Science For A Better Life

SUSTAINABLE DEVELOPMENT REPORT 2011

Sustainable Development Report 2011

Our Sustainable Development Report highlights the economic, ecological and social challenges and opportunities that are linked to our operations and shows the strategies and solutions that we are applying to meet them.

This report aims to provide our stakeholders with comprehensive, transparent and succinct information. The concerns of our business partners and employees, together with those of stockholders, non-governmental organizations, suppliers, authorities and the general public, form the basis of our reporting. They provide us with crucial impetus for our sustainability strategy.

Our Strategy chapter describes how sustainability is anchored in our operations. We illustrate this with the aid of three focus issues that form part of our commitment to sustainability – our contributions to health care, safeguarding food supplies and climate and resource protection. The Management & Corporate Governance, Innovation & Product Stewardship, Employees, Ecology and Social Commitment chapters contain detailed facts and figures about our sustainability performance.

In this Sustainable Development Report, we have endeavored to ensure maximum transparency, clarity of layout and ease of verification. The auditing company Ernst & Young has subjected all content to an assurance process (see page 69f.).

Due to the abundance of information, selected parts of the report are only available online. Reference is made to this where appropriate in the report (marked in color). This information was also included in the assurance process.

The report is available in German and English. The editorial deadline was April 30, 2012. Our next Sustainable Development Report is due to be published in 2013.

Designations such as manager and employee refer equally to men and women; the masculine form of personal pronouns is used in such cases solely to simplify the text.

Our reporting is aligned to the G3.1 guidelines of the Global Reporting Initiative (GRI) and the 10 principles of the UN Global Compact (UNGC). The GRI has checked and confirmed that level A+ has been maintained. You can find the statement to this effect and a summarized GRI index also listing the corresponding UNGC principles inside the back cover. A comprehensive overview of the GRI indicators [1] and our progress in implementing the 10 UNGC [2] principles taking into account the Blueprint for Corporate Sustainability leadership can be found on the internet.

1 BAYER WEB

2 BAYER WEB

Further information on the internet

Our report contains references to further information on the internet at various points.
All internet references in the report are assigned a corresponding code number.
An overview of all references including codes can be found under "Additional Info Links" at www.sustainability2011.bayer.com

ONLINE REPORT	More in-depth information in our online Sustainable Development Report
BAYER WEB	Additional information on the Bayer websites
WWW	Links to supplementary information on the websites of third parties

Quick and easy access to our online report:

Simply read in this code with your smartphone and a corresponding app.
You will also find the online report at www.sustainability2011.bayer.com.

Targets 2015*

Management & Corporate Governance

Supplier management

- Inform all suppliers with purchase-order-relevant volumes about the Bayer Supplier Code of Conduct
- Assess the sustainability performance of suppliers that represent ≥75% of the total procurement volume and ≥75% of the procurement volume from risk areas
- Annually audit the sustainability performance of at least 10% of the suppliers from risk areas or at least 15 suppliers

Compliance

- Extend compliance training to 100% of all Bayer managers

Innovation & Product Stewardship

Research & development

- Maintain or increase R&D spending in relation to sales

Product stewardship

- Roll out Global Product Strategy in another 10 countries with different languages

Employees

Diversity

- Increase the proportion of female managerial staff to approaching 30%

Occupational safety (new target figure)

- Reduce the number of occupational injuries with lost workddays to ≤ 0.21 LTRIR**

Ecology

Climate protection

- Reduce specific greenhouse gas emissions in the Group by 35% (direct and indirect emissions in relation to manufactured sales volume in t) between 2005 and 2020

Process and plant safety

- Implement the Bayer-wide initiative to increase process and plant safety; dedicated process and plant safety training for approx. 26,000 employees worldwide by the end of 2012

Emissions

- Reduce other relevant emissions (ozone-depleting substances -70%, volatile organic compounds -50%)

Waste

- Reduce specific hazardous waste from production to 2.5% in relation to manufactured sales volume

Social Commitment

- Focus our global commitment further on scientific education, fostering talent, cutting-edge research, health care and, in Germany, additionally on recreational, youth and disabled sports

* Unless indicated otherwise. More information on the targets can be found on page 12 and at the beginning of each chapter in the Performance Report.
** Lost Time Recordable Incident Rate = the number of reported occupational injuries and work-related illnesses resulting in at least one or more days lost per 200,000 hours worked

The Bayer Group

The Bayer Group is a global enterprise with companies all over the world. The map shows some of our most important locations.

The Bayer Group in 2011 in figures (values for previous year in parentheses)

	North America	Latin America/Africa/ Middle East	Europe	Asia/Pacific	Total
Sales (€ million)	**8,177** (8,228)	**6,068** (5,628)	**14,441** (13,751)	**7,842** (7,481)	**36,528** (35,088)
Employees	**15,800** (16,400)	**16,400** (16,100)	**53,600** (54,300)	**26,000** (24,600)	**111,800** (111,400)
R+D expenditures (€ million)	**528** (612)	**42** (35)	**2,187** (2,246)	**175** (160)	**2,932** (3,053)
No. of fully consolidated companies	**42** (42)	**44** (43)	**139** (150)	**58** (53)	**283** (288)

Bayer Group Key Data

Category	Key Data	2010	2011
Economic Indicators (€ million)			
	Sales	35,088	36,528
	EBIT[1]	2,730	4,149
	EBIT before special items[2]	4,452	5,025
	EBITDA[3]	6,286	6,918
	EBITDA before special items[2]	7,101	7,613
	EBITDA margin before special items[4]	20.2%	20.8%
	Income before income taxes	1,721	3,363
	Income taxes	(411)	(891)
	Net income	1,301	2,470
	Earnings per share (€)[5]	1.57	2.99
	Core earnings per share (€)[6]	4.19	4.83
	Gross cash flow[7]	4,771	5,172
	Net cash flow[8]	5,773	5,060
	Net financial debt	7,917	7,013
	Capital expenditures (as per segment table in the Annual Report 2011)	1,621	1,666
	Research and development expenses	3,053	2,932
	Dividend per Bayer AG share (€)	1.50	1.65
	Personnel expenses (incl. pension plans)	8,099	8,726
	Pension liability[9]	17,699	19,310
Employee Indicators[10]			
Diversity and opportunities	Percentage of women in the Group Leadership Circle	21	22
	Number of nationalities in the Group Leadership Circle	21	22
	Proportion of full-time employees with contractually agreed working time not exceeding 48 hours per week (%)	100	100
	Proportion of employees with health insurance (%)	94	94
	Proportion of employees eligible for a company pension plan or company-financed retirement benefits (%)	71	69
	Proportion of employees covered by collective agreements on pay and conditions (%)	55	54
Safety	Occupational injuries to Bayer employees with lost workdays (LTRIR*)	0.34	0.31
	Recordable ocupational injuries to Bayer employees (RIR*)	0.62	0.56
Ecological Indicators			
Emissions	Direct greenhouse gas emissions (CO_2 equivalents in million metric tons)[11]	4.80	4.23
	Indirect greenhouse gas emissions (CO_2 equivalents in million metric tons)[11]	3.70	3.92
	Volatile organic compounds (VOC) (thousand metric tons per year)	2.54	2.69
	Total phosphorus in wastewater (thousand metric tons per year)	0.09	0.08
	Total nitrogen in wastewater (thousand metric tons per year)	0.49	0.53
	Total organic carbon (TOC) (thousand metric tons per year)	1.42	1.50
Waste	Hazardous waste generated (million metric tons per year)	0.35	0.47
	Hazardous waste landfilled (million metric tons per year)	0.06	0.12
Use of resources	Water use (million m^3/year)	474	411
	Primary energy consumption (petajoules [10^{15} joules] per year)**	51.63	50.10
	Secondary energy consumption (petajoules [10^{15} joules] per year)**	34.08	34.85
Environmental incidents and transport accidents	Environmental incidents	7	3
	Transport accidents	8	7

1 EBIT = operating result as shown in the income statement
2 EBIT(DA) before special items is not defined in the International Financial Reporting Standards and should therefore be regarded only as supplementary information. The company considers EBITDA before special items to be a more suitable indicator of operating performance since it is not affected by depreciation, amortization, impairments or special items. By reporting this indicator, the company aims to give readers a clearer picture of the results of operations and ensure greater comparability of data over time.
3 EBITDA = EBIT plus amortization and impairment losses on intangible assets and depreciation and impairment losses on property, plant and equipment, minus impairment loss reversals
4 The EBITDA margin before special items is calculated by dividing EBITDA before special items by sales.
5 Earnings per share as defined in IAS 33 = adjusted net income divided by the average number of shares
6 Core earnings per share are not defined in the International Financial Reporting Standards and should therefore be regarded only as supplementary information. The company considers that this indicator gives readers a clearer picture of the results of operations and ensures greater comparability of data over time.
7 Gross cash flow = income after taxes, plus income taxes, plus non-operating result, minus income taxes paid or accrued, plus depreciation, amortization and impairment losses, minus impairment loss reversals, plus/minus changes in pension provisions, minus gains/plus losses on retirements of noncurrent assets, minus gains from the remeasurement of already held assets in step acquisitions. The change in pension provisions includes the elimination of non-cash components of the operating result (EBIT). It also contains benefit payments during the year.
8 Net cash flow = cash flow from operating activities according to IAS 7
9 Present value of defined-benefit obligations for pensions and other post-employment benefits
10 Stated in full-time equivalents, 2010 figures restated
11 Portfolio-adjusted in accordance with the Greenhouse Gas Protocol
* The RIR and LTRIR values for 2007 to 2010 were calculated from the former MAQ values and do not include work-related illnesses.
** Since 2011 we have reported our energy consumption differentiated according to type of origin.

Bayer: Science For A Better Life

Bayer is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. Our products and services are designed to benefit people and improve their quality of life. At the same time we want to create value through innovation, growth and high earning power.

We are firmly aligned to our mission “Bayer: Science For A Better Life” and continue to optimize our portfolio, concentrating our activities in three high-potential, efficient subgroups with largely independent operations: HealthCare, CropScience and MaterialScience. These provide us with access to major global growth markets and are supported by our service companies.

As an inventor company, we plan to continue setting trends in research-intensive areas. Innovation is the foundation for competitiveness and growth, and thus for our company’s success in the future.

Our knowledge and our products are helping to diagnose, alleviate or cure diseases, improving the quality and adequacy of the global food supply, and contributing significantly to an active, modern lifestyle. Our expertise and innovative capability also enable us to offer solutions for protecting the climate and addressing the consequences of climate change.

We are committed to the principles of sustainable development, and to our role as a socially and ethically responsible corporate citizen. For us, there is a clear link between technical and economic expertise and social commitment. This, in turn, we define as our responsibility to work for the benefit of humankind, become socially involved and make a lasting contribution to sustainable development. At Bayer, we regard economy, ecology and social commitment as objectives of equal rank.

We seek to retain society’s confidence through performance, flexibility and open communication as we work in pursuit of our overriding goals: to steadily create corporate value and generate high value-added for the benefit of our stockholders, our employees and the community in every country in which we operate.

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Creating acceptance for innovation through sustainability

Bayer CEO Dr. Marijn Dekkers

Dear Reader,

Our mission "Bayer: Science For A Better Life" never ceases to motivate us. We work very hard every day to build on our position as a world-class innovative company that improves the lives of many people with its innovative products and solutions.

In our core business fields we concentrate on the health of people and animals, on improving nutrition for a growing world population and on the area of energy and resource efficiency. And we do this with a great sense of responsibility and a clear commitment to sustainable business. Because only in this way can we create the societal acceptance that is of such importance for our innovations.

Specifically, this means that safety has top priority for us. The safety of our products and facilities is our license to operate. It is the foundation for gaining the trust of our customers, stockholders, public authorities, neighbors and employees that is absolutely essential for us.

That's why safety training measures – both for our employees and for external service providers and suppliers – are standard operating procedure at all our sites worldwide. In addition, special events such as last year's global Safety Day help to further strengthen awareness about safety in the office, laboratory and production plant. These constant efforts are paying off. Our safety performance is better now than ever before. We will do everything to make sure it stays that way

The safe handling and use of our products lie at the focus of our activities, which include transparent communication and distribution of our product safety information. Here, we also follow the precautionary principle of the United Nations and the European Commission.

In addition to safety, integrity is also a key aspect of sustainability – which is why it is one of our four LIFE values (Leadership, Integrity, Flexibility and Efficiency). After all, it goes without saying that compliance with all relevant laws and regulations is an essential element of our global business activities. We focus constantly on the issue of legal compliance. That's why at the beginning of this year, we further strengthened and increased the efficiency of our compliance organization. In this connection, we are making our business partners more aware of their obligations too and will allow them this year to be subjected to a third-party due diligence process.

As a globally operating company, we must and we intend to be a role model in our implemented values. For example, we were one of the first companies to join the United Nations Global Compact. We are expressly committed to its 10 principles in the areas of human rights, labor standards, environmental protection and anti-corruption, and also promote adherence to these principles as a signatory of the "Corporate Sustainability Leadership – LEAD" platform.

With this Sustainable Development Report, we are continuing our open and constructive dialogue with our stakeholders – a dialogue about challenges and opportunities, objectives and progress, and principles and values. With this in mind, I wish you pleasant reading.

Marijn Dekkers

Innovation and responsibility drive success

The Bayer Group is a global enterprise with around 112,000 employees. As the management holding company, Bayer AG sets common values, goals and strategies for the entire Group. We aim to create value through innovation, growth and high earning power. Responsibility is the basis for that.

Corporate structure

Bayer was founded in Wuppertal, Germany, in 1863 and has been headquartered in Leverkusen, Germany, since 1912. Today, the Bayer Group comprises more than 300 fully consolidated companies on five continents. The Group is headed by a management holding company. This sets the strategic framework for the subgroups and service companies, which operate as separate legal entities. The operational business is divided among three subgroups: Bayer HealthCare, Bayer CropScience and Bayer MaterialScience. Our three service companies – Bayer Business Services GmbH, Bayer Technology Services GmbH and Currenta GmbH & Co. OHG – provide services for both internal and external customers. The Corporate Center supports the Group Management Board in its task of strategic leadership.

Bayer AG (holding company)

Group Management Board

Dr. Marijn Dekkers
Chairman

Werner Baumann
Finance

Prof. Wolfgang Plischke
Technology, Innovation & Sustainability

Dr. Richard Pott
Strategy & Human Resources

Corporate Center

■ Corporate Office ■ Communications ■ Investor Relations ■ Corporate Auditing ■ Law, Patents, Compliance & Insurance ■ Regional Coordination ■ Group Accounting & Controlling ■ Finance ■ Taxes ■ Mergers & Acquisitions ■ Environment & Sustainability ■ Corporate Human Resources & Organization ■ Corporate Development

Subgroups
Bayer HealthCare
Bayer CropScience
Bayer MaterialScience

Service companies
Bayer Business Services
Bayer Technology Services
Currenta

Our commercial success

Bayer had a very successful year in 2011, both strategically and operationally. We achieved the Group targets that we raised after the first quarter. We successfully drove forward our innovation projects in the subgroups – particularly the development of our pharmaceutical pipeline. On a currency- and portfolio-adjusted basis sales rose by 5.5 percent (nominal growth: 4.1 percent) to €36.5 billion. The operating result (EBIT) advanced by 52.0 percent to €4.1 billion while EBITDA before special items increased by 7.2 percent to €7.6 billion. Net income rose to €2.5 billion (+ 89.9 percent). Net financial debt fell by €0.9 billion to €7.0 billion.

Our growth markets made a significant contribution to the improvement in sales in fiscal 2011. For reporting purposes we have defined these markets as Asia (excluding Japan), Latin America, Eastern Europe, Africa and the Middle East. Sales in these growth markets rose by 9.0 percent to €13.3 billion. Sales in growth markets accounted for around 36.4 percent of total sales in 2011. A more detailed breakdown of Bayer's sales can be found inside the front cover (by regions) and on pages 80/81 of the Annual Report 2011 (by subgroups and regions).

Our investments

We spent €2.9 billion on research and development in 2011. That was equivalent to 8 percent of sales. Bayer HealthCare accounted for €1.9 billion (66.4 percent) of the total, Bayer CropScience for €0.7 billion (24.7 percent) and Bayer MaterialScience for €0.2 billion (8.1 percent).

Capital expenditures totaled €3.9 billion in 2011, with €1.6 billion (+6.7 percent) of this amount allocated to property, plant and equipment and intangible assets. Bayer HealthCare accounted for €608 million of capital expenditures, Bayer CropScience for €280 million and Bayer MaterialScience for €565 million. These outflows include expenditures for the expansion of our MaterialScience site in Shanghai, China, and expenses related to a licensing agreement in the HealthCare subgroup. The €261 million spent on acquisitions included the purchase of the animal health company Bomac, New Zealand; Hornbeck Seed Company Inc., United States; and Pathway Medical Technologies Inc., United States.

An overview of the main investments and further acquisitions that were made in 2011 can be found on page 87 of the Annual Report 2011.

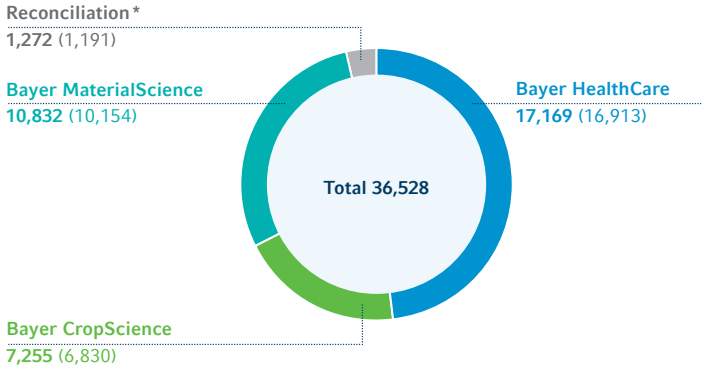
Our stock

Including the dividend of €1.50 paid in May 2011, the price of Bayer shares fell by 8 percent over the year. The share closed the year at €49.40. Despite the decline, it thus performed better than the DAX index, which ended the year down 15 percent. A long-term investor who purchased Bayer shares for €10,000 five years ago and reinvested all dividends would have seen the value of the position grow to €13,920 as of December 31, 2011. That corresponds to an average annual return of 6.8 percent.

Stockholders' equity rose by €0.4 billion to €19.3 billion. Our equity ratio (equity coverage of total assets) was 36.5 percent as of December 31, 2011. Bayer stock is held by a broad spectrum of international investors. The entire capital stock is free float. According to a survey conducted in November 2011, 25.3 percent of shareholders are based in the United States and Canada, 25.1 percent are in Germany, 18.1 percent in the United Kingdom and Ireland, 8.2 percent in France, Spain, Italy and Portugal, 4.2 percent in Austria, Switzerland and Liechtenstein, 3.9 percent in the Benelux states, 3.4 percent in Scandinavia and 6.0 percent in other countries. This calculation covers all but 5.8 percent of the capital stock.

