Safety	
	Environmental protection	
	Supplier management	
	Stakeholder engagement / Partnering	
	Societal engagement	

Commitment to standards and organizations such as WBCSD, GRI, U.N. Global Compact, Responsible Care

See also Chapter 1.3 for Group strategy

www.bayer.com/policies

The Sustainability Council sets targets, draws up initiatives, management systems and Group regulations, and is responsible for their implementation. In order to operationalize the Group strategy and make it measurable, we have set ambitious nonfinancial targets and indicators all along the value chain. Internal Group regulations ensure our sustainability principles are implemented in business operations, where they are realized through corresponding management systems, regulations and processes.

GRI
G4-18, G4-26, G4-27

www.bayer.com/materiality

We regularly check that our areas of activity are up to date and relevant. To do so, we analyze and evaluate what the major stakeholders expect and require and match this against our own assessment. Thanks to this approach, we are quick to identify sustainability-related opportunities and risks and can incorporate these into our strategy. In 2014, we used a multi-stage process to identify issues of relevance to us and prioritized these in respect of sales, costs, risk and reputation. We summarized the 24 areas of activity that are relevant to Bayer in a materiality matrix.

In 2015, we once again discussed the results of the materiality analysis at internal workshops and reconciled these with current developments and the Group targets. We also analyzed the results' relevance for the Bayer value chain (see graphic) and reporting in line with the new GRI G4 guidelines. During this process, the original 24 areas of activity were condensed into 11, presented to the Board of Management and approved by it. The graphic below shows the assignment of our areas of activity to the stages of the value chain.

Areas of Activity Across the Different Stages of the Value Chain [Graphic 3.5.2]

Areas of activity \ Value chain stages	Research, development, innovation	Supply chain	Production	Logistics	Distribution and marketing	Use
Product and process innovation	⊗		⊗			
Access to health care	⊗				⊗	
Sustainable food supply	⊗		⊗		⊗	
Human capital	⊗		⊗	⊗	⊗	
Business ethics	⊗		⊗	⊗	⊗	⊗
Product stewardship	⊗		⊗	⊗	⊗	⊗
Safety			⊗	⊗		
Environmental protection	⊗		⊗	⊗	⊗	⊗
Supplier management		⊗				
Stakeholder engagement / Partnering	⊗		⊗	⊗	⊗	⊗
Societal engagement					⊗	

In the augmented version of the Annual Report you will find a detailed GRI content index with the corresponding UNGC principles and the GRI aspects to which we have assigned our areas of activity. There we indicate whether our scope for exercising influence lies within or outside the company. An overview of our areas of activity, their definition, the corresponding Group targets and the assigned GRI aspects is available online.

www.bayer.com/gri-content-index

www.bayer.com/key-areas-of-activity

STAKEHOLDER DIALOGUE AT BAYER

We consider the maintenance of constant contact and continuous dialogue with our stakeholders at a global and local level to be very important. Bayer is a part of society and of public life. Society's acceptance and appreciation of our corporate activities are therefore essential to Bayer's reputation and business success. Involving the different interest groups is a vital element of the company's activities with the goal of creating better mutual understanding and trust in respect of our work and products.

ONLINE ANNEX: 3-5-1

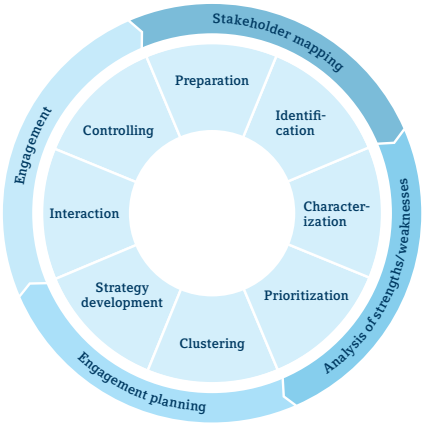
We believe that systematic dialogue with the stakeholders relevant to us offers a vital key to understanding their viewpoints and expectations and being able to incorporate them into our business decision-making processes as far as possible. This procedure helps us to identify social and market trends and developments early, avoid risks, assess our contribution and thereby set focus areas for our corporate activities.

GRI
G4-25

We systematically involve our stakeholders in various ways, including the Stakeholder Engagement Process. This describes how, throughout the Group, stakeholder groups for a project can be identified, their expectations charted and dialogue with them steered. The engagement process requires regular review and needs to be reflected against social trends.

GRI
G4-25

Stakeholder Engagement Process [Graphic 3.5.2-1]



To ensure the long-term acceptance and appreciation of our business, we seek to link the interests of our stakeholders even more closely to our corporate strategy. It is important to approach key social and political players right from the start of a new project and, early on, to canvass their support, identify risks and opportunities and seek open dialogue. The Group has developed a guide to engaging stakeholders in strategic decision-making processes such as investment projects and the launch of new products. The Virtual Resource Center platform that emerged from this provides online tools and a tutorial to help identify social and political trends at an early stage so that they can be successfully incorporated into project planning. The concept is currently being applied to various projects at Bayer, and the practical experience gathered is being channeled back into further refinements. In addition, senior managers are systematically undergoing specific training to improve interaction with critical stakeholders.

GRI
G4-26

Bayer's day-to-day stakeholder activities range from targeted dialogue at local, national and international level and active involvement in committees and specialist workshops, through to comprehensive information programs and participation in international initiatives and collaborations. Our stakeholder dialogue includes both communication and active interaction with individual target groups and also issue-related multi-stakeholder events.

GRI
G4-24

We basically divide the stakeholders with whom we mainly interact into four groups: partners, regulators, financial market players and social interest groups. In the following and in the relevant chapters, we use examples to provide an insight into the commitment Bayer has shown in 2015.

OUR PARTNERS

GRI
G4-27

Customers and suppliers

More on this topic can be found in Chapter 7 "Procurement, Production, Logistics, Distribution."

Employees

More information about internal communications can be found in Chapter 6 "Employees."

Universities and scientific institutions

Bayer's research and development activities are supported by an international network of collaborations with leading universities, public-sector research institutes and partner companies. More about this can be found in Chapter 4 "Research, Development, Innovation."

GRI
G4-26, G4-27

Schools and universities

You can find more information on Bayer's comprehensive activities in dialogue with school and university students in Chapter 11 "Social Commitment."

Associations

Alongside our business activities, Bayer is also an active member of, or holds leadership positions on, numerous national, European and international associations and their committees such as the Federation of German Industries (BDI, Vice-Presidency from 2015), the German Chemical Industry Association (VCI, Presidency), the German Equities Institute (DAI, Presidency), the European Chemical Industry Council (CEFIC, membership of the Board and Executive Committee), BusinessEurope and the International Council of Chemical Associations (ICCA). Bayer also currently chairs econsense, the Forum for Sustainable Development of German Business.

The subgroups are also active members of their respective industry associations. For example, HealthCare is on the boards of both the European (EFPIA) and the American (PhRMA) pharmaceutical trade associations, CropScience is represented on the boards of the international crop protection association CropLife International, the regional associations (CropLife America, Latin America, Africa & Middle East) and the European Crop Protection Association (ECPA), and the CEO of Covestro is the President of PlasticsEurope, the association of plastics manufacturers.

FINANCIAL MARKET PLAYERS

More information on our dialogue with the capital market – stockholders, capital investment companies, institutional investors, banks and rating agencies – can be found in the Chapter "Investor Information."

REGULATORS

Legislators, authorities and politicians

The framework for the company's operations is determined by authorities, legislators and politicians through statutory regulations and licensing, for example. The dialogues Bayer is currently pursuing with authorities and ministries at local, national and international level include targeted discussions with political decision-makers and active involvement in specialist workshops and cooperation projects. Our active participation in political decision-making processes is also explicitly sought by the key players involved.

Lobbying

In its Bayer Group Regulation "Code of Conduct for Responsible Lobbying," Bayer sets out clear and binding rules for its involvement in political matters, aiming to ensure transparency in any collaboration with the representatives of political institutions. The Group's Public and Governmental Affairs Committee is responsible for the strategic planning of Bayer's political work. This especially includes developing the company's political standpoints, as well as determining the position of the Bayer Board of Management on important political issues. In 2015, Bayer's political lobbying again focused on the acceptance of products and technologies in society, on submitting proposals for creating sustainable health care systems, on dismantling obstacles to innovation, on chemicals and energy policy, on trade policy and on climate protection. Bayer actively promotes the protection of intellectual property in order to be able to continue developing innovative products. In addition, Bayer makes suggestions relating to the regulatory framework for crop protection products and seeds. More information on our political principles can be found on the internet.

www.bayer.com/pol-involvement

www.bayer.com/eu-transparency-register

Our liaison offices in Berlin, Brussels, Washington, Moscow, Brasilia and Beijing are key points of contact between the Group and the political arena. Bayer actively participates in existing transparency initiatives. It publishes details of costs, employee numbers and any of the other statistics required in each country, e.g. in the transparency registers of the European institutions and the U.S. Congress. Bayer goes way beyond the statutory requirements in doing so. For instance, the Group also publishes data for countries, e.g. in Germany, where there is no legal requirement to publish such information. In 2015, the costs incurred at the liaison offices for human resources, material and projects totaled approximately: €1.2 million in Berlin, Germany; €2 million in Brussels, Belgium; €6.9 million in Washington, United States; €0.14 million in Moscow, Russia; €1.1 million in Brasilia, Brazil; and €1 million in Beijing, China.

www.bayer.com/us-lobbying-disclosure

In keeping with our Group regulation, we have committed not to make any direct donations to political parties, politicians or candidates for political office. However, some associations to which the Group belongs make donations on their own initiative, in compliance with statutory regulations.

In the United States, a number of employees use the Bayer Corporation Political Action Committee (BayPac) to make private donations supporting candidates for parliamentary office. Political action committees in the United States are state-regulated, legally independent employee groups. In the United States, companies are legally prohibited from donating to political candidates directly. Consequently, such donations are not donations made by the company. The BayPac contributions are regularly reported to the U.S. Federal Election Commission and can be viewed on its website.

www.fec.gov

SOCIAL INTEREST GROUPS

Nongovernmental organizations, the public, local community, competitors

Bayer is involved in a variety of projects, thematic initiatives and specialist conferences at a national and international level in order to play an active role in the common task of shaping sustainable development. Alongside exchange and cooperation with nongovernmental organizations (NGOs) and supranational organizations, this primarily involves dialogue with the public.

Among other involvement, Bayer is actively engaged in the U.N. Global Compact and its initiatives, the CEO Water Mandate and Caring for Climate, as well as the Global Compact LEAD network and local Global Compact networks. We have also acted as an organizational stakeholder in the Global Reporting Initiative since 2004.

HealthCare is an active participant in the social dialogue addressing sustainability issues and creates forums to encourage exchange and develop viable problem-solving approaches together with partners. The subgroup supports the International Dialogue on Population and Sustainable Development conference in close collaboration with various governmental and nongovernmental organizations. The concept of this political dialogue involves finding solutions for internationally relevant issues in reproductive health and sharing experiences of implementing the Millennium Development Goals.

GRI
G4-26, G4-27

Together with the DSW (Deutsche Stiftung Weltbevoelkerung – the German foundation for world population), HealthCare organizes a series of parliamentary evenings where experts in development cooperation and representatives from the political sphere, foreign agencies, medical research, international NGOs and think tanks discuss issues related to development policy and population growth.

GRI
G4-26, G4-27

CropScience wants to strengthen and expand societal dialogue about the need for and benefits of science and innovation in agriculture and inform the public of the potential and challenges in today's agriculture. The Agricultural Education program is primarily aimed at encouraging young people to take a greater interest in agriculture and food production. The program includes practical exercises in student laboratories, agricultural science scholarships and sharing ideas about the future of agriculture at international youth conferences such as the Youth Ag-Summit.

In 2015, the second Youth Ag-Summit was held in Canberra, Australia, in partnership with the Australian agricultural youth organization FFN (Future Farmers Network). The focus was on nutrition for the growing global population. At the end of the year, delegates from the Youth Ag-Summit presented a declaration by the young people on specific campaigns and recommendations for safeguarding food supplies to the United Nations' Committee of World Food Security in Rome, Italy.

The neighborhoods near Bayer's sites are a key subject in our stakeholder dialogue. The Group is working at all sites on being recognized as a reliable partner and attractive employer that is aware of its social responsibility. For example, the involvement of the local community plays a decisive role in the success of any investment project.

CropScience regularly uses forums, print media and personal discussions with citizens' initiatives, representatives of the church communities and the regional press to keep its neighbors continually informed, for instance at the Dormagen, Frankfurt-Hoechst and Knapsack sites in Germany. Stakeholder dialogue is also taking place with the communities around sites in other countries, such as Muskegon, United States, and Hangzhou, China.

Covestro engages in dialogue with neighbors, the public and non-governmental organizations (NGOs) on a case-by-case basis. The communities around the sites are proactively informed and involved when it comes to investment projects. One example is the intensive voluntary information policy adopted by Covestro and the German Chempark operator Currenta with respect to the relocation of a section of the existing carbon monoxide pipeline under the Rhine between Dormagen and Leverkusen. The permit documentation for the culvert could be openly viewed by interested parties in both cities affected and was additionally accessible on a specially dedicated website. For more detailed up-to-date information go to www.dueker.chempark.de (in German only). Both the media and local residents are kept informed about the planned carbon monoxide pipeline between the German sites of Dormagen and Krefeld-Uerdingen. The dialogue forum initiated by Covestro also plays an important role in the exchange of information with a critical public

www.bayer.com/
COV-CO-pipeline

In the United States, Covestro's site dialogue takes place through local Community Advisory Panels (CAPs). These, for example, organize regular meetings with local government or the community, in order to provide information on current issues or news from the area of site safety. In Germany, dialogue with the community is conducted through the Chempark neighborhood offices run by Currenta at the Lower Rhine sites.

Among other things, Covestro is a member of the U.N. Global Compact and is active in econsense. It also maintains various partnerships with NGOs as part of a commitment to wider society, for instance with Habitat for Humanity, which seeks to build sustainable and affordable housing in India.

6. Employees

Our business success is based to a large extent on the knowledge, skills, commitment and satisfaction of our employees. The aim of human resources work at Bayer is to create a working environment that encourages personal development and where every employee can drive forward innovations and achieve an excellent performance. Our corporate culture therefore builds on integrity, fosters strengths, identifies potential and helps us in our common goal of attracting the most talented employees and retaining them in the company in the long term.

Our human resources work starts with selecting and hiring new employees. We reward achievement and encourage ongoing development. We constantly develop our organizational structures and adapt them to the changing business environment. In addition, we have a wide range of initiatives and offerings to help managers lead their teams and enable employees to perform optimally.

The global strategy introduced by the Human Resources (HR) Committee helps us meet present and future business requirements. The HR Committee sets binding policies and defines priorities for all regions and organizational units. It is chaired by the member of the Board of Management responsible for human resources.

GRI
G4-26

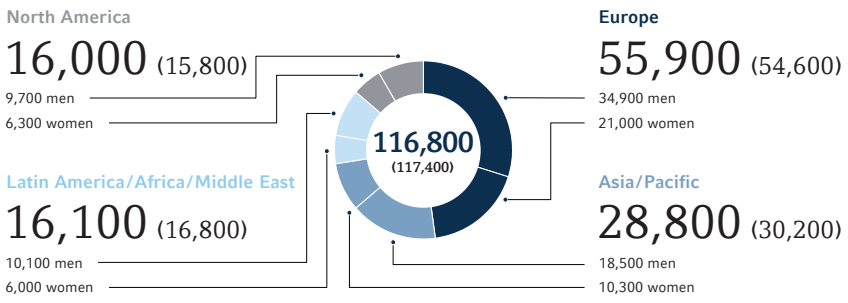
Group target: continuous improvement in employee engagement

See Chapter 1.4 for Group targets
See Chapter 4 for more details

To monitor the effectiveness of our human resources work, we conduct a Group-wide Employee Survey every two years. This is supplemented by institutionalized feedback processes and analyses. The information we receive in this way is used to steadily improve our activities. One area of focus derived from the results of the last Employee Survey was improving our innovation culture. Cultivating innovation has therefore been integrated into the Bayer Competency Model as one of the key leadership competencies and we have introduced new initiatives such as the "WeSolve" knowledge platform. Further information on Bayer's innovation culture can be found in Chapter 4 "Research, Development, Innovation."

At the end of 2015 we had 116,800 employees worldwide.

Employees by Region and Gender 2015 [Graphic 3.6.1]



2014 figures restated and in parentheses
Number of employees converted into full-time equivalents (FTE)
Values rounded to the nearest hundred

IDENTIFYING TALENTS

Bayer actively encourages its employees to develop their individual abilities, talents and strengths. Scientific innovations, changing customer requirements and a strong competitive environment are just some of the reasons why we welcome open-minded employees. A professional approach to attracting suitable talents is key to this. In 2015 we successfully continued the rollout of our uniform employer branding "Passion to Innovate | Power to Change." This message expresses what Bayer expects of its employees and, at the same time, what it can offer them. The employer branding "Passion to Innovate | Power to Change" was deployed worldwide for internal communication with employees in 2015 and was also used to position Bayer as an employer in many key markets. In addition, in 2015 we took the first steps toward further optimizing Group-wide recruitment of new employees. This was supported by

an increased presence in social media. Our excellent reputation as an employer is shown by many external rankings, awards and accolades.

ONLINE ANNEX: 3-6-1

New Hires[1] by Region and Gender [Table 3.6.0-1]

	Women		Men		Total	
	2014	2015	2014	2015	2014	2015
Region						
Asia / Pacific	1,745	1,569	2,758	2,762	4,503	4,330
Europe	2,717	2,359	3,104	3,162	5,821	5,521
Latin America/Africa/Middle East	1,080	820	1,670	1,400	2,750	2,220
North America	990	2,359	1,510	1,406	2,500	3,765
Total	**6,532**	**5,772**	**9,042**	**8,729**	**15,574**	**14,502**

The figures also include the discontinued operations.
[1] Converted into full-time equivalents (FTE)

Vocational training plays an important role at Bayer in order to meet the need for skilled employees. We provide sound training in more than 20 different occupations and offer more vocational training places than required to meet our needs. In Germany alone, around 920 young people embarked on a vocational training course at Bayer in 2015. We also give young people an opportunity to gain an insight into working for our company at any early age. Overall, Bayer provided around 2,900 demanding professional internships for students around the world in 2015.

www.bayer.com/career

PRESENT EMPLOYEE DATA

On December 31, 2015, Bayer had around 116,800 employees worldwide, a slight decrease compared with the previous year. In Germany we had some 36,700 employees (2014: approximately 35,700), which was 31% of the total Group workforce.

Employment Data[1] [Table 3.6.1]

	2014	2015
	FTE	FTE
Employees by function		
Production	49,300	47,800
Marketing and distribution	45,100	44,700
Research and development	13,900	14,700
General administration	9,100	9,600
Total	**117,400**	**116,800**
Apprentices	2,600	2,600

2014 figures restated
Values rounded to the nearest hundred
[1] The number of employees on either permanent or temporary contracts is stated in full-time equivalents and rounded to the nearest hundred. Part-time employees are included on a pro-rated basis in line with their contractual working hours.

The breakdown by age group was as follows:

Employees by Age Group [Table 3.6.2]

Age in years	< 20	20 – 29	30 – 39	40 – 49	50 – 59	> 60
2014	0.1%	15.8%	30.2%	28.2%	22.3%	3.4%
2015	**0.1%**	**15.3%**	**30.0%**	**27.7%**	**23.0%**	**3.9%**

Of the total Group workforce, 112,100 employees had permanent contracts while 4,700 had temporary contracts.

ONLINE ANNEX: 3-6-2

Employees[1] by Employment Status, Region and Gender 2015 [Table 3.6.2-1]

	Permanent employees			Temporary employees		
	Women	Men	Total	Women	Men	Total
Europe	19,900	33,500	53,400	1,100	1,400	2,500
North America	6,200	9,600	15,800	100	100	200
Asia/Pacific	10,100	17,700	27,800	200	800	1,000
Latin America/Africa/Middle East	5,700	9,400	15,100	300	700	1,000
Total	**41,900**	**70,200**	**112,100**	**1,700**	**3,000**	**4,700**

[1] The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE) and rounded to the nearest hundred. Part-time employees are included on a pro-rated basis in line with their contractual working hours.

The voluntary fluctuation rate shows that we were again successful in retaining staff in the company long-term. On the reporting date, our employees had worked for the company for an average of 11 years. The proportion of employee-driven terminations (voluntary fluctuation) was 5.0% in 2015, level with the previous year's figure. Group-wide, the fluctuation rate was around 13.9% and thus up 2.5 percentage points on the previous year. This figure includes all employer- and employee-driven terminations, retirements and deaths.

Employee Fluctuation [Table 3.6.3]

	Voluntary fluctuation		Total	
	2014	2015	2014	2015
Women	5.3%	5.8%	11.6%	13.9%
Men	4.6%	4.5%	11.3%	13.9%
Total	**4.8%**	**5.0%**	**11.4%**	**13.9%**

ONLINE ANNEX: 3-6-3

Employee Fluctuation[1] by Region, Gender and Age Group [Table 3.6.3-1]

	Europe		North America		Asia/Pacific		Latin America/ Africa/Middle East		Total	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
	%	%	%	%	%	%	%	%	%	%
Women	**8.2**	**7.8**	**14.8**	**15.7**	**15.2**	**22.2**	**13.6**	**19.0**	**11.6**	**13.9**
<30[2]	23.6	19.5	31.0	36.1	17.7	24.9	23.6	29.6	21.5	24.5
30–49	6.2	6.5	13.1	14.1	13.6	20.4	11.3	17.1	9.8	12.6
>=50[3]	5.3	5.4	13.6	13.2	19.5	29.1	9.9	12.9	8.5	9.1
Men	**6.8**	**6.7**	**15.8**	**13.2**	**16.1**	**23.6**	**13.0**	**21.8**	**11.3**	**13.9**
<30[2]	32.1	23.8	40.0	35.8	21.4	31.3	27.4	41.9	26.8	30.7
30–49	4.4	4.7	13.5	10.0	14.3	21.7	10.3	17.5	9.4	12.3
>=50[3]	4.1	4.9	14.1	12.8	13.2	17.2	9.4	20.2	7.3	8.7
Total	**7.4**	**7.1**	**15.4**	**14.2**	**15.8**	**23.1**	**13.2**	**20.7**	**11.4**	**13.9**

[1] The data include all employer- and employee-driven terminations, retirements and deaths.
[2] The comparatively high proportion of employees in the <30 age group is due to the inclusion of employees on temporary contracts (working for 2–6 months of the year) and other short-term employees. It does not include apprentices.
[3] The fluctuation rates for the >= 50 age group are mainly due to retirements.

At our significant locations of operation, which represent a selection of countries in which we generate around 68% of our total sales, Bayer also uses temporary personnel from staffing agencies on a small scale, based on stringent rules that are rooted in the LIFE values.

ONLINE ANNEX: 3-6-4

Temporary personnel from staffing agencies are primarily used where this is necessary as a result of short-term personnel requirements, fluctuations in order levels, temporary projects or long-term illness. The proportion of temporary staff employed in Germany is around 2.9% of the total workforce, and the average for the significant locations of operation is 7.5%.

6.1 Utilizing Potential to the Full: Personnel Development at Bayer

We aim to develop our employees on the basis of their abilities. To ensure this, in 2015 we introduced the Bayer Competency Model as a uniform, Group-wide standard. It comprises 16 clearly defined core and leader competencies, which are derived from our business strategy and LIFE values. They enable both employees and managers to use a common language and enhance transparency of the skills and behaviors we expect from both current and future employees.

This common understanding facilitates development opportunities for employees and at the same time gives them guidance on their career path. The Bayer Competencies are now used as criteria for many employee development tools, ranging from recruitment interviews through the Development Dialogue to various Assessment Centers to identify future managers. In 2015, 28,000 nonmanagerial staff and 23,000 managerial staff around the world were trained to use the competencies in interviews and Development Dialogues.

The aim of the Development Dialogue is to draw up an individual development plan that fosters employees' strengths and addresses areas in which they would like to develop further. 30,000 Development Dialogues were held in 2015. They are an opportunity for employees to discuss their personal strengths and development needs, career expectations and professional aspirations with their supervisor. This tool is to be rolled out Group-wide and given a firm place in our global leadership culture. In 2015, the Development Dialogue was extended to nonmanagerial employees in Germany.

Thanks to its wide-ranging business activities, Bayer is able to offer employees throughout the Group good opportunities for development. Vacancies throughout the Bayer Group, from nonmanagerial right up to senior management level, are advertised via a globally accessible platform. In 2015, we posted around 13,000 vacancies in 61 countries on this platform.

Selective training is also part of our philosophy of personnel development. We actively encourage "lifelong learning" by our employees as an integral element in the management of demographic change. Our aim is to empower all employees to broaden their knowledge and skills and keep up with the latest changes throughout their working lives.

www.bayer.com/training

We have training programs for all employees throughout the company. An overview of the various programs, together with details of their aims and uptake can be found on the internet.

At the heart of our ongoing training concept is the Group-wide Bayer Academy, which bundles our extensive range of continuing education offerings. Alongside systematic development of managerial employees, it offers continuous professional training through various functional academies. Managers from different management levels have taken a total of 31,966 training courses through the programs offered by the Bayer Academy for managers since 2013, including 11,623 in 2015. In 2015, the Bayer Academy was honored with the renowned Brandon Hall Group Excellence Award in bronze for its training offerings to enhance the performance and feedback culture. A total of 302,205 training sessions in Skill & Competency were taken by managers across all managerial levels.

Every employee at our significant locations of operation received an average of 20.0 hours of vocational and ongoing training.

ONLINE ANNEX: 3-6.1-1

Training Activities in Hours in 2015 by Employee Group and Gender[1] [Table 3.6.3-2]

	Women	Men	Total
Employee group			
Senior management	18.3	15.9	16.3
Junior management	33.2	24.4	27.4
Specialists	19.9	14.3	16.4
Overall average	**24.1**	**17.7**	**20.0**

The figures also include the discontinued operations.
[1] Selected training activities in the 14 largest countries covered by the global training system, in which we generate 71.8% of our sales; the gender-specific averages do not include the United States or Japan as statutory regulations preclude differentiation by gender in these countries.

ACHIEVING EXCELLENT PERFORMANCE – FOSTERING FLEXIBILITY

Above-average performance is only possible in an environment where fairness and respect are key elements of the corporate culture. That includes observing Bayer-wide standards of conduct and protecting employees from discrimination, harassment and retaliation. These standards are set forth in the corporate policy on Fairness and Respect at Work.

Specific and differentiated feedback forms the basis for positive personal development. Bayer encourages a culture of candid feedback to help employees achieve their individual goals. The global performance management system is part of this culture. Employees agree individual objectives with their supervisor that are directly based on corporate goals. Alongside continuous feedback throughout the year, attainment of the objectives is assessed by the supervisor at the end of the year and discussed personally with each employee. The results are documented in the employee portal and made available to each employee on an individual basis. In 2015, this system covered more than 88,000 employees, i.e. about 75% of our total workforce. Of the participants, 42% were female and 58% male. The system is mandatory for all managerial employees. This ensures that they receive feedback on how well they have applied our corporate values in the fulfillment of their individual objectives. Applying the LIFE values is as important as meeting business targets and therefore affects the level of their variable compensation.

Bayer's corporate culture is shaped by its employees. As a modern employer, Bayer endeavors to respond to employees' widely differing lifestyles. The company therefore offers employees in all countries a wide range of options to help them balance employment with their personal and family lives. Today's employees and prospective employees attach great importance to flexible working arrangements and to support in caring for children and close relatives. Bayer offers a variety of flexible working opportunities throughout the world. In many countries, these go well beyond the statutory requirements. We significantly expanded our benefits and services in this area in 2015, for example in China.

In 2015, Bayer concluded a new General Works Agreement with the Works Council in Germany on a binding and uniform framework for short-term mobile working. For the first time, this agreement is applicable throughout the Group.

We regularly conduct extensive global surveys of family-friendly working arrangements. In 2015, these showed further progress at our significant locations of operation. New and improved programs for flexible working from home, flextime and caring for relatives have been introduced. In 2015, the Bayer Group had some 10,200 part-time employees, in particular in Europe. This figure represents 8.5% of the total headcount.

ONLINE ANNEX: 3-6.1-2

Percentage of Part-Time Employees by Region and Gender [Table 3.6.3-3]

	Women		Men		Total	
	2014	2015	2014	2015	2014	2015
	%	%	%	%	%	%
Region						
Asia/Pacific	2.2	2.1	0.3	0.1	1.0	0.8
Europe	23.5	24.1	11.2	12.2	15.9	16.9
Latin America/Africa/Middle East	0.1	0.2	0.0	0.0	0.1	0.1
North America	1.6	1.2	0.1	0.2	0.7	0.6
Total	**12.1**	**12.7**	**5.3**	**6.0**	**7.9**	**8.5**

Bayer enables both men and women to take parental leave. Since national parental leave regulations vary widely from country to country, we only compile data for our significant locations of operation. Group-wide 1,315 women and 788 men took parental leave in 2015. By the end of the year, around 1,847 employees on parental leave had returned to work. 81% of women and 99% of men who took parental leave in 2015 returned to work in the same year.

ONLINE ANNEX: 3-6.1-3

The next table shows the number of employees who have returned after the standard statutory parental leave program and Bayer's more far-reaching "Family & Career" model in the past seven years, using Germany as an example. By the end of 2015, 82.6% had returned to work.

Employees Returning from Parental Leave using Germany as an Example [Table 3.6.3-4]

	%	Absolute
Employees who have taken parental leave since 2009	**100.0**	**3,178**
Returnees by 2015	82.6	2,624
Women	**58.7**	**1,867**
Still on parental leave/with a dormant employment contract	17.2	321
Returned by 2015	72.4	1,352
Left the company[1]	10.4	194
Men	**41.3**	**1,311**
Still on parental leave/with a dormant employment contract	1.3	17
Returned by 2015	97.0	1,272
Left the company[1]	1.7	22

[1] Includes employees who have left the company due to employer- and employee-driven terminations, severance agreements and expiration of contracts

The General Works Agreement on caring for close relatives helps Bayer employees in Germany to combine working with their role as carers.

ONLINE ANNEX: 3-6.1-4

Under this agreement, employees can take up to 10 days' paid leave to provide emergency care for family members. For longer periods, they are entitled to work part-time. During this time, their salary can be topped up by drawing funds from their long-term account. Alternatively, employees who need to care for close relatives full-time can take unpaid leave for up to six months (or up to one year in exceptional cases). The new General Works Agreement on mobile working, which includes working from home for short periods, also offers employees greater flexibility in dealing with personal emergencies.

EMPLOYEE COMMUNICATION

GRI
G4-26

We regard providing regular, up-to-date information for our employees and involving them through active dialogue as an integral part of modern human resources and talent management based on competitive structures and processes. To ensure this, Bayer stepped up open and transparent communication with employees in 2015. The previously separate intranet sites providing HR information, company news, country-specific information and background facts have been combined, offering extensive information on career paths, compensation, training and benefits.

Communication with employees also includes meeting national and international obligations to inform staff promptly and extensively about upcoming changes in the Group.

In Germany we combine providing timely information to the employee representatives on the Economics Committee of the company concerned with coordinating and jointly deciding on the proposed communication measures.

We also actively involve our employees in dialogue through a range of offerings and specifically encourage open discussion. These include regular employee assemblies, information events for managers and the European Forum, where employee representatives from all European sites engage in discussion with the Board of Management. Particular attention is paid to explaining strategic issues, business performance, research, innovation and sustainability.

6.2 Diversity and Internationality

A diverse employee structure is vital for our company's future competitiveness. Diversity improves our understanding of changing markets and consumer groups, gives us access to a broader pool of talented employees, and enables us to benefit from the enhanced innovative and problem-solving abilities that are demonstrably associated with a high cultural diversity within the company.

A better gender and cultural balance at management level is especially important for our success as a company. Our activities in this area are bundled in "Leading Across Cultures and Genders." At the heart of this program are special training sessions for managers. These provide an opportunity for them to consider the economic benefits of greater diversity, cultural and gender-specific differences and positive examples from within the Group in order to develop action plans for their own areas of responsibility.

ONLINE ANNEX: 3-6.2-1

Since November 2014, Bayer has been a member of the Gender Parity Council of the World Economic Forum in Davos. It is also a founding member of the new "Chefsache" network sponsored by the German Chancellor Angela Merkel, which was set up in the summer of 2015. The members of this initiative are committed to working together to develop practically oriented strategies to drive diversity and gender balance in their organizations.

Overall, the Bayer Group employs people from around 150 different nations. Of the members of our Group Leadership Circle, in which 33 nationalities are currently represented, around 67% come from the country in which they are employed. The Group Leadership Circle comprises managers who perform senior functions in the Group. At the end of 2013, 82% of senior managers in our five top contract levels came from Western Europe, the United States and Canada and 18% came from other countries. By the end of 2015, the proportion of employees in the latter group had increased by three percentage points to 21%. We aim to increase this to 25% by 2020.

Group target 2015: increase in the proportion of senior managers from outside the E.U., the United States or Canada to 25%

In 2010, Bayer set itself the voluntary target of raising the proportion of women at the five highest management levels throughout the Group to 30% by the end of 2015. In just five years, we have increased the proportion of women in this management segment from 21% to around 28%. We aim to raise this to 35% by 2020.

Group target 2015: increase in the proportion of women in senior management to 30%

In the Group Leadership Circle – the top management level below the Board of Management – the ratio likewise improved from 93% men and 7% women at the end of 2010 to 87% men and 13% women at the end of 2015.

See Chapter 1.4 for Group targets

ONLINE ANNEX: 3-6.2-2

Bayer Group Workforce Structure[1] [Table 3.6.3-5]

	Women		Men		Total	
	2014	2015	2014	2015	2014	2015
Senior management	2,800	3,100	7,700	7,900	10,500	11,000
Junior management	10,900	11,300	16,600	16,700	27,500	28,000
Skilled employees	30,200	29,300	49,200	48,500	79,400	77,800
Total	**43,900**	**43,700**	**73,500**	**73,100**	**117,400**	**116,800**
Apprentices	800	800	1,800	1,800	2,600	2,600

2014 figures restated
[1] Number of employees converted into full-time equivalents (FTE) and rounded to the nearest hundred

6.3 Employee Compensation and Variable Pay

Compensation at Bayer combines a basic salary reflecting performance and responsibility with elements based on the company's success, plus extensive additional benefits. In this way, we aim to offer our employees working conditions that give them a high degree of security and reliability. Adjustments based on continuous benchmarking are designed to ensure that our compensation is always internationally competitive. We also attach great importance to equal pay for men and women, providing fair and competitive compensation worldwide and informing our employees transparently about the overall structure of their compensation.

ONLINE ANNEX: 3-6.3-1

At Bayer, individual salaries are based on each employee's personal and professional abilities and the level of responsibility assigned to them. At managerial level, this is based on uniform evaluation of all positions throughout the Group using the internationally recognized Hay method. In areas of the Group and jobs that fall within the scope of binding collective bargaining agreements, there are no differences in pay based on gender either. This also applies for the compensation of trainees. In the Emerging Markets and developing countries, too, compensation levels are aligned to local market conditions. To provide a transparent overview of their compensation, including all additional benefits provided by the company and employer pension and social insurance contributions, more than 30,000 employees in 12 countries up to now annually receive an extensive "Total Reward Statement" containing all relevant information. This will be rolled out successively to further countries in the next few years.

Our compensation concept also includes variable one-time payments. More than €1,100 million is earmarked for bonus awards to employees for 2015 under the Group-wide short-term incentive (STI) program. In many countries, employee stock programs enable our staff to purchase Bayer shares at a discount. This offers them a further opportunity to participate in the company and its business performance. We also offer senior managers throughout the Group "Aspire," a uniform long-term compensation program based on the development of the share price (see NOTE [26.6] to the consolidated financial statements). For members of the Group Leadership Circle, an appropriate personal investment in Bayer stock is the prerequisite for participating in this program.

In the continuing operations, our personnel expenses amounted to €11,203 million in 2015 (2014: €9,693 million). The change was mainly due to currency effects, an increase in average employee numbers, and higher employee bonuses. Offering a stable income and financial security is a basic principle of our global compensation strategy. This also applies to financial security in old age. More than 70% of Bayer employees worldwide are included in a Bayer pension plan. Pension provision is available to most employees for the period after their retirement. The way these benefits are provided varies according to the legal, fiscal and economic conditions of each country, the benefits generally being based on employee compensation and years of service. Further details of pension provision and pension obligations are given in NOTE [29] to the consolidated financial statements.

Personnel Expenses and Pension Obligations [Table 3.6.4]

	2011	2012	2013	2014	2015
	€ million	€ million	€ million	€ million	€ million
Personnel expenses	8,726	9,194	9,430	9,693	11,203
of which pension and social security contributions	1,672	1,823	1,845	1,818	2,191
Pension obligations[1]	19,310	22,588	20,682	27,771	26,809

2014 figures restated; figures for 2011 – 2013 as last reported
[1] Present value of defined-benefit obligations for pensions and other post-employment benefits for continuing and discontinued operations

HUMAN RIGHTS AND SOCIAL RESPONSIBILITY

Our social responsibility as a company and an employer is based on our corporate values and our unreserved commitment to supporting and fostering human rights in our sphere of influence. Bayer's Human Rights Position is set out in a binding Group-wide policy. We are committed to respecting, fostering and reporting transparently on human rights both internally and within our sphere of influence. That means, in particular, that we have policies, processes and monitoring systems to enforce human rights in our business operations. Alongside working conditions in the Bayer Group, these outline our expectation that human rights will be respected at all stages in the supply chain, as detailed in our Supplier Code of Conduct. In addition, our LIFE values and Corporate Compliance Policy commit all employees around the world to fair and lawful conduct toward staff, colleagues, business partners and customers. We are a founding member of the UN Global Compact and respect the United Nations' Declaration of Human Rights and a range of globally recognized declarations applicable for multinational corporations.

See Chapter 7.1

ONLINE ANNEX: 3-6.3-2

These include, in particular, the OECD Guidelines for Multinational Enterprises, the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy, and the core labor standards of the International Labour Organization (ILO). We also observe the U.N. Guiding Principles on Business and Human Rights, which were adopted in 2011. To implement these, in 2015, we played an active part in the consultation process, which aims to support the German government in drafting a national action plan.

To enhance our employees' awareness of the importance of human rights in their day-to-day activities, we trained around 52% of our workforce in the main aspects of our Human Rights Position at various courses with a total duration of 201,000 hours in 2015. That included training for internal and external security staff. The compliance organizations at Group and country levels monitor compliance with the relevant corporate policies. If there are signs of violation, employees can contact their Compliance Officer at any time, anonymously if required. Alternatively, they can contact the Group-wide compliance hotline, which is available worldwide to the general public as well as to employees. For further details see Chapter 16.3 "Compliance."

See Chapter 16.3

At Bayer, social responsibility includes ensuring safe working conditions and thus an environment where our employees can work and undertake international business travel without fear. We support our employees by providing training to prepare them for business trips, including training in the correct conduct in emergencies.

Our social responsibility is also reflected in our approach to necessary changes and restructuring measures. In Germany, which remains the company's largest operational base with 36,700 employees, business-related dismissals are excluded through the end of 2020 for a large proportion of employees under an agreement with the employee representatives.

In 2015, the working conditions for around 53% of our employees worldwide were governed by collective or company agreements. The contractually agreed working hours of our employees do not exceed 48 hours a week in any country. At various country companies, the interests of the workforce are represented by elected employee representatives who have a right to be consulted on certain personnel-related decisions.

ONLINE ANNEX: 3-6.3-3

Percentage of Collective Agreements by Region [Table 3.6.4-1]

	Percentage of employees covered by collective agreements, especially on compensation and working conditions[1]	
	2014	2015
	%	%
Region/area		
Asia/Pacific	14	15
Europe	87	88
Latin America/Africa/Middle East	45	45
North America	5	5
Total	**52**	**53**

[1] Collective or company agreements

Our understanding of our role as a socially responsible company includes a commitment to helping disadvantaged people. We employ some 2,500 people with disabilities in 29 countries. That is around 2% of our total workforce. 35% are female and 65% male. Most employees with disabilities work for our companies in Germany, where they made up 4.9% of the workforce in 2015.

An important part of our sustainable human resources policy is ensuring a high level of social protection for our employees. For example, nearly all employees worldwide either have statutory health insurance or can obtain health insurance through the company. In 2015, we once again expanded or improved the quality of the health benefits provided for employees in many countries. 78% of employees have access to a company pension plan.

Health Insurance and Pension Coverage [Table 3.6.5]

	Health insurance[1]		Pension plans[2]	
	2014	2015	2014	2015
	%	%	%	%
Region				
Asia/Pacific	95	95	57	64
Europe	99	99	86	86
Latin America/Africa/Middle East	94	93	59	56
North America	92	93	99	99
Total	**96**	**96**	**77**	**78**

[1] State or employer-/employee-funded
[2] Programs to supplement statutory pension plans

Employees' health and vitality are important to Bayer. The company therefore specifically encourages health awareness and healthy lifestyles. We have therefore introduced a wide range of workplace health management programs at all levels, which are being expanded in response to employee surveys. Further information can be found in Chapter 9.1 "Occupational Health and Safety."

See Chapter 9.1

7. Procurement, Production, Logistics, Distribution

We strive to offer our customers innovative products and high-quality solutions. This requires efficient processes all along the value chain for our products – in procurement, production, logistics and distribution. Economic factors play a role here, as do ecological and social criteria such as comprehensive product stewardship, human rights and a clear commitment to safety and environmental protection.

At our production sites throughout the world, we continuously work to improve our cost structure, react more rapidly to market fluctuations through increased flexibility and achieve our ambitious quality and safety objectives. The quality requirements for our products and services vary due to divergent regulatory demands: the manufacture of pharmaceutical and medical devices in particular is subject to extraordinarily stringent requirements.

This chapter presents the (internal) value chain: how we procure, manufacture and transport our products, as well as how we market and distribute them.

7.1 Procurement and Supplier Management

Bayer's procurement organization supplies our internal business partners around the world with goods and services while operating in accordance with the ethical, ecological, social and economic principles established in our procurement directive. This directive is binding for all employees. Our procurement activities aim to ensure security of supply, provide a financial value contribution and meet quality and sustainability requirements. Procurement makes a substantial value contribution to the Bayer Group by centrally pooling know-how, leveraging network effects and economies of scale throughout the organization and facilitating access to innovation.

We exert significant influence on society and the environment in many regions as a result of our procurement activities, which in 2015 took place in 151 (2014: 147) countries and accounted for a procurement spend of some €22.2 billion (2014: €20.3 billion) from transactions with approximately 112,500 (2014: approximately 112,000) suppliers in all areas.

In 2015, our procurement spend in Germany, the United States and Japan accounted for nearly 67% of our expenditures in OECD (Organisation for Economic Cooperation and Development) countries, which in turn made up about 53% of the Bayer Group's global procurement spend. Brazil, India and China together accounted for about 68% of expenditures in the non-OECD countries or about 14% of the total spend.