In 2011 Bayer again qualified for inclusion in major sustainability indices that assess companies on the basis of economic, ecological and social criteria. More on this topic can be found in the Management & Corporate Governance chapter on page 24.

Sales by subgroups in 2011 (€ million) (2010 figures in parentheses)



* Not directly allocated to the subgroups; mainly sales of the service companies

Sustainability in the subgroups and service companies

Subgroups

Bayer HealthCare

Bayer HealthCare is among the world's foremost innovators in the field of pharmaceutical and medical products. This subgroup's mission is to research, develop, manufacture and market innovative products that improve the health of people and animals throughout the world.

Dr. Jörg Reinhardt,
Chief Executive Officer of Bayer HealthCare AG

Working together to improve health care services worldwide

Through our products, we aim to achieve a higher quality of life for people and animals. One of our primary objectives is to facilitate needs-based access to medical products for people around the world and to help limit the spread of diseases through education programs. But the problem of inadequate health care in many countries will not be solved by individual companies or organizations acting on their own. That's why a key focal point of our social commitment is long-term cooperation in public-private partnerships with recognized aid organizations and international bodies. Our activities in this area center on customized access programs for medical care and we are also heavily involved in helping to train physicians in a number of regions.

Headquarters: Leverkusen, Germany
Headcount: 55,700 (2011), 55,700 (2010)
Sales: €17,169 million (2011), €16,913 million (2010)
Sites: in over 120 countries
Website: www.bayerhealthcare.com

Bayer CropScience

Bayer CropScience, with its highly effective products, pioneering innovations and keen customer focus, holds global leadership positions in crop protection and non-agricultural pest control. The company also has major activities in seeds and plant traits.

Sandra E. Peterson,
Chief Executive Officer of Bayer CropScience AG

Food security through sustainable agriculture

Creating an environment that promotes efficient and sustainable agriculture is critical for Bayer CropScience to overcome global challenges such as food security, limited natural resources and climate change. We propel farming´s future through innovative sustainable solutions for small-holder farmers and large-scale farming operations alike and drive sustainable progress by connecting the dots across the entire value chain, from seed to shelf. We engage as a key player in selective public-private collaborations like the "New Vision for Agriculture," an industry-wide coalition to sustainably transform global agriculture, and host events such as the International Cereals Future Forum, dedicated to sustainably increase productivity of one of the world´s most important staple crops.

Headquarters: Monheim, Germany
Headcount: 21,000 (2011), 20,700 (2010)
Sales: €7,255 million (2011), €6,830 million (2010)
Sites: in over 120 countries
Website: www.bayercropscience.com

Bayer MaterialScience

Bayer MaterialScience is a renowned supplier of high-tech polymers and develops innovative solutions for a broad range of applications relevant to everyday life. Products holding leading positions on the world market account for a large proportion of its sales.

Patrick Thomas,
Chief Executive Officer of Bayer MaterialScience AG

Innovative technologies and production processes

As an industrial company that wishes to be truly sustainable, it is important that where possible our products are environmentally acceptable. We focus on cleaner, low-carbon manufacturing processes and innovative technologies. In our business we are closely involved with the latest trends in vehicles, architecture and entertainment electronics. Innovation is part of our everyday activities with functionality, design, efficiency and intelligence all growing in demand.
With our new technologies we are providing solutions to global challenges such as urbanization, a growing population, a revolution in health care and accelerating technological change. We include environmentally efficient processes and the safety of our employees as key elements in developing a sustainable business model.

Headquarters: Leverkusen, Germany
Headcount: 14,800 (2011), 14,700 (2010)
Sales: €10,832 million (2011), €10,154 million (2010)
Sites: in over 55 countries
Website: www.bayermaterialscience.com

Service Companies

Bayer Business Services

Bayer Business Services is the Bayer Group's global competence center for IT and business services. Its portfolio is focused on services in the core areas of IT infrastructure and applications, procurement and logistics, human resources and management services, and finance and accounting.

Daniel Hartert,
Chairman of the Executive Board of Bayer Business Services GmbH

IT and business services for sustainable development

Our EcoFleet, Business Travel and Green IT initiatives are part of the Bayer Climate Program. Our goal is to significantly reduce the carbon dioxide emissions generated by the Bayer vehicle fleet and our IT infrastructure and to offer Bayer employees climate-friendly alternatives to business travel such as innovative HD video conferencing technology. This year will see us achieve our target of cutting CO_2 emissions from the vehicle fleet by 20 percent between 2007 and 2012. And we have made even more progress in our Green IT project, achieving our target of boosting energy efficiency in our data centers by 20 percent between 2009 and 2012 a year earlier than planned. There has also been an outstanding response to the new forms of virtual cooperation we have introduced, which stretch from high-end video conferencing systems to a whole range of collaboration options provided by our cutting-edge PC workstations. These innovative technologies are actively helping to eliminate unnecessary business trips and the associated CO_2 emissions.

Headquarters: Leverkusen, Germany
Headcount: 6,400 (2011), 6,500 (2010)
Sites: in over 70 countries
Website: www.bayerbbs.com

Bayer Technology Services

Bayer Technology Services, the global technological backbone and a major innovation driver of the Bayer Group, is engaged in process development and in process and plant engineering, construction and optimization. Bayer Technology Services is the gateway to the Bayer Group for young engineers.

Dr. Dirk Van Meirvenne,
Managing Director of Bayer Technology Services GmbH

Technological expertise for sustainable operations

Bayer Technology Services works closely with the Bayer subgroups to ensure that Group-wide ecological and social responsibilities are met globally. This includes implementing international standards at all sites, as well as developing processes and planning and constructing plants in line with the latest technology and increasing safety, efficiency and availability of facilities. We have, for example, developed the Bayer Climate Check and applied it worldwide at Bayer and hold responsibility for the process and plant safety platform for the entire Group.

Headquarters: Leverkusen, Germany
Headcount: 2,700 (2011), 2,700 (2010)
Sites: Belgium, Brazil, Germany, India, Mexico, P.R. China, Russia, Singapore, United Arab Emirates, United States
Website: www.bayertechnology.com

Currenta

Currenta offers services for the chemical industry including utility supply, waste management, infrastructure, safety, security, analytics and vocational training.

Dr. Günter Hilken,
Chairman of the Executive Board of Currenta GmbH & Co. OHG

Chemical park sites safeguard sustainable development for industry

As a chemical park operator, we play an important role in supporting energy-efficient and resource-friendly production among our customers. For example, we provide efficient material and production networks and professional waste disposal and environmental management services. As a result, the chemical park model also helps safeguard long-term jobs in local communities. The consistent implementation of our climate protection program A++ alone created some 200 individual projects up to 2011, which helped to cut annual CO_2 emissions by a total of approximately 159,000 metric tons compared to 2005 levels. A further key aspect of this commitment is the continuous support and training that we offer employees regarding health management in the workplace and occupational health and safety.

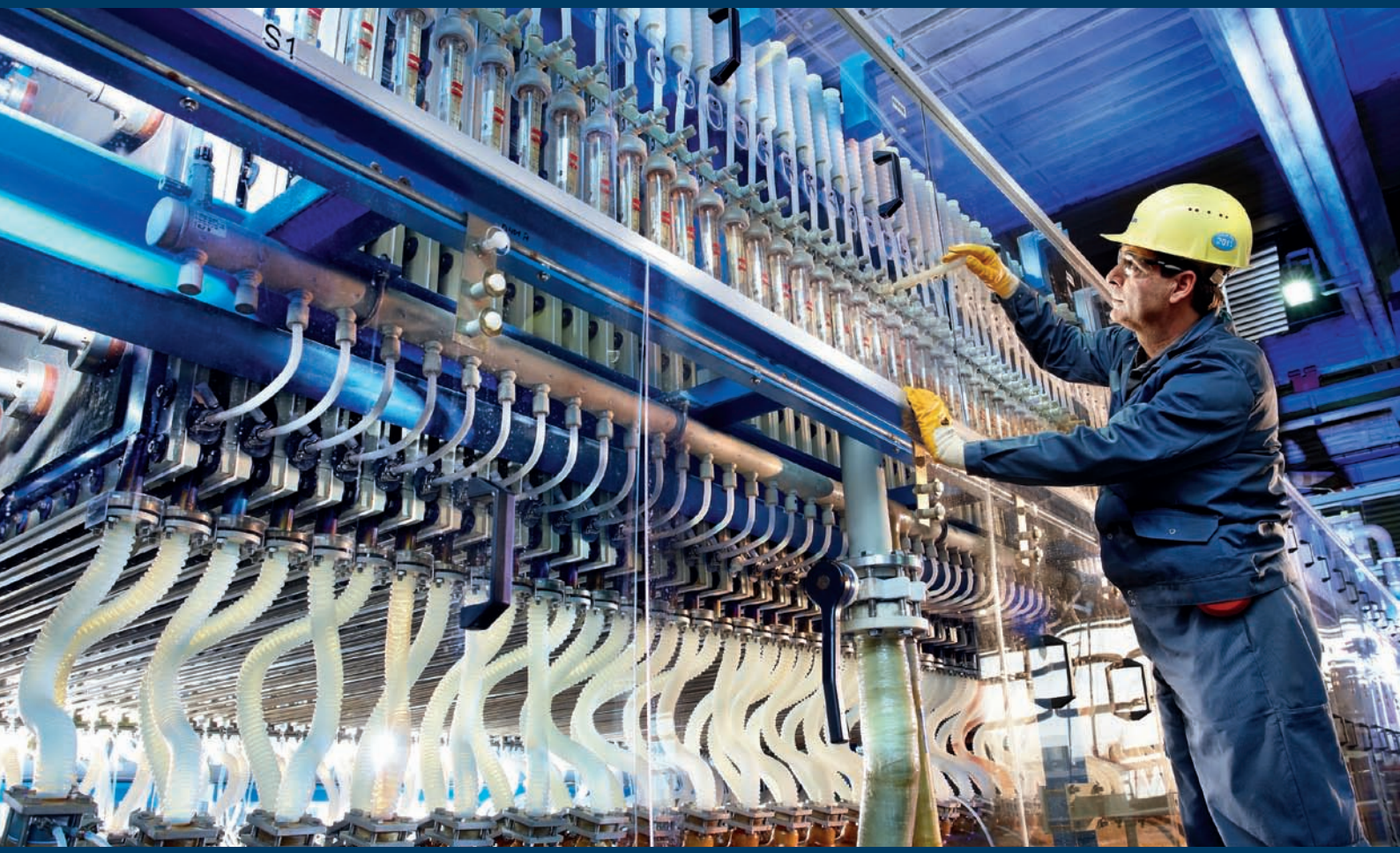
Headquarters: Leverkusen, Germany
Headcount: 5,400 (2011), 5,400 (2010)
Sites: Leverkusen, Dormagen, Krefeld-Uerdingen (all Germany)
Website: www.currenta.com

Growth with responsibility: addressing global challenges

The Earth's population currently stands at around seven billion. By 2050, it is expected to grow to more than nine billion. Population growth, access to resources, climate change, poverty and equal opportunities represent huge challenges for society, politicians and companies. A major challenge facing the international community is to safeguard adequate ***health care, nutrition and energy supply*** *for the growing world population. Our company is addressing these challenges responsibly – and thus creating global growth opportunities. In line with its mission "Science For A Better Life," Bayer is making relevant contributions to help solve the major global challenges of our time. Commercial success and a sustainable business strategy are two key motivational factors.*

Health care *Chagas is very widespread in Latin America. In cooperation with the World Health Organization (WHO) Bayer is fighting the disease, in Argentina for example. Combating serious tropical diseases is among the UN Millennium Development Goals.*

Nutrition *Farmers Doan Thi Hong and Phan Minh Phat (from left) harvest rice. The goal of the "Much More Rice" program is to increase both yields and the quality of rice, in Vietnam for example.*



Resource and energy efficiency *Luciano Goncalves from Bayer MaterialScience checks the sodium hydroxide feed to the oxygen depolarized cathode element. Oxygen depolarized cathode technology can enable energy consumed in chlorine production from common salt to be cut by around 30 percent.*

Strategy & Focus Issues

Nutrition, health care and the protection of the climate and natural resources – these are essential cornerstones of a prosperous society in which as many people as possible should share. Yet the requirements for this are more difficult than ever. With population growth particularly rapid in developing and emerging nations, local infrastructures and the ecological equilibrium are being put under increasing pressure, although high growth in these countries is helping many people maintain an increasing standard of living. At the same time, the population in most industrial nations is aging, generating an imbalance in the social structures. In addition, changes in consumption patterns and the massive demand for energy caused by the global spread of urbanization are exerting more pressure on natural resources and leading to an increase in global carbon dioxide emissions.

How can more and more people share in this prosperity in the future while the negative impact on the environment is minimized? This is a question that globally operating companies such as Bayer must address. It is one that is being directed to us by stockholders, politicians, employees and the general public alike. Some of these stakeholders are interested primarily in long-term business development with the help of future-oriented applications and products, while others expect us primarily to make substantial contributions to shaping global economic growth as sustainably as possible. One of our key objectives, which will also help to ensure our future viability, is to balance economic growth with ecological and corporate social responsibility.

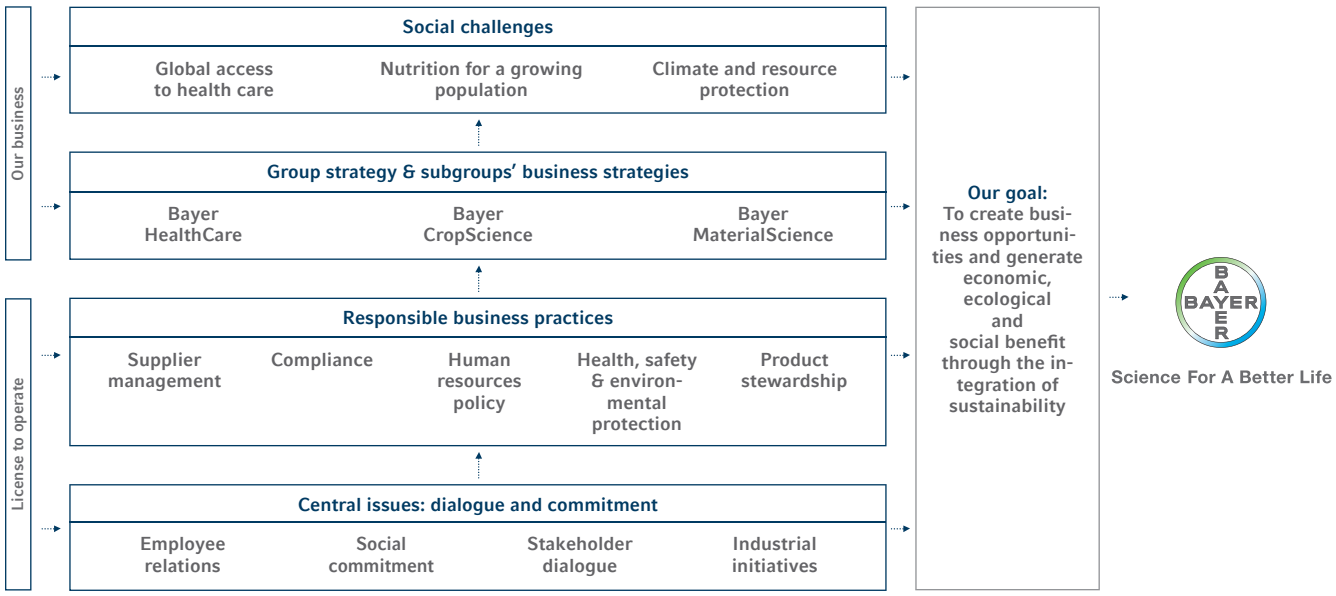
Contributing solutions to global challenges

Global requirements for sustainable development are very important to Bayer. The future of our areas of business is impacted by the political and societal consequences of tomorrow's megatrends. To safeguard the existence of our company in the long term in the face of these global challenges, we are working on solutions for the future that drive forward sustainable development and our own business at the same time. In our three subgroups – Bayer HealthCare, Bayer CropScience and Bayer MaterialScience – we possess a product portfolio that addresses some of the most urgent problems affecting the provision of health care, the safeguarding of food supplies and the protection of the climate. Responsible business practices are our obligation: potential negative effects of our business activity on people and the environment must be limited.

Numerous Bayer products are helping to solve urgent problems in many parts of the world and support several of the United Nations' Millennium Development Goals [3]. As the world market leader in the field of hormonal contraception, we support, for example, efforts by numerous governments to limit population growth in their countries through family planning activities. This also helps to prevent potential bottlenecks in health care capacities and food supplies. In addition, Bayer provides

3 www

Bayer's sustainability strategy



We realize at four levels our goal of balancing ecological and social responsibility with corporate interests.

the World Health Organization (WHO) with drugs to treat neglected tropical diseases and, along with other major pharmaceutical companies, has joined the initiative founded in January 2012 by the Bill & Melinda Gates Foundation to tackle such diseases. Furthermore, crop protection products, seed, plants with improved traits (such as tolerance against abiotic stress factors like heat, drought and soil salinization) and new methods of cultivation also help to protect harvests in regions that are negatively impacted by climate change – thus contributing to the safeguarding of food supplies. Additionally, the materials produced by Bayer – such as building insulation materials – are helping our customers to save energy and thus reduce their CO_2 emissions.

Our sustainability strategy

As an inventor company with the mission Science For A Better Life," [4] Bayer continues to focus on its core competencies in the development of new solutions in the fast-growing, innovation-driven areas of health care, nutrition and high-tech materials. Based on our innovation capability, we are pursuing a strategy of sustainable and profitable growth to increase the value of our company. For Bayer, sustainability essentially means future viability and is therefore an integral part of our business strategy. Together with our value concept LIFE [5] (see also page 24), our mission forms the basis of our sustainable actions. The Bayer Sustainable Development Policy [6] formulates our common understanding of sustainability that applies to all subgroups and service companies worldwide.

The goal of our sustainability strategy is clearly defined: we want to create both business opportunities for our company and generate economic, ecological and social benefit through sustainability. We realize our goal of balancing ecological and social responsibility with corporate interests through the following elements:

Our business

Sustainability is a key element of our Group strategy and also of our subgroups' business strategies. And above all through our innovations and products (read from page 34), it is integral to our business activities. In this way, we identify and exploit new market opportunities that create added value for society and that address the nexus of the sustainability challenges.

Our Sustainability Program [12] introduced in 2009 as part of our sustainability strategy offers solutions to major social challenges such as sustainable health care, high-quality nutrition for a growing world population, and protection of the climate and natural resources. With our activities to address these overarching social needs, we also pursue long-term company objectives. We thus help not only to solve global challenges, but also to open up the markets of the future with the help of innovative products and technologies. Our nine lighthouse projects (see page 14ff. and the Ecology chapter on page 55) illustrate particularly clearly the core of our strategy.