ONLINE ANNEX: 3-7.1-1

Procurement Spend and Number of Suppliers in OECD and Non-OECD Countries in 2015 [Table 3.7.0-1]

	Spend		Suppliers	
	€ billion	%	Number	%
OECD countries				
Germany	5.4	24.3	22,286	19.8
United States	5.3	23.9	11,515	10.2
Japan	1.1	4.8	1,888	1.7
Other	5.8	26.3	43,461	38.7
Total	**17.6**	**79.3**	**79,150**	**70.4**
Non-OECD countries				
China	2.1	9.5	4,032	3.6
India	0.5	2.5	3,738	3.3
Brazil	0.5	2.1	2,387	2.1
Other	1.5	6.7	23,103	20.6
Total	**4.6**	**20.7**	**33,260**	**29.6**

Where possible, Bayer buys locally. In 2015, this applied to 75% of our procurement spend at our main business locations, and 71% of our total worldwide procurement spend. This enables us to align our procurement activities to the requirements of our sites in the regions and to help strengthen local economies.

Bayer minimizes procurement-specific risks for goods and services of strategic importance, such as supply bottlenecks or major price fluctuations, through long-term contracts and active supplier management. In this way we ensure both the company's global competitiveness and smooth production processes.

Indirect goods that are not of relevance to production are procured by the respective major user within the Bayer Group. The individual procurement organizations were coordinated during the reporting period by the Group Procurement Committee, which reports directly to the Chief Financial Officer. In line with the company's procurement strategy, direct and production-related procurement in the Bayer Group is organized decentrally in the subgroups so that Bayer can act in accordance with differentiated market and production requirements. The composition of HealthCare's supplier portfolio has changed as a result of the acquisitions of the nonprescription medicines businesses of Merck & Co., Inc. and Dihon Pharmaceutical Group Co. Ltd., as well as the divestiture of the Diabetes Care business.

ONLINE ANNEX: 3-7.1-2

Main Procurement Products by Subgroup/ Segment [Table 3.7.0-2]

Subgroup/segment	Main procurement products
HealthCare	
Pharmaceuticals	Zetia (finished product), cell media culture (raw material), Betaferon (interferon-beta-1b) (bulk product)
Consumer Health	Consumer Care: Supradyn (finished product), naproxen (active ingredient), Berocca (finished product) Radiology: iopamidol (active ingredient), iodine (raw material), cyclen (raw material) Animal Health: moxidectin (active ingredient), Avenge (finished product), Baycox-isocyanate (intermediate)
CropScience	
CropScience	Packaging materials, adjuvants and solvents (e.g. rapeseed oil, soybean oil, toluene, ammonia), complex intermediates (e.g. pyridine polyfluoride) and active ingredients (e.g. mancozeb)
Covestro	
Covestro	Key basic raw materials are benzene and phenol, propylene oxide, toluene, acetone and hexamethylenediamine.

The use of renewable raw materials currently plays only a subordinated role at Bayer. We use them more intensively when it makes technical, economic and ecological sense to do so.

ONLINE ANNEX: 3-7.1-3

A number of hormones are synthesized at **HealthCare** through certain sterols and phytosterols that result as byproducts during the production of plant oils from soybeans, oilseed rape/ canola or sunflowers, as well as during wood processing. Palm oil or palm kernel oil is not used here due to its low sterol content. We additionally purchase various steroids that are manufactured from diosgenin or its intermediate stages. Today, this substance is usually obtained from yam grown in countries such as China. We also use raw materials such as water, glucose, yeast, soybean starch, castor oil and corn steep water in our fermentation processes. Extracts of plant leaves (Centella asiatica) are used in some Consumer Care products. This plant is widely found in Asia and is not an endangered species. We also take great care with the cultivation and harvesting of the raw materials for manufacturing plant-based pharmaceuticals for holistic treatments. They are collected and cultivated in line with the GACP (Good Agricultural and Collection Practice) guidelines of the European Medicines Agency.

On the European market, **CropScience** offers a mild weed control product based on fatty acids derived from palm oil. As the production of palm oil is often associated with social and ecological problems, Bayer takes part in the Round Table for Sustainable Palm Oil (RSPO). This underscores our commitment to responsible materials procurement. In 2015, Bayer for the second time purchased GreenPalm certificates, which support the production of sustainable palm oil.

Covestro is developing processes for the replacement of raw materials derived from crude oil. In 2016, for example, the company is planning the commercial production and market launch of pentamethylene diisocyanate (PDI), an isocyanate produced from a novel renewable raw material derived in turn from biomass.

Sustainability in supplier management

Bayer regards adherence to sustainability standards within its supply chain as both a crucial factor for value creation and an important lever for minimizing risks. For this reason, not just economic standards, but also ethical and environmental, social and governance (ESG) standards apply for the selection of new as well as established suppliers. These standards are defined in Bayer's Supplier Code of Conduct, which is based on the principles of the U.N. Global Compact and our Human Rights Position. It forms the basis for our collaboration with suppliers and is available online in 14 languages. The Code of Conduct is integrated into electronic ordering systems and contracts throughout the Bayer Group. Since 2015, furthermore, relevant new and renewed supply contracts have contained special clauses that request suppliers to observe the sustainability requirements defined in the Code of Conduct and authorize Bayer to monitor this.

Group targets: supplier management

See also Chapter 1.4 for Group targets

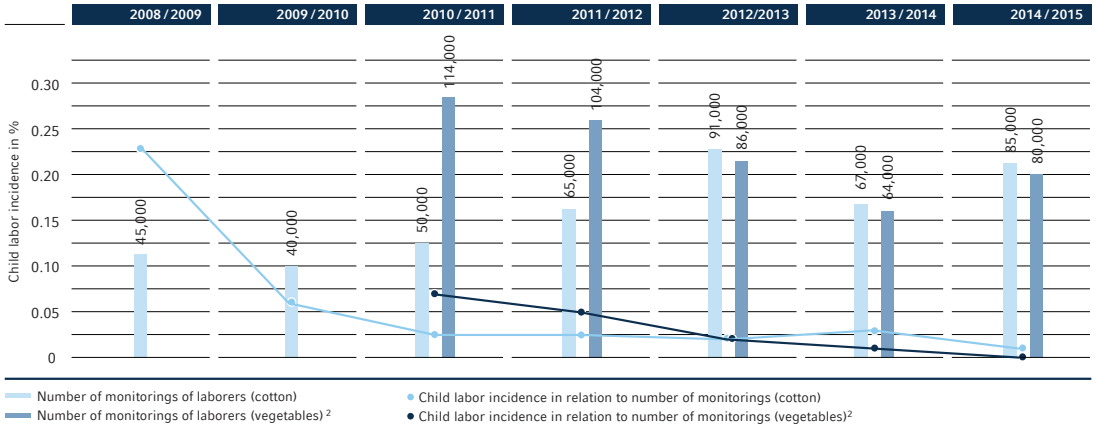
In order to consistently drive sustainability in supplier management, Bayer has set ambitious targets. By 2017, we plan to evaluate all strategically important suppliers i.e. those with a major influence on business in terms of, for example, procurement spend and long-term collaboration prospects (3-5 years) according to sustainability-relevant criteria (target attainment as of 2015: 84%). By 2020, we also aim to include in the evaluation all those suppliers with a significant procurement spend (> €1 million p.a.) that are regarded as potential high-risk suppliers (target attainment as of 2015: 73%). Risk definition is based on a country- and material-based approach. Another objective is the development and establishment of a sustainability standard for our supply base by 2020. Here we are working with both the Together for Sustainability (TfS) initiative and the Pharmaceutical Supply Chain Initiative (PSCI). The goals include standardizing and sharing sustainability assessments and audits of suppliers in the same industry and describing clear expectations regarding sustainability so as to establish appropriate sustainability practices among our suppliers. The TfS initiative counts 16 and the PSCI 19 participating companies.

A key challenge for sustainable supplier management in the Bayer Group is to prevent child labor in the seed supply chain of our CropScience subgroup.

Our Human Rights Position is unequivocal and includes a strict ban on child labor. We therefore also obligate our suppliers along our supply chain strictly to refrain from employing children. For many years, CropScience has taken systematic action to prevent child labor in the seed supply chain in India, Bangladesh and the Philippines through its Child Care Program. Special teams from Bayer visit the fields used, for example, in cotton, rice and vegetable seed production without prior notice throughout the cultivation season in order to raise awareness of the issue and the Bayer requirements and to determine the age of the workers there. Thanks to this stringent monitoring system, which is supported by local educational initiatives, there are now only very few incidences of child labor among our contractors, and we are closely tracking these cases. Further risk assessments were carried out in vegetable and rice seed production for Bayer in Thailand, China, Indonesia and Vietnam. It is planned to introduce the Child Care Program in these countries as well in 2016. We measure the success of our comprehensive program using the indicators "Child labor incidence per monitored km²" and "Child labor incidence as a percentage of total monitorings of laborers."

In the following diagram depicting the latter indicator, we demonstrate the continued elimination of child labor in Indian cotton and vegetable seed production sites contracted by Bayer based on the results of field monitoring.

Child Labor Incidence in the Production of Cotton and Vegetable Seed for Bayer in Relation to the Total Number of Monitorings[1] [Graphic 3.7.1]

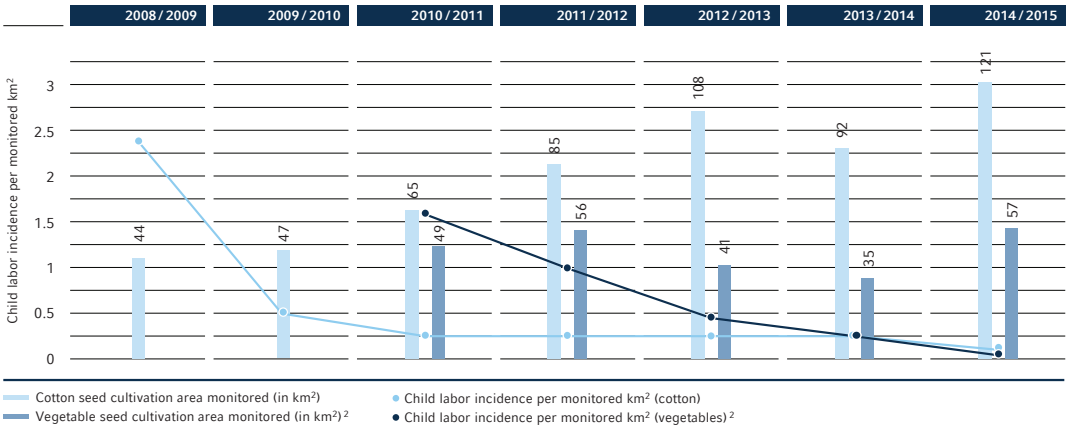


[1]The figures cover several growing cycles per cultivation year. In India the cultivation year runs from the middle of one year to the middle of the next, depending on climatic conditions and the various different seed types. Cumulated depiction on the basis of control inspections performed (at least 3 per cultivation season for vegetables and up to 6 per season for cotton)
[2] Vegetable seed included in field monitoring from 2010/2011 onward; for vegetables, cultivation areas and number of monitorings refer to a combination of various different seed types. Each type of seed has its own monitoring intensity.

Below you will find a graphic for the indicator "Child labor incidence per monitored km²" and further information on our Child Care Program.

ONLINE ANNEX: 3-7.1-4

Child Labor Incidence in the Production of Cotton and Vegetable Seed for Bayer in Relation to the Cultivation Area Monitored[1] [Graphic 3.7.1-1]



[1] The figures cover several growing cycles per cultivation year. In India the cultivation year runs from the middle of one year to the middle of the next, depending on climatic conditions and the various different seed types. Cumulated depiction on the basis of control inspections performed (at least 3 per cultivation season for vegetables and up to 6 per season for cotton)
[2] Vegetable seed included in field monitoring from 2010/2011 onward; for vegetables, cultivation areas and number of monitorings refer to a combination of various different seed types. Each type of seed has its own monitoring intensity.

Once a year, the audit firm EY (formerly Ernst & Young), India, conducts unannounced inspections of randomly selected farms on behalf of Bayer.

Suppliers who can verify that they strictly observe our ban on child labor receive a bonus from Bayer along with training in raising agricultural efficiency. Graduated sanctions are applied for noncompliance. These range from written warnings to termination of the contract in the case of repeated noncompliance.

Bayer regards school attendance not only as essential for children's development but also as an effective tool to drive the elimination of child labor. We therefore also visit the parents of children we find working in the fields to convince them of the importance of school education. We promote this with the "Learning for Life" initiative within our Child Care Program. This initiative aims to ensure that children and young people get a proper education and covers everything from reintegrating children into the regular school system to vocational training measures. Between 2005 and the end of 2015, the "Learning for Life" educational programs benefited more than 6,100 children and young people.

The Child Care Program Advisory Council, comprised of international experts and recognized professionals, supports Bayer in the protection of children's rights and the obligation of seed production without child labor. The annual meeting of the Advisory Council, which took place in India in May 2015, focused on the effectiveness of the Child Care Program and on a project concerning minimum wages in the seed supply chain.

Evaluating the sustainability performance of our suppliers

Bayer verifies the observance of sustainability requirements by our suppliers through online assessments and on-site audits. Suppliers are selected for these evaluations based on a combination of country and material risks as well as strategic importance in accordance with our Group targets.

The online assessments are carried out on Bayer's behalf by EcoVadis, an established provider of sustainability performance evaluations. They are comprised of a web-based, modular questionnaire completed by the supplier, coupled with accompanying verification documents and 360° screening. The evaluation criteria comprise the areas environment, labor practices and human rights, fair business practices and sustainable procurement.

Together with external, independent auditors, Bayer carries out on-site audits of its suppliers based on the PSCI and TfS sustainability criteria. In addition, internal auditors evaluate suppliers with a focus on health and safety, environmental protection and sustainability.

Through cooperation with the industry initiatives PSCI and TfS, we leverage synergies through the exchange of comparable, high-quality supplier assessments and/or audits among members using the IT platforms of the respective initiatives.

An overview of the number of supplier assessments and audits can be found in

› ONLINE ANNEX: 3-7.1-5

Supplier Assessments and Audits for 2015 [Table 3.7.0-3]

	2014	2015
Sustainability assessments[1] via the EcoVadis platform	692	521
Sustainability audits[2] by external auditors	56	71
HSE[3]/sustainability audits by Bayer auditors	94	107

[1] Supplier assessments initiated by Bayer as well as assessments of suppliers working for Bayer exchanged as part of the TfS initiative
[2] Initial and follow-up audits initiated by Bayer of suppliers working for Bayer and exchanged as part of the TfS and PSCI initiatives
[3] Health, safety, environment

Within the scope of the TfS initiative, a total of 2,580 supplier assessments using EcoVadis and 179 audits – performed, for example, in China, India and Brazil – were successfully completed in 2015. A total of 40 joint and/or shared audits were carried out in 2015 through PSCI, for example in Turkey, Brazil and Uruguay.

Alongside consideration of our sustainability criteria in the selection of suppliers, CropScience and HealthCare undertake separate evaluations of suppliers with regard to the contract manufacturing of quality-relevant goods and services. These evaluations encompass the areas of health, safety and environmental protection among others and are performed prior to the start of operations. Since 2015, furthermore, HealthCare has obligated newly selected suppliers with a prospective annual procurement spend in excess of €1 million to undergo an EcoVadis sustainability assessment or an on-site audit after being awarded business. The suppliers evaluated in 2015 in this context satisfied our sustainability requirements.

Moreover, Bayer monitors suppliers who process minerals such as tin, tungsten, tantalum and gold to establish whether these originate in conflict regions. In this way we want to rule out that such materials find their way into our products through supply chains. To tighten up our requirements, the issue of conflict materials has also been included in our Supplier Code of Conduct.

ONLINE ANNEX: 3-7.1-6
International regulations such as the Dodd-Frank Act in the United States obligate companies to disclose the origin of certain raw materials to rule out that conflict minerals from the Democratic Republic of the Congo or its neighboring countries find their way into products through supply chains. Bayer has questioned about 100 suppliers who could potentially be impacted by this issue. Nearly 60% of them confirmed to us that they do not procure potential conflict minerals. The status of the remaining suppliers is being clarified.

All online assessments and audits are comprehensively analyzed and documented so that – in the event of unsatisfactory results – specific improvement measures can be defined together with the suppliers to ensure the future observance of social, ethical and environmental standards. In 2015, 33 suppliers (equivalent to 6% of those evaluated) posted a critical result. These suppliers were requested by Bayer to rectify the identified weaknesses with the help of corrective instructions or action plans.

ONLINE ANNEX: 3-7.1-7
The corrective action established together with the suppliers in 2015 mainly related to the areas of occupational health, occupational safety, fair business practices and sustainable procurement. In 2015, we monitored the implementation of the stipulated improvements among 324 suppliers by means of reassessments through the EcoVadis platform; approximately 73% improved their sustainability performance to a relevant degree. In 2015, Bayer was not prompted to end any supplier relationship due solely to sustainability performance or serious sustainability deficiencies.

Training measures and dialogue on the issue of sustainability

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We support our HSEQ and procurement employees in the implementation of our sustainability requirements with targeted Group-wide training measures. In the reporting period, 162 of these employees completed training courses dealing with the EcoVadis sustainability assessment process. CropScience carried out additional training courses on the subject of sustainability audits. HealthCare organized supplementary sustainability workshops for selected procurement employees. In addition, we also offer our suppliers a wide range of training and dialogue opportunities in order to familiarize them with Bayer's sustainability requirements.

ONLINE ANNEX: 3-7.1-8
In 2015, Bayer once again held Supplier Days, which are an important dialogue platform for our subgroups. CropScience organized special training courses on quality, health and safety, and environmental protection for selected suppliers. The TfS initiative organized Supplier Days in China and Brazil that dealt, for example, with environmental protection and occupational safety. In India, PSCI held an education conference where suppliers were trained in occupational safety, environmental protection, process and plant safety, and labor and business ethics. Both initiatives offer extensive supplementary information material and online training courses on their websites.

7.2 Production

Bayer operates production facilities at more than 120 sites in 35 countries. We deploy our competencies and experience at all our sites to continuously optimize production processes and technologies, as well as infrastructure. That is because product quality and the efficiency of materials and energy are crucial competitive factors.

The safe and responsible operation of our facilities and the comprehensive safety of our employees and the people who live near our sites are of utmost importance to Bayer. Bayer also places great importance on protecting the environment and using natural resources responsibly. Accordingly, management systems have been established for the areas of health, safety, environmental protection and quality (HSEQ) that apply throughout the Bayer Group. They are integrated into all business processes and regularly audited and updated. All relevant HSEQ performance indicators from our production sites are compiled in a Group-wide Bayer site information system (BaySIS). Extensive information on the topics of safety, product stewardship, environmental protection and the corresponding management systems can be found in chapters 8, 9 and 10.

HEALTHCARE

SITES

HealthCare operates production sites around the world at which active ingredients are manufactured and at which formulation and packaging services are performed for the product portfolio of all HealthCare divisions. The importance of the production sites within the network is regularly assessed, giving consideration to site- and product-specific criteria. Product supply strategies and site strategies are further developed and/or adjusted on this basis. The most important production and formulation sites for global product supply in 2015 are listed in the following table.

HealthCare Sites [Table 3.7.1]

Segment/site	Main activity
Pharmaceuticals	
Bergkamen, Germany	Active ingredient production
Berkeley, California, U.S.A.	Active ingredient production based on biotechnological processes
Berlin, Germany	Formulation and packaging
Leverkusen, Germany	Formulation and packaging
Turku, Finland	Formulation and packaging of intrauterine systems
Weimar, Germany	Formulation and packaging
Wuppertal, Germany	Active ingredient production
Consumer Health	
Bitterfeld-Wolfen, Germany	Formulation and packaging
Cimanggis, Indonesia	Formulation and packaging
Grenzach, Germany	Formulation, filling and packaging
Kiel, Germany	Formulation and packaging of animal health products
Myerstown, Pennsylvania, U.S.A.	Formulation and packaging
Pittsburgh, Pennsylvania, U.S.A.	Manufacture of medical devices such as contrast agent injectors and consumables
Wuppertal, Germany	Active ingredient production

QUALITY MANAGEMENT

The manufacturing of pharmaceutical and medical devices is subject to extraordinarily stringent quality requirements that are based on internationally recognized standards. Compliance with these requirements at Bayer is regularly audited by internal experts, regulatory authorities and external consultants.

ONLINE ANNEX: 3-7.2-1

Quality standards are developed on the one hand according to regulatory requirements, approvals and authorizations, and relevant standards of nongovernmental organizations and industry associations, and on the other hand according to customer expectations. These requirements are evaluated by HealthCare and integrated into an internal quality management (QM) system that is based on international standards of the ISO (e.g. ISO 9001 and ISO 13485) and the ICH (International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use), as well as on rules for good working practice (GxP) in the development and manufacture of pharmaceuticals (e.g. Good Manufacturing Practices (GMP), Good Distribution Practices (GDP) and Good Clinical Practices (GCP)). With the help of our QM system, we effectively and transparently implement and manage the quality control processes and responsibilities according to established, documented and binding procedures and methods. The goal is to ensure the quality of our products throughout their entire life cycle and safeguard the value chain over the long term.

INVESTMENTS IN PROPERTY, PLANT AND EQUIPMENT

HealthCare continuously invests in its global production network in order to ensure security of supply, provide the necessary capacities and satisfy regulatory requirements. Further production capacities for the manufacture of hemophilia A products are being established at the Wuppertal and Leverkusen sites through the biggest current capital expenditure program with a total volume of more than €500 million. Another major project with a volume of some €100 million is aimed at expanding production capacities in Beijing, China.

See Chapter 14.5

CROPSCIENCE

SITES

The products of the Crop Protection and Environmental Science units are mainly produced at the company's own production and formulation sites, the largest of which are listed in the following table:

CropScience Sites [Table 3.7.2]

Site	Main activity
Dormagen, Germany	Development of new production processes and manufacture of Crop Protection and Environmental Science products
Frankfurt am Main, Germany	Manufacture of Crop Protection and Environmental Science products
Nunhem, Netherlands	Vegetable seed production
Kansas City, Missouri, U.S.A.	Manufacture of Crop Protection and Environmental Science products
Knapsack, Germany	Manufacture of Crop Protection and Environmental Science products
Vapi, India	Development of new production processes and manufacture of Crop Protection and Environmental Science products

Numerous decentralized formulation and filling sites enable the company to quickly react to the needs of local markets. At these sites the active ingredients are processed into herbicides, fungicides, insecticides, seed treatment products and Environmental Science products according to local requirements and application areas. Packaging of the products also takes place in these facilities.