License to operate

Responsible business practices form the foundation of our operational business and are our license to operate. Bayer attaches great importance to responsible practices in the areas of compliance, human resources policy, product stewardship, health, safety and environmental protection, and supplier management. These issues are anchored in our business operations through internal Group management regulations. These regulations include above all our Human Rights Position [7] including labor conditions, the Corporate Compliance Policy [8], the new Responsible Marketing & Sales Policy [9], our Supplier Code of Conduct [10], and our Water Position [11] that was adopted in 2011.

We take account in our sustainability strategy of the expectations of our stakeholder groups. This basic understanding includes above all the efforts on behalf of our employees, the discourse between industry, the scientific community, society and politicians (see "Stakeholder dialogue" on page 27) and our social needs activities. Our commitment to sustainable development is expressed by our active participation in important international initiatives and associations [13] such as the United Nations Global Compact (UNGC) [14] and its "Corporate Sustainable Development Leadership (LEAD)" initiative, the Responsible Care® initiative [15] of the chemical and pharmaceutical industry, and the

Opinion

"Today the issue of sustainability is on the agenda of top management, something that would have been almost inconceivable 10 years ago. The shortage of natural resources, the growing world population and urbanization are, however, affecting companies today more directly than ever before. These trends will become even more critical. What's more, companies are moving in a multi-stakeholder environment that demands ever greater transparency and sustainable corporate governance. At the same time, changes are occurring in the behavior of consumers, who are making their purchase decisions dependent on sustainable products. For this reason, sustainability is not a fashionable phenomenon but a fundamental trend. Many companies have already begun to integrate sustainability into their core business. This in turn awakens the need for specially qualified managerial staff offered long-term incentives who are able to drive forward this process of transformation. In the future, sustainability will be one of the central factors determining just how competitive companies are."

Dr. Johannes von Schmettow, co-head of HR consultants Egon Zehnder International Deutschland

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World Business Council for Sustainable Development (WBCSD) [16].

Sustainability management and steering

A key element of our sustainability strategy is central management and strategic anchoring of the issue at the Management Board level. To underline the relevance of our commitment to this issue, the job description of Professor Plischke – the Management Board member who was already previously responsible for this area – was formally expanded on January 1, 2012, to include sustainability. The Corporate Center department Environment & Sustainability – headed up by Dr. Wolfgang Grosse Entrup – reports directly to him in his function as the company's highest ranking sustainability officer. Dr. Grosse Entrup also chairs the Sustainable Development (SD) Committee that steers the operational implementation of sustainability within the company. This committee is comprised of the top-ranking sustainability officers in the subgroups, together with the heads of Corporate Development, Communications and Human Resources & Organization. The committee's tasks include identifying and evaluating sustainability-relevant opportunities and risks for the company, as well as establishing objectives, initiatives and suitable Group management regulations and monitoring their implementation. The exchange of information – including dialogue across departmental boundaries – takes place with the other committees for the areas of Health, Safety, Environmental Protection, Quality (HSEQ); Innovation; Industrial Operations; Technology; and Public and Governmental Affairs. To disseminate our sustainability strategy, we made a conscious decision not to employ an advisory committee, but instead to regularly engage in intensive and challenging dialogue involving alternating prominent stakeholders and our top management on company-specific themes and challenges.

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Targets and indicators serve to operationalize our sustainability strategy. To further integrate sustainability into our business activities, the Group committees responsible for sustainability in 2011 defined new, ambitious Targets 2015 [17] all along the value chain. We document the development of these targets in the relevant chapters of the Performance Report.

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In addition to these Group-wide committees and targets, our subgroups, regions and countries have created organizational structures focused on specific relevant issues, targets and measures. An overview of the development of sustainability at Bayer [18] can be found online.

Shaping a sustainable future together

Sustainable development is only possible if equal importance is attached to economic, ecological and societal interests. This networked approach, which was given due recognition at the latest at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, has drifted out of focus somewhat in recent years. Many solutions proposed by the international community have ignored the major contexts. They only address certain aspects, although most of the economic, ecological and societal challenges are closely related and thus should not be considered in isolation. For example, extreme weather conditions are increasing as a result of global climate change. Drought, flooding, storms and soil erosion are resulting in bad harvests in many regions of the world. That leads to shortages of staple foodstuffs. And this in turn harbors the risk of many life-threatening diseases.

Steering sustainability at Bayer

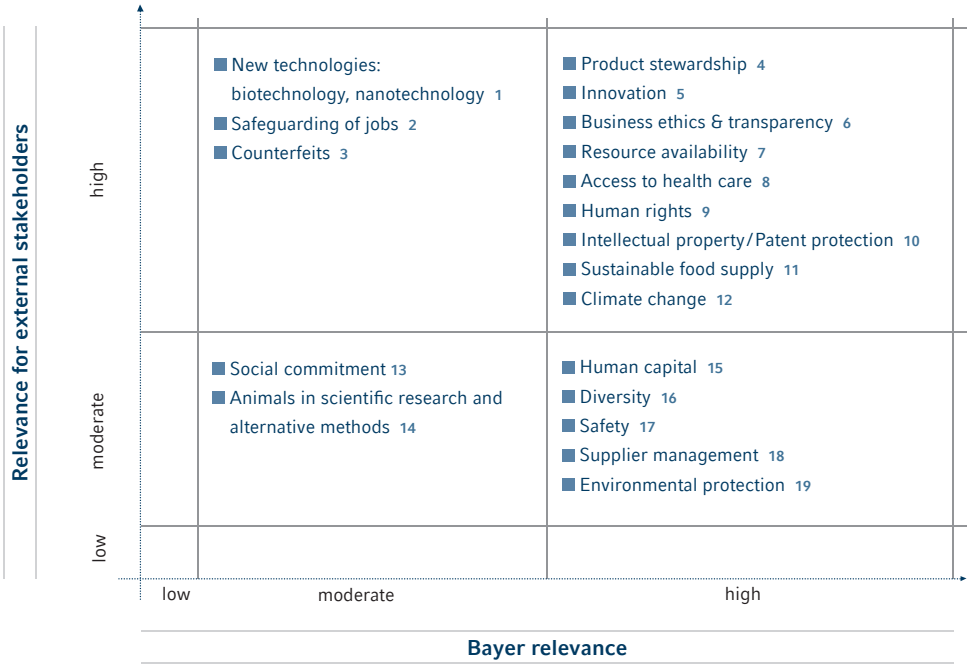
Professor Wolfgang Plischke (left), member of the Bayer Board of Management responsible for Innovation, Technology and Sustainability and for the Asia/Pacific region, and Dr. Wolfgang Grosse Entrup, Head of Environment & Sustainability at Bayer AG and of the Sustainable Development (SD) Committee, do a final check of the current Bayer Sustainable Development Report.

As the steering body for sustainability in the Group, the SD Committee supports Prof. Plischke in his function as CSO (Chief Sustainability Officer) in the implementation of the sustainability strategy across the Group. This also applies in specific terms to the corresponding sustainability-relevant targets, Group regulations and management systems. As the interface between stakeholder interests and Board decisions the committee assumes an important management role at Bayer. The Sustainable Development Report documents the results annually.

It is essential for the future that we recognize the correlation between the various factors of a phenomenon and address the root causes of the major challenges of our time based on these findings. Of late the term "nexus" has emerged as a way to describe this type of comprehensive approach. Germany especially will address the nexus issue at the Rio successor conference in June 2012. 25 years after the Brundtland Report "Our Common Future," the goal is to shift the focus once again to the holistic approach that is essential for sustainable development.

No one can solve the global challenges of sustainable development alone. As the problems are closely interlinked, the approaches taken to solve these must be as well. What are needed are effective collaborations between countries, multilateral organizations, non-governmental organizations (NGOs), the scientific community and industry. That is why Bayer places great value on constructive dialogue and specific cooperation with a large number of dedicated stakeholders. We can only be successful in the long term through cooperation and through conduct that is commensurate with the requirements of our stakeholders. This dialogue with our stakeholders reveals among other things potential for development and leads to specific research and development projects. As a highly diversified company, we also take advantage of the fact that we can observe, analyze and systematically factor into our solutions the correlations and interactions between the various global challenges. As the focus issues described on the following pages show, it is in our own interest to consistently align our portfolio to the challenges of the future and systematically pursue partnership-based collaborations that bring us closer to finding joint solutions.

Essential fields of action



We regularly analyze the suggestions and expectations of external and internal stakeholders pooled during stakeholder dialogues and surveys to compare the pertinence of sustainability-relevant issues for our stakeholder groups with that of our own assessments. In this way, we can determine the areas in which our sustainability strategy requires further development and identify issues that we must focus on more clearly in the future. We document the comparison of external and internal priorities in a materiality matrix. Within the context of a stakeholder process, we recently examined, restructured and refocused this matrix together with an international think tank. This process involved surveys of external stakeholders, internal stakeholder workshops at various levels, benchmarking and external analyses. The materiality matrix has been changed since 2010 to encompass the changing priorities of our external and internal stakeholders and a new method of analysis. We have created new groupings in order to focus more strongly on particular issues, thereby reducing their overall number and creating a sharper profile. We have also expanded the matrix to include a number of explanations.

Explanatory notes on specific topics:

1 New technologies: managing risks & opportunities
2 Commitment to job security
3 Fighting health risks imposed by counterfeits
4 Product safety, REACH, monitoring impact of endocrines and active ingredients in the environment, HCFCs and withdrawal of WHO Class I products
5 Innovation to meet customer and societal needs
6 Incl. compliance, integrity, anticorruption, responsible marketing & sales
7 Promoting energy efficiency, efficient resource use (e.g. water, energy) and switch to renewables where possible
8 Facilitating greater access to health care through R&D, pricing, patent protection, collaboration etc.
9 Respect and promotion of human rights throughout the value chain, incl. the abolition of child labor
10 Safeguarding IP while providing access to products and innovations
11 Contributing to sustainable food production, supply and availability
12 Climate protection through mitigation & adaptation
13 Social investment and social volunteering programs
14 Reduced use of animals where possible, commitment to welfare of animals as part of scientific R&D process
15 Comprises employee training & development, remuneration, benefits, recruitment, retention
16 Ensuring a sound diversity of gender, ethnic background etc. of employees
17 Ensuring occupational, process & plant and transport safety
18 Promoting fair and constructive relations and influencing sustainable behavior in the supply chain, incl. ESG performance and human rights
19 Reducing environmental impacts of products and processes on water, air, soil, supporting biodiversity

Promoting health worldwide

Family planning
Women in developing and emerging countries should be able to take control of their own lives. Working with partners, Bayer aims through the provision of more health information and education to reduce the risks associated with unplanned pregnancies and unsafe terminations. Here, Dr. Nicodemus McKinnen advises his patient Mitchel Marwena about family planning at the Family Health Center in Nairobi, Kenya.

In the 21st century, the world will be strongly shaped by the effects of population growth in developing countries and emerging markets and by demographic change in numerous industrialized countries. Developing countries in particular are home to increasing numbers of people who lack access to the necessary pharmaceutical products and medical care. That is why Bayer is extending its reach beyond established western health care systems. "Innovation is the key to our commercial success and at the same time the basis of our social commitment," says Dr. Jörg Reinhardt, Chief Executive Officer of Bayer HealthCare AG. "That's why we invest significantly each year in the research into and the development of new active ingredients and treatments. We want all people to share in this progress – regardless of their income or where they live." In developing countries, needs are considerable, but access to pharmaceuticals is made difficult through low incomes and a lack of infrastructure in the health care sector. As part of its "Access to Medicine (ATM)" strategy, Bayer HealthCare is cooperating with a number of private and state organizations. In its "Family Planning" and "Neglected Diseases" lighthouse projects, the company is enabling access to health care and education – including for the poorest of the poor. In emerging markets where economic development is further advanced, Bayer HealthCare is offering its preparations at reduced prices within its patient access programs. In industrialized countries and countries with medium incomes the company has established patient aid programs to be able to offer the necessary therapies also to those people who are not covered by health insurance or who cannot afford treatment.

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Combating poverty through family planning

According to estimates of the World Health Organization (WHO) [19], of the good 210 million pregnancies recorded each year, around 38 percent are unplanned and 20 percent are terminated. Particularly in developing and emerging countries with high mortality rates for mothers and children, women often do not have any possibility of protecting themselves against unwanted pregnancies, which in turn increases the risk of falling even deeper into poverty. Poverty is one of the biggest obstacles when it comes to gaining access to health care. Half a million women, above all in poorer countries, still die during pregnancy or childbirth each year.

Bayer is the world market leader in contraceptives and has many years of experience in this area. The company has been active in family planning programs for over 40 years. For example, we are involved in joint projects with USAID [20] (United States Agency for International Development) and non-governmental organizations such as the UNFPA (United Nations Population Fund) [21]. In 2011 Bayer HealthCare provided these and other organizations with around 119 million cycles of oral contraceptives, more than 4 million injection ampoules and 1.6 million contraceptive implants

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Opinion

"Bayer and the WHO have been partners since 2004 in the fight against Chagas disease. Bayer's continuing support in donating high-quality medicines and providing financial support for distribution, logistics and for national health care programs will greatly help to reduce the extent of Chagas disease in countries where the burden on health and society is greatest."

Dr. Hiroki Nakatani, Assistant Director-General at the World Health Organization (WHO), responsible for issues concerning HIV/AIDS, tuberculosis, malaria and neglected tropical diseases

at a preferential price. These were then sold by the organizations under favorable terms or given away free of charge in countries in Africa, Asia and Latin America. In cooperation with USAID, Bayer HealthCare has established the Contraceptive Security Initiative, which has so far been launched in Ethiopia, Uganda and Tanzania – with other African countries to follow through 2013. This initiative is geared towards selling modern oral contraceptives through local pharmacies at a cheaper price. This way, the up-and-coming middle classes in these countries have the opportunity to take on financial responsibility for their own family planning (for more information, see the "Bayer lighthouse projects" table on page 16).

Our work also focuses on improving knowledge of family planning in developing countries. Bayer is cooperating on the "Youth2Youth" sex education program with the German Foundation for World Population (DSW) in Uganda [22]. More information is available in the online report [23].

Our "Family Planning" lighthouse project addresses three of the eight Millennium Development Goals of the United Nations (UN): strengthening equal opportunities, reducing child mortality and improving health care for mothers. This commitment to education programs relates to the UN Declaration, which calls for a substantial increase in health information and education to reduce the risk of HIV infections and other sexually transmitted diseases and of unplanned pregnancies and to cut the number of unsafe terminations.

Effective means of tackling tropical diseases

Another UN Millennium Development Goal is to tackle serious tropical diseases. Bayer concentrates primarily on neglected tropical diseases, working closely with the WHO in this regard. As part of this cooperation, we provide medicines to treat the life-threatening infectious diseases Chagas in Latin America and African sleeping sickness – Germanin™ for the treatment of the early stages of African sleeping sickness and Lampit™ both as a combination therapy with another drug for the advanced stages of African sleeping sickness and as a single-entity therapy to treat Chagas disease. The active ingredients in both drugs have been on the WHO's Essential Drug List for many years.

Bayer is the only producer of the Lampit™ active ingredient nifurtimox. Since 2004 we have been supporting the WHO in the fight against Chagas disease by providing the requisite drugs free of charge. The contract with the WHO, which was extended ahead of schedule in March 2011 through 2017, sets aside an annual donation of one million Lampit™ tablets from 2012, which is double the existing commitment. This is supplemented by an annual donation of US$300,000 that Bayer provides for logistics and the distribution of nifurtimox to treat Chagas disease. The fight against African sleeping sickness is also proving successful. The number of cases for both forms of the disease is in continual decline, with the chance of eliminating the disease entirely growing strongly.

Bayer HealthCare is also committed to tackling tuberculosis, a highly drug-resistant disease in tropical regions in particular. As a partner in the Global Alliance for TB Drug Development, we are involved in the development of a therapy that reduces the duration of treatment from six to four months. This therapy incorporates the Bayer active ingredient moxifloxacin. The WHO has been provided with the drug containing the active ingredient moxifloxacin since 2011 – before approval of the indication – to treat multi-resistant tuberculosis (MDR-TB) in national programs, e.g. initially in China in 2011.

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Our Bayer CropScience subgroup has long been involved, above all, in the fight against vector-borne infectious diseases such as malaria and dengue fever. One approach designed to counteract the threat of malaria is a new type of mosquito net that combines the strength of polypropylene with the softness of a multifilament fiber. It also incorporates the WHO-recommended active ingredient deltamethrin against insects. This ingredient is then gradually released to continuously deliver its insecticidal action. The concluding report of the Pesticide Evaluation Scheme of the World Health Organization (WHOPES) [25] confirmed that the Bayer LifeNet™ mosquito nets [24] exhibit a superior action against insects that transmit malaria. LifeNet™ therefore surpasses by far the minimum requirements of WHOPES which state, for example, that a net must remain effective after 20 washes. The longer-lasting action of a durable net represents an important step on the way towards sustainable vector control. More information can be found on the internet [26].

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Access to innovative medicine

The call for access to medicine affects not only developing and emerging countries but also countries without state-run health insurance systems, such as the United States. Here, too, many people cannot afford certain effective medicines when they come at a higher cost as a result of the high associated research outlay.

For markets like these, Bayer has developed a differential pricing system based on the general level of income, with the medicines being distributed for sale via local partners. This way, for example, a total of 40,366 patients in the United States benefited in 2011 from our patient access programs, including 17,068 from our multiple sclerosis drug Betaseron™/Betaferon™, 39 from Kogenate™ for the treatment of hemophilia, and 2,975 from the anticancer drug Nexavar™. Similar programs have been up and running since 2007 in China and, since 2008, in other countries in southern and southeast

Asia, Brazil and selected countries in southeastern Europe.

Programs like these not only provide patients with access to forms of treatment they could otherwise not afford – they also help Bayer to open up new markets.

We intend to further expand Bayer's commitment in this area in the future. To ensure the long-term success of our programs, our concepts within the ATM strategy must be commercially viable, they must offer answers to urgent social issues and they must comply with the principles of research-driven pharmaceutical manufacturers. In line with the joint declaration – the "Principal Focus and Actions of the Research-Based Pharmaceutical Industry in Contributing to Global Health" – all member companies of the International Pharmaceutical Association are committed to supporting the Millennium Development Goals. The formation of global partnerships plays an essential role in this regard.

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Bayer is also active in the public health sector, e.g. with its "Go West" [27] program in China that was launched in 2007 in cooperation with the Chinese Health Ministry to support the continuing education of physicians in rural and district hospitals in the undersupplied western part of the country.