Production of seeds takes place at locations close to our customers in Europe, Asia, and North and South America at our own farms or under contract.

QUALITY MANAGEMENT

Our CropScience products are manufactured according to high quality standards based on ISO 9001, to which more than 80% of CropScience production sites are certified. The compliance of the production processes and registered product specifications is regularly monitored by external auditors. All our products are reviewed and registered by the national authorities in the various countries, and thus fulfill the respective requirements with regard to quality and user safety.

INVESTMENTS IN PROPERTY, PLANT AND EQUIPMENT

We invest continuously in our global production network in order to generate capacities for new products and technologies and to improve manufacturing processes. We plan to significantly increase our capital investment to meet the steadily rising demand. We intend to invest approximately €2.4 billion in property, plant and equipment between 2013 and 2016.

The construction of a new crop protection facility for the production of methane phosphorous acid ester (MPE), an important precursor for the active ingredient glufosinate-ammonium, commenced at the Knapsack site. The capital expenditure volume is more than €150 million. In September 2015, we expanded our capacity for oilseed rape/canola through the construction of a new production site in Monheim, Germany.

COVESTRO

Covestro operates a large number of locations worldwide, including eight world-scale production sites. The company also maintains specialized technical centers around the world that offer customers individually tailored solutions and that are designed for regional supply. Covestro thus guarantees not just a global presence, but also above all customer centricity with short supply times and flexible service. At these production sites Covestro pursues the ambitious goal of assuming and further expanding its leading position in the future, too, with regard to production volume, quality, efficiency and safety. Innovative and environmentally friendly production processes are employed as a result of the continuous technological improvement of our facilities. The selectively backwards-integrated production process enables Covestro to procure key raw materials such as chlorine and propylene oxide from within the company or through joint ventures so as to reduce the dependency on external supply sources.

SITES

Covestro's most important production sites are listed in the following table:

Covestro Sites [Table 3.7.3]

Site	Main activity
Leverkusen, Germany	Coatings, adhesives and specialties production; technical laboratories; chlorine production
Uerdingen, Germany	Polycarbonates and polyurethanes (MDI) production; chlorine and CO production
Dormagen, Germany	Polyurethanes (TDI, PET) and coatings, adhesives and specialties production; chlorine and nitric acid production
Baytown, Texas, U.S.A.	Polyurethanes (MDI, TDI), polycarbonates and coatings, adhesives and specialties production
Shanghai and Shanghai Chemical Industry Park, China	Polyurethanes (MDI, TDI), polycarbonates and coatings, adhesives and specialties production; chlorine production
Brunsbüttel, Germany	Polyurethanes (MDI) production
Antwerp, Belgium	Polyurethanes (PET) and polycarbonates production
Map Ta Phut, Thailand	Polycarbonates and coatings, adhesives and specialties production

To serve our differentiated businesses, we maintain several production facilities in selected countries that include systems houses where we formulate and supply customized polyurethane systems, as well as plants where we compound polycarbonate granules to meet specific customer requirements or manufacture semi-finished products (polycarbonate sheets). We also operate regional production facilities for derivatives of the Coatings, Adhesives, Specialties Business Unit and for functional films made of polycarbonate or thermoplastic polyurethane.

QUALITY MANAGEMENT

Covestro applies very high standards for the quality of the raw materials it uses and their further processing into high-tech plastics and polymer precursors. A quality management system was implemented for this purpose that is certified to the international standard ISO 9001. In terms of total energy consumption, over 99.97% of the reporting production and nonproduction sites of Covestro worldwide are certified. This is regularly monitored by internal and external auditors.

INVESTMENTS IN PROPERTY, PLANT AND EQUIPMENT

To safeguard competitiveness, Covestro continuously invests in a global production network so as to maintain the production facilities and their infrastructure, optimize production processes and, in the case of profitable growth prospects, appropriately expand capacities. Due to the significant expansion of capacities in recent years, Covestro plans to invest less through 2020 and focus on maintaining and optimizing existing production facilities.

7.3 Logistics

Logistics at Bayer does not just involve the transport, handling or warehousing of goods. On the contrary, it comprises the entire planning, steering, coordination, implementation and monitoring of all internal and intercompany flows of goods and the related information. Not only are individual business functions combined into process chains, all processes are integrated – from the procurement of raw materials to the sale to end users. We work continuously to develop efficient and environmentally friendly logistics concepts with the goal of reducing transport and storage complexity.

The safe transport of our materials and products is very important to Bayer. With this objective in mind, we have installed management systems and directives with global validity, implemented an agile corporate structure and carefully selected contracted logistics services suppliers. You can find out more in Chapter 9 "Safety."

See Chapter 9

Concrete production and logistics planning depends on the products to be transported and the resulting specific requirements. Logistics processes are therefore decentrally organized at Bayer. Each subgroup maintains its own logistics units to account for the demands of different business models.

HEALTHCARE

Among other activities, the internal Product Supply organization steers all logistics services at HealthCare across divisions – from suppliers to the company's own sites, within the production network and from the company to its customers. This also includes warehouse and transport management and the steering of supplier-, production- and customer-specific material streams. HealthCare both utilizes internal capacities and employs external logistics partners to meet its storage and transport needs. Warehouse sites and transport flows are established and continuously optimized accordingly. Service, quality and costs are continuously monitored according to corresponding guidelines and indicators.

The means of transport is generally selected in a standardized process between the production site and the recipient country, with consideration given to demand, costs and environmental aspects. These aspects also serve to continually optimize transport processes. To this end, hubs are established in the distribution network, planning processes are optimized and air transport reduced. These globally steered measures are supported by greater standardization and transparency along the supply chain.

CROPSCIENCE

CropScience manages the transport and storage of products through a multi-stage system that is aligned to production and distribution. Subsequent to production, active ingredients are distributed to a global network of specialized warehouses and then forwarded to our regional formulation and filling sites for further processing depending on current demand. The finished products manufactured there are then transferred to local distribution warehouses in the respective destination countries where the products are stored, commissioned after release and shipped to customers. The logistics process at Seeds encompasses the various stages of production all the way to ready-to-sell seed, which is distributed to customers via local distribution warehouses.

CropScience generally deploys trucks for land transportation, while container ships are primarily used for overseas traffic. Air freight is only selected in exceptional cases, and accounts for less than 1% of the transport volume.

COVESTRO

At Covestro, logistics in the regions are centrally organized in Supply Chain Centers. Transport is handled by logistics service suppliers that are selected according to stringent safety, environmental and quality criteria. The preferred mode of transport is by rail or intermodal – in other words employing a combination of road, rail and water transport. This increases energy efficiency and reduces CO_2 emissions. Customers are supplied from close-to-production warehouses, wherever transport times and supply security allow this. In the case of longer distances, goods are temporarily stored in regional distribution centers and then dispatched at short notice. Logistics are steered according to indicator-based management that is aligned toward safety, environmental and supply security aspects.

7.4 Distribution

Bayer markets its products worldwide through a market- and customer-specific distribution network. The marketing and distribution units play a key role in communicating to customers the benefits and advantages of our high-quality products and services. Our distribution activities are geared toward the long-term retention of existing customers and the acquisition of new clients. In this connection, we offer smooth business processing from ordering to delivery in adequate time. Responsible conduct is also a top priority for Bayer in marketing and distribution. The necessary rules of conduct, which do not permit legal violations in marketing, are established in our Group Responsible Marketing & Sales Policy. This Group regulation and the respective training programs are implemented decentrally in the subgroups. A high level of customer satisfaction is essential for the long-term success of our business. We therefore systematically analyze both the needs and satisfaction of, as well as complaints voiced by, our customers, and thus foster partnership-based cooperation and dialogue with them.

HEALTHCARE

Our pharmaceutical products are primarily distributed through wholesalers, pharmacies and hospitals. Co-promotion and co-marketing agreements serve to optimize our distribution network.

Consumer Care's products are generally sold in pharmacies, with supermarket chains and other large retailers also playing a significant role in certain important markets such as the United States. The contrast agents and medical equipment of our Medical Care Division are marketed to radiologists, cardiologists and other specialists in medical imaging in hospitals and out-patient clinical sites through a global direct sales organization, supplemented in some cases by local distributors. Depending on local regulatory frameworks, we market our animal health products through veterinarians and other distribution channels such as pharmacies or retail stores.

RESPONSIBLE BUSINESS PRACTICES IN MARKETING AND DISTRIBUTION

In the development, sale and marketing of its products, HealthCare does not tolerate bribery or any other form of improper exertion of influence on our business partners. Furthermore, Bayer is committed to ethical advertising and communication for all its products and services. Our minimum standards are derived from three basic sources: laws and other statutory regulations, industry codes and internal rules.

The marketing and distribution of pharmaceuticals and medical devices are strictly regulated and subject to relevant laws that we are committed to observing. Also applicable at the global or regional levels are industry codes adopted by associations of the pharmaceuticals, medical devices and animal health industries. In many countries, furthermore, these standards are further concretized by local codes – all of which apply to prescription pharmaceuticals and many of which additionally apply to nonprescription medicines.

ONLINE ANNEX: 3-7.4-1

All codes of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) serve as a binding global minimum global standard for all products marketed by HealthCare. In addition, Bayer observes the codes of the European Federation of Pharmaceutical Industries and Associations (EFPIA) for dealings with health care professionals and patient organizations. The WHO's Ethical Criteria for Medicinal Drug Promotion, together with national ethical standards that are usually enshrined in industry codes at the local level, represent the minimum global standard for the advertising of pharmaceutical products at HealthCare. All the aforementioned codes contain provisions governing, among other issues, advertising material standards, the distribution of samples, cooperation with members of medical and pharmaceutical specialist groups in connection with speaker and consultancy contracts, and scientific studies. Adherence to these codes is designed to ensure the independence of both health care professionals and patient organizations. Based on the new EFPIA transparency code and beginning in June 2016 at the latest, furthermore, Bayer will disclose any grants to health care professionals and organizations annually for the preceding calendar year.

The most important Bayer Group regulation in this connection is our Anti-Corruption Procedure, which establishes minimum global standards on this topic for the entire company. HealthCare has summarized the key requirements and the minimum global standard for compliant and ethical conduct in the Anti-Corruption Compliance Manual, which applies worldwide in all divisions. The main principles for ethically and legally acceptable advertising for pharmaceuticals and medical devices are also set out in an internal HealthCare directive. The goal of these directives is to help HealthCare employees to always act in compliance with all applicable regulations. Should several regulations be relevant, HealthCare principally applies the more stringent standards.

Training measures on product-related communication and anti-corruption are fundamental elements of the system at Bayer. They are directed toward certain employee groups and are tailored to account for the special risks these employees are exposed to. The principles presented in these training courses provide an overview of globally applicable minimum requirements for cooperation with key stakeholders of HealthCare, such as physicians, hospitals or patient organizations. The courses not only explain general compliance principles but also give specific instructions in relation to nonreciprocal benefits and the exchange of services with health care professionals.

As part of our compliance management system, we register and investigate any suspected violation of our responsible marketing principles. This applies to complaints both from within the company and as notified to us from outside.

See Chapter 16.3

GRI
G4-26

CUSTOMER DIALOGUE

A keen understanding of manifold customer needs is especially important if HealthCare's products are to be successful in the market. Our customers include patients, physicians, caretakers, health policy decision-makers and opinion leaders, partners from research and development, and health care payers. Due to the stark distinctions between these groups, the individual HealthCare divisions take specific steps to enter into dialogue with customers and measure their satisfaction.

Different legal requirements apply for prescription medicines than for nonprescription or medical devices. This makes the conditions under which customer satisfaction data are gathered in the health sector correspondingly complex. For example, it is not permitted to directly survey patients about the effects and side effects of prescription medicines. HealthCare therefore conducts primary market and data research in this area.

ONLINE ANNEX: 3-7.4-2

We use market research projects to identify the needs of the various customer groups and thus further strengthen customer orientation at Pharmaceuticals. We also carry out systematic internet analyses that give us a better understanding of our stakeholders' opinions, interests and networks. To measure customer satisfaction, Pharmaceuticals conducts international surveys of its customer groups according to therapeutic areas. The results of the studies are regularly integrated into brand planning. To continuously optimize customer service, moreover, we support our medical sales force through product- and country-specific training courses.

Following the success of pilot projects in key markets, Consumer Care in 2015 began introducing its excellence program to improve customer orientation worldwide. The program is designed to identify examples of best practices in the areas of market launch strategies, distribution and trading. It has already been successfully implemented in 13 countries, and others will follow in 2016.

Animal Health also conducts studies on customer satisfaction and customer retention, applying varying methods according to the respective market segment. From studies that track long-term customer behavior, performance indicators are developed that in turn are used to measure customer satisfaction.

Complaints, customer services for orders, product and delivery information, information on health care topics or the handling of general inquiries pertaining to HealthCare are processed by the relevant business units and country organizations. The respective contact information is available online.

As the Bayer Group is headquartered in Germany, HealthCare operates a customer service center in that country with a quality management system certified to ISO 9001:2008.

CROPSCIENCE

DISTRIBUTION

CropScience markets its products in more than 120 countries. We market our crop protection products mainly through wholesalers or directly through retailers. We also sell products directly to customers in selected markets where market conditions require this mode of distribution.

Distribution activities for seeds are focused on the crops cotton, oilseed rape/canola, rice, soybeans and vegetables from our own research laboratories and breeding facilities. In our core crops, we have achieved strong market positions and are internationally represented. Our seeds are sold to growers, seedling companies, specialist retailers and the processing industry. Plant traits developed using modern breeding methods are either incorporated into our own seed varieties or licensed to other seed companies.

The Environmental Science products are mainly sold through wholesalers and specialist retailers. We market our range of pest and weed control products to professional users in the green industry (including public parks and golf courses), forestry, industrial vegetation management and professional pest control. In the area of public health, an example being vector control to combat malaria and dengue fever, much of our business is transacted in response to tendering by government agencies and non-governmental organizations. We also offer pest control and plant care products to private customers in the home and garden sector.

RESPONSIBLE BUSINESS PRACTICES IN MARKETING AND DISTRIBUTION

CropScience follows the guidelines of its Product Stewardship Policy with regard to the distribution and use of its crop protection products. This policy, which also satisfies the requirements of the Group Responsible Marketing & Sales Policy, is based on the International Code of Conduct issued by the Food and Agriculture Organization of the United Nations (FAO). Training materials to explain this Group policy have been distributed throughout the global organization and are available to the employees on the Bayer intranet.

ONLINE ANNEX: 3-7.4-3

Responsible business practices in marketing and sales are addressed at CropScience in compliance training courses and are also an integral element of marketing and sales excellence training measures. In 2015, we trained a total of 600 (2014: 2,400) CropScience employees worldwide in three- and one-day training courses.

CUSTOMER DIALOGUE

GRI
G4-26

CropScience sees tremendous value in the satisfaction of its customers. Our goal is to establish long-term customer relationships that ensure the business success and meet the expectations of both parties. We strive to fulfill the high expectations of our customers through targeted communication, smooth business processing and effective complaint management. We regularly determine these expectations through our commercial excellence activities so that we can offer our customers tailored solutions. In addition to the customer surveys we conduct through our country organizations every two years according to a standardized process, we analyze all channels of interaction with our customers. We use the findings of these analyses to align our distribution and marketing processes around the world to the respective customer needs. In general, we aim to make our dialogue with customers more target group- and region-specific and to continuously improve it. We improve our customer processes in part with the help of a customer relationship management database that is now used in more than 60 of our country organizations. We assess our performance using a system of qualitative and quantitative indicators.

CropScience is also intensifying its direct cooperation with farmers through the Bayer Forward Farming initiative. Our solutions for sustainable agriculture in practice are demonstrated at Bayer ForwardFarms. The first farms have been established in Belgium, France, Germany and the Netherlands, and further collaborations are being prepared in Spain and Brazil. CropScience will successively expand this type of cooperation worldwide.

COVESTRO

DISTRIBUTION AND CUSTOMER DIALOGUE

Covestro's products are mainly supplied to the automotive and transportation, construction, wood processing and furniture, and electrical/electronics industries. Other customer industries are the sports and leisure, cosmetics and health care sectors, as well as the chemical industry.

Covestro markets its products mostly through regional and local distribution channels. Here three regional Supply Chain Centers serve as the central link to the customer. Covestro makes use of e-commerce platforms and other channels for order processing. Customer satisfaction is systematically analyzed on a global basis, enabling the development of improvement measures.

ONLINE ANNEX: 3-7.4-4

The Supply Chain Centers pool all information streams from order acceptance to dispatch planning, delivery and complaint acceptance in the Europe/Middle East/Africa/Latin America, North America and Asia/Pacific regions. This ensures a high level of expertise particularly in order management and in transaction, supply chain and logistics solutions. Using the "Order@Covestro" online information platform, customers can at any time place orders, call up material safety data sheets and track the status of their orders.

Covestro's highest quality objective is faultlessness so as to attain a high level of customer satisfaction. To systematically increase customer satisfaction and ensure optimal quality of service, complaints registered in the global management system and by the individual business units are regularly evaluated. Customer evaluations are also analyzed in detail. Through dialogue with internal stakeholders, preventive and corrective measures are undertaken to further increase quality and customer satisfaction while at the same time lowering the error rate and thus also the incidence of complaints. In 2015, for example, a total of 5,178 complaints by around 2,088 customers were registered worldwide. This yields a rate of 7.61 complaints per 1,000 deliveries, about the same as in 2014 (7.75 complaints per 1,000 deliveries).

Covestro also works with trading houses and local distributors who are responsible for business with small customers. Major customers with global operations are serviced directly by key account managers.

RESPONSIBLE BUSINESS PRACTICES IN MARKETING AND DISTRIBUTION

In the marketing of its products, Covestro also takes into account all the requirements of the Bayer Group's Responsible Marketing & Sales Policy. The importance of observing antitrust law and preventing corruption is regularly emphasized in training programs, internal communications and discussions with management. In 2015, training focused on export control. Around 4,980 Covestro managerial employees took part in web-based compliance training courses and supplementary target group-oriented, on-site training sessions.

8. Product Stewardship

Our products and services are designed to benefit people and improve their quality of life. We consider product stewardship to mean that our products are safe for people, animals and the environment when properly used. This is a key factor in creating lasting trust in our products and maintaining our business foundation over the long term.

All substances and finished products undergo extensive testing and evaluation to ensure a high degree of safety. We assess the possible health and environmental risks of a product along the entire value chain – starting with research and development and continuing through production, marketing and use by the customer through to disposal. From this we derive suitable steps to mitigate risks based on the observation of legal requirements and internal standards that go beyond these.

Bayer has put in place suitable directives and management systems for the implementation of regulatory and voluntary product stewardship requirements that are steered by our HSEQ (health, safety, environmental protection and quality) departments. These efforts are underscored by the Bayer Group's target of completing the assessment of the hazard potential of all substances (>99%) used in quantities exceeding one metric ton per annum by 2020.

IMPLEMENTING STATUTORY REQUIREMENTS

Extensive legal regulations apply to all products manufactured by Bayer. Chemical substances are subject to the European chemicals regulation REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and the CLP regulation (Regulation on Classification, Labelling and Packaging of Substances and Mixtures). The classification and labeling of chemicals is intended to clearly inform employees and consumers in the European Union about the risks associated with chemicals.

ONLINE ANNEX: 3-8-1

The registration obligation under REACH applies irrespective of marketing activities for all substances that we produce or import in quantities of more than one metric ton. There is also an authorization procedure that limits the use of particularly hazardous substances or can lead to their replacement or ban. To fulfil the complex requirements of REACH, we have approved Group-wide and subgroup-specific regulations. Already registered substances are also regularly evaluated by the authorities. For Bayer substances this can result in additional testing requirements, new risk management measures or inclusion in the REACH authorization procedure. This is indeed the case for some Bayer substances. The authorities enforce the implementation of REACH through regular inspections. So far none of the inspections at Bayer has resulted in complaints. As we also use many substances from other manufacturers, we maintain close contacts with our suppliers and ensure that they reassure conformity with REACH for the substances they supply.

In the European Union, the Globally Harmonized System (GHS) for the classification and labeling of chemicals is implemented through the CLP regulation. The purpose of the GHS is to achieve a globally standardized system for classifying chemicals and labeling them appropriately on packaging and in material safety data sheets. Bayer assesses all its marketed products and implements the GHS worldwide.

Before any product is introduced to the market, we assess it under this stringent process to determine whether it is safe for people, animals and the environment.

Furthermore, the end products from our Life Science units – such as pharmaceuticals, crop protection products and biocides – are subject to specific approval/authorization procedures.

VOLUNTARY COMMITMENT

Since 1994, Bayer has supported the voluntary Responsible Care™ initiative of the chemical industry, which was globalized in 2006 with the introduction of the Responsible Care™ Global Charter. We cover all main elements of the charter at all Group sites with our HSEQ management systems and activities. We are also actively involved in the further development of scientific risk assessment through our work in associations and initiatives.

ONLINE ANNEX: 3-8-2

International associations such as the European and international chemical industry associations (CEFIC, ICCA) and the OECD (Organisation for Economic Co-operation and Development), as well as initiatives such as ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals) and the EPAA (European Partnership for Alternative Approaches to Animal Testing), work to evolve the scientific assessment of chemicals, develop new test methods and oversee the implementation of statutory regulations. Bayer actively supports these efforts through its activities in the associations. We are also involved in the ICCA Long-Range Research Initiative, for example, and endorse the goals of the WHO and E.U. action plans for improving health and environmental protection. We also support the Global Product Strategy (GPS), a voluntary commitment of the chemical industry initiated by the International Council of Chemical Associations (ICCA). Its objective is to improve knowledge about chemical products, especially in Emerging Markets and developing countries, and thus increase safety in the handling of these products.

We concern ourselves intensively with our substances' properties and regularly evaluate them already at the research and development stage. In application of the precautionary principle, the development of substances with undesirable properties is discontinued.

ONLINE ANNEX: 3-8-3

We accept the precautionary principle as explained in Principle 15 of the Rio Declaration of the United Nations and communiqué COM (2000) 1 of the European Commission as a possible consumer protection and risk management tool. It is applied whenever there is no final scientific certainty in a given area and evidence also exists that people or the environment could suffer significant or irreversible damage that must be rectified. There should not be a unilateral focus on hazard potential, but rather a balanced risk-benefit evaluation.

To assess the effects of our products, especially on human health, but also on nature and the environment, animal studies are legally required. Wherever possible, we use existing data or approved alternative test methods to avoid animal studies. We set high animal welfare standards in this regard. For more information, see the section "Focusing on Animal Welfare."

Group target 2020: assessment of the hazard potential of all substances > 1 metric ton p.a.

The safe handling of chemicals is a top priority in the manufacture of our products (see also Chapter 9). In Europe we operate under strict legal requirements. We voluntarily apply comparable standards around the world, independent of the respective national legislation. In this way we exceed statutory requirements and are ensuring that substance assessments comparable to those established under REACH will also be applied at Bayer sites that are not subject to this European regulation. How we aim to realize this target is established in our Bayer Group Regulation "Substance Information and Availability."

See also Chapter 1.4 for Group target

To ensure the safe handling of chemicals, risk assessments are carried out applying recognized scientific methods such as the Guidance on Information Requirements and Chemical Safety Assessment of the ECHA (European Chemicals Agency).

Should the assessment or new findings reveal that it is not safe to use a certain chemical, we take the steps to mitigate risks. We support our customers in the safe handling and use of our products through close, trust-based cooperation. Bayer compiles material safety data sheets for all products regardless of whether or not they are legally required. All end consumer products come with suitable packaging information, an example being package inserts for pharmaceuticals.

ONLINE ANNEX: 3-8-4

Risk mitigation measures can range from revised application recommendations through the withdrawal of support for a certain application to the substitution of a substance. In this case, a replacement substance must be sought that is economically and technically feasible. The substitution of chemicals is basically a continuous task of the chemical and pharmaceutical industry to obtain new or substantially improved products and processes. This is integral to our commitment to Responsible Care.

Material safety data sheets are the central means of communication for safety-relevant information about substances and mixtures in the supply chain. Targeting professional users, they contain information on the substance's properties and on the safe use of the substance or mixture. In addition, technical information is provided for professional use.

In accordance with the respective product safety and information obligations, all subgroups compile product information – regardless of whether it is for raw materials, intermediates or end products. To ensure worldwide access to this information, Bayer uses appropriate IT systems, including those for product labeling. This data compilation is updated accordingly whenever new legal requirements are established.

Another important element of our product stewardship is the monitoring of all products that are already on the market. We have established processes in all subgroups aimed at addressing inquiries on product safety or problems with our products. This feedback and these experiences are systematically accounted for in our assessment of risks, which also covers substances that are regarded as potentially high-risk by regulatory authorities and independent institutions.

In all subgroups, we examine additional steps that go beyond the legally required disposal specifications.

See Chapter 10.5

PRODUCT STEWARDSHIP IN THE USE OF BIOTECHNOLOGY

Biotechnological methods are used for product development in our Pharmaceuticals and Crop Protection businesses.

Biotechnology has already gained significant importance in pharmaceutical product development. The HealthCare products Betaferon™/Betaseron™, Eylea™ and Kogenate™ are manufactured by a biotechnological process. Further biotechnologically manufactured active ingredients are undergoing clinical development.

Plant biotechnology can improve crop yields, yield security and the stress tolerance of plants through both genetic engineering and conventional breeding methods but with the same input of resources.

Safety is Bayer's top priority in the use of biotechnology, too. Beyond our observance of all relevant legal provisions, we have formulated a Bayer Group Regulation "Position on the Responsible Use of Gene Technology" and specific regulations for HealthCare and CropScience. We provide our stakeholders with comprehensive, transparent and reliable information about our products and services in accordance with our Bayer Responsible Marketing & Sales Policy.

ONLINE ANNEX: 3-8-5

HealthCare has established strict safety measures for handling biological agents in research, development and production in its "Biological Safety" regulation and its "Requirements for the safe handling of biological agents" procedure.

CropScience has included the responsible measures taken when utilizing plant biotechnology in both the Product Stewardship Policy and the Seeds Stewardship Directive. CropScience maintained its focus on product stewardship for customers both within and outside the company through its activities in the context of the industry's Excellence Through Stewardship Program (ETS). Audits by ETS-certified auditors are required to maintain our ETS membership, and in 2015 CropScience successfully completed audits of its operations in Brazil and Argentina which included for the first time the new ETS Insect Resistance Management best practices for biotechnology-derived plant products.

FOCUSING ON ANIMAL WELFARE

Animal studies are legally required and essential from a scientific viewpoint to assess the safety and efficacy of pharmaceuticals and other chemical compounds. We aim to minimize the use of study animals and to employ replacement and complementary methods wherever possible.

In our handling of animals, we respect all legal requirements pertaining to animal welfare. Bayer's principles on animal welfare and animal studies apply in countries without special animal welfare legislation, and in the case of external studies compliance with these guidelines is contractually agreed. Bayer's in-house Global Animal Welfare Committee – comprised of the animal welfare officers at our research sites and further Bayer experts – monitors compliance with our principles on animal welfare and animal studies within the Bayer Group and in external studies. It defines supplementary standards that are essential for carrying out animal studies in the Bayer Group.

Bayer ensures that international and national laws and directives are strictly observed during all animal studies. This is verified by both regulatory authorities and internal audits. Bayer additionally deploys its own animal welfare experts at all sites at which animal studies are carried out.

www.animalstudies.bayer.com

Our principles also apply to both the research institutes we commission and our suppliers, whose compliance with our animal welfare requirements we regularly monitor. The information provided in supplier self-evaluations is verified through on-site audits. Current figures and further information are available on our website.

ONLINE ANNEX: 3-8-6

The Global Animal Welfare Committee has defined performance criteria. Each year we analyze the development of animal numbers, the distribution according to species, the burden placed on our test animals and the ratio of regulatorily required studies to exploratory studies, and discuss possible steps in accordance with the 3Rs principle (replace, reduce, refine). We are thus able to demonstrate that since 2005 the number of study animals used per €1 million research budget (including animals in Bayer studies performed by contract research organizations) has declined from 96 animals to around 31 animals in 2015.

We continuously update our internal database, which combines all information about our own animal studies and the evaluation of our cooperation partners and makes it available to all employees in this area. All subgroups apply clear rules to ensure that animal welfare standards are comprehensively observed by our partners.

Bayer also participates in several European consortia that aim to reduce the number of animal studies or improve their validity, such as the European Partnership for Alternative Approaches to Animal Testing (EPAA). HealthCare is involved in the leadership of the eTOX project and the MARCAR and K4DD projects of the Innovative Medicines Initiative (IMI). Bayer is a member of the scientific advisory boards of the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) and the Long Range Research Initiative (LRI). In Germany, we support the Foundation for the Promotion of Alternate and Complementary Methods to Reduce Animal Testing (SET).

PROTECTION AGAINST PRODUCT COUNTERFEITING

Counterfeit medicines and crop protection products harbor substantial risks for patients and consumers. Product counterfeiting is a global problem that can only be addressed internationally through a joint approach by industry, associations, governmental agencies and nongovernmental organizations. Bayer consistently advocates the strengthening and expansion of existing laws and provisions aimed at the identification and confiscation of illegal products. We try to protect patients and our products through extensive measures of our own.

ONLINE ANNEX: 3-8-7

www.bayer.com/beware-of-counterfeits

The focus of HealthCare's activities is on raising awareness and providing information to ensure the clear identification of our original products, as well as on legal steps aimed at minimizing illegal trade. Through our "Beware of Counterfeits" campaign, we inform patients on the internet about the risks of counterfeit pharmaceuticals and provide patients with tips on how they can protect themselves. Through the use of various technological means in production, we constantly strive to ensure that patients, too, can distinguish between original and counterfeit products.

We also support the establishment of a Europe-wide system for the identification of original pharmaceuticals that satisfies the requirements of the E.U. Falsified Medicine Directive. In addition, Bayer participates in the Pharmaceutical Industry Initiative to Combat Crime (PIICC) of Interpol to counteract pharmaceutical counterfeiting through global prosecution and the elimination of related criminal networks. We participate in the SecurPharm initiative in Germany. Since 2015, Bayer has contributed its expertise to a research project (ALPhA) supported by the German Ministry of Education and Research to prevent the sale of counterfeit pharmaceuticals on the internet.

www.illegalpesticides.eu/

For crop protection products, too, a worldwide increase in the trade of counterfeit and illegal products can be observed. According to a study conducted in 2015 on behalf of the European Commission, such products account for an average of 10% of the total market across all E.U. member states. To protect against the import of counterfeit and illegal crop protection products into the E.U., CropScience intensively advocates the uniform interpretation and implementation of existing E.U. regulations in all E.U. member states. In addition to supporting regulatory authorities with the identification

of counterfeit products through chemical analysis, we conduct our own inspections in the market and also actively support initiatives by associations.

To educate about the potential dangers and risks of counterfeit and illegal crop protection products, we provide information material and train customers, dealers, farmers and regulatory authorities as part of our product stewardship programs. We document all indications of suspicious and potentially counterfeit or illegal CropScience products in an established, systematic process. CropScience's efforts yield measurable results: in 2015, for example, we successfully asserted our patent protection rights against an illegal Chinese producer. In Brazil, counterfeit CropScience products with a market value in the double-digit million range were confiscated.

8.1 HealthCare

BENEFIT-RISK MANAGEMENT FOR MEDICINAL PRODUCTS AND MEDICAL DEVICES

Patient safety is Bayer's top priority. HealthCare continuously assesses the medical benefit-risk balance of its medicinal products and medical devices throughout their entire product life cycle. The efficacy, safety and tolerability of pharmaceuticals and their behavior in the body are studied in Phases I-III of preclinical and clinical development. The documentation submitted to the regulatory authorities contains the results of these studies and comprehensive information on the product's benefit-risk assessment. Marketing authorization is only granted for a product if it satisfies the safety requirements of the health and regulatory authorities.

Following registration, HealthCare continues to compile safety-relevant information in an internal pharmacovigilance database. This information is continuously evaluated and the risk-benefit balance regularly assessed by medical experts in the Global Pharmacovigilance Department. In this process, Bayer works closely with the responsible regulatory and supervisory authorities at the international and national levels. These include the U.S. Food and Drug Administration (FDA), the European Medicines Agency (EMA) and Germany's Federal Institute for Drugs and Medical Devices (BfArM).

Additional safety-relevant information is also compiled using Post-Authorization Safety Studies (PASS) conducted after approval. Protocols and summaries of PASS results are entered into the PASS registry in compliance with E.U. pharmacovigilance legislation.

ONLINE ANNEX: 3-8.1-1

HealthCare has a global pharmaceutical monitoring system in which experts from various disciplines work together in functional safety management teams (SMTs). These teams jointly evaluate the available benefit and safety data and other relevant product information so as to identify potential safety concerns at an early stage or detect possible changes in the benefit-risk ratio. In addition to internally compiled safety data from clinical trials, post-marketing studies and ad hoc information on adverse side effects, the company's experts conduct assessments using external databases and the information contained in scientific publications. SMTs produce detailed safety risk management plans. These plans are updated as soon as relevant new benefit-risk data become available. Implementation of risk mitigation activities is coordinated by local SMTs in the country organizations. All processes are documented, regularly updated and integrated into a quality management system.

Should risks be identified during this assessment, Bayer immediately undertakes suitable steps to safeguard the health of patients – such as updating product information for patients and physicians. Further elements of risk mitigation programs can include targeted information, e.g. patient education brochures and training measures for medical specialists, as well as direct communication with medical experts (Direct Healthcare Professional Communication, DHPC) and even product withdrawals if necessary. These measures are coordinated with the competent authorities.

HealthCare's quality and risk management functions also make further contributions to increased safety. We examine external and internal quality assurance requirements for our products through systematic internal audits – not just in research and development, but also in production. These audits also cover both institutes sub-contracted by us and our suppliers. More information on our quality management can be found in Chapter 7.2 "Production."

See Chapter 7.2

In line with the statutory requirements, strict safety and quality standards also apply to animal health products. Within the scope of the approval/authorization procedures, Animal Health also carries out studies in order to ensure the quality, efficacy and safety of its products.

ANALYSIS OF RESIDUES OF PHARMACEUTICALS IN THE ENVIRONMENT

Active pharmaceutical ingredients can enter the environment, either through human or livestock excreta, improper disposal of unused medicines or during the production process. HealthCare carries out ecotoxicological investigations of the environmental behavior of residues and degradation products to assess the potential environmental impact of our pharmaceutical products. In accordance with applicable law regarding human and veterinary pharmaceuticals, an environmental risk assessment takes place for all active ingredients for which the company is targeting an approval procedure in Europe or the United States. Here it must be examined whether significant risks may arise for the environment when the pharmaceuticals are used as instructed.

Based on currently available information derived from measurements carried out by authorities and scientific institutes, the existing concentrations of individual active pharmaceutical ingredients from human or veterinary medicines in drinking water do not have any adverse effects on human health. This subject is dealt with in particular by a WHO report on pharmaceuticals in drinking water published in 2012 that comes to the conclusion that traceable effects on human health through the current extent of exposure via drinking water are highly improbable. This estimation corresponds with the studies by national authorities and institutes known to us.

In the production of our pharmaceuticals, internal company wastewater threshold values ensure that no risk to the environment results from the release of traces of active ingredients in wastewater from our production sites. All HealthCare production sites worldwide are evaluated with regard to these threshold values. Site-specific measures aimed at a further reduction are taken should it not be possible to observe these standards over the long term. This includes substance-specific measures such as filtration, evaporation, oxidation, incineration or biological clarification in wastewater treatment plants.

ONLINE ANNEX: 3-8.1-2

Within the scope of our product stewardship, we actively participate in research projects aimed at further studying pharmaceutical residues in the environment and introducing targeted measures to prevent them.

Since 2015, we have coordinated the "Intelligence-led Assessment of Pharmaceuticals in the Environment" project in Europe, which seeks new ways to improve environmental risk assessment. To this end, information from toxicological studies, pharmacological modes of action and computer-based models are analyzed with the goal of developing models and methods for determining possible environmental risks of pharmaceutical substances in early development stages and prioritizing for further environmental assessment existing substances that previously have not been evaluated.

Bayer was represented on the Scientific Advisory Board of noPILLS, an E.U.-sponsored cooperation project completed in 2015 and involving several European countries with the goal of reducing pharmaceutical residues in water. The project demonstrated that a reduction in

pharmaceutical residues in water can only be achieved through cooperation between numerous parties. Educating consumers on the correct disposal of pharmaceuticals, improving wastewater treatment technology and the collection of excreta in connection with certain medicines proved to be effective approaches for achieving this objective.

In Germany, HealthCare participates in the "Risk Management of Emerging Compounds and Pathogens in the Water Cycle" initiative sponsored by the German Ministry for Education and Research. HealthCare is a member of the steering committee. The "SAUBER+" ("Clean+") project, which is part of this initiative, deals with the study of wastewater from health care industry facilities that is contaminated with active pharmaceutical ingredients and disease pathogens. Here it was determined that these emissions are not higher on average than those from private households. The reduction of pharmaceutical emissions generally depends on the individual active ingredients and should pursue a holistic approach. HealthCare was a member of the Stakeholder Advisory Board of that project, which was concluded in 2015.

8.2 CropScience

FOCUSING ON PRODUCT SAFETY

Before crop protection products and technologies can be introduced to the market, they must demonstrate that they are harmless to people and animals and can be used without causing unjustifiable burden on the environment. For this they require official authorization, which is regulated by numerous international and national laws and provisions. The requirements for marketing authorization, particularly as pertains to the environment, have risen sharply in recent years with the goal of further increasing product safety and minimizing potential risks. CropScience satisfies all the regulatory requirements of the countries in which our products are sold to protect crops.

Product safety and environmental compatibility of crop protection products and technologies play a central role in development. CropScience examines the products during the development phase in stringent tests that are required by law. The tests evaluate a product's mode of action, its ecotoxicological and toxicological properties and potential remaining trace concentrations in the plants or the environment following proper application. Each new crop protection active ingredient and each new technology must undergo several years of studies and testing to ensure that it can be applied effectively and that its use is safe for people, animals and the environment.

It takes roughly 10 years for a crop protection product or technology to complete the entire development process including all studies and be launched onto the market. But our product stewardship does not end there. CropScience also observes the International Code of Conduct on Pesticide Management of the United Nations Food and Agriculture Organization (FAO). The principles of this code cover the entire life cycle of a product or technology, from its development to its application and beyond. We implement all major aspects of responsible product handling in our Product Stewardship Program, which is based on the principles of our Product Stewardship Policy.

ONLINE ANNEX: 3-8.2-1

Even beyond its core business, CropScience participates specifically in projects aimed at increased product stewardship – such as the Better Sugarcane Initiative, which works to promote sustainable sugarcane cultivation, and the International Sustainability & Carbon Certification organization, which is working to establish a system for certifying biomass and bioenergy. We are also a member of the Round Table for Sustainable Palm Oil Production and the Round Table for Responsible Soy (rtrs). In 2015, we signed an agreement with rtrs to support the certification of soybean production in Brazil. In the United States, the e3 cotton sustainability program was introduced to support farmers in the production of sustainably grown cotton, which is much in demand by retailers. Farmers who sign up for the program commit to ensuring that the cultivation of their cotton is certified as traceable, environmentally responsible, economically viable and socially equitable.

RESPONSIBILITY FOR CUSTOMERS AND PARTNERS

The application of crop protection products requires the greatest possible care. Supporting our customers and partners in the proper and safe handling of our seed and crop protection products is therefore a focus of our product stewardship. In this connection, we offer targeted training measures worldwide particularly for farmers and dealers that are designed to promote the responsible handling of our products and thus improve safety for users, the environment and consumers. These training measures are carried out in all countries in which our products are sold. Responsibility for their implementation lies with the country organizations, which align their training concepts to the needs of the respective countries.

ONLINE ANNEX: 3-8.2-2

We maintained our training activities in the Asia and Latin America regions in 2015. In India, CropScience trained farmers in good agricultural practice. We teach them how they can enhance the growth of their produce, use crop protection products effectively and safely, and thus increase the quality of their harvested goods. This opens up new ways of marketing their products that help smallholder farmers in particular to gain increased profit from them.

Our AgroVida program in Latin America comprises various initiatives with which we have been continuously increasing the farmers' safety awareness and specialist expertise for more than 20 years. Safety training offerings for farmers are an important aspect here. In 2015, for instance, we trained more than 35,100 farmers in the Andean region and almost 30,400 farmers in the Central America and Caribbean region (excluding Mexico). Together with the international crop protection association CropLife, we also carried out safety training measures in numerous African countries in 2015.

Our product stewardship measures also include internal employee training measures. Our Product Stewardship Policy also provides information on all principles for the responsible handling of our products, combined with specific instructions for use for our employees and those who work with our products.

In addition to training activities, we produce manuals explaining the safe use and scope of protective clothing and the correct storage and disposal of our products. These manuals are available online to our customers and partners, an example being the "DressCode" containing information on optimal protective clothing for the handling of our products. They are also distributed in the aforementioned training courses as brochures or information sheets. Furthermore, we offer farmers our support in implementing practical steps for user and environmental protection.

Users of our products can contact CropScience through a range of communication channels should they have complaints or feedback or wish to report any incidents. These include direct contact with our sales staff; our hotline, which is printed on all our product packaging; and, for example, in Germany, the "Agrar Telefon" hotline. All incoming product complaints and incidents are locally compiled and processed by the respective CropScience experts. Entries necessitating corrective measures are additionally recorded in a global database. An internal Bayer directive governs the processing, communication and, if necessary, implementation of corrective measures. Employee training courses also take place regularly here as well.

CROP PROTECTION PRODUCTS IN THE ENVIRONMENT

Stringent legal regulations apply to the approval and use of crop protection products. They are aimed at protecting the environment from unwanted side effects, as every farmer's livelihood depends on an intact environment and fertile soil. Responsible Care is extremely important in all areas of agriculture to minimize possible effects and the discharge of crop protection products outside of the treated crops. Bayer believes its responsibility includes protecting the environment from emissions and optimizing the safety of its products through extensive stewardship measures.

Protecting water from agricultural emissions and maintaining good groundwater quality are cornerstones of the responsible use of water as a natural resource. It cannot be completely ruled out in agricultural practice that substances can leach into groundwater or be emitted into flowing waters and lakes through surface runoff. Improper disposal of residual liquids following the cleaning of spraying apparatus can also lead to discharges of crop protection products into surface water. The application of crop protection products is subject to national water protection regulations, including in Europe the requirements of the Water Framework Directive. CropScience places particular importance on water protection and supports agriculture in environmentally friendly land cultivation and the disposal of residual liquids following the application of crop protection products.

ONLINE ANNEX: 3-8.2-3

In the area of water pollution mitigation, we promote the biological remediation system Phytobac™ to customers. This is intended to prevent point source discharges of crop protection active ingredients into water bodies during the disposal of residual liquids that are generated during the filling and cleaning of spraying devices. There are already some 3,500 Phytobac™ plants in Europe (primarily in France).

www.bayer.com/phytobac

Erosion and runoff processes on agricultural land can also lead to substance emissions into adjacent water systems. In this context, we are collaborating with external partners on the development of a web-based geoinformation system for water protection in agriculture. This enables the visualization of site-related runoff/erosion risks by means of high-resolution risk maps supplemented with suitable mitigation proposals. It is planned for this system to be used as an advisory tool for water protection in agriculture.