Bayer lighthouse projects for health care

Family Planning	Implemented measures	Results in 2011
Introduce original products (oral contraceptives) at prices in line with the local market in 11 African countries jointly with USAID by 2013	Project: Contraceptive Security Initiative (CSI): Ethiopia (Dec. 2010), Uganda (Sept. 2011) and Tanzania (Nov. 2011), with another eight countries to follow by 2013 (contract with USAID to run until 2014 – roll-out scheduled for completion in 2012)	Measurements are based on CYP* (Couple Years of Protection) Example for oral contraceptives: 1 CYP = around 14 cycle packs; total CYPs: 8,157; all CYPs are calculated using the MSI Impact Calculator** (Version 1.2) Ethiopia (2011): outlets supplied***: 1,351; cycles provided: 103,690; CYPs: 7,406 Uganda (2011): outlets supplied: 140; cycles provided: 7,429; CYPs: 530 Tanzania (2011): outlets supplied: 47; cycles provided: 3,097; CYPs: 221
Increase annual provision of oral contraceptives to 119 million cycles jointly with partners (e.g. USAID, UNFPA, IPPF)	Bulk delivery of oral contraceptives, injections and implants for family planning programs in developing countries in agreement with partners	Figures for 2011: Hormone implant: 1.61 million; CYPs: 5.64 million Oral contraceptives: 118.56 million; CYPs: 8.47 million Injections: 4.53 million; CYPs: 1.13 million Total CYPs in 2011: 15.24 million All CYPs are calculated using the MSI Impact Calculator (Version 1.2) Target defined in 2009 and met in 2010; the level was sustained in 2011
Neglected Diseases	**Implemented measures**	**Results in 2011**
Support the WHO • in tackling Chagas and • in treating African sleeping sickness	Extension of cooperation with the WHO in the fight against Chagas and doubling of the provision of nifurtimox for Chagas treatment from 500,000 to 1 million tablets per year from 2012 to 2017, a total of 5 million tablets and US$1.5 million during the entire period	Figures for Chagas: 2011: Number of nifurtimox tablets distributed according to the WHO: 488,100 worldwide Patients treated with nifurtimox: 1,212
	Annual provision of 400,000 tablets containing nifurtimox to the WHO for the nifurtimox/eflornithine combination therapy of African sleeping sickness from 2009 to 2012	African sleeping sickness: A combination therapy involving drugs containing the active ingredients nifurtimox and eflornithine for the treatment of this disease has been placed on the WHO's Essential Drug List
	Plans to extend the contract	2011: 403,700 tablets containing nifurtimox distributed by the WHO
	Bayer participation in the Bill & Melinda Gates Foundation's initiative "London Declaration on NTDs (Neglected Tropical Diseases)" on January 30, 2012 for the elimination of neglected tropical diseases by 2020	4,500 patients treated The report on the WHO's control and monitoring program on African sleeping sickness from 2011 indicates that: • The number of cases for both forms of the disease has declined steadily • The combination therapy of eflornithine and nifurtimox has made an important contribution to this decline • The chances of eliminating the sickness are high
Conduct research into shortening the duration of tuberculosis therapy together with the Global Alliance for TB Drug Development		Patient recruitment for the ReMOXTB**** study concluded mid-January 2012
New cooperation with the WHO in tackling TB	Cooperation between Bayer, the WHO and the Stop Tuberculosis (TB) Partnership to tackle multi-resistant tuberculosis	Bayer made 620,000 tablets of the antibiotic moxifloxacin available in 2011 to treat TB in China

* CYP = Couple Years of Protection. CYP is the number of couples who used the provided contraceptives for a year.
** MSI Impact Calculator: Marie Stopes International (MSI) is one of the biggest international organizations committed to the support of family planning and reproductive health. The Impact Calculator is a method for controlling the influence of, for example, family planning programs. More information is available at http://www.mariestopes.org/
*** Outlet: pharmacies or drug-dispensing outlets
**** ReMOXTB = rapid evaluation of moxifloxacin in the treatment of sputum smear positive tuberculosis. (This study investigates a short, fast therapy involving moxifloxacin for the treatment of tuberculosis.)

Helping to shape the future of agriculture

Nutrition
As part of its "Food Chain Partnership" projects, Bayer brings together all players in the food chain and thus helps farmers worldwide to produce agricultural products of the best possible quality. At the MarBran farm Rancho Granjenal in Villagran, Mexico, Juan Ramón Camacho and Gustavo Martinez Barbosa (from right) inspect the harvest.

Ensuring ample food supplies for the global population is already a major challenge today. Harvests are failing because periods of drought are increasing and deserts are becoming more widespread as a result of climate change. In other parts of the world, harvests are being destroyed by floods and storms for the same reason. Experts on the Intergovernmental Panel on Climate Change (IPCC) [28] have repeatedly indicated that extreme weather is a result of climate change. Even without the negative impact of climate change, agricultural production would have to increase by around 40 percent by 2025 to meet the rising demand of the growing global population and its changing nutritional habits.

Contributions to sustainable agriculture

Sustainable agriculture that combines economic, ecological and social aspects to provide sufficiently high-quality and safe agricultural produce plays an important role in helping to solve these problems. In doing so, the environmental impact of farming must be minimized and biological diversity protected as far as possible. At the same time, innovative cultivation methods and higher crop yields can significantly improve the social and economic situation of the people living in the cultivation regions. However, individual solutions must be found for the varying conditions in the different parts of the world.

The products and services of Bayer CropScience focus on key areas to improve the productivity and sustainability of agriculture and to safeguard the supply of food. The goal is to identify the needs of our customers and to develop innovative and sustainable solutions for the entire value-added chain (from seed to shelf). "We want to play a role in shaping the future of agriculture. This means we have to combine the mind of a scientist with the heart of a farmer," says Sandra Peterson, Chief Executive Officer of Bayer CropScience, describing the challenge for the company.

Four-pillar strategy

In September 2011 Bayer CropScience announced a new growth strategy comprising four elements that will enable the subgroup to drive forward its diverse solutions for sustainable agriculture even more strongly:

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1 Rejuvenating our crop protection business: Crop protection agents are the most commercially important area of Bayer CropScience's business. The efficient use of herbicides, insecticides or fungicides protects crops and therefore farmers against crop failure caused by pests or disease. In the future, crop protection agents will play a significant part in increasing productivity, as will be necessary, and safeguarding food supplies. Bayer CropScience is currently restructuring its crop protection business by phasing out older products and focusing on new product families that have been identified as growth drivers. In this context, all remaining insecticide formulations in WHO Class I are to be removed from the crop protection portfolio by the end of 2012.

2 Strengthening customer focus along the entire value-added chain: We are aiming to strengthen our customer focus along the entire value-added chain. This involves boosting our commitment to farmers and improving processes in the sales channels. We are also employing new systems for maintaining customer relationships that utilize the know-how associated with the Bayer brand and expand the successful "Food Chain Partnership" business model.

Opinion

"The METRO GROUP and Bayer CropScience work together on "Food Chain Partnership" projects. Their common objective is to promote sustainable methods of cultivation and help food manufacturers meet customer requirements in terms of quality, safety and traceability. One example of this successful collaboration is a project initiated in India in 2011 which involves purchasing vegetables from more than 120 farmers. It is a win-win situation for everyone involved. Bayer CropScience's crop protection expertise and training boosts the volume of salable goods, small-holder farmers enjoy higher incomes, the industry benefits from traceability throughout the process and end consumers obtain high-quality food."

Nina von Radowitz, Head of Sustainability of the METRO GROUP

3 Refocusing and reweighting innovation activities: In developing our product innovations, we will focus more strongly in the future on the BioScience Business Unit, doubling its annual research and development (R&D) spending through 2015 (compared to 2010).

For example, we are conducting research into stress-resistant plants. In addition to being pest-resistant, agricultural plants will in the future need to be better equipped to deal with the effects of climate change. Drought tolerance is one important example.

The total research spending of Bayer CropScience is to be increased by around 20 percent (compared to 2010) to more than €850 million through 2015.

4 Extending BioScience business in core crops: We want to further expand our market shares for cotton, canola and vegetables in particular and achieve significant market positions for soybeans, rice and wheat – three of the four most important field crops worldwide. With regard to rice, we want to drive forward the spread of hybrid varieties in Asia and support farmers through comprehensive agronomic programs such as "Much More Rice/Vietnam."

Future-focused partnerships

Bayer CropScience is also committed to partnerships and collaborations, including public-private partnerships. Our partners include the German Society for International Cooperation (GIZ) [29], the World Economic Forum (WEF) [30], the International Rice Research Institute (IRRI) [31], Australia's national research organization CSIRO [32] and many other regional partners.

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Bayer CropScience joined the global "New Vision for Agriculture" [33] initiative of the World Economic Forum in 2011. This initiative is supported by 28 global companies working closely with governments, other economic, political and social stakeholders, international organizations and universities. The goal is to promote the sustainable intensification of agriculture through an innovative partnership model involving public and private cooperation. Under the initiative, national action plans for public-private collaboration have already been initiated in six countries – Tanzania, Vietnam, Indonesia, Mexico, Nigeria and India. As a leading company in the agricultural industry, Bayer CropScience makes important contributions to boosting agricultural productivity with its innovative activities. The company invests significant sums in partnerships with some of the world's leading institutes conducting research on important staple foodstuffs such as wheat and rice. This has already produced some important results that will help make plants more resistant to disease and increase yields.

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Agriculture is a key driving force behind economic growth and prosperity. It also accounts for the livelihood of more than 2.5 billion people living in rural areas worldwide. With this in mind, Bayer CropScience has been quick to develop a wide range of products and services for small-holder farmers. For example, the company offers a whole host of solutions for rice cultivation, ranging from training on good agricultural practice to improvements in water management and harvest storage.

Our cooperation with farmers and local authorities in Indonesia has given rise to a very sustainable solution for rice cultivation. Here, we are helping farmers switch from the process of planting rice to seeding pregerminated rice directly. This method increases the rice yield, cuts water consumption and reduces the emission of the greenhouse gas methane (see table on page 19).

Bayer CropScience's products and services are aimed at both small-holder farmers and large-scale farming operations. The focus with small-scale operations is on taking customers' needs into account, including through appropriate formulations and pack sizes. For example, Bayer CropScience has developed practical pack sizes for small-holder farmers such as single-use doses (ampoules) for application to small areas.

The main challenge is, however, less the availability of suitable products and more the access to information (market, prices or growing methods). Solutions also have to be found to finance resources and storage and transport for small-holders. In numerous projects, such as its "Food Chain Partnerships," Bayer CropScience is therefore working on improving the situation for small-holder farmers. The company is also applying its know-how to the problem as well as supplying its products.

Food Chain Partnerships

"Food Chain Partnerships" are part of the sales and marketing concept that Bayer CropScience is using to support the food industry worldwide with

solutions from seed to shelf. Bayer's "Food Chain Partnership" projects bring together all the players in the food chain – farmers, food producers and processors, wholesalers, retailers, importers and exporters. They are designed to help farmers in emerging and established markets improve their agricultural yields and raise the quality of their harvested produce and thus of the resultant foodstuffs. The projects also help boost marketing opportunities for their products and improve their income situation.

Bayer is involved in around 240 "Food Chain Partnership" projects [34] worldwide, primarily in southern Europe, Africa, Latin America, India and China. Experts from Bayer CropScience teach farmers about sustainable cultivation in keeping with good agricultural practice. This includes the controlled, environmentally friendly use of crop protection agents. High-quality seed adapted to the local region, improved treatment plans and consistent monitoring of pest infestation increase not only agricultural yields, but also quality. What is more, thanks to the documentation of crop treatment by farmers, production becomes more transparent and traceable. Ultimately, these partnerships bring benefits not only for farmers but also for Bayer. Cooperation with international partners in the food industry and local organizations opens up new markets for us.

Innovation – a key factor in sustainable development

Thanks to research and development work, innovations are constantly being achieved in the company's product portfolio to meet the needs of our customers and respond to changing cultivation and market conditions. Our goal is to provide efficient, environmentally friendly technologies to benefit agricultural operations across the globe by optimizing harvests in terms of both quality and quantity. There are significant differences between countries in terms of climate, cultivation conditions and the prevalence of weeds, diseases and pests. To protect crops under these varying conditions, Bayer CropScience offers a diverse range of products here, too, with the focus on developing stress-resistant plants.

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In this context, it responsibly mixes modern cultivation methods with traditional techniques. Bayer CropScience regularly analyzes data from the markets, regulatory authorities, researchers, other organizations and the general public. New, highly effective substances and formulation technologies are being developed and launched on the market. Older or less suitable products are gradually being replaced by products that, for example, feature a better safety profile, optimized biological effectiveness or better environmental credentials.

Bayer lighthouse projects for nutrition

Food Chain Partnership Vegetables	Implemented measures	Results in 2011
Work together with partners to jointly develop solutions for sustainable vegetable growing	Successful project development with local partner organizations and farmers	Partners communicate projects independently as sustainable value chain initiatives
Help farmers in India with the sustainable cultivation of vegetable crops	The ongoing project has been well received 2011/2012: Successful presentations at international trade fairs (Fruit Logistica, Berlin; Asia Fruit Logistica, Hong Kong)	Projects in 125 cultivation regions with 65,000 farmers on an area of 50,000 hectares
Direct Seeding of Rice	**Implemented measures**	**Results in 2011**
Program for sustainable rice-growing with a combination of new growing methods involving the direct seeding of pregerminated rice and the efficient use of crop protection agents and fertilizer	Project started in Indonesia in 2009 2011: Rice Value Chain Workshop with stakeholders in the 1st quarter of 2011 Project documentation and external auditing (for UNFCCC*) Acceptance among farmers is still hesitant Preliminary talks about expanding the program to India	Target of 50,000 hectares by 2015; area achieved in 2011: 2,900 hectares Method successfully registered with UNFCCC* (April 2011); auditing process initiated (November 2011) Expansion of the program to India through pilot activities (2012)
Increase yield by up to 10%	Segmentation of rice farmers based on specific criteria such as experience, training, willingness to innovate and communicate and opinion leadership	The training and composition of the field team were optimized after an in-depth analysis (2012)
Reduce water consumption by up to 20% and emissions of the greenhouse gas methane by up to 30%	Measurement of greenhouse gas emissions from rice fields of participating farmers	Planned evaluation as a CDM project with UNFCCC Planned registration as a Clean Development Mechanism project with UNFCCC (2012) Emissions data from 2011 are currently being evaluated

*United Nations Framework Convention on Climate Change

Cutting emissions – protecting the climate

Solar Impulse *With innovative high-tech polymer materials and energy-saving lightweight materials Bayer is helping to enable the Solar Impulse aircraft to circumnavigate the globe powered by solar energy alone.*

International efforts to draw up a global agreement on the reduction of greenhouse gas emissions are only progressing slowly, despite the fact that climatologists draw attention time and again to climate change and its possible consequences. In addition to worldwide growth and a rising energy requirement in both industrialized countries and emerging markets, this is also being caused by the growing global population, the food supplies it requires, mobility, urbanization and changing lifestyles. It therefore remains the task of politicians, the business world and the whole of society to take climate change seriously and develop solutions to help ease the situation.

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At the end of 2007 Bayer launched an ambitious Climate Program [35] involving all subgroups as part of the company's sustainability strategy. We want to rigorously continue along this path and in 2011 once again tightened our longer-term climate objectives for greenhouse gas reduction. The new Group target is to reduce specific greenhouse gas emissions (direct and indirect emissions in relation to manufactured sales volume in metric tons) by 35 percent from 2005 to 2020 (see also page 56f.). To achieve this objective, in 2011 the target values for reducing the specific emissions of our energy-intensive subgroup Bayer MaterialScience were increased to 40 percent (formerly 25 percent), while the target values for the absolute emissions of Bayer HealthCare were increased to 10 percent (formerly 5 percent). The ambitious target value for Bayer CropScience remains a cut in absolute emissions of 15 percent. "The projected growth in production during this period means that we have to keep total emissions through 2020 at roughly the level of 2007. In other words, we have to effectively decouple production volumes and emissions," says Patrick Thomas, Chief Executive Officer of Bayer MaterialScience AG.

Extensive climate program

Bayer pursues three approaches to achieve climate protection:

1 **More efficient production:** Reducing emissions in Bayer's own production facilities by increasing energy efficiency and by developing and utilizing new, innovative technologies

2 **Market solutions:** Using Bayer products, particularly in the areas of building insulation, lightweight construction and agriculture, to reduce customer emissions

3 **Supporting measures:** Reducing emissions in units not associated with production, such as the vehicle fleet and IT, involving the workforce in the process

This comprehensive climate program also has economic benefits for Bayer. Not only do we cut energy costs significantly through improved efficiency, we also develop and market products that help our customers with their own climate protection efforts. This represents a growing market potential that will increase in the area of building efficiency in particular owing to political regulation. In 2011 sales of products

Opinion

"We are living the New Energy Revolution. Global warming and the increasing demand for larger amounts of energy have made us realize that the current energy system we are using worldwide is complex and inefficient. The existing model of large power generating companies and energy consumers is trending towards a new scenario where every consumer will become a producer of his own energy, promoting the rational use of all energy resources. At Kliux Energies we believe that the future of our society's ability to sustain the current economic growth will require a change of paradigm by implementing a new Distributed Energy generation. Thanks to the use of Bayer MaterialScience's polyurethane material in the construction of our Vertical Axis Wind Turbine rotor blades, we have been able to dramatically improve our production costs and aerodynamic performance."

Iñaki Eguizabal, founder and CEO of Kliux Energies

relating to climate protection accounted for around 20 percent of the total sales of Bayer MaterialScience alone, amounting to approximately €2.4 billion.

Focusing on energy efficiency in production

While up to around 2005 Bayer focused first and foremost on facilitating cogeneration in its own power plants, in 2008 we started systematically integrating the topic of energy efficiency into our production processes. For this purpose, we use an innovative and effective system of energy management known as "Structured Efficiency System for Energy" (STRUCTese™) [36] that we developed in-house. By the end of 2011 Bayer MaterialScience had already rolled out this DIN EN 16001 (ISO 50001) certified system in 46 energy-intensive production facilities. Implementing targeted measures made it possible to reduce primary energy consumption by 585,000 megawatt hours a year and CO_2 emissions by around 175,000 metric tons a year. By the end of 2013 we plan to have introduced this system at a total of 65 such production facilities. STRUCTese™ works in three steps: we first use the Bayer Climate Check [38] to identify potential savings and then categorize and prioritize possible measures. Commercial measures are successively implemented in a final step. Energy losses are visualized and a system of reporting with objectives is established. Online monitoring and daily energy logs display the optimal consumption and quickly flag up any deviations. Having successfully launched the system at Bayer MaterialScience, we made the system available to other companies from 2010.

Research and development in process technology is a key to generating solutions to cut energy consumption, to reduce emissions in our production facilities and to expand our competitive advantage. One result is common salt electrolysis using oxygen depolarized cathode technology, which makes it possible to use up to 30 percent less electricity in chlorine production than in the membrane technology generally deployed today. After many years of research and development, this lighthouse project was launched in Germany on an industrial scale for the first time in 2011 and is undergoing successful testing (see table on page 22).

Climate protection solutions for our customers

A holistic overview of energy efficiency measures for buildings also offers further tremendous potential for reducing global greenhouse gas emissions. With the "EcoCommercial Building Program" lighthouse project [41], Bayer MaterialScience is integrating, for example, all the players in the field of building construction and promoting the use of building materials that further reduce emissions in the utilization phase. The interdisciplinary ECB network supplies innovative solutions, materials and services in all areas linked to sustainable building. This way, we offer our customers opportunities to implement energy efficiency measures that we are also using in our own buildings (see table on page 22).

In many different ways, our products play their part in saving energy and conserving resources. One example at Bayer MaterialScience are polyurethane feedstocks that are used in insulating materials for building facades, roofs and refrigerators. These offer more efficient heat insulation than other high-volume materials made of styrene or mineral wool. Polyurethane systems for bumpers and fenders and polycarbonate as a replacement for glass in windows feature in lightweight construction solutions in the automotive sector, where they help, among other things, to further cut fuel consumption. Bayer MaterialScience is researching, developing and demonstrating other lightweight construction solutions for mobility and renewable energies as part of the "Solar Impulse" lighthouse project [37] (solar-powered lightweight aircraft). The objective is to test our lightweight materials and drive forward research in this area (see table on page 22).

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Climate protection is not limited to production and product solutions. A large proportion of the world's greenhouse gases are emitted during food production. By breeding stress-resistant plants and with suitable crop protection systems, Bayer CropScience is helping to generate better yields without increasing emissions in spite of difficult climatic conditions. State-of-the-art cultivation methods, as being tested in our "Direct Seeding of Rice" lighthouse project [39], will enable further significant reductions in greenhouse gas emissions in the future depending on land use and irrigation systems (see table on page 19).

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Innovation for the future

Developing visions and joining forces with partners to establish collaborations and initiatives brings Bayer closer to the goal of more energy-efficient and resource-friendly production. Pursuing completely new approaches in plastics production is enabling us to make a technical breakthrough in carbon dioxide (CO_2) recycling. It took more than 40 years of research to develop a useful raw material from this harmful climate gas. The breakthrough was triggered by a new catalyst developed by Bayer researchers and jointly optimized with the CAT Catalytic Center in Aachen, Germany. In February 2011, as part of the publicly sponsored "Dream Production" project [40], Bayer took into operation a pilot plant in Leverkusen for the manufacture of polyol – an important precursor of polyurethane – with the help of CO_2. Provided the test phase is successful, Bayer will launch industrial-scale production in 2015. In parallel with this, a further project partner, RWTH Aachen University, is conducting an investigation of the ecological balance of the complete process. The new process helps, above all, to reduce dependency on crude oil as a source of carbon and makes a contribution to climate protection. "Dream Production" was nominated, for instance, for the German Sustainability Award 2011.

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Researchers involved in the publicly sponsored CO2RRECT joint project [42] are focusing on the question of how carbon dioxide can additionally be harnessed with the help of surplus electricity from wind energy.

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In September 2011 Bayer Technology Services and the Technical University of Dortmund opened the new INVITE research center [43] at the Chempark Leverkusen site. INVITE stands for innovations, visions and technologies. The facility is dedicated to the development and testing of flexible, efficient and thus climate-friendly production concepts for the "Factory of the Future" that help to conserve resources.

Greener fleet and greener offices

The third pillar of our Climate Program focuses on measures outside production or products that generate real energy savings. This incorporates initiatives that concern everyday work and office routines. The EcoFleet, which was launched in 2007, is designed to cut emissions from the Group's global vehicle fleet by 20 percent by the end of 2012. Between 2007 and the end of 2011, the EcoFleet project led not only to fuel savings but also to reductions in CO_2 emissions of over 32,500 metric tons per year, which corresponds to a fall of 18 percent compared with 2007.

A year earlier than planned, the energy efficiency of the company's data centers was increased by more than 20 percent compared to 2009. Key improvements meant that in 2011 alone we virtualized almost 800 systems in the areas of hardware and IT architecture, thus significantly reducing the number of servers. Furthermore, we improved the energy efficiency of our offices by optimizing the cooling technology, for example. We also converted the data centers to more energy-efficient data storage media. In total, between 2009 and 2011 it was possible to save almost 14,600 megawatt hours of electricity, which is equivalent to a reduction of around 6,300 metric tons of CO_2 taking account of national conversion factors.

Teleconference and video conference systems are increasingly being implemented and thus reduce the number of business trips. A further step towards a sustainable office was taken in October 2011 with the global introduction of FSC-certified paper as the standard office paper.

Our way forward: improving the established – realizing innovation

Four years after the Bayer Climate Program was launched, the energy efficiency and emission reduction measures are taking effect. With the measures implemented we are well on the way to achieving the targets we previously set ourselves and then tightened in 2011. In the future, innovation in product and process development will play an even more important part in helping us achieve our climate targets.

Another important climate protection component will be innovations that we will outlicense following a successful pilot phase. To this end, Bayer MaterialScience has established dedicated marketing functions to offer, for example, the oxygen depolarized cathode technology developed by Bayer and its partners for chlorine production to external chlorine producers as well.

In the future, research collaborations will play an even bigger role, especially with a view to energy efficiency in the material sector and the adjustment to climate change in the fields of agriculture and vector control.

Bayer lighthouse projects for climate protection

EcoCommercial Building Program (ECB)	Implemented measures	Results in 2011
Focus on large-scale commercial and public building projects; alignment to international core and growth markets	Development of international marketing and industry networks Support for the Bayer Climate Program through energy-efficient new buildings Emissions-neutral and energy-efficient Bayer buildings in line with the ECB standard in Monheim, Germany; Diegem, Belgium; Pittsburgh, United States	Founding of four centers of excellence worldwide with 50 network partners 15 memorandums of understanding signed with high-profile decision-makers in the construction industry Inauguration of an ECB in Greater Noida, India, and groundbreaking for first emissions-neutral ECB in China (Qingdao Lighthouse Project) in May 2011
Energy Efficiency	**Implemented measures**	**Results in 2011**
Oxygen depolarized cathode (ODC) technology based on common salt; used at Bayer MaterialScience for industrial-scale chlorine manufacture; reduction in electricity requirements of up to 30 % compared with the membrane process and thus an indirect reduction in CO_2 emissions	At Bayer MaterialScience: demonstration plant taken into operation at the Krefeld-Uerdingen site in 2011 (capacity: 20 kilotons of chlorine per year) Successful launch of two-year production trial	Measured data from demonstration plant to date confirm savings potential indicated during laboratory operation
Establish STRUCTese™ to achieve a sustainable and systematic reduction of CO_2 emissions in energy-intensive plants	Implementation planned in 65 plants Rolled out at 46 sites by the end of 2011 Energy costs reduced by €35 million	Four audits passed, recertification to the DIN EN 16001 energy management system Marketing successes in outlicensing of technology
Solar Impulse	**Implemented measures**	**Results in 2011**
Develop innovative lightweight construction solutions for renewable energy concepts with materials from Bayer MaterialScience	Construction of the solar aircraft HB-SIA sample project Successor model HB-SIB due to circumnavigate the globe in 2014	Material tests concluded for polyurethane foam (cabin) and polycarbonate film (cockpit windows)

Interview with Prof. Wolfgang Plischke

"Sustainability and innovation go hand in hand."

Prof. Wolfgang Plischke, member of the Bayer AG Board of Management responsible for Innovation, Technology and Sustainability and for the Asia/Pacific region

Professor Plischke, how important is sustainability to an innovation company like Bayer?
I believe that sustainability goes hand in hand with future viability. At Bayer, this is directly connected to innovative strength. Sustainability therefore plays a key role for us as early as the research and product development stages. After all, only sustainable innovations ensure commercial success. And, in light of the rising cost of raw materials and energy, we are able to secure the solid foundation we need through material and energy efficiency in particular, and also through process and product innovation. We want to use our innovative products to help solve key challenges facing our society today, including a growing global population that has to be fed, an aging society that wants to remain healthy into old age, and rising levels of prosperity worldwide coupled with the need to conserve natural resources and improved energy efficiency.
In recent years, society has become much more aware of the importance of sustainability. A wide range of groups, e.g. consumers, job applicants and investors, attach importance to sustainability in global economic growth. They expect us as a company to make a substantial contribution to this goal. And we are working on doing just that – increasingly in cooperation with partners.

How important are these partnerships to Bayer?
Very important indeed. We work with a broad range of partners and non-governmental organizations (NGOs) worldwide. That these collaborations are bearing fruit can be seen in a number of areas. As part of our "Access to Medicine" strategy, we are working with various private and public organizations, such as the WHO. Our successful "Food Chain Partnership" programs bring together all players in the food chain, thus helping farmers to increase the yield of their crops while also helping to improve the quality of food available. Our EcoCommercial Building Program integrates all players involved in building construction to make an important contribution to conserving resources in this area. We also cooperate with research institutes and universities, other companies and private and public institutions. In all these partnerships, the various partners bring their specific strengths and expertise to bear, thus ensuring a valuable end result.

Bayer is investing not only in innovation but also in growth markets. What role do these markets play in sustainable development?
An enormous one. Our products help deliver long-term solutions to problems resulting from growth. At the same time, these markets are important for the sustainable development of our business because they offer considerable potential.

But this demands substantial investment.
Yes. We are investing heavily in the growth markets, in staff, production, sales and research. The opportunities are immense, but so are the entrepreneurial risks. The legal and regulatory environment is complicated and the markets are very diverse. For example, political change may mean that a market does not develop as we expected it to. However, our products and solutions are designed to address the change processes triggered by the global megatrends in these markets.
In this context, we also attach great importance to responsible business management practices. Risk management involves a number of aspects: we must keep sight of the long-term development of our company and promote staff development. We must ensure that we meet the relevant legal requirements at all times wherever we operate. We take our responsibility for the environment and products very seriously. We support the protection of human rights both within the Group and throughout the supply chain. We maintain ongoing communication with all our interest groups (stakeholders). Ensuring responsible business management in all areas is essential to achieving acceptance and recognition in society. It represents our license to operate.

Those are ambitious goals. How are you putting these ideas into practice?
By not leaving the focus on our guiding values to chance. Last year we globally introduced our newly formulated value system LIFE, i.e. the values of Leadership, Integrity, Flexibility and Efficiency. This gives every employee a clear and binding set of guidelines to follow. Our values form the basis of our corporate culture but are also an integral part of our management systems. This way, we can be sure that sustainability and innovation at Bayer go hand in hand. And this is the key to our success in the long term.

Does this commitment pay dividends from a business perspective?
Long-term corporate alignment is essential for ensuring a sustainable and reliable partnership that benefits everyone involved. Our stockholders benefit from this strategy, too. The name Bayer has a good reputation in the market for socially responsible investments. There is a common awareness here that our development pipeline is amply filled, that we are addressing the relevant challenges, that we set ourselves ambitious goals and that we are committed to strict standards and values. The trust placed in us by the financial market and the rising demand for good performance in the area of sustainability drive us to follow even more resolutely the path that we have chosen.

Management & Corporate Governance

Targets 2015

Supplier management

- Inform all suppliers with purchase-order-relevant volumes about the Bayer Supplier Code of Conduct
- Assess the sustainability performance of suppliers that represent ≥ 75% of the total procurement volume and ≥ 75% of the procurement volume from risk areas
- Annually audit the sustainability performance of at least 10% of the suppliers from risk areas or at least 15 suppliers

Compliance

- Extend compliance training to 100% of all Bayer managers

Growth perspectives in China *Bayer CEO Dr. Marijn Dekkers (center) inaugurated the new TDI plant in Shanghai in the presence of numerous guests. The company plans to substantially increase sales in the region through 2015.*

Bayer is a globally operating enterprise active in the fields of health care, nutrition and high-tech materials. We want to create lasting value through innovation, growth and high earning power. In this endeavor, we are committed to responsibly managing the resources of our investors, our employees, the communities in which our sites are located, and nature. Our responsible corporate governance is based on value systems, corporate directives and management systems.

Our company culture is expressed in our mission "Bayer: Science For A Better Life" and in our concept of values: Leadership, Integrity, Flexibility and Efficiency – or LIFE [44] for short. Our values are binding for all employees and guide our business conduct. Our culture of values ensures a common identity across national borders, hierarchies and cultural differences from which Bayer derives entrepreneurial strength.

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One of the four elements of LIFE is Integrity, which we understand to mean compliance with all laws, directives and regulations and being an honest and reliable partner for our stakeholders. Clear corporate governance [45] structures and transparent principles for worldwide compliance serve as the foundation for this. Wide-ranging risk management helps us identify and counter possible risks as early as possible. Bayer also contributes to positive economic and social development through its activities in the regions in which it operates.

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Responsible corporate governance is the basis for sustainable growth and business success. We are convinced that by integrating sustainability [47] at all levels and in all functions of the Bayer Group, we help to positively impact the value of the company.

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Our value-based corporate governance is specifically implemented through Group management regulations and positions. In this way, we ensure the Group-wide integration of social and ecological responsibility into our supplier relations, the observance of international human and labor rights, compliant conduct in the marketing of our products, the responsible use of water resources, and other goals.

Financial and innovation targets met in 2011

In 2011 we grew sales by 4.1 percent (5.5 percent on a currency- and portfolio-adjusted basis) to €36.5 billion. The operating result (EBIT) rose by 52.0 percent to €4.1 billion. Earnings were diminished by special items of minus €0.9 billion. This includes special charges of €0.7 billion in connection with our Group-wide restructuring initiative and €0.3 billion for litigations, as well as income of €0.1 billion from divestitures. EBITDA before special items improved by 7.2 percent to €7.6 billion. Net income increased to €2.5 billion. Net financial debt fell by €0.9 billion to €7.0 billion (see also Key Data inside the front cover).

Corporate governance

Bayer has always placed great importance on responsible corporate governance. This will remain the case in the future. In 2011 the company issued a declaration that it had complied with the recommendations of the German Corporate Governance Code [46], with one temporary exception. In February 2012 Bayer declared a deviation from the recommendations of the Corporate Governance Code in view of planned changes to the compensation of the Supervisory Board. The recommendation to which the deviation related is, however, no longer included

in the new version of the Corporate Governance Code published in May 2012. Bayer is thus again in full compliance with the recommendations. Further information on corporate governance can be found in the Corporate Governance Report on page 96ff. of the Annual Report 2011, which provides extensive information on how the Board of Management and Supervisory Board work and on their control mechanisms.

Group leadership and compensation

The role of the 20-member Supervisory Board is to oversee and advise the Board of Management. Under the German Codetermination Act, half the members of the Supervisory Board are elected by the stockholders, and half by the company's employees.

With regard to the compensation of the Board of Management and the Supervisory Board, Bayer complies with the recommendations of the German Corporate Governance Code and German legislation on the appropriateness of the compensation of members of management boards (VorstAG). In 2011 the compensation of the Board of Management basically comprised five components: a fixed annual salary, a short-term incentive award on a yearly basis in relation to a target amount, a long-term incentive award for a four-year period in relation to a target amount, a further long-term compensation component introduced in 2010 involving a grant of virtual Bayer shares subject to a three-year retention period, and a company pension plan conferring pension entitlements that increase with years of service. Remuneration in kind and other benefits are also provided, such as the use of a company car for private purposes or reimbursement of the cost of health screening examinations. The compensation of the Supervisory Board will be based in the future on the provisions of the Articles of Incorporation adopted by the Annual Stockholders' Meeting on April 27, 2012.

Further information can be found in the Compensation Report on page 102ff. of the Annual Report 2011. Information on the provisions of the Articles of Incorporation adopted at the 2012 Annual Stockholders' Meeting can be found on the internet [48].

Compliance at Bayer

Bayer expects the conduct of every employee to be characterized by integrity at all times. The company does not tolerate any violation of applicable laws, codes of conduct or internal regulations.

In the Corporate Compliance Policy [49], the Group Management Board outlines the company's clear commitment to corporate compliance and specifically states that it will forego any business that involves violating these principles. This policy contains commitments to fair competition, integrity in business dealings (i.e. zero tolerance for corruption), the principle of sustainability and product stewardship, the upholding of foreign trade laws and insider trading laws, proper record-keeping and transparent financial accounting, fair and respectful working conditions, and avoidance of all forms of discrimination. Other requirements of the policy include protecting the company's intellectual property and the legally recognized rights of others, keeping corporate and personal interests separate and cooperating with the authorities.

We updated the Group's Anti-Corruption Procedure with effect from January 1, 2012. This is designed to help our employees around the world avoid possible corruption problems. In the procedure, we explicitly refer to our LIFE values system and our obligations within the framework of the United Nations Global Compact. The aforementioned principles include responsible marketing. For more information on our guidelines concerning the marketing of medicines, see the Innovation & Product Stewardship chapter on page 41.

Each Group company with business operations has at least one Compliance Officer. Some foreign companies have several local compliance functions with clearly defined responsibilities for the different business units within the respective companies. These functions in turn report to the Chief Subgroup Compliance Officers at the Group management companies or to the Group Compliance Officer appointed by the Group Management Board. At least once a year the Group Compliance Officer and the Head of Corporate Auditing report to the Audit Committee of the Supervisory Board on any compliance violations that have been identified. Corporate Auditing also regularly evaluates the effectiveness of the Corporate Compliance Policy.

We centrally trained a total of 43 compliance officers at two Compliance Officer Workshops in 2011. These workshops also serve as a platform for sharing experiences and establishing a compliance community.

We provide continuous information and training for our employees, and the brochure on our Corporate Compliance Policy is available in 42 languages. To ensure that employees are aware of the importance of this issue, we developed a web-based training module entitled "Corporate Compliance Basics" that was introduced among managerial employees in 2010. By the end of 2011, 22,434 managers worldwide – with the exception of those in the United States – had successfully completed this module. In addition, 5,203 non-managerial employees also completed the training course – particularly in China, Spain, France, Colombia, Morocco, Taiwan, Peru, Singapore, Belgium and Ecuador. A separate, mandatory compliance (ethics) training course was implemented for all employees in the United States, with

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News

Bayer plans continued expansion of business in Japan

Bayer's subsidiary in Japan celebrated its centennial in 2011. Despite the difficult conditions following the earthquake and tsunami disaster, the Bayer Group plans to further expand its business in Japan and continue to grow sales in the coming years. "Japan will remain one of the world's most attractive markets for Bayer in the future too," said Dr. Marijn Dekkers, Chairman of the Board of Management, at a news conference held to mark the centennial of Bayer's Japanese subsidiary. Dekkers emphasized Japan's importance for the Group's global business: "Japan is more than just a market to us. This country is known for its strong innovative drive and has contributed significantly to the development of our global business over the years."

about 12,500 of 15,800 employees in that country taking part in 2011. Excepted from this obligation were employees with a temporary employment contract. *This corresponds to a participation rate for the compliance training courses of about 36 percent of the total workforce and 90 percent of Bayer managers.*

Target 2015

Our managers have a special obligation to set an example to their employees, communicate the compliance requirements within their companies and take organizational measures to implement them. Senior managers can lose their claim to variable compensation components and must expect further disciplinary measures if systematic violations of the applicable legislation with financial damage to Bayer have occurred in their sphere of responsibility and could have been prevented if they had taken appropriate action. The issue of corporate compliance is a permanent part of the performance targets agreed with the members of the Group Leadership Circle (GLC).