Pollinator protection is another focus of our product stewardship activities. As a Life Science company with a long tradition in agriculture and animal health, we know how important healthy bees are – not just as pollinators for sustainable food production and as honey producers, but also due to the key role they play in many ecosystems throughout the world. Promoting pollinator health and sustainable agriculture is of central importance for our business activity. In our view, protecting honey bees and wild bees is a matter that concerns society at large; maintaining their health is everyone's responsibility. Bayer takes its role very seriously in this regard and wants to make a contribution.

In our Bee Care Program, we coordinate and combine all Bayer activities in the area of pollinator health and pollinator safety in order to advance the development and implementation of suitable solutions. Within the framework of this program, we proactively approach numerous stakeholder groups – including industry partners, scientists, farmers, beekeepers, governmental agencies, nongovernmental organizations and representatives of the food value chain – to improve our networks with them, address their questions and concerns and seek opportunities for cooperating with them in the area of pollinator health. Bee Care Centers exist in Germany and the United States for this purpose. In 2015, furthermore, we entered into a collaboration in the area of bee health in Latin America with the Fraunhofer Chile Research Foundation. A global Bee Care network has now been built up.

www.beecare.bayer.com

The Bayer Bee Care Program combines our well-founded knowledge in the areas of animal health and crop protection so as to contribute to protecting pollinator health. The objectives here are to:

- Develop further solutions to promote bee health so that beekeepers can better fight pests and disease pathogens
- Actively promote the bee-friendly use of our innovative solutions (products, technologies and services) and to enable involved stakeholder groups to ensure bee safety in farming and gardening
- Expand and improve pollinators' food sources to help offset nutritional deficits
- Openly and actively promote an honest dialogue and transparent communication on pollinator health with all involved stakeholders
- Exchange knowledge and specialist information with all stakeholder groups and institutions (beekeepers, farmers, research institutes, NGOs, political decision-makers and registration authorities)

ONLINE ANNEX: 3-8.2-4

Bee health is impacted by several factors for which Bayer pursues various solutions.

Bayer is investing in the research and development of a new form of application for products to control the Varroa mite, which scientists consider to be the biggest danger for honey bees. Bayer is also active in setting up flowering areas that can provide pollinators with a rich food source for pollen and nectar. The treatment of seed is an important step to protect sensitive crop seedlings from pest pressure. In the sowing of treated seed, however, small amounts of insecticide dust that is potentially harmful to pollinators can be released. Our "Zero Dust" project and further cooperation projects to reduce dust emissions help to minimize the dust release.

Bayer is firmly convinced that neonicotinoids are an important insecticide class with beneficial properties. They are effective against key pests that in many regions have already developed resistances against other substances. They are especially user-safe due to their low human toxicity. Seed treatment with neonicotinoids is an environmentally friendly application technique because it significantly reduces the likelihood that pollinators and other environmental organisms can come into contact with crop protection products. Bayer is also convinced that neonicotinoids are safe for bees if they are used responsibly and properly. This was confirmed by risk evaluations performed during marketing authorization reviews by the responsible authorities of countries outside Europe. In Europe, however, Bayer products that contain two of our neonicotinoid compounds have been prohibited since 2013 from use in crops that are attractive to bees. The European Commission has recently instructed the European Food Safety Authority (EFSA) to examine all newly available data and reports from the past two years. The results are expected for the end of 2016.

Bayer has brought the restriction on neonicotinoid use in the E.U. before the Court of Justice of the European Union in order to clarify the legal basis of the Commission's decision. This decision is based on an assessment by the EFSA that in turn is based on neither a validated nor an officially recognized risk assessment system. With a view to future investment decisions, the company is primarily asking that the court clarify the regulatory framework.

8.3 Covestro

The products of Covestro satisfy the most stringent of safety requirements. This does not just apply to those chemical substances subject to standard review in accordance with the European REACH Regulation. Within the context of the voluntary Global Product Strategy (GPS) of the chemical industry, we also assess the substances we use and reduce potential health and environmental risks that could result from our chemicals. The product safety assessments apply to the entire life cycle of a product – from research and procurement through production and logistics to application, disposal and recycling. Our product stewardship does not end at the company gate, but also includes suppliers, customers and partners. GPS is accessible at Covestro through the "Product Safety First" internet portal, and is available worldwide in seven languages. Through this website, we inform customers and other stakeholders about our activities and product safety assessments.

ONLINE ANNEX: 3-8.3-1

A product safety assessment at Covestro takes place in several steps: first, chemicals that are subject to statutory regulations are identified and the corresponding laws compiled. Then we examine their risk potential to obtain a basis for the effective minimization of risks. Such steps can include proposals for technical measures such as protective clothing, or marketing restrictions. Finally, we produce the legally required material safety data sheets, technical information sheets and labeling for the chemicals. Here we go beyond the extent prescribed by law and also produce these documents for chemicals that are not subject to this statutory obligation. All product groups undergo this process.

For especially important products such as MDI, TDI, polycarbonate and polyether, Covestro additionally works with associations to draw up environmental product declarations and eco-balances certified according to ISO 14040 and 14044 based on industry averages.

Covestro follows the scientific discussion about the chemical bisphenol A (BPA), a feedstock for various plastics with a controversial public profile. Critics are concerned that health risks could result for users if traces of BPA are released from polymers. As documented by numerous scientifically valid studies, we are convinced that BPA can be safely used in its existing areas of application – especially those that involve contact with food. This assessment is consistent with evaluations by the authorities responsible for food safety in Europe, the United States, Australia, Japan and other countries. In cooperation with the PlasticsEurope association, we work to make the discussion more objective and more strongly based on scientific analysis. Covestro actively participates in this dialogue and informs customers and the public via the internet.

www.bayer.com/COV-BPA

9. Safety

Safety management and the continuous development of a safety culture are a cornerstone of corporate responsibility in the Bayer Group. Preventing accidents and incidents in day-to-day work, when operating production facilities, and on work-related travel and transportation routes where people or the environment could suffer harm or damage has top priority for us. Responsibility for health, safety, environmental protection and quality (HSEQ) thus lies directly with the Bayer Board of Management. Our HSEQ activities are geared toward ensuring occupational health and safety, the smooth and safe operation of our facilities, and the safe transportation of our products. In this way, we also reduce running costs by avoiding damage and disruptions to work and production.

At the Group level, responsibilities and framework conditions for HSEQ are regulated through appropriate directives such as our new Bayer Group Regulation "Safety at the Bayer Group." Operational responsibility lies with the boards of management/executive boards of the respective subgroups and service companies and the corresponding line organizations, which have their own management systems, committees and working groups to steer HSEQ. Continuous review and revision of directives and regular internal audits and external certification processes ensure our HSEQ management systems at all sites meet the specific requirements in each case.

See Chapter 10.1

Our safety management is based on four pillars:

Safety Pillars [Graphic 3.9.1]

9.1 Occupational Health and Safety

We regard safeguarding the occupational health and safety of our employees and of contractors and suppliers working on our company premises and under the supervision of Bayer as one of our core tasks. This entails preventing work-related accidents and occupational illnesses, identifying and assessing potential hazards, maintaining comprehensive risk management and designing a healthy working environment.

The rate of occupational injuries with lost workdays at Bayer has been falling for several years. In 2015 intensive training and awareness-raising once again helped enable the Bayer subgroups and service companies to report an overall reduction in injury figures.

Group target 2020: reduction of 35% in occupational safety incident rate (RIR)

See also Chapter 1.4 for Group targets

We record all injuries to Bayer employees requiring medical treatment that goes beyond simple first aid. These are indicated by the Recordable Incident Rate (RIR), which includes both injuries with lost workdays and those without. In 2015, this rate dropped to 0.42 cases per 200,000 hours worked (2014: 0.43) throughout the Group, corresponding to 543 occupational injuries worldwide. This means that, in statistical terms, one recordable incident occurred for around every 476,000 hours worked.

The rate of recordable occupational injuries with lost workdays (LTRIR, Lost Time Recordable Incident Rate) also fell. In 2015, it stood at 0.21 (2014: 0.22).

Regrettably, two Bayer employees lost their lives in work-related accidents in 2015. One employee was killed in a plane crash. Another employee suffered serious burns in a work-related accident at the Chempark Leverkusen site and later died in a hospital. Investigations into the causes of the latter incident are still ongoing.

Occupational Injuries [Table 3.9.1]

	2011	2012	2013	2014	2015
Occupational injuries to Bayer employees with lost workdays (LTRIR)	0.31	0.27	0.26	0.22	0.21
Recordable occupational injuries to Bayer employees (RIR)	0.56	0.49	0.47	0.43	0.42
Fatal injuries (total)	3	2	2	4	2
of which Bayer employees	2	2	1	3	2
of which contractor employees[1]	1	–	1	1	–

[1]Employees working for third parties whose accidents occurred on our company premises and under Bayer supervision

The injury figures varied both within individual regions and between the various subgroups and service companies and depended, among other aspects, on employees' range of activities.

ONLINE ANNEX: 3-9.1-1

Recordable Occupational Injuries (RIR[1]) by Region [Table 3.9.1-1]

	2012	2013	2014	2015
Europe	0.56	0.72	0.62	0.60
North America	0.53	0.49	0.64	0.58
Asia/Pacific	0.21	0.20	0.14	0.12
Latin America/Middle East/Africa	0.54	0.40	0.33	0.41
Total	**0.49**	**0.47**	**0.43**	**0.42**

[1] RIR = Recordable Incident Rate

Cases of occupational illness are recorded by us in the countries in which this is legally permissible and are also included in the LTRIR parameter, irrespective of whether they are included in the occupational diseases listed in international registers.

As in previous years, we hardly recorded any sector-typical accidents involving contact with chemicals in 2015. The absolute number of injuries with lost workdays continued to decline. A significant proportion of our work-related accidents and injuries have behavior-linked causes. To increase the focus on this area, the Bayer Safety Council headed up by the Chairman of the Board of Management launched the Behavioral Safety initiative and the program was rolled out in the subgroups in 2015. The subject was also the focus of our annual global Safety Day in 2015.

ONLINE ANNEX: 3-9.1-2

The Behavioral Safety initiative focuses on the promotion of safety-conscious conduct among employees. Behavioral safety involves identifying and preventing unsafe working practices and reinforcing and consolidating safe working methods at all levels. This approach is by no means limited to production but also covers areas of work such as research & development, marketing & sales and administration. The initiative is rolling out a comprehensive behavioral safety program in the subgroups. The first step of this process involved carrying out an assessment of the existing safety culture at all CropScience production sites in 2015, while the focus at HealthCare was on sites with the biggest impact on safety performance. At Covestro, a pilot project was conducted at the site in Antwerp, Belgium. As a next step, all subgroups carried out both basic training courses for employees and manager training courses on behavioral safety at a number of these sites. The successfully launched program will be intensified next year.

We are committed to maintaining and promoting employee health and performance through targeted shaping of the working environment. As part of our occupational health management activities, we offer numerous preventive measures, ranging from ergonomic workplaces and stress management to incentive systems to promote healthy behavior. This also includes support for treating illnesses or reintegration measures.

As Bayer is active in countries with major differences in health care infrastructures and legal frameworks, the needs and options in health promotion vary. Bayer aims to provide employees with access to adequate, affordable and targeted health offerings such as regular medical check-ups, sports programs, help in overcoming illness and on-site medical care.

Our employee representatives are included in operational health management and are actively involved in its development.

ONLINE ANNEX: 3-9.1-3
At the Bayer European Forum – a joint committee of representatives of management and employees – both parties signed the Luxembourg Declaration on Workplace Health Promotion in the E.U.. According to the declaration, workplace health promotion covers all joint measures by employers, employees and society to improve health and well-being in the workplace. The objective of the network is to identify and disseminate best practices on the basis of continuous sharing of experience. So far around 200 European companies have signed the declaration.

Group-wide initiatives to foster employees' health and maintain their employability in view of the rise in the retirement age include, in Germany, the General Works Agreements on lifetime working and demographic change and on shaping demographic change for nonmanagerial employees at Bayer. These innovative agreements contain measures to reduce the workload of shift workers from the age of 55 and of all other nonmanagerial employees in Germany from the age of 57 and ease the return to work of nonmanagerial employees after long-term illness, along with an extensive health screening program for all employees. In 2015, more than 97% of those who were eligible took part in the program to reduce the workload of older employees.

9.2 Process and Plant Safety

We aim to design and operate our processes and facilities in such a way that they do not pose any inappropriate risks to employees, the environment or the community. To improve the safety of our production facilities and processes worldwide, Bayer is continually working to further develop the safety culture and the corresponding standards for identifying and evaluating the associated risks. At the same time, we promote the skills of relevant employees on a regular basis. The corresponding Bayer Group Regulation "Process and Plant Safety" specifies globally harmonized procedures and standards.

ONLINE ANNEX: 3-9.2-1
In a key move to maintain and raise safety awareness, the globally binding training program for all Bayer employees who are able to influence process and plant safety in their work environment has been further enhanced. The process and plant safety training program is firmly anchored in the subgroups' HSEQ management systems. Both traditional and web-based training has been established for tradespeople and chemical technicians in the production facilities.

The organization and staffing levels of the Bayer Group's central competence center for process and plant safety, together with the Group HSEQ Platform for Process and Plant Safety, in Leverkusen, Germany, have been strengthened. Together with the regional competence centers in Shanghai, China, and Kansas City, Missouri, United States, it works closely together in a professional network with plant safety experts from production sites all over the world. To improve our risk analysis process, an additional system audit on the content and completeness of our safety reviews was conducted this year on a trial basis. This quality improvement measure is due to be rolled out across HealthCare and CropScience next year and will be mandatory.

ONLINE ANNEX: 3-9.2-2
Our experts work in international working groups of the European Chemical Industry Council (CEFIC) and the American Petroleum Institute with the goal of developing a global reporting standard for key performance indicators in plant safety. We also are involved in an intensive exchange of experiences nationally and internationally in this area at an industrial level.

A globally standardized KPI for plant safety incidents, Loss of Primary Containment (LoPC), applies to all Bayer plants and is integrated into Group-wide safety reporting. LoPC refers, for example, to chemicals in amounts above defined thresholds leaking from their primary container, such as pipelines, pumps, tanks or drums, and is thus an indicator of incidents in production facilities. We use the LoPC Incident Rate (LoPC-IR) to determine the number of LoPC incidents per 200,000 working hours in areas relevant to plant safety. In 2015, this was 0.22 (2014: 0.23).

Group target 2020: reduction of 30% in process and plant safety incidents (LoPC-IR)

See also Chapter 1.4 for Group targets

Rate of Plant Safety Incidents (LoPC-IR) [Table 3.9.2]

	2012	2013	2014	2015
LoPC-IR (Loss of Primary Containment Incident Rate)	0.38	0.35	0.23	0.22

More information on the procedures in the case of LoPC incidents can be found in

ONLINE ANNEX: 3-9.2-3
The causes of every reported incident are carefully analyzed. The evaluations indicate areas where there is room for further improving the safety of existing facilities. The results of the cause analysis are published across the Group. The introduction of both the LoPC-IR parameter and the globally established training program mentioned above is helping us raise employees' safety awareness.

The reporting level is set so low that even material and energy leaks that have no impact on employees, neighbors or the environment are systematically recorded and reported. This approach is in line with our commitment to maintaining the integrity of our facilities at all times.

The global, comprehensive Bayer Emergency Response System (BayERS) is an overarching early warning system for the Group. The subgroups and service companies have integrated their internal reporting procedures into BayERS and adapted them to it.

ONLINE ANNEX: 3-9.2-4
The handling of unusual incidents is the responsibility of the local crisis organization/emergency response team. For this purpose, organizational precautions with defined responsibilities and procedures have been implemented at the sites/in the countries. Depending on the situation, these involve business partners and the local community around the sites.

9.3 Transportation Safety

Great importance is attached to transportation safety within the Bayer safety culture. This applies to the transportation of materials on public transportation routes, particularly in the case of hazardous materials. This includes various processes such as loading and unloading, classification, labeling, packaging and selecting the right logistics partners.

In a dedicated Bayer Group directive, we have defined procedures that ensure all transported materials are handled in line with applicable regulations and the potential hazard they pose. Logistics service providers are selected following a defined procedure, and their fulfillment of safety and quality standards is assessed. Under the directive, people responsible for transportation safety are appointed in every organizational unit concerned. As part of our Responsible Care activities, transportation safety instructions are also drawn up and distribution safety audits performed for nonhazardous materials. We thus go beyond what is required under transportation legislation. Bayer's objective is to achieve an appropriate and equally high standard of HSEQ throughout the world and to continuously improve this, particularly regarding transportation processes. The transportation safety and security management of our subgroups is part of the audit system of the Bayer Group detailed in the Bayer Group Regulation "Health, Safety, Environment and Quality (HSEQ) Audits," which was updated in 2015.

The subgroups have also set up a network of transportation safety experts and users with practical experience to share and harmonize know-how and procedures for transportation and distribution safety and security including emergency response management and incident reporting. The Transportation Safety Platform acts as a global forum for exchanging information and standardizing procedures between the subgroups. In 2015, the platform focused, for example, on regulations management, training in transportation safety and use of this worldwide, the review of internal process instructions and the evaluation and selection of our logistics service providers.

In total, well over one million transport movements took place in 2015. Despite our extensive safety precautions and training activities, residual risks remain and can result in transport incidents. We classify critical incidents during the transportation of our products as transport incidents. These include accidents that cause personal injury or significant damage to property and environmental impact through the release of substances or leakage of hazardous materials. We record transport incidents using defined criteria. Assessment is based on the spilled load, graded according to the volume and dangerous goods class, personal injury and blocked transportation routes. We take into account both our own chemical transport movements and those we commission and pay third parties to perform on our behalf. We carefully analyze and evaluate all transport incidents so that adequate steps can be taken to prevent a recurrence.

TRANSPORT AND ENVIRONMENTAL INCIDENTS

The number of transport incidents in 2015 was 12, the same as last year. These were mainly traffic accidents.

Group target 2020: reduction of 30% in transport incidents

See also Chapter 1.4 for Group targets

In recent years most transport incidents occurred at Covestro. For this reason, as a Life Science company Bayer will refrain from continuing with the relevant Group target in the future. Instead, we shall endeavor to minimize the number of such incidents through preventive measures.

ONLINE ANNEX: 3-9.3-1

Transport Incidents by Means of Transport [Table 3.9.2-1]

	2011	2012	2013	2014	2015
Road	6	6	8	11	11
Rail	1	0	0	1	1
Inland waterways	0	0	0	0	0
Sea	0	0	3	0	0
Air	0	0	0	0	0
Pipeline	0	0	0	0	0
Total	**7**	**6**	**11**	**12**	**12**

The number of environmental incidents fell from four to two in 2015. Bayer uses the term "environmental incidents" to define incidents in the course of our business activities that result in the release of substances into the environment. Factors that determine whether there is a reporting obligation include, in particular, the nature and quantity of the substance, the amount of damage caused and any consequences for nearby residents. In accordance with our internal voluntary commitment, we report any leakage of substances with a high hazard potential from a quantity of 100 kg upward.

ONLINE ANNEX: 3-9.3-2

Number of Environmental Incidents [Table 3.9.2-2]

	2011	2012	2013	2014	2015
Environmental incidents	**3**	**5**	**10**	**4**	**2**

In total there were 13 incidents reported in 2015, one of which had to be classified both a transport and an environmental incident. A detailed overview of the transport and environmental incidents can be found in the table below.

ONLINE ANNEX: 3-9.3-3

Environmental and Transport Incidents 2015[1] [Table 3.9.2-3]

	Environ-mental	Transport	Personal injury
Covestro, Illinois, United States, January 15, 2015 At a truck parking lot, approximately 7,600 liters of 36% hydrochloric acid escaped from a leaky tanker and entered a wastewater pipe, from where it continued in a diluted form into the wastewater treatment system. No injuries or hazards occurred.		X	No
Covestro, Hubli, India, January 18, 2015 Approximately 1,200 kg of product (hazardous polyisocyanate) leaked from a truck in a transport incident. Specialist staff ensured expert cleanup and disposal.		X	No
Covestro, California, United States, February 7, 2015 A tanker was accidentally overfilled during loading, resulting in around 1,150 liters of TDI (hazardous material) leaking into the collection area of the filling station. No injuries or hazards occurred.		X	No
Covestro, Ward Creek, United States, May 31, 2015 In an accident, an overturned truck tractor lost 1,500 liters of MDI, which spilled onto the road and into the surrounding area. This accident was also classified as an environmental incident. The product was cleaned up in a professional manner. No injuries occurred.	X	X	No
Covestro, Helsinki, Finland, June 4, 2015 An IBC[2] was damaged in a vehicle transport incident at a site belonging to the postal service. An unquantified amount (maximum capacity of the IBC 1,000 kg) of Bayhydrol escaped. 24 people were endangered by the product leak, 12 of whom underwent hospital examinations as a precaution and were discharged the same day. The product was cleaned up and disposed of in a professional manner.		X	No
Covestro, Budapest/Sibiu, Hungary, June 8, 2015 The driver of a tanker was killed in a traffic accident. No product was spilled.		X	Yes
Covestro, Antwerp, Belgium, August 18, 2015 Due to incorrect operation during transfer between a tank container and a flexitank, the flexitank burst and lost approximately 6,000 kg of Desmophen (not a hazardous material). No injuries or hazards occurred.		X	No
Covestro, Dormagen, Germany, September 3, 2015 During unloading, around 150 liters of nitric acid (hazardous material) were accidentally spilled. An employee who came into contact with the acid was treated at a hospital as a precaution and was then able to resume work. An investigation into the impact on the environment was initiated.	X		Yes
Covestro, Laredo, United States, September 28, 2015 A forklift truck pierced a drum filled with Desmodur (TDI). 150 kg of the product spilled onto the loading ramp. The product was cleaned up and disposed of in a professional manner.		X	No
Covestro, Seelze, Germany, September 30, 2015 Approximately 100 liters of 30% hydrochloric acid escaped from a leaky rail tank car. No injuries or hazards occurred. An investigation into the incident was initiated.		X	No
Covestro, Cologne, Germany, October 28, 2015 While a truck was being loaded, a forklift truck accidentally pierced a drum filled with Desmodur I (hazardous material). 150 liters of the product spilled onto the floor of the warehouse and were cleaned up and disposed of in a professional manner. No personal injury or environmental damage occurred.		X	No
Covestro, Martinsburg, United States, December 9, 2015 A truck driver noticed a leak in his tanker. This was caused by a leaky drum filled with Desmodur. The fire department was notified and cleaned up the spilled liquid on the road surface using binding agent. The remaining product was transferred to a new drum.		X	No
Covestro, Charleston, United States, December 16, 2015 Almost 1,900 liters of a polyalcohol spilled from a tanker truck in a traffic accident. The fire department sealed up the spillage, thus preventing release into the environment. The driver of the truck was injured in the accident and treated at a hospital.		X	Yes

[1] Standard practice at Bayer is to record every fatality reported to us relating to our business activities. A difference between the number of fatalities in Table 3.9.1 (occupational injuries) and Table 3.9.2-3 may occur because for occupational injuries, by definition, we indicate only fatalities of Bayer and contractor employees who were under immediate Bayer supervision.
[2] IBC (intermediate bulk container)

The following incident was recorded and analyzed, but is not classed as an environmental or transport incident according to Bayer criteria.

Further Incidents Not Considered Environmental or Transport Incidents under Bayer Criteria [Table 3.9.2-4]

Location of the incident	Description	Comments
CropScience, Muskegon, United States, October 5, 2015	Small quantity of product entered the municipal wastewater system	At the Muskegon site, a small quantity of product entered the municipal wastewater system. The local community complained about the odor this caused. The responsible authorities were notified as a precaution. There were no hazards. Due to the low quantity, the incident is not classified as an environmental incident.

10. Environmental Protection

Bayer takes its responsibility to protect the environment very seriously. We are continuously working to reduce the environmental impact of our business activities and find innovative product solutions that benefit the environment. Our environmental standards apply worldwide.

An efficient approach to raw materials and energy is now both an ecological and economic imperative. Eco-efficient processes help reduce environmental impact and at the same time cut the costs associated with materials, energy, emissions and disposal.

Our use of energy sources, water and other resources, as well as the emissions and waste we generate, are determined to a great extent by just a few factors. Our product portfolio and demand for our products determine the use of materials and energy. At the same time, we continuously improve our production processes to make them more resource-friendly and lower the emissions they generate. We measure how efficiently we use our resources in relation to manufactured sales volume, which does not include intermediates.

Responsibilities and framework conditions for health, safety, environmental protection and quality (HSEQ) are stipulated at the Group level, with Group regulations, targets and performance indicators (KPIs), among other things, serving this purpose. In the field of environmental protection (from, for example, resource use to air, water and soil emissions and waste generation), operational management takes place at the subgroup level, with the aid of HSEQ management systems, committees and working groups.

Our commitment to environmental protection, health and safety extends beyond the scope of legal requirements. It includes factoring in environmental aspects in a particular way and performing a voluntary ecological assessment for capital expenditure projects exceeding €10 million. In the case of acquisitions, we examine prior to the transaction whether the applicable environmental and occupational safety regulations and fundamental employee rights are complied with at the production sites in question.

10.1 International Standards and Certifications

To maintain high HSEQ standards throughout the Group, Bayer has established appropriate management systems that are aligned to acknowledged international standards and are regularly evaluated and updated. They form an integral part of all our business processes. Regular upkeep of the management systems and appropriate training and certification also demonstrate our commitment to the chemical industry's Responsible Care™ initiative and in particular the guidelines of the Responsible Care Global Charter.

With regard to the coverage of our business activities with HSEQ management systems based on energy consumption, in 2015 around 96% of our production sites featured an HSE management system audited by Bayer. Some 93% of our entire business activities were certified externally to at least one internationally recognized standard. As part of a Group-wide certification plan, it is planned, by 2017, to achieve virtually complete coverage based on energy consumption by external standards in both environmental and occupational safety management. One hundred percent coverage is not feasible owing to the frequent changes in our site portfolio.

Standards and Certifications in % of Business Activities (Based on Energy Consumption) [Table 3.10.1]

	2011	2012	2013	2014	2015
Certification to external standards					
ISO 14001 certification / EMAS validation	66	84	84	91	93
Certified to OHSAS 18001[1]	27	30	30	34	80
Certified to ISO 50001[2]	–	–	–	40	47
Degree of coverage with certification to at least one of the above standards	87	89	90	95	93
HSE management systems internally audited by Bayer					
HSE management systems audited by Bayer	99	99	99	94	96

[1] The rise in 2015 is due to enhanced OHSAS 18001 certification at Covestro sites.
[2] Group values determined from 2014 onward

All subgroups also have industry-specific international quality management systems such as ISO 9001, ISO 17025, ISO 13485 or GMP (Good Manufacturing Practice). Group-wide, the coverage by this kind of certification is over 98%. More information about quality management in the various subgroups can be found in Chapter 7 "Procurement, Production, Logistics, Distribution."

See Chapter 7

10.2 Energy Consumption

In 2015, we succeeded in reducing the Group's total energy consumption by 2.5% to 83.2 petajoules. Basically, we differentiate between primary energy consumption – mainly of fossil fuels for our own generation of electricity and steam – and secondary energy consumption that reflects the purchase of electricity, steam and refrigeration energy and the use of process heat.

Primary energy consumption fell by 5.7%. This was mainly due to the reduction in natural gas, which was primarily achieved through more efficient facility operation at the Uerdingen site in Germany. The use of coal was approximately at the same level as the previous year, while consumption of liquid fuels and other primary energy sources was reduced. Waste utilization was significantly higher than the previous year, mainly owing to the use of liquid waste as a source of energy at Covestro's site in Caojing, China. Secondary energy consumption rose by 1.1%. The use of electricity declined, while consumption of steam and process heat was higher than in 2014 (see Table 3.10.2).

The drop in total energy consumption (primary and secondary energy sources) was mainly caused by lower energy needs at the Leverkusen and Uerdingen sites in Germany. Moreover, the partial shutdown of production facilities at the Belford Roxo site in Brazil also contributed to a reduction in total energy consumption.

In 2015, Bayer's manufactured sales volume rose by 2.7%. We were able to slightly improve our energy efficiency, which we define as the total energy consumption in megawatt hours (MWh) per metric ton of manufactured sales volume, from 3.37 MWh/t in 2014 to 3.34 MWh/t in 2015. This development confirms the trend of a decoupling of manufactured sales volume from energy consumption identified in previous years. This brings us closer to our Group target of improving energy efficiency by 10% by 2020.

Group target 2020: improvement of 10% in Group-wide energy efficiency

See also Chapter 1.4 for Group targets

Energy Consumption in the Bayer Group [Table 3.10.2]

	2011	2012	2013	2014	2015
Primary energy consumption for the in-house generation of electricity & steam (TJ)	**50,096**	**49,047**	**47,582**	**45,572**	**42,996**
Natural gas	31,162	30,411	29,796	31,580	28,813
Coal	16,776	15,954	15,094	12,611	12,755
Liquid fuels	660	656	416	421	350
Waste	515	1,005	1,282	833	1,523
Other[1]	983	1,021	994	127	(445)
Secondary energy consumption (net, TJ)	**34,846**	**34,137**	**33,266**	**39,745**	**40,186**
Electricity[2]	25,475	25,849	25,560	27,177	25,977
Steam	1,054	(121)	(801)	3,579	4,694
Steam from waste heat (process heat)	9,000	9,144	9,146	9,639	9,974
Refrigeration energy	(683)	(735)	(639)	(650)	(459)
Total energy consumption (TJ)	**84,942**	**83,184**	**80,848**	**85,317**	**83,182**
Energy efficiency[3] (MWh/t)	**3.63**	**3.50**	**3.44**	**3.37**	**3.34**

[1] E.g. hydrogen
[2] Secondary energy consumption for electricity is based on the raw material mix of the country concerned.
[3] Energy efficiency is the quotient of total energy consumption and manufactured sales volume. For Covestro, this includes neither the secondary products sodium hydroxide solution and hydrochloric acid generated in production nor trade products.

More than 90% of our own energy generation comes from combined heat and power processes. These efficient power plants convert approximately 80% of the fuel energy used into electricity and heat. In addition, we purchase electricity on the market – through energy exchanges, for example. The electricity and heat generated and purchased are used in our own production facilities and third-party facilities (especially of Lanxess Deutschland GmbH as the other shareholder of our service company Currenta). The proportion of renewable energies is determined by the energy mix of our energy suppliers. We comment in detail on these issues in our CDP (previously Carbon Disclosure Project) Report.

www.bayer.com/CDP-climate

10.3 Air Emissions

At Bayer, air emissions are caused mainly by the generation and consumption of electricity, steam and process heat. Our commitment to greater energy efficiency helps reduce both costs and emissions. We also aim to contribute to climate protection on several levels. We have set ambitious targets for resource efficiency and established relevant measures across the Group.

Our commitment is divided into three areas:

Group target Covestro: improvement in production process technology to achieve better energy efficiency

1. More efficient production: we aim to reduce the emissions of greenhouse gases in our own production facilities by increasing energy efficiency, using combined heat and power generation in our power plants and developing and marketing new, more climate-friendly technologies. Thanks to our own energy management systems and production and process innovations, considerable resources have been saved in recent years. Energy efficiency projects resulting from STRUCTese™ (Structured Efficiency System for Energy) implemented since 2008 lead to annual savings. Taking into account all sustainable savings effects since the system was introduced, these savings amounted to 1.55 million MWh in the area of primary energy consumption in 2015.

www.bayer.com/COV-production

2. Reducing emissions using market solutions: our products play their part in saving energy and conserving resources in many different ways. We are able to help our customers in the areas of building insulation, lightweight construction and agriculture in particular. We provide solutions both for reducing emissions and for adapting to climate change. These include state-of-the-art crop protection products that enable higher yields, new cultivation methods such as precision farming and the development of crops that are better able to cope with stress factors such as extreme temperatures and aridity. You can read more, for example, about combating the growing threat of malaria – resulting from climate change – in the CropScience section of Chapter 4 "Research, Development, Innovation."

See also Chapter 4

3. Reducing emissions in nonproduction areas of Bayer: this includes – with the planned reduction of specific CO_2 emissions of newly registered vehicles to 110 g/km through 2020 – an ambitious reduction target for our vehicle fleet, optimized logistics and enhancement of the environmentally friendly credentials of our information and communication technologies (Green IT). Through our EcoFleet initiative, CO_2 emissions of newly registered vehicles for our global fleet of over 25,000 vehicles were reduced by a further 7 g/km to 141 g/km in 2015.

GREENHOUSE GAS EMISSIONS

Bayer reports all Group greenhouse gas emissions in line with the requirements of the Greenhouse Gas Protocol (GHG Protocol). Direct emissions from our own power plants, waste incineration plants and production facilities (corresponding to Scope 1 of the GHG Protocol) and indirect emissions that result from the external procurement of electricity, steam and refrigeration energy (Scope 2) are determined at all production locations and relevant administrative sites.

Dual reporting was introduced in 2015 with the updating of the GHG guidelines for Scope 2. According to this, indirect emissions have to be reported using both the location-based and the market-based methods. The location-based method uses regional or national average emissions factors, while the market-based method uses provider- or product-specific emissions factors. From 2015, we are reporting for the first time in line with the new guideline, shown retroactively to 2012. To ensure the comparability of the data we are additionally reporting according to the previous system once more this year.

Group Greenhouse Gas Emissions[1] [Table 3.10.3]

	Million metric tons of CO_2 equivalents				
	2011	2012	2013	2014	2015
Direct greenhouse gas emissions[2]	4.23	4.24	4.09	4.02	4.41
Indirect greenhouse gas emissions[3], according to the previous method (reported until 2014)	3.92	4.12	4.29	4.70	4.64
Indirect greenhouse gas emissions[3], according to the location-based method (reported from 2015)	–	4.71	4.85	5.03	4.94
Indirect greenhouse gas emissions[3], according to the market-based method (reported from 2015)	–[4]	4.72	4.91	5.53	5.30
Total greenhouse gas emissions, according to the previous method (reported until 2014)	8.15	8.36	8.37	8.72	9.05
Total greenhouse gas emissions, according to the market-based method (reported from 2015)[5]	**–**	**8.96**	**9.00**	**9.55**	**9.71**
Specific greenhouse gas emissions (t CO_2e/t), according to the previous method (reported until 2014)[6]	0.95	0.98	1.00	1.02	1.09
Specific greenhouse gas emissions (t CO_2e/t), according to the market-based method (reported from 2015)[5,6]	**–**	**1.06**	**1.09**	**1.12**	**1.19**

[1] Portfolio-adjusted in accordance with the GHG Protocol
[2] In 2015, 86.8% of emissions were CO_2 emissions, 12.7% N_2O emissions, just under 0.5% partially fluorinated hydrocarbons and 0.04% methane.
[3] Typically, CO_2 in incineration processes accounts for over 99% of all greenhouse gas emissions. When determining indirect emissions, our calculations are therefore limited to CO_2.
[4] Back calculation using the market-based method is only possible from 2012, as the RE-DISS factors needed for the calculation were only available for the first time for that year.
[5] The market-based method of the new Scope 2 GHG Protocol most reliably reflects the indirect emissions and the success of emissions reduction measures, so we used emissions volumes calculated using this method when calculating the total and specific greenhouse gas emissions.
[6] Specific Group emissions are calculated from the total volume of direct emissions and indirect – calculated using the market-based method of the new Scope 2 GHG Protocol – emissions of the subgroups, including the emissions at the Belford Roxo site and emissions from the vehicle fleet, both reported for the Group as a whole, divided by the manufactured sales volume of the three subgroups in metric tons. Quantities attributable to the supply of energy to external companies are deducted from the direct and indirect emissions. At Covestro, neither the by-products sodium hydroxide solution and hydrochloric acid generated during production nor trade products are included in the manufactured sales volume.

The total volume of Group-wide greenhouse gas emissions rose by 1.7% (Scope 2 market-based) in 2015. Broken down, direct emissions rose by 9.7%, while indirect emissions fell by 4.1% (Scope 2 market-based). The rise in direct emissions is largely due to higher nitrous oxide emissions caused by a significant increase in nitric acid production at the site in Caojing, China, and to additional emissions from the incineration of liquid and thermal waste there. Another reason was increased energy consumption by third parties at the CropScience site in Institute, United States.

Group target 2020: reduction of 20% in specific greenhouse gas emissions

In line with our Group target we are endeavoring to reduce specific greenhouse gas emissions (total emissions divided by the manufactured sales volume) by 20% through 2020. 2015 saw a rise of 6.0% (Scope 2 being calculated according to the market-based method) owing mainly to the effects described above.

See also Chapter 1.4 for Group targets

ONLINE ANNEX: 3-10.3-1

Even though a significant proportion of our direct emissions comes from the generation of energy that is delivered to other companies, we include all greenhouse gas emissions from the conversion of primary energy sources into electricity, steam or refrigeration energy in our energy balance, in line with the regulations of the GHG Protocol. Consequently, our absolute figures for greenhouse gas emissions are higher than the actual emissions resulting from Bayer's business activities. The level of specific greenhouse gas emissions is a more meaningful statistic. This indicates only the greenhouse gas emissions for which Bayer is directly responsible in relation to the manufactured sales volumes of the three Bayer subgroups.

Greenhouse Gas Emissions by Subgroup and Service Company[1] [Table 3.10.3-1]

	Total direct and indirect emissions in million metric tons of CO_2 equivalents			
	2012[2]	2013	2014	2015[5]
HealthCare	0.60	0.57	0.57	0.57
CropScience	0.96	0.99	0.97	1.05
Covestro	5.29	5.42	6.27	6.41
Currenta[3]	1.99	1.92	1.62	1.47
Specific greenhouse gas emissions at Covestro (metric tons of CO_2 equivalents per metric ton of manufactured sales volume)[4]	0.93	0.97	1.03	1.10

[1] The indirect emissions were calculated according to the market-based method. Since the RE-DISS factors needed for this were only available from 2012 on, the data are only indicated for the past 4 years.
[2] Emissions from the Bayer Group's vehicle fleet have been recorded since 2012, but not specific to any subgroup, and are assigned to the direct Group emissions in Table 3.10.3. In 2015, fleet emissions amounted to 0.14 million metric tons of CO_2 equivalents.
[3] The emissions reported for Currenta are attributable to the provision of energy to external companies at the Chempark sites.
[4] The by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the manufactured sales volume, nor are trade products.
[5] The emissions from the production site in Belford Roxo, Brazil, totaling 0.06 million metric tons of CO_2 equivalents, are not included in this table but are reported for the Group as a whole in Table 3.10.3.

In 2015, the waste incineration plants operated by Currenta generated just under 1 million metric tons of steam from the incineration of more than 250,000 metric tons of hazardous waste from the Chempark sites and some external production companies. Compared to using fossil energy sources, the use of this steam enables approximately 200,000 metric tons less CO_2 TO BE EMITTED per year.

The reporting of all relevant indirect emissions resulting from the value chain is bindingly regulated by the GHG Protocol Corporate Value Chain (Scope 3) Accounting & Reporting Standard. Following a thorough examination, Bayer has identified nine essential Scope 3 categories, which we report on in detail in the CDP Report. We take particular account of those emissions where there is significant potential for reduction e.g. our transport-related emissions resulting from business trips.

In 2015, the Bayer Group was involved in European emissions trading with 19 plants in total. The greenhouse gas emissions of these plants amounted to approximately 2.32 million metric tons of CO_2 equivalents.

OTHER DIRECT EMISSIONS INTO THE AIR

Emissions of ozone-depleting substances (ODS) fell by 20.7%. Emissions of volatile organic compounds excluding methane (VOCs) decreased by 24.0%. The main source of both types of emissions remains the CropScience site in Vapi, India, which accounts for 55.4% of VOC emissions and 94.3% of ODS emissions. The project initiated there four years ago to reduce these emissions continues to have an impact. VOC emissions fell by a further 38.3%. ODS emissions there also decreased, by 21.1%. A central waste air treatment system will go into operation at the Vapi site during 2016. This will bring together the many different sources of emissions there and cause another significant reduction in these emissions.

Emissions of Ozone-Depleting Substances (ODS)[1] [Table 3.10.4]

	2011	2012	2013	2014	2015
ODS in metric tons p.a.	16.3	16.3	15.7	14.8	11.7

[1] Ozone-depleting substances (ODS) in CFC-11 equivalents

Emissions of Volatile Organic Compounds (VOC)[1] [Table 3.10.5]

	2011	2012	2013	2014	2015
VOC in 1,000 metric tons p.a.	2.69	2.60	2.27	2.12	1.61
VOC in kg per metric ton of manufactured sales volume	0.2457	0.2316	0.2047	0.1864	0.1379

[1] Volatile organic compounds (VOC) without methane

Emissions of sulfur dioxide fell by 4.1%. Particulate emissions also declined, in this case by 8.9%, caused by reductions at Covestro's sites in Baytown, Texas, United States, and Caojing, China. Emissions of nitrogen oxides, on the other hand, rose by 2.4% and of carbon monoxide by 2.1%. Both increases could essentially be attributed to differences in the types of coal used at the Uerdingen site in Germany.

ONLINE ANNEX: 3-10.3-2

Other Important Direct Air Emissions [Table 3.10.5-1]

1,000 metric tons p.a.

	2011	2012	2013	2014	2015
CO	1.31	1.00	0.94	0.91	0.93
NO_X	3.66	3.07	2.51	2.36	2.42
SO_X	2.27	1.85	1.32	1.22	1.17
Particulates	0.18	0.18	0.16	0.25	0.23

10.4 Use of Water and Emissions into Water

The continuous availability of clean water in sufficient quantities is essential for supplying our production sites and the surrounding areas. However, this can no longer be taken for granted in many parts of the world. We plan to design our water supply in such a way that industrial water usage continues not to lead to local problems such as a shortage of water for the people living in the area.

Our Water Position commits us to compliance with international and local legislation and to fulfilling the strictest requirements worldwide while at the same time ensuring the reliable operation of our production facilities. The goal is to protect water as a resource and use it efficiently.

In their respective directives, our subgroups have defined responsible water use, ranging from resource-friendly usage to appropriate disposal of wastewater, and anchored implementation in their HSEQ management systems.

Group target 2017: establishment of water management at all sites in water-scarce areas

As part of our Water Position, we used the WBCSD Global Water Tool™ to identify all Bayer sites that are located in regions affected or threatened by water shortage. In line with our Group target, these sites are to establish a water management system with local targets by 2017. The sites concerned are analyzed annually, including an evaluation of their water usage, quality and discharge data. In addition, site-specific initiatives that enable the reuse of water and thus contribute to reducing water consumption are also examined and evaluated. Results of the current analysis show that an effective water management system is already in place at around 58% of the sites examined.

See also Chapter 1.4 for Group targets

Although the framework conditions for sites can differ very considerably according to region, some measures successfully implemented at several sites have already been seen to be effective. These include both in-house water treatment plants to make river water usable and river water reservoirs to avoid having to take drinking water from local water suppliers even when water levels are low. Further effective steps for pursuing the water target include continuous analysis of wastewater in line with site-specific performance indicators and training new employees in responsible water usage.