Every employee is required to report any infringement of the Corporate Compliance Policy without delay. Hotlines allowing anonymous reporting have been set up worldwide. The only exception is in France, where this reporting obligation does not apply due to the nature of national law there. In the year under review, our central compliance hotline registered 64 reports, 28 from Germany and 36 from other countries. Of these, 46 reports were received by e-mail (17 of them anonymously), 16 by phone (eight of them anonymously) and two anonymously by mail. All suspected case of compliance infringements are recorded according to uniform criteria and processed according to defined rules in line with the Directive on the Management of Compliance Incidents.

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At the end of 2011 the Bayer Group decided to intensify its global activities in the area of corporate compliance. Among other steps taken in this connection, a Group Compliance Office was established to handle compliance issues of relevance to the Bayer Group as a whole. Bayer is stepping up the focus on prevention. The compliance organization aims to provide advice, education and support. For example, counseling options for employees are to be expanded and access to these services facilitated, and additional training measures are planned. Risk assessment is also to be improved, and regular checks will be carried out on Bayer's contractual partners in certain areas of the business (third party due diligence project). Internal checks will also continue to be made. Rapid action is planned in the event of any irregularities. Bayer aims to ensure that its compliance principles are observed throughout the world. Violations can have very serious consequences, both for the company and for individual employees. A compliance program comprising seven elements is being put in place to prevent such violations. The existing Corporate Compliance Policy will retain its validity.

The new setup also requires uniform and efficient structures, along with global processes encompassing the subgroups, service companies and country organizations. With this objective in mind, a high-ranking Compliance Committee has been established to make policy decisions.

Responsible marketing

We are convinced that responsible marketing must be based on sustainable principles. Bayer does not tolerate any legal violations in the marketing of its products. Yet responsible marketing also includes further ethical and moral principles that are expressed, for example, in transparent, consistent and reliable communication, as well as in the obligation to regularly assess our products and introduce the appropriate measures where necessary.

To transparently document our commitment to responsible marketing throughout the Bayer Group as well as to increase the strength and focus of this commitment, the Community Board for Sustainable Development decided in 2011 to summarize our principles in a Responsible Marketing & Sales Policy [50]. Parallel to this process, our subgroups have begun emphasizing their commitment to compliant and ethical conduct and the observation of industry-specific requirements in product marketing. With this initiative, we are establishing the foundation for the further emphasis of this issue in ongoing training measures.

Risk management

Business operations necessarily involve opportunities and risks. Their effective management is therefore a key factor in sustainably safeguarding a company's value.

The management of opportunities and risks at Bayer is an integral part of the Group-wide corporate governance system, not the task of one particular organizational unit. Sustainability aspects are included in risk management at Bayer because they

play a part in safeguarding the company's value. Along with excellent product quality and corporate compliance, they form the basis for the long-term sustainability of our business operations and business success.

In the Bayer Group, risks are systematically and continuously identified, analyzed and documented in a database. Risks are defined as events and possible developments within or outside of the company that could jeopardize a sustained increase in corporate value. Risk-relevant information is compiled at least quarterly and also on an ad hoc basis where necessary. The documentation contains a description of the risk, an assessment of the extent of possible damage and the probability of occurrence, along with measures to monitor and counteract the risk. The criteria are set out in a special procedure (BayRisk Instruction). Risk management at the Group level is assigned to the Chief Financial Officer. Clear responsibilities within the organizational units ensure the efficiency of the risk management system. More information on risk management in the subgroups [51] can be found in our online report.

The specific sustainability-relevant risks covered by our risk management include in particular safety and environmental risks. The manufacturing of chemical products is subject to risks associated with the production, filling, storage and transportation of raw materials, products and waste. These risks may result in personal injury, property damage, environmental contamination, production stoppages, business interruptions and liability for compensation payments. We address product and environmental risks by adopting suitable quality assurance measures. An integrated quality, health, environmental protection and safety management system increases process stability (see also page 62f.). An emergency response system (Bayer Emergency Response System, BayERS) to protect employees, neighbors, the environment and production facilities is an obligatory element in the integrated HSEQ management systems at all our production sites. The basis for this is set forth in a procedure on crisis management in the Bayer Group.

To minimize potential sustainability-relevant risks originating from our distribution channels, we integrate our suppliers into our risk management system (see page 31ff.).

A detailed opportunity and risk report can be found on page 132f. of our Annual Report 2011. We also report in detail about climate-related risks and opportunities and their financial impact in our annual report to the Carbon Disclosure Project (CDP) [52].

Legal risks

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, patent disputes, tax assessments and environmental protection. The outcome of any current or future proceedings cannot be predicted. It is therefore possible that legal or regulatory judgments or future settlements could give rise to expenses that are not covered, or not fully covered, by insurers' compensation payments and could significantly affect our revenues and earnings. Legal proceedings currently considered to involve material risks are described on page 255ff. of the Bayer Annual Report 2011.

Stakeholder dialogue

As a socially engaged, globally operating company, we know that open and transparent dialogue with all our stakeholder groups is essential. We are convinced that we cannot achieve long-term acceptance for our business activities without this regular discourse with our stakeholders. We therefore seek targeted dialogue with our stakeholders at the local, national and international levels. Our direct partners are our employees, customers and suppliers. The group comprising financial market participants safeguards our economic foundation. Important stakeholder groups for our company also include representatives of public interest groups, such as residents in the communities near our sites, non-governmental organizations and politicians, as well as the general public. Finally, we operate within a framework of action that is determined by legislation, scientific findings and public bodies. Graphic 1

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We regard systematic dialogue with our stakeholders as the essential global basis for building mutual understanding. In this way we want to create confidence in our activities. In discourse with representatives of our stakeholder groups, we openly explain viewpoints and courses of action to one another. Together, we identify challenges and analyze them from various perspectives.

In part through regular surveys, we determine which issues are particularly important to our stakeholders. In winter 2011, 328 external stakeholders such as suppliers, customers and financial market participants, as well as individuals from the political and scientific communities, replied to our online survey. We wanted to know how important they consider certain sustainability issues to be for Bayer and how they assess our performance in these areas. We also asked them to rate the relevance of the strategic sustainability issues Bayer has focused on so far, and to give us their opinion on the content and form of our sustainability reporting. Through this procedure, we discover areas for improvement, recognize risks more quickly and are able to exploit trends and new market opportunities at an early stage. Details on the most recent stakeholder survey, an overview of our stakeholder groups, the form and frequency

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of our dialogue with them and numerous practical examples from 2011 [53] are available on the internet.

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In 2011 we introduced a newly developed tool for strategic investment projects: the Stakeholder Check. This tool is designed to enable us to consider the views of potentially critical stakeholders more effectively in investment decisions. At information assemblies held in all subgroups, it was clearly demonstrated that dialogue processes such as these create social trust and therefore make business sense for us as well. For this reason, starting in 2012, the systematic stakeholder analysis for strategic investment decisions with a volume of €20 million or more will play an important role in the approval of capital expenditures.

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Lobbying

Our stakeholders at the political level include legislators, authorities and the scientific community. This is where the framework conditions of our business are decisively shaped. At the same time, our stakeholders have an active interest in industry's expertise. We therefore see lobbying as an important and legitimate way of participating in decision-making processes. As a basis for these activities, we have set clear rules through our

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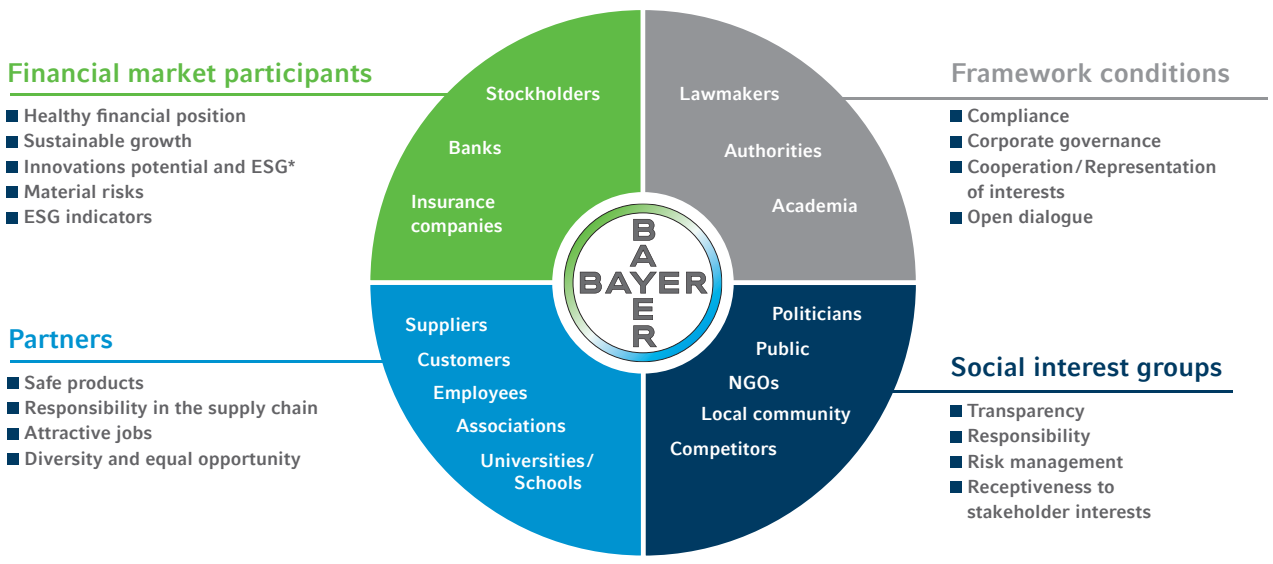
Code of Conduct for Responsible Lobbying [56], which reflects the principles set forth in the Green Paper on the E.U.'s European Transparency Initiative. The principles include making sure that it is clear whose interests are being represented. Within the Bayer Group, the Public and Governmental Affairs Committee is responsible for the focus and prioritization of the company's political work. This includes Group-wide tasks such as the publication of the Bayer Policy Letter, the entry in the lobby register of the E.U., and dealing with subgroup-specific political matters. In 2011 Bayer's political lobbying focused [54] on the acceptance of products and technologies, fostering and recognizing innovation, sustainable health care systems, chemicals management, and energy policy and climate protection.

Our liaison offices in Berlin, Brussels, Washington and Beijing serve as key interfaces to policy makers. To enhance transparency, Bayer was one of the first companies in the chemical and pharmaceutical sector to be entered in the European Commission's lobby register [55]. We disclose the relevant costs of our lobby work at E.U. level (€2.5 million in 2011). We are expecting a similar initiative in Germany and would enter the company in a German register if one were to be introduced. In 2011 we spent €1.2 million on our liaison office in Berlin. That figure comprises personnel, operating and project costs. In the United States, Bayer discloses its lobbying costs in several public databases.

In keeping with its directives, Bayer does not make any direct donations to political parties, related institutions, politicians or candidates for political office. However, associations to which we belong make donations on their own initiative, in compliance with the relevant statutory regulations,

1 Overview of our most important stakeholder groups and their main areas of interest



Our most important stakeholder groups can be divided into four major areas. Each respective stakeholder has different areas of focus.

* Environmental, Social and Governance

Dialogue

Dialogue between investors and management

Some 75 institutional investors and financial analysts from throughout Europe accepted Bayer's invitation to attend the company's seventh "Meet Management" investor conference in Leverkusen in March 2012. The guests took advantage of the opportunity to exchange ideas with the Group Management Board and the CEOs of the subgroups – Dr. Jörg Reinhardt of Bayer HealthCare, Sandra Peterson of Bayer CropScience and Patrick Thomas of Bayer MaterialScience – along with their colleagues on the respective boards. The guests particularly valued the small discussion groups in which they could engage in intensive dialogue with the board members of the holding company and subgroups about the development of the company and its markets. In view of its good experiences with this format, Bayer will organize similar events in 2012 in New York and Tokyo.

Investors and analysts such as Fabian Wenner (2nd from left) appreciate the direct dialogue with Bayer CEO Dr. Dekkers (2nd from right).

especially laws on party political activity. In the United States, individual employees utilize the opportunity to support candidates for political office by making private donations via the Bayer Corporation Political Action Committee (BayPac). Political action committees in the United States are government-regulated, legally independent associations of employees established to collect private donations to political organizations and candidates for political office. Consequently, such donations are not donations made by the company. The BayPac contributions are regularly reported to the U.S. Federal Election Commission [57]. Full details can be viewed on the Commission's website.

Regional commitment

As an international company, Bayer supports economic and social development in various ways in many parts of the world. We base our activities on where our customers are located, maintain production sites in all regions, invest in research and development, create jobs, forge supplier relationships and implement social needs activities at our sites around the world. This regional presence also has many advantages for Bayer. Manufacturing our products in close proximity to our customers strengthens our ties to them, lowers transport costs and reduces the burden on the environment.

Bayer regards itself as a regional employer that creates jobs locally, contributes to securing social structures at its sites and strengthens purchasing power in various regions of the world. We carefully and intensively support personnel development and talent management particularly in the growth regions. We also promote diversity, both through supporting women in management and by training local employees for management tasks. Furthermore, we contribute to economic development in the communities in which we do business through regional corporate tax payments.

We offer our employees at our sites worldwide a high level of social protection. In 2011 our personnel expenses – including social expenses and expenses for pension plans – amounted to €8,726 million. Defined-benefit obligations for pensions and other post-employment benefits totaled €19,310 million as of December 31, 2011. Table 2

Growth markets such as Asia play a central role in our corporate strategy. Bayer has had strong local roots for many years – particularly in China, India and Japan – as a result of its country organizations. Asia was the most important growth region for Bayer in 2011. The company aims to further expand its production, distribution network – including in sub-centers and rural areas – and research in order to improve the local availability of our products. Bayer plans to invest some €1.8 billion in property, plant and equipment in Asia through 2015. Major strategically relevant capital expenditures undertaken last year by the subgroups for property, plant and equipment are described on page 87 of the Annual Report 2011.

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As an in-house consulting unit, Bayer Business Services supports the subgroups in their projects to become more international. For example, Business Excellence Day in December 2011 focused on growth in the emerging markets. As the operator of Chempark, Currenta collaborates in China with Nanjing Chemical Industry Park. Currenta also benefits from this in the marketing of the German Chempark sites to international investors.

2 Personnel expenses and pension obligations* (worldwide, € million)

	2007	2008	2009	2010	2011
Personnel expenses	7,571	7,491	7,776	8,099	8,726
– of which pension and social security contributions	1,611	1,513	1,490	1,623	1,672
Pension obligations**	15,022	14,910	15,931	17,699	19,310

* Figures until 2010 as last reported
** Present value of defined-benefit obligations for pensions and other post-employment benefits

News

CO pipeline: an important raw materials network on the Rhine

Carbon monoxide (CO) is an important raw material for the chemical industry. As Bayer will not be able to produce a sufficient quantity at the site in Krefeld-Uerdingen over the long term, the company plans to supply the plants there with CO from the Chempark Dormagen site through a pipeline. During its legislative procedures, the state parliament of North Rhine-Westphalia has determined on a number of occasions that the CO pipeline [59] serves the public good because the project strengthens the economic structure of the state. The 67-kilometer-long pipeline has nearly been completed. It will only become operational once all the conditions have been satisfied. This also includes a favorable court decision. From the beginning of the planning phase for the pipeline – which runs underground mainly along the right bank of the Rhine and uses existing infrastructure routes such as rails and highways – Bayer conducted an intensive dialogue with everyone involved, including residents, authorities, politicians and other representatives of society. The company takes residents' concerns very seriously. For this reason, an extensive safety concept was developed that sets standards in pipeline construction and goes beyond the statutory requirements.

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Bayer invests in its sites around the world. This includes environmental investment that goes beyond statutory requirements. We perform a voluntary ecological assessment for all capital expenditure projects exceeding €10 million.

Growth in emerging markets also means finding solutions for the specific challenges that exist there. These include diseases that are more widespread in Asia than elsewhere, such as liver cancer and diabetes. Bayer HealthCare also wants to accelerate access to new medicines in Asia by integrating patients there into the global development programs already at an early stage. In addition, we want to submit innovative medicines for regulatory approval at the same time in Asia, Europe and the United States. Bayer MaterialScience not only supplies industrial customers with locally manufactured polymer products, it also offers the necessary technical advice and applications development know-how in its systems houses. Ground was broken for a new systems house in Qingdao, China. Bayer MaterialScience also began the further expansion of its polymer research and development center in Shanghai, China. Also in Shanghai, a new production facility for the plastics precursor TDI (toluene diisocyanate) went on stream in November 2011 that will have a capacity of 250,000 metric tons per year.

In India, Bayer HealthCare formed a joint venture in January 2011 with Zydus Cadila. Bayer Zydus Pharma will unite complementary product portfolios and specialized sales units in the areas of women's health care, diagnostic imaging, general medicine and oncology. In February 2011 Bayer MaterialScience inaugurated a new Color Competence and Design Center in Greater Noida, India.

Bayer CropScience wants to help raise living standards in rural areas of India by increasing value-added and reinvesting this in the community. In 2010 the subgroup therefore launched the Model Village Project [58]. In 2011 the Bayer Prayas Rural Development Organization was established for local coordination of all activities. As the project advances, other partners – including those not directly involved in agriculture, such as non-governmental organizations or local companies – will be able to join the association. As part of the project, a technology for systematic droplet irrigation in seed production and its acceptance was successfully tested in selected Indian villages in 2011. The method is to be introduced in the model villages in 2012. In November 2011 we began introducing other suitable measures. For example, we facilitated direct market access for farmers through our village service centers which now also offer products and advice on animal husbandry in conjunction with Bayer HealthCare. Since January 2012 education and training opportunities for children have been supported through the introduction of an established scholarship program under the Bayer Vidya Prayas Scholarship Scheme. Pforzheim University in Germany is our partner in the development of further concepts linked to the subject of model villages. Collaborating with an Indian non-governmental organization, the university surveyed around 2,300 people in August and September 2011. By repeating the survey at regular intervals, it should be possible to determine the progress of the project and the change in the standard of living of the village population to gain valuable findings for the further development of the project.