Awareness of this issue is being raised through ongoing Group-wide dialogue. Equally important in this is active participation in forums and discussions on this subject with government officials and other stakeholders. The next step will be to agree specific measures for the targeted development at those sites with identified potential for improvement.

www.bayer.com/CDP-water

Bayer supports the CEO Water Mandate of the U.N. Global Compact with the goal of working with key stakeholders to develop sustainable strategies for water usage. In our annual response to the CDP Water Disclosure, we report in detail on our water usage, the company-specific water footprint and the associated opportunities and risks. This represents a progress report for the CEO Water Mandate.

WATER CONSUMPTION AND USAGE

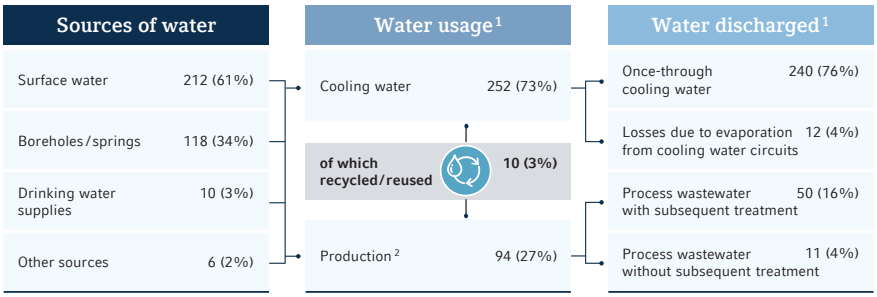
In 2015, total water consumption in the Group fell by 1.1% to around 346 million cubic meters.

Some 73% of all water used by Bayer is cooling water. This water is only heated and does not come into contact with products. It can be returned to the water cycle without further treatment in line with the relevant official permits. The total volume of once-through cooling water was around 240 million cubic meters in 2015. In our production activities, we endeavor to use water several times and to recycle it. Water is currently recycled at 35 sites, e.g. in closed cooling cycles, or through the reuse of treated wastewater or the recirculation of steam condensates as process water. A total of 10.5 million cubic meters of water were reused in 2015.

ONLINE ANNEX: 3-10.4-1

The diagram shows the distribution of the different types of water usage within the Bayer Group.

Water Use in the Bayer Group in 2015 (million m³) [Graphic 3.10.0-1]



[1] The differences between volumes of water consumed and water discharged can be explained, for example, by unquantified losses due to evaporation, leaks, quantities of water used as raw materials in products and volumes of condensate generated through the use of steam as a source of energy.
[2] Sum from production processes, sanitary wastewater and rinsing and cleaning processes in production

Water was essentially obtained from the same sources as in the previous year.

Net Water Intake by Source [Table 3.10.6]

	2011	2012	2013	2014	2015
Water consumption (million m³ p.a.)	411	384	361	350	346
Proportion from surface water (%)	65	64	63	63	61
Proportion from boreholes/springs (%)	31	32	33	32	34
Proportion from public drinking water supplies (%)	2	2	3	3	3
Proportion from other sources, generally rainwater (%)	2	2	2	2	2

WASTEWATER AND WASTEWATER DISCHARGES

The total volume of process wastewater fell by 7.7%. All wastewater is subject to strict monitoring and analysis before it is discharged into disposal channels. 81.9% of Bayer's process wastewater worldwide is purified at wastewater treatment plants (Bayer or third-party facilities). Following careful analysis, the remaining volume was categorized as environmentally safe according to official provisions. Part of it contained nutrients and was therefore used to water gardens and agricultural land, as in the previous year.

Volume of Process Wastewater [Table 3.10.7]

	2011	2012	2013	2014	2015
Volume of process wastewater (million m³)	72	65	63	66	61

The goal is to minimize emissions into wastewater. Total emissions of nitrogen compounds into wastewater fell by 26.1% in 2015. The main factors behind this reduction were the decrease in production at CropScience's Dormagen site in Germany and the fact that the denitrification process at Covestro's Baytown site in Texas in the United States operated without interruption again in 2015. Discharges of phosphates into wastewater rose by 2.0% in 2015. Total organic carbon (TOC) emissions, however, decreased by 3.3%.

Emissions into Water [Table 3.10.8]

	2011	2012	2013	2014	2015
Phosphorus (1,000 metric tons p.a.)	0.08	0.15	0.11	0.10	0.10
Nitrogen (1,000 metric tons p.a.)	0.53	0.70	0.69	0.76	0.56
Nitrogen (kg per metric ton of manufactured sales volume)	0.0486	0.0624	0.0620	0.0671	0.0483
TOC[1] (1,000 metric tons p.a.)	1.50	1.42	1.53	1.20	1.16
TOC (kg per metric ton of manufactured sales volume)	0.137	0.126	0.138	0.105	0.100
Heavy metals (1,000 metric tons p.a.)	0.0108	0.0098	0.0091	0.0063	0.0064
Inorganic salts (1,000 metric tons p.a.)	926	1,048	946	845	927
COD[2] (1,000 metric tons p.a.)	4.51	4.25	4.58	3.59	3.48

[1] Total organic carbon
[2] Chemical oxygen demand; calculated value based on TOC figures (TOC x 3 = COD)

10.5 Waste and Recycling

Systematic waste management minimizes material consumption and disposal volumes. Safe disposal channels with separation according to the type of waste and economically expedient recycling processes serve this purpose. Production fluctuations and building refurbishment/land remediation work also influence waste volumes and recycling paths.

In 2015, the total volume of waste generated rose by 4.9%. Although the volume of nonhazardous waste fell by 2.5%, the volume of hazardous waste generated rose by 11.1%. This contrast is largely due to the re-categorization of fluidized bed ash from the power plant at the Chempark Leverkusen site, which now has to be classified as hazardous waste. Increased production at the sites in Wuppertal, Germany, and Muttenz, Switzerland, also led to greater volumes of hazardous waste.

Waste Generated[1] [Table 3.10.9]

	2011	2012	2013	2014	2015
Total waste generated (1,000 metric tons p.a.)	958	1,014	899	896	940
Hazardous waste generated[2]	474	603	467	487	541
of which hazardous waste from production	354	397	417	442	488
Specific volume of hazardous production waste (%)	3.23	3.54	3.77	3.89	4.18

[1] Waste generated by Bayer only
[2] Definition of hazardous waste in accordance with the local laws in each instance

The volume of waste disposed of rose by 5.6%. This increase is mainly due to the construction of new production facilities at the Knapsack site in Germany. More information about the distribution of waste according to the different means of disposal is available in:

ONLINE ANNEX: 3-10.5-1

Waste by Means of Disposal [Table 3.10.9-1]

	2011	2012	2013	2014	2015
Total volume of waste disposed of[1] (1,000 metric tons p.a.)	**966**	**1,021**	**915**	**898**	**949**
Proportion removed to landfill (%)	38	36	32	28	26
Proportion incinerated (%)	33	33	38	40	39
Proportion recycled (%)	28	29	27	29	31
Others[2] (%)	1	2	2	3	4

[1] Bayer serves as a certified waste disposal plant operator at various sites. At these locations, Bayer disposes not only of its own waste but also of waste from third parties (companies not belonging to the Bayer Group). For that reason, the volume of waste disposed of differs slightly from the volume of waste generated by Bayer.
[2] E.g. passed on to third parties (providers/waste disposal companies)

In 2015, the volume of recycled waste was 295,826 metric tons. Expressed as a proportion of the total waste disposed of, this represented an increase from 29% in 2014 to 31% in 2015. Site-specific reasons such as changes to the product portfolio, other production volumes, variations in the intensity of construction measures and recycling projects were key to this.

Hazardous Waste[1] Generated by Means of Disposal [Table 3.10.9-2]

	2011	2012	2013	2014	2015
					1,000 metric tons p.a.
Total volume of hazardous waste generated[2]	**474**	**603**	**467**	**487**	**541**
Amount removed to landfill	122	175	53	65	75
Amount incinerated/recycled	352	428	414	422	466

[1] Waste generated by Bayer only
[2] Definition of hazardous waste in accordance with the local laws in each instance

RECYCLING

In addition to satisfying economic and environmental criteria, the recycling and treatment of our materials also has to comply with legal requirements. This results in restrictions, in particular in the areas of pharmaceuticals and crop protection. Throughout the Group, we are developing opportunities for recycling within the framework of legal regulations. Examples of recycling measures provide proof of Bayer's commitment to recycling.

ONLINE ANNEX: 3-10.5-2

Production-related recycling at HealthCare is conducted in line with the requirements of the relevant production site. When determining the best means of disposal, recycling options are explicitly included, and are to be considered preferable to landfilling or incineration.

Material-based recycling is important in CropScience's active ingredient and intermediate product production. For reasons of resource efficiency, solvents, catalysts and intermediates are repeatedly processed and returned to the production process. Since these are recycling steps that are closely linked with the process, there is no global regulation. Material-based recycling is regulated separately at each production site and production plant. In the global process development of active ingredients and intermediates, material recycling is considered an important development criterion. In accordance with CropScience's global Environment Policy, all CropScience sites are obliged to prevent, recycle and reduce waste and dispose of it safely and in line with good environmental practices.

The subgroups select the best means of disposal for any given waste type at the production site based on the applicable national or local legal requirements, the technical possibilities available on site, environmental protection aspects and the internal hierarchy of waste disposal.

No product-related recycling is possible for the HealthCare portfolio because pharmaceutical products are subject to strict quality requirements. Packaging materials are recycled in line with national regulations as part of the national infrastructure for waste disposal.

CropScience does not generally take back crop protection products it has sold. Packaging materials are disposed of or recycled in line with national legislation. In many countries where there is no legal regulation, the industry has set up a returns system in collaboration with other providers.

Returns of obsolete stocks of crop protection products are only conducted in individual cases where there is good reason. However, the crop protection product industry has set up voluntary initiatives in various countries that enable farmers to ensure obsolete stocks are disposed of safely. As part of its activities in the CropLife association, CropScience is working with the United Nations' Food and Agriculture Organization (FAO) and the World Bank to support the proper collection and disposal of obsolete stocks in Africa.

In its own production operations, Covestro also uses material recycled from plastic waste. These kinds of high-quality secondary raw materials are used to manufacture certain grades of engineering thermoplastics. A flame-retardant plastic compound for television set housings, for example, comprises 30% recycled PET water bottles.

The Global Sideline Business unit at Covestro sells unwanted plant and tools on the open market, thus feeding them back into circulation. Approximately 150 tangible assets were sold to third parties worldwide in 2015. Scrap metal from plants is returned to the material cycle. In 2015, this amounted to around 1,600 metric tons in Germany alone.

Covestro is actively committed to recycling through its involvement in associations such as PlasticsEurope and to the avoidance of plastic granule wastage in industrial plants through the Zero Pellet Loss initiative. The company is also a shareholder of BKV GmbH, German industry's competence platform for recycling plastic.

Using conventional recycling measures, Currenta was able to return approximately 45,000 metric tons of building materials, FGD gypsum and slag, 14,300 metric tons of metal and 15,800 metric tons of chemicals such as sulfuric acid and solvents to the material cycle in 2015.

10.6 Biodiversity

Our Group-wide biodiversity position takes into account influences on biodiversity throughout the entire value chain. In this position, we commit ourselves to the United Nations Convention on Biological Diversity and its Nagoya Protocol, which regulates access to genetic resources and the fair and equitable sharing of the benefits arising from their utilization. Our CropScience subgroup passed an internal regulation in 2015 to ensure that the company only acquires and uses genetic resources in harmony with international and applicable national legislation.

ONLINE ANNEX: 3-10.6-1

Biodiversity is essential for successful agriculture, as it promotes the resilience of ecosystems. Various ecological enhancement measures are under discussion to support resilient ecosystems, such as planting flower strips to provide a refuge for animals or the more extensive cultivation of slopes to protect against erosion. These measures can help farmers improve soil fertility and water regulation in their fields, or boost the pollination activities of insects and thus increase their yields.

HealthCare also attaches great importance to maintaining biological diversity. As a member of the Association of Research-Based Pharmaceutical Companies, it supports the association's position on the U.N. Convention on Biological Diversity. Among other things, this policy, which applies to all HealthCare sites, takes into account that the subgroup concentrates on the chemical synthesis of substances using state-of-the-art technologies in medicinal, combinatorial and computational chemistry. Research into natural substances is not a focal point of its work, accounting for less than 5% of research projects. If such substances are used during research into new pharmaceuticals, they are first checked with respect to the Convention on Biological Diversity.

Group-wide directives stipulate that new production sites must not be set up in areas that are protected by statutory requirements of the countries concerned relating to natural characteristics, biodiversity or other factors.

ONLINE ANNEX: 3-10.6-2

In 2013, Bayer Real Estate, the Bayer Group's real estate service provider, used its global site register to compare the geographical coordinates of relevant production sites against those of internationally recognized protected areas (ASEAN Heritage, Barcelona Convention, UNESCO-MAB Biosphere Reserve, Wetlands and World Heritage Convention and Ramsar Convention). This comparison revealed three sites that are less than three kilometers from the protected areas Schorren van de Benenden Schelde, Belgium; the Wadden Sea of Lower Saxony, Germany; and Blesbokspruit, South Africa, respectively. Owing to major portfolio changes in the Group (separation of Covestro, formerly MaterialScience, sale of the Diabetes Care business and acquisition of the consumer care business of Merck & Co., Inc.) we are planning a new coordinate comparison with an updated range of production sites in 2016.

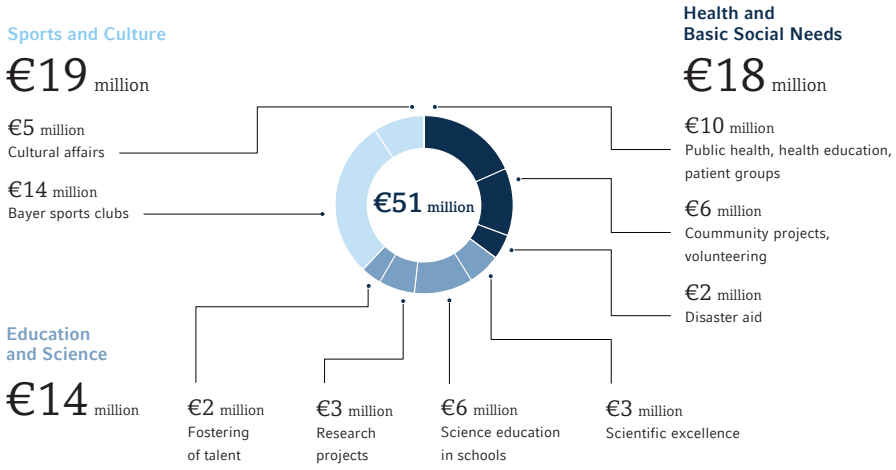
11. Social Commitment

Bayer's funding strategy focuses on people embarking on new approaches to problem-solving in the natural and life sciences and in the key areas of health, education and basic social needs, with the goal of sustainably improving living conditions. This also applies to a further focus area, sports and culture. With our support programs we see ourselves as investors, trendsetters and partners for initiatives and projects that have model character, a long-term effect and thus the potential to achieve systemic change.

The Foundation & Donations Management Department within the Corporate Office of Bayer AG is responsible for strategically aligning and coordinating our social commitment, as well as for monitoring and reporting activities. The Group-wide donation allocation and management regulations form the basis for this. The country companies, in collaboration with partner organizations such as nongovernmental organizations, bear responsibility for implementing a large number of the initiatives. An independent panel made up of internal and external judges generally decides how project funding is allocated.

In 2015, we invested a total of €51 million (2014: €49 million) in charitable activities worldwide. This was aimed at improving the quality of life at the company's various locations and contributing to solving social challenges.

Social Commitment in 2015 [Graphic 3.11.1]



Further information can be found in

ONLINE ANNEX: 3-11-1

HEALTH AND BASIC SOCIAL NEEDS

In 2015, the Bayer Cares Foundation awarded the Aspirin Social Award to the Jourvie charitable initiative. The first-place prize money of €15,000 will enable the already successful app for supporting the treatment of eating disorders to be further developed and disseminated. The foundation entered into a collaboration with the "Discovering Hands" initiative, which was a prize-winner in 2014. This will introduce this exemplary social medicine project, which is already established in Germany, to other countries. Blind women, trained as Medical Tactile Examiners, use their extraordinary sense of touch to help with the early diagnosis of breast cancer in women. Colombia is the first pilot country outside Germany. The Latin American Development Bank is another project partner.

Since the Bayer Volunteering Program began in Germany in 2007 and worldwide in 2013, the Bayer Cares Foundation has provided support for 550 volunteering projects in 65 countries. Through these projects, employees and citizens work toward improving living conditions in and around the company's sites. In 2015, the foundation brought 100 projects in 38 countries into the program, due primarily to their innovative approaches, providing them with a total of around €304,000 in funding.

Bayer is involved in an initiative aimed at eliminating or stemming the incidence of 10 neglected tropical diseases, which threaten the lives of 1.4 billion people, by 2020. We provide medication to tackle these diseases and participate in collaborations for developing new medicines. The World Health Organization (WHO), governments, nongovernmental organizations and other companies are partners in this global initiative. Focal points that fit in with Bayer's product portfolio are Chagas disease, African sleeping sickness, dengue and river blindness.

For more than 10 years, we have donated our active ingredients for the treatment of African sleeping sickness and Chagas disease, which is widespread in Latin America, to the WHO free of charge. In 2015, we again supplied one million Lampit™ tablets (active ingredient: nifurtimox 120 mg) to treat Chagas disease, as well as providing US$300,000 for logistics and distribution. We are also currently developing a nifurtimox tablet with a lower dosage that will make it easier to treat children with Chagas disease.

We are pleased to report that the number of patients affected by the type of African sleeping sickness primarily found in eastern and southern Africa is in steady decline. We were therefore able to reduce the amount of Germanin™ supplied to the WHO to 10,000 ampoules worth €114,000 in 2015. We again provided 300,000 tablets of the active ingredient nifurtimox to be used in a combination therapy with an active ingredient from another manufacturer to treat the most widespread, West African version of sleeping sickness. We also came to an agreement with the WHO to further expand support for patients in the Democratic Republic of Congo, which is the country most severely affected by sleeping sickness.

In a new product development partnership with the Drugs for Neglected Diseases Initiative, we are examining whether the active ingredient emodepside, which is currently used in veterinary medicine, could also be used to treat river blindness in humans and thus achieve a significant shortening of treatment time.

In 2015, Bayer was once again active in supporting people experiencing acute hardship as a result of natural disasters. For example, we donated medication and money with a total value of €400,000 for people affected by the earthquake in Nepal. We contributed money and water purification tablets with a total value of €25,000 to help victims of the floods in Myanmar.

We donated antibiotics with the total value of just under €1.9 million to the aid organization Health Partners International of Canada (HPIC) for the treatment of people in crisis areas and humanitarian emergencies.

We also made drugs with a market value of just under €1.5 million available free of charge to aid organizations and authorities in Turkey, Greece and Austria to treat refugees.

EDUCATION AND SCIENCE

The Bayer Science & Education Foundation again awarded prizes in 2015 with the primary goal of recognizing and raising the profile of pioneering work in life sciences and basic medical research.

Winner of the Hansen Family Award 2015 is the French infection researcher Professor Emmanuelle Charpentier from the Helmholtz Center in Braunschweig, Germany. She is responsible for key insights in the field of genome editing. In 2015, the Bayer Early Excellence in Science Award and the Bayer Thrombosis Research Award – the two prizes that promote young scientists – went to young researchers from Germany and the United States for their successes in the fields of medicine, biology and chemistry, and specifically in thrombosis research.

The company awarded 187 scholarships to talented students, postgraduates and trainees in the fields of natural, life and agricultural science and medicine, with the particular goal of enabling projects abroad. With regard to our support of schools, the "Making Science Make Sense" initiative in the United States celebrated its 20th anniversary. This program involves several hundred employees volunteering regularly to visit elementary schools and use everyday experiments to communicate the fascination and practical importance of science. Bayer implemented similar programs also aimed at young people in more than 20 countries in 2015.

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To this end, our country companies cooperated with museums, universities and other educational institutions, invited schoolchildren to the company's own student laboratories or took "research trucks" to the schools.

In Germany, the focus was on funding innovative teaching projects with a total of €500,000 for 63 specific measures at 57 schools and other educational institutions in 31 towns and cities, plus the awarding of travel scholarships and support of competitions for school students. In addition, the Humboldt Bayer Mobil, a research laboratory on wheels, regularly visited schools and the four Baylab student laboratories offered school classes a professional infrastructure. More than 20,000 schoolchildren used these facilities alone in 2015.

Given the huge influx of refugees into Germany, the Bayer Science & Education Foundation has expanded its range of scientific school education programs to also target refugee children. Along with the Berlin Senate and other educational organizations, the foundation launched a unique pilot project – the Science4Life Academy.

For the first time, teaching materials specifically for children with no knowledge of German are being developed and introduced into science lessons, and teachers are receiving targeted training. Our company also offers talented schoolchildren the chance of individualized support in the form of internships and mentoring. Our other activities to support refugees include a course preparing refugees aged between 18 and 26 for work, involving language training and careers advice.

SPORTS AND CULTURE

In 2015, Bayer further expanded its range of cultural activities. We continued to focus particularly on encouraging young talent, and brought new artists into the stART program. Another key point was to enable young people to have greater access to theater. Bayer Arts & Culture also intensified dialogue with the public. In total, Bayer staged around 120 events in the fields of music, dance, theater and the fine arts in 2015.

The "Versionale" competition for theater direction, for example, challenged creative theatrical and cultural minds for the first time to develop short stage works on the topic of "Science For A Better Life."

The Bayer clubs again made a key contribution to the broad range of sporting activities near the German sites in North Rhine-Westphalia. The major clubs also became more intensely involved as professional service providers for the company's occupational health management. In 2015, the company provided funding of some €14 million for recreational, disabled and competitive sports activities.

Bayer's involvement in professional soccer at Bayer 04 Leverkusen GmbH is not part of its social sports sponsorship activities because it belongs to the company's image advertising.