We are currently concentrating on this holistic project approach in model villages. Thus we are helping farmers increase productivity and improve seed quality so as to raise their income, thereby supporting the payment of fair wages to workers on the arable land contracted by Bayer CropScience.

We also invest in local research. For example, Bayer HealthCare strengthened its research activities by inaugurating a new innovation center in 2011 near San Francisco, California, United States. Bayer CropScience opened a new seed research laboratory in Singapore in 2011, while Bayer MaterialScience in January 2012 inaugurated a new process research center at the Chempark Dormagen site in Germany focusing on the primary feedstocks for polyurethane.

Bayer also supports research activities at universities in North America, Europe and Asia. At the end of 2011 the University of Rostock was granted an endowed professorship in its medical department. Bayer had already sponsored a Chair for Apparatus Engineering at Dortmund Technical University in 2009. In China, Bayer supports a total of four endowed professorships at three universities. These comprise two professorships at Tongji University focusing on sustainable development

and intellectual property rights, as well as one endowed chair for health policy (Tsinghua University) and a professorship for marketing at China Europe International Business School. At Tongji University, Bayer MaterialScience is making available €1.5 million in funding for an initial period of five years for the Bayer-Tongji Eco-Construction & Material Academy so as to contribute to the development of innovative and sustainable solutions in the construction of buildings. Within the scope of its collaboration with the University of Nebraska, United States, for improving wheat breeding, Bayer CropScience has set up a professorship in that institution's cereals breeding department.

In the following chapter you can read about how our purchasing volume represents a substantial economic development factor in many regions. In addition to business relations with customers and suppliers, Bayer also implements targeted social needs activities at its sites around the world. Further information is given in the Social Commitment chapter on page 65.

Supplier management

We exert considerable influence on society and the environment in many regions through our purchasing volume. In the reporting period, we purchased goods and services from about 98,000 suppliers in more than 115 countries for approximately €15.7 billion in total. Among OECD countries, Germany, the United States and Japan accounted for just under 70 percent of these expenditures. This corresponds to nearly 59 percent of total procurement spending by the Bayer Group. Three of the BRIC countries – China, Brazil and India – accounted for 11 percent of total expenditures, or more than 70 percent of total spending among the non-OECD countries. Table 3

Sustainability in procurement

Sustainability-based supplier management is strategically important for Bayer's success as a company. The Group-wide policy guidelines issued by the Procurement Community set out the principles of our procurement policy. By integrating sustainability aspects into our Group-wide procurement processes, we are able to avoid risks, lower costs and increase sales. We strive to achieve responsible conduct throughout our entire supply chain, as we want to enter into stable and long-term relationships with our business partners. This cooperation is based on our Supplier Code of Conduct [60], in which we document our sustainability principles and requirements. *It is a fixed element of our supplier selection and evaluation process, and is integrated as binding into our electronic ordering systems and contracts throughout the Group through a special clause.* Furthermore, all employees based in purchasing are provided with standardized clauses for integration into framework agreements. To participate in bidding processes in our supplier management system, suppliers must bindingly confirm before submitting an offer that they acknowledge Bayer's Supplier Code of Conduct. Table 4

Training

The training concept established in 2009 for sustainability in procurement was further pursued in the reporting year. New purchasing employees completed the obligatory training course, which teaches the basics of sustainability-based supplier management and communicates our management approach.

Through various initiatives worldwide, such as a supplier day in Finland and the presentation of the BayBuy Awards in India, we want to create growing awareness among our suppliers about sustainability. Another global supplier day is planned for 2012.

Supplier evaluation

Supplier self-assessments and audits are used to check whether the demands made by the Bayer Supplier Code of Conduct are being implemented and complied with along the supply chain. The selection of the suppliers to be evaluated takes place using a country-based risk approach, and was expanded to include strategic and key suppliers from non-risk countries. We will continue the focused expansion of our risk approach in the future too. Both the quality and the number of supplier self-assessments – which are conducted on site or using questionnaires – were increased in 2011: more than 33 percent more assessments were completed compared with the previous year. Of the 361 assessed suppliers from 26 countries, 70 were from high-risk countries, 114 were strategic suppliers and 177 were key suppliers. Overall, improvement potential was identified with 144 suppliers and considerable need for improvement with 32 suppliers. There was no need for improvement with 185 suppliers. Should a need for improvement exist for a supplier, a plan of action comprising defined measures is developed together with that supplier. *In 2011 the supplier self-assessments covered 25 percent of the total procurement volume and 56 percent of the procurement volume in high-risk countries.* In

Target 2015

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Target 2015

3 Number of suppliers and procurement expenses by economic region (percent)

	Suppliers	Spending
OECD countries	73	84
Non-OECD countries	27	16

4 Purchasing volume in OECD and non-OECD countries (percent)

Spending OECD	Germany	United States	Japan	Other
	31.4	20.4	7.0	25.4
Spending Non-OECD	China	Brazil	India	Other
	6.2	3.0	2.3	4.3

addition, 104 country-specific assessments were carried out in India. We plan to carry out supplier self-assessments in a more target-oriented way in the future by applying a modular questionnaire format.

In 2011 we conducted random audits to check the information provided by the suppliers in the supplier self-assessments. *Sustainability audits of 15 suppliers in four countries (China, Thailand, India and Japan) were conducted in cooperation with independent external auditors.* All identified improvement potentials were addressed through jointly coordinated, binding plans of action with fixed implementation deadlines, which we monitor together with our external auditor. Furthermore, internal Bayer auditors conducted 205 audits of suppliers in the reporting period that were focused on HSE (Health, Safety, Environmental Protection). The goal of these HSE audits is to evaluate the reliability of suppliers of strategically important synthesis intermediates for whom a heightened risk was identified with regard to occupational and process safety or environmental protection. This process is intended to prevent supply bottlenecks and damage to the company's reputation. Improvement potential identified by the HSE audits was also addressed through plans of action and their implementation monitored by our internal auditors. None of the improvement requirements identified through these audits led to the termination of a supplier relationship.

Target 2015

Partnerships for sustainable supplier management: industrial initiatives

To effectively address the wide-ranging challenges of a sustainable supply chain and the constantly growing demands of stakeholder groups while at the same time identifying synergies, Bayer joined two industrial initiatives in 2011. This was also done with the intention of reducing the administrative workload and costs both for suppliers and within our own procurement organizations. The audits planned as part of these industrial initiatives supplement our own audit program. In April 2011 Bayer joined the Pharmaceutical Supply Chain Initiative (PSCI) [62]. The main focus in 2011 was on the development of a PSCI standard for joint audits. Further objectives are the exchange of audit results and the conduct of audits at shared suppliers by qualified, independent auditors. Together with five other chemical companies, Bayer also established a Supply Chain Initiative of the chemical industry in 2011. The first step involved the consolidation of the participating companies' sustainability requirements and the evaluation of opportunities to exchange sustainability evaluations and audits. In 2012 a pilot phase is planned in which supplier self-assessments and audits for shared suppliers will be performed. In 2011 we decided, together with the chemical industry initiative, to manage the reporting and monitoring of sustainability evaluations in the future through a joint IT platform. An interface to the Bayer supplier management system will ensure that the results of the sustainability evaluations of our suppliers will be integrated into purchasing decisions.

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Tackling child labor

An important focus of our work with suppliers in developing countries and emerging markets is the prohibition of child labor. Unfortunately, child labor is still widespread in many regions of the world. In a number of countries in which we are present and maintain business operations, children are still used for activities such as field work to contribute to the subsistence of their families. In keeping with our commitment to human rights worldwide and our own dedicated position, we oblige suppliers along our entire supply chain to refrain from using child labor. In the developed markets of the West, child labor is not only considered unethical, it also potentially threatens the reputation of companies involved, which can have economic consequences.

For many years Bayer CropScience has taken resolute and systematic action against child labor in our cotton seed supply chain in India with its Child Care Program [61]. Education plays a key role in securing a lasting improvement in living circumstances. As part of the Child Care Program, our "Learning for Life" initiative, which comprises

5 Field monitoring results: production of cotton seed (India)

Season	2007/2008 Kharif*	2007/2008 Rabi*	2008/2009 Kharif	2008/2009 Rabi	2009/2010 Kharif	2009/2010 Rabi	2010/2011 Kharif	2010/2011 Rabi	2011/2012 Kharif
Standing acres**	1,014	141	1,863	38	1,683	172	2,152	335	2,773
Monitored acres***	6,330	855	10,770	222	10,575	1,052	13,856	2,276	16,712
Labor details									
Total laborers	28,656	5,283	43,241	1,409	35,826	3,902	43,150	7,198	50,548
Proven child labor cases	89	7	105	0	22	2	14	0	18
Adult laborers	28,567	5,276	43,136	1,409	35,804	3,900	43,136	7,198	50,530
Child labor incidence per monitored acre	0.014	0.008	0.01	0	0.002	0.002	0.001	0	0.001
Child laborers as a percentage of total laborers	0.31	0.13	0.24	0.00	0.06	0.05	0.03	0.00	0.04

* Kharif = cultivation in the rainy season (summer) and harvest in the fall / Rabi = cultivation in the fall and harvest in winter
** Area under cultivation (in acres); 1 acre = 4046.86 m²
*** Cumulated depiction of the area under cultivation monitored on the basis of control inspections performed (up to 6 per season)

projects established in conjunction with local non-governmental organizations and educational institutions, is helping to achieve this. More than 2,700 children and young people benefited from this initiative between 2005 and 2011. The focus of the program is currently on vocational training. These educational activities are supported by contractual agreements with seed producers. In addition, the fields used in cotton seed production are checked at least six times each season. The table shows the trend since the main 2007/2008 season. Table 5

We pay a bonus to suppliers who strictly enforce the ban on child labor, and run training sessions to enhance agricultural efficiency. Graduated sanctions are applied for non-compliance. These range from oral warnings to termination of the contract in the case of repeated non-compliance. In addition, auditing firm Ernst & Young, India, once a year conducts an unannounced on-site inspection of farms selected on a random basis. Two indicators are used to measure the success of this extensive range of activities. These are highlighted in Table 5.

Bayer stock a sustainable investment

The success of our sustainability- and value-based corporate governance is reflected partly in the performance of Bayer stock in sustainability indices and rankings. Investors increasingly pay attention to how companies integrate ecological, social and corporate governance aspects into their strategies and business activities. They also use sustainability ratings as an additional risk indicator. That is particularly true of long-term institutional investors such as pension funds. Table 6

The United Nations Principles for Responsible Investment (UNPRI) [63], a network which works closely together with the financial initiative of the United Nations Environment Programme (UNEP) and the UN Global Compact, is also very popular among investors. In 2011 more than 900 major investors, asset managers and financial services providers from around the world – with combined assets under management of more than US$30 trillion – committed to uphold the six principles of the UNPRI. 63 WWW

In 2011 we reported to sustainability-minded investors during one-on-one meetings and an SRI (socially responsible investment) roadshow on Bayer's commitment in this area.

Bayer stock is listed in numerous sustainability funds and indices [64]. We have been continuously listed in the Dow Jones Sustainability World Index (DJSI World) since the establishment of that index in 1999. The evaluation of corporate sustainability performance is performed on behalf of the index provider Dow Jones by the Swiss rating agency SAM. Bayer is one of three chemical companies worldwide whose sustainability commitment SAM has honored in its assessment for 2012 with the designation SAM Gold Class. 64 BAYER WEB

Bayer stock has also been listed in the U.K.-based FTSE4Good index since this was established in 2001. In 2011 we were again listed in the Carbon Disclosure Leadership Index (CDLI) of the Carbon Disclosure Project (CDP) [65] in recognition of our transparent reporting – this time as one of the four best companies in all sectors worldwide. Bayer was also included in the Carbon Performance Leadership Index (CPLI) with an "A" ranking in light of our efforts to reduce carbon dioxide emissions. 65 WWW

6 Bayer stock in sustainability indices and funds

Index/Fund		Bayer's listing 2009	2010	2011
Dow Jones Sustainability Indexes	DJSI World	✓	✓	✓
	DJSI Europe	–	✓	✓
FTSE4Good	FTSE4Good Global Index and FTSE4Good Europe Index	✓	✓	✓
	FTSE4Good Environmental Leaders Europe 40 Index	✓	–	–
ASPI	ASPI Eurozone	✓	✓	✓
BEST IN CLASS	Storebrand SRI Funds	✓	✓	✓
CARBON DISCLOSURE PROJECT	Carbon Disclosure Leadership Index*	✓	✓	✓
	Carbon Performance Leadership Index* (published in 2010)		✓	✓
NYSE Euronext	NYSE Euronext Low Carbon 100 Europe Index	✓	✓	✓
access to medicine index	Access To Medicine Index*	✓**	✓	✓**

* The Carbon Disclosure Leadership Index, the Carbon Performance Leadership Index and the Access To Medicine Index are not trading indices.
** Not re-assessed in 2009 and 2011

Innovation & Product Stewardship

Targets 2015

Research & development

- Maintain or increase R&D spending in relation to sales

Product stewardship

- Roll out Global Product Strategy in another 10 countries with different languages

A danger to the lungs *High blood pressure in the lungs (pulmonary hypertension) can have life-threatening consequences. Bayer research scientists Professor Johannes-Peter Stasch, Dr. Stephan Vettel and Dr. Dieter Neuser (from right to left) are working on new and innovative therapies.*

Innovation is the key to mastering the global challenges related to sustainable development. Through novel solutions in the fields of health care, nutrition and climate protection, we are exploiting new growth areas and thus safeguarding Bayer's future viability. The highest priorities in connection with all our products are the health and safety of those who use them and the protection of the environment.

At Bayer, sustainability is directly linked to innovative capability. After all, only sustainable innovations ensure commercial success and society's future viability. We adapt our research and development activities to current and future market needs on an ongoing basis. We also continuously expand our product portfolio and optimize our production processes. This gives us an important competitive advantage. We distinguish ourselves from our competitors in the world market through innovative products and excellent research and technology. We focus constantly on the safety and compatibility of our products and the protection of the environment. Product innovations are steered by the subgroups. In this way we ensure that research activities are aligned closely to our businesses and the respective market needs. The subgroups are supported by our service companies – Bayer Technology Services as a technological center of expertise for processes and facilities, and Bayer Business Services and Currenta.

Research & development

Target 2015

The inventor company Bayer focuses on research and development, *on which the company spent €2.9 billion in 2011. This was equivalent to 8.0 percent (2010: 8.7 percent) of sales.* Of the Bayer Group's entire R&D expenditures in 2011, Bayer HealthCare accounted for 66.4 percent, Bayer CropScience for 24.7 percent and Bayer MaterialScience for 8.1 percent. The number of employees working in research and development worldwide was 13,300. Table 7

Bayer HealthCare has a well-stocked pharmaceutical pipeline. There were 43 innovative projects in Phase I to Phase III of clinical development as of February 2012.

Bayer CropScience too is focusing on growth through innovation. Four new crop protection products are scheduled to be introduced to the market between 2012 and 2015. Future growth in BioScience, too, is supported by the introduction of new varieties and plant traits.

In total, more than 1,400 people around the world work in the area of innovation at Bayer MaterialScience. In 2011 Bayer MaterialScience invested some €237 million in research and development, corresponding to more than 2 percent of total sales. These investments pay off: 256 patent applications were filed in 2011 alone.

Excellence through networks

The complex nature of global challenges demands an integrated approach and the pooling of various competencies provided by internal and external know-how so that business ideas can be rapidly converted into successful products. For Bayer, global networking with the scientific community and various partners along the value chain is an important element in ensuring successful research activities. Joint research projects based on the open innovation approach are a key component of our innovation strategy. In this context, we also rely on an international network of leading universities, public research institutes and partner companies. We are continuously expanding this network to

include, among other facilities, innovation centers known as "science hubs" in emerging regions such as Asia. Such research collaborations are partly supported through public funding. This makes it easier for the company to decide in favor of future-oriented, high-risk research. Overall, Bayer was involved in around 114 projects in Europe in 2011, for which it received total public funding of around €18 million. This corresponded to about 0.6 percent of the company's research and development expenses. An overview of Bayer's global research activities can be found on page 108ff. of our Annual Report 2011.

We also implement various measures internally to ensure a lively and open culture of innovation. For example, the "Expert Club" – which is headed up by the member of the Board of Management responsible for Technology, Innovation and Sustainability – promotes the exchange of best practices by scientific experts from all the subgroups. Regular meetings involving up to 100 participants are held to discuss current research issues and best-practice examples from the specialist units. The "Expert Career" initiative offers leading employees from research and development targeted career development opportunities. With the global "Triple-i" [66] (inspiration, ideas, innovation) initiative, we motivate all employees in all countries to actively share their own business ideas and contribute to innovation at Bayer. Some 13,000 ideas have been submitted overall since 2006.

Innovative proposals – particularly as regards process improvements – are also submitted through the company's suggestion system, the Bayer Ideas Pool [67]. More information on this is found in our online report.

Biotechnology and nanotechnology: drivers of innovation

Future research and production viability in the area of pharmaceuticals and plant technology would be difficult to imagine without the application of biotechnology. Plant biotechnology can help to improve the yield and stress resistance of plants through both genetic engineering and modern non-genetic engineering methods. This in turn enables the efficiency and yield security of agricultural production to be improved without increasing the input of resources. In pharmaceutical research and production as well, biotechnology has become increasingly important in recent years.

We manufacture two of our best-selling products – the multiple sclerosis drug Betaferon™/Betaseron™ and the hemophilia treatment Kogenate™ – using biotechnological processes. The applied process technologies include bacterial fermentation, yeast fermentation and mammal cell cultures. Our development candidate VEGF Trap-Eye, an active ingredient for the treatment of wet age-related macular degeneration developed together with our partner Regeneron, is also produced in a biotechnological process. For a number of years now, Bayer has been continuously expanding its activities in the area of biologicals research and has also increased its production capacities for new biologicals so as to produce sufficient material for the required clinical studies. In Wuppertal the framework of the cell biology pilot plant was completed in 2011; the interior of the building, including laboratories and production facilities, will be completed in September 2012. The capital expenditure volume for this project will total €35 million.

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New technologies always require transparent action and stringent risk management. Safety is our top priority in the use of biotechnology. Bayer addresses the concerns of consumers who are worried about health risks for people and negative effects on indigenous plants and animals as a result of genetically modified organisms. We explicitly respect consumers' desire for more information and the freedom to make their own purchasing decisions. Beyond the observance of all relevant legal provisions, we have formulated our own Position on the Responsible Use of Gene Technology [68], a Position on Plant Biotechnology for Sustainable and Responsible Agriculture, and specific regulations for the subgroups and service companies. Before any product reaches market maturity, we subject it to a stringent approval process to determine whether it is safe for people, animals and the environment. In accordance with our new company-wide Responsible Marketing & Sales Policy [69] (see also the Management & Corporate Governance chapter on page 26ff.) and

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7 Research and development expenses* (€ million)

	2007	2008	2009	2010	2011
Total	2,578	2,653	2,746	3,053	2,932
of which Bayer HealthCare	1,700	1,742	1,847	2,066	1,948
of which Bayer CropScience	637	649	653	722	723
of which Bayer MaterialScience**	209	221	207	231	237
of which reconciliation***	32	41	39	34	24

* Figures for 2007-2010 as last reported
** Not included: R&D in collaboration with customers
*** Not directly allocated to the subgroups; mainly expenditures of the service companies

News

Patent dispute concerning Nexavar in India

The Indian patent authorities in March 2012 granted Indian generics producer Natco a compulsory license for the Bayer cancer drug Nexavar™. Bayer does not consider that the requirements are in place for the granting of a compulsory license and will appeal the decision by the patent authorities in order to defend its patent rights.
The Indian health system indisputably faces particular challenges as regards medical care for the country's population. However, these challenges are hardly connected with pharmaceutical product patents, as none of the drug products on the Indian list of essential pharmaceuticals is patented.
The granting of compulsory licenses alone therefore cannot solve the problems facing the Indian health system. Instead, the decision is harmful to the international patent system and thus threatens pharmaceutical research in the long term. After all, investment in the research and development of both innovative drug products and future therapies can only be financed through patent rights.
There should therefore be a closer focus on allowing patients direct access to innovative drug products. Since introducing Nexavar™ in India, for example, Bayer has offered a patient assistance program that is regularly expanded. As part of this program, needy patients are currently supplied with Nexavar™ at approximately 10 percent of the pharmacy price. Patients receive advice from their attending physicians based on their therapeutic response to the drug and their financial situation.

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the Directive on Integrity & Responsibility in Communications and Marketing, [70] we provide our stakeholders with comprehensive, transparent and reliable information about our products and services.

In 2011 Bayer CropScience continued its activities in the context of the "Excellence Through Stewardship" program, a voluntary initiative by industry to implement product stewardship and quality management processes in connection with plant biotechnology. As a member of the German

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biotechnology industry association BIO Deutschland [71], Bayer CropScience works – in accordance with BIO Deutschland's product launch policy – to reduce the risk of trade disruptions. These can occur in the commercial cultivation of genetically modified plants owing to varying registration systems worldwide. Bayer HealthCare has established strict production safety measures in its Directive on Biological Safety and its "Requirements for the safe handling of biological agents" procedure.

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Alongside biotechnology, nanotechnology is regarded as an innovation engine of the 21st century. This technology offers significant innovation potential for a wide spectrum of industries and forms of

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application. It enables us to develop new materials and components with improved properties, functions and levels of performance for which many applications are conceivable. As nanotechnology is a relatively new technology, it is particularly im-

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portant to conduct a sound, scientific risk analysis of the manufactured nanomaterials that focuses on protecting human health and the environment. We have summarized our principles for the handling of nanotechnology in the Group-wide Position on

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Nanotechnology [75]. Areas of application for nanotechnology at Bayer MaterialScience are presented from page 46 onwards.

Patents: protecting intellectual property worldwide

As an inventor company, Bayer is dependent on reliable global protection of its intellectual property. At the end of 2011 there were 77,000 valid patent registrations and patents, as well as 12,000 protected inventions at Bayer worldwide. The funding for important innovations must be secured reliably and over the long term. A patent usually remains valid for 20 years. As a new pharmaceutical takes 12 years to develop on average, this generally leaves eight years of patent protection for a drug product following its registration. Without patent protection, there is no way to cover the substantial costs incurred in the search for new solutions. Ongoing patent costs amount to 2 percent of Bayer's annual research and development expenditure. Patented products and technologies account for around 40 percent of the sales generated by each of our three subgroups. We are therefore actively committed to promoting patent protection and protecting our own intellectual property around the world.

To support the development of industrial property rights and trademark rights in China, Bayer funds a professorship for industrial property rights ("IPR Chair") at Tongji University in Shanghai and an annual IPR forum on current issues surrounding the protection of intellectual property rights.

Product stewardship at Bayer

The comprehensive assessment of risks to health and the environment along the entire value chain of a product – from research and development through production, marketing and use by consumers to disposal – is a cornerstone of our sustainability strategy. The safe handling and use of our products lie at the focus of our activities, which also include transparent communication and distribution of our product safety information. Our sustainable actions include not just compliance with statutory requirements, but also our voluntary efforts. Here we also take into account the precautionary principle [72] as defined by the United Nations and the European Commission.

In 2006 the international United Nations Conference on Chemicals Management (SAICM) [73] agreed to minimize the negative impact of chemicals on human health and the environment by 2020. The chemical industry committed to a voluntary obligation to support this process. An important part of these activities is our support for the Global Product Strategy (GPS) [74], which is aimed at the safe handling of chemical products. Bayer has a tradition of commitment. Since 1994 we have been committed to the voluntary Responsible Care® [76] initiative of the chemical industry, which was globalized in 2006 with the Responsible Care Global Charter [77].

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Since 2007 we have operated in accordance with the new European chemicals regulation REACH [78] (Registration, Evaluation, Authorization and Restriction of Chemicals). At the same time, we are implementing the Globally Harmonized System (GHS) [79] for the classification and labeling of chemicals, which came into effect in the E.U. in 2009.

We also participate in the further development of scientific risk assessment through associations and political initiatives. More information on our international product safety activities [80] is available on the internet.

Our activities as regards process, plant, occupational and transport safety are described in the Employees (page 47ff.) and Ecology (page 55ff.) chapters.

Fulfilling our obligations

The European chemicals regulation REACH applies irrespective of the marketing activities involved for all substances that we produce or import in quantities of more than one metric ton. REACH affects all activities by Bayer as a manufacturer, importer and user. To adequately address the scope and complexity of the REACH regulation, we have formulated Group-wide and subgroup-specific directives. In 2010 we met the first deadline by completing the registration phase for substances we produce or import in volumes of more than 1,000 metric tons annually or that are particularly hazardous. In 2011 we began compiling the dossiers for the second registration phase, in which all substances we produce or import in a volume greater than 100 metric tons annually must be registered by June 1, 2013. REACH also involves an authorization procedure that could lead to the replacement or prohibition of hazardous substances. Bayer is not yet affected by this authorization process, which was introduced in 2011. The substances from the first registration phase are now being evaluated by the regulatory authorities. In the future this could result, for example, in additional testing requirements, new risk management measures or the inclusion in the authorization procedure. Furthermore, the European Chemicals Agency (ECHA) organizes REACH inspections each year that are carried out by the respective national agencies (e.g. trade inspection agencies). In 2011 REACH inspections took place at two Bayer HealthCare sites but did not result in any complaints. As Bayer also uses products from other manufacturers, we maintain close contacts with our suppliers and ensure that they confirm compliance with REACH for these products.

Alongside REACH, the introduction of the GHS regulation is the second major change to take place in European chemicals law in recent years. The aim is to implement a globally standardized system for classifying chemicals and labeling them appropriately on packaging and in material safety data sheets. All substances marketed and sold in the European Union that require classification according to the GHS must be notified to the European Chemicals Agency (ECHA). In 2010 we notified within the deadline more than 1,000 substances marketed by us at that time. Since then, all new substances have been notified through the normal processes. Parallel to the changes in Europe, we also observe regulatory changes in the countries where our trading partners are based and make available corresponding material safety data sheets and labels there as well.

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The Global Product Strategy (GPS) is a voluntary commitment by the chemical industry. It was initiated by the International Council of Chemical Associations (ICCA) to improve knowledge about chemical products, especially in emerging and developing markets, and thus increase safety in the handling of these products. The ICCA has established an information portal through which summarized details on products – so-called "GPS Safety Summaries" – are made available. In 2011 Bayer began entering product safety summaries [81] in the information portal. The Global Product Strategy is very important to us, the focus being on the activities of Bayer MaterialScience. *The specific goal for 2015 is to roll out the GPS in 10 additional countries via our BayCare platform. More information on this can be found on page 45.*

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Target 2015

Group-wide registration of product data

The implementation of REACH and the GHS is closely interlinked with that of the Global Product Strategy and the Responsible Care Global Charter. Group-wide working groups coordinate their implementation at Bayer. All subgroups compile product information enabling them to meet the respective product safety and information obligations for raw materials, intermediates or end products. This data compilation is updated accordingly whenever new legal requirements are established. We address all major elements of the Responsible Care Global Charter with our HSEQ management systems and activities. More information on this can be found in our online report [82].

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Animal welfare – an important goal

As a research-based company, we investigate the effects of our products on people, nature and the environment. In this connection, animal studies are legally prescribed and scientifically necessary. Animal studies are only replaceable to a certain extent in the research of new active pharmaceutical ingredients. In our handling of animals, we respect all legal requirements pertaining to animal welfare. Wherever animal studies may be required to evaluate our innovative substances, Bayer adheres to the so-called 3R (replace, reduce, refine) principles. Animal studies should be replaced by alternative methods wherever possible. We first ask ourselves whether a recognized method is available that does

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Cooperation to treat heart failure

New methods for the early diagnosis and causal treatment of heart failure (myocardial insufficiency) are at the focus of a new partnership between Bayer HealthCare Pharmaceuticals and the Ludwig Boltzmann Institute for Translational Heart Failure Research in Graz, Austria. Heart failure currently affects more than 23 million people worldwide. The five-year mortality rate for patients with heart failure is greater than 50 percent, which is higher than that of many cancers. The collaboration ideally complements Bayer's research activities in the field of cardiology. The focused collaboration between basic researchers, application-oriented scientists and experienced heart specialists enables internationally competitive research that centers on improving the provision of medical care and the quality of life of the patient.

Bayer research scientists Diana Dutcher and Mark Hilse (from right) looking at a model of vessels of the cardiovascular system

not rely on animal studies. In the event that no alternative method exists, only as many animals are used as are needed to achieve scientifically meaningful results based on statutory requirements. We make sure animal studies are performed in a way that is as gentle on the animals as possible. These principles also apply to both the research institutes contracted to us and our suppliers, whose compliance with our animal welfare requirements we regularly monitor. The most recent figures and further information on animal welfare and animal studies [84] can be found on the internet.

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The Global Animal Welfare Committee established in 2010 monitors the observance of our "Bayer principles on animal welfare and animal studies" within the Bayer Group and in external studies. To this end, the committee – which is comprised of the animal welfare officers at our research sites and further Bayer experts – in 2011 began defining key performance indicators with which we aim to measurably communicate our efforts on behalf of animal welfare. We also plan to establish an internal database in which we will compile all information about our cooperation partners worldwide for access throughout the entire company. Bayer HealthCare participates in several European consortia that aim to reduce or improve the validity of animal studies: we are active, for example, in the European Partnership for Alternative Approaches to Animal Testing (EPAA) [87] and are involved in the leadership of the eTOX project and the MARCAR project of the Innovative Medicines Initiative (IMI). We also support the Foundation for the Promotion of Alternate and Complementary Methods to Reduce Animal Testing (SET) [90].

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Protection against counterfeit products

Bayer is active in the fight against the illegal trade with counterfeit pharmaceuticals and crop protection products. Such products can present considerable dangers to people and the environment due to deficient properties such as their uncontrolled composition. In close cooperation with regulatory authorities, Bayer actively works to minimize the possible negative effects on the health of patients, customers and users. The focus is on education and information, as well as on legal steps aimed at minimizing illegal trade and ensuring the reliable identification of our original products.

Through the internet platform "Beware of Counterfeits" [83], Bayer HealthCare informs patients about the risks of counterfeit pharmaceuticals and provides important tips on how patients can protect themselves. The site is regularly updated and is being expanded worldwide. By providing extensive resources, furthermore, Bayer HealthCare supports the establishment of a pan-European system for the verification of pharmaceutical packaging in accordance with the proposal of the EFPIA [85] (European Federation of Pharmaceutical Industries and Associations), as well as its implementation in Germany through the "SecurPharm" [86] project. Substantial investments have already been made to implement the corresponding systems worldwide.

The proportion of counterfeit products in the crop protection market lies between about 5 and 7 percent. Bayer CropScience therefore fights illegal crop protection products both with its Product Defense Network and by supporting regional and global association committees such as the Anti Counterfeiting Expert Group of the European Crop Protection Association (ECPA) [88] and the Anti-Counterfeiting Steering Committee of CropLife International (CLI) [89]. Our Product Defense Team cooperates intensively with national and international authorities, which regularly leads to numerous confiscations of counterfeit products and the prosecution of the counterfeiters in a number of countries. In connection with CLI's "Know Your Customer" campaign, Bayer CropScience since 2010 has maintained an initiative, in collaboration with shipping companies, aimed at preventing the transport of counterfeit products by more closely inspecting freight and customers, among other measures.

Bayer CropScience also works not only to strengthen existing legislation, but also to expand laws and provisions dealing with the identification and confiscation of illegal crop protection products.

Here the company supports initiatives of the ECPA and CLI aimed at providing information and training for dealers, farmers and governmental agencies through anti-counterfeiting training materials (manuals, workshops).

In 2011 Bayer CropScience began replacing its generic industry packaging with Bayer-specific, more counterfeit-proof packaging developed by the Packaging Technology Department. Furthermore, communication of the potential risks and dangers of illegal crop protection products in the media was further intensified in the reporting period.

Innovation for health – Bayer HealthCare

Bayer HealthCare is a health care company with global research activities that develops products in the areas of Pharmaceuticals, Consumer Care, Medical Care and Animal Health. These four areas account for two thirds of Bayer's R&D expenses. Three current examples of our innovations are described in the inset below. We pursue a long-term research strategy by developing therapeutic options for currently unmet medical needs. To create additional value for physicians and patients, we aim in the future to think beyond individual products and focus more closely on the development of integrated solutions combining products and services. Such solutions could range, for example, from the prevention through the diagnosis and treatment to the secondary prevention of cardiovascular disease.

We intend to further strengthen our global network through external research partnerships in science and industry to supplement our research infrastructure and safeguard our product pipeline.

In the development of our products, we are committed to the responsible use of innovative technologies. Some of our product pipeline candidates are being further developed for the treatment of serious and at the same time very rare diseases – also known as orphan diseases. The active ingredient regorafenib was granted orphan drug status by the U.S. Food and Drug Administration (FDA) [91] for the treatment of patients with gastrointestinal stromal tumors (GIST). In the United States, substances qualify for orphan drug status if they help to diagnose, treat or prevent a disease from which fewer than 200,000 people throughout the country suffer.

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Advances in the field of biomedical research open up completely new opportunities for us. At the same time, however, they raise questions about the responsible use of new technologies. This applies, for example, to pharmacogenetics, stem cell research and regenerative medicine. We address concerns and suggestions, and undertake to act ethically. Stem cells provide a beacon of hope in medicine, as they can be transformed into various cell and tissue types. Bayer HealthCare is not currently conducting research projects with embryonic stem cells and has not done so in the past. However, we remain convinced that research – particularly with adult stem cells – in the field of regenerative medicine should be promoted. Scientific discoveries in this area could lead to new therapeutic solutions for serious and life-threatening diseases.

Sustainable innovation at Bayer HealthCare

We conducted clinical studies with several drug candidates from our research and development pipeline during 2011 to drive the development of new substances to treat diseases with a high unmet medical need. Drug discovery is concentrated in the areas of cardiology and oncology, along with gynecological treatments and hematology. Other areas of focus are inflammatory processes and ophthalmology.

- In the field of **cardiology**, for example, an oral anticoagulant could help to reduce the risk of stroke and embolism. In addition to stroke prophylaxis in adults with non-valvular atrial fibrillation the drug can also be used for prophylaxis of venous thromboembolism following elective hip or knee-joint replacement surgery or for the treatment of deep vein thrombosis.
- In the field of **oncology** a novel oral active ingredient for the treatment of metastatic colorectal carcinomas (mCRC) and gastrointestinal stromal tumors (GIST) is in clinical development.
- Together with a cooperation partner we are working in the field of **opthalmology** on the development of an active ingredient for the treatment of wet age-related macular degeneration. This eye disease is among the most frequent causes of irreversible loss of vision in elderly patients.

Further information on our highly promising development candidates can be found on page 109ff. of the Annual Report 2011.

Safety risk management processes for medicinal products and devices

Bayer HealthCare continuously assesses the medical benefit-risk ratio of all its pharmaceutical and medical products over their entire life cycle. Within the framework of the safety risk management process at Bayer HealthCare, experts from various disciplines form cross-functional Safety Management Teams (SMTs). These teams jointly evaluate the available data on the product and other relevant information in order to identify possible safety risks at an early stage. This also involves evaluating external databases to ensure the available data are on the broadest possible footing, thereby enabling an even more reliable determination and understanding of existing risks and their features. Should significant risks be identified, Bayer HealthCare immediately takes measures to minimize them, such as updating the product information for patients and physicians. Further tools include targeted information e.g. patient educational brochures, patient alert cards and training measures for physicians and patients, among others. SMTs compile all information and produce detailed safety risk management plans. These plans are intended as "dynamic" documents that are immediately updated as soon as relevant new safety data become available.

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The Global Pharmacovigilance unit of Bayer HealthCare, which is also in charge of the cross-functional SMTs, pools all safety-relevant information on our products on an ongoing basis. This information is continuously updated and evaluated by experts. Bayer works closely with the responsible regulatory and oversight authorities at an international, national and regional level. These include the U.S. Food and Drug Administration (FDA), the European Medicines Agency (EMA) [93] and Germany's Federal Institute for Drugs and Medical Devices (BfArM) [94].

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The Bayer HealthCare quality processes also play a key role in added safety. They describe Bayer HealthCare-wide measures aimed at permanently and continuously satisfying external and internal requirements for quality assurance in Bayer HealthCare products. The observation of technical compliance standards is verified through systematic internal inspection both for research and development and for production. These audits also cover contracted institutes and suppliers. With the help of a safety risk management system, drug product risks are systematically identified and assessed and the necessary steps initiated. Countries and regions receive continuous support in observing pharmaceutical compliance. The results of our risk management processes and the activities derived from them help to ensure the safety of our patients and the correct use of our products, thus ensuring an optimal medical benefit-risk ratio.

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Bayer HealthCare undertakes with its Good Publication Policy to observe recognized international standards in scientific publications. We base the implementation of all clinical studies on the Good Clinical Practices of the World Health Organization (WHO) and on the guidelines of the International Conference on Harmonization (ICH). We transparently disclose the methods and results of clinical trials. We publish an overview of ongoing clinical studies [92]on the internet.

Possible product risks present special challenges

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, especially in the area of product liability. Bayer is insured against product liability risks to the extent customary in the industry.

More detailed information on the special challenges we face – for example in connection with our oral contraceptives Yasmin™ and Yaz™, or with Magnevist™ or Trasylol™ – is found on page 255ff. of our Annual Report 2011 and in the respective current Stockholders' Newsletter.

Analysis of pharmaceuticals in the environment

The product stewardship of Bayer HealthCare also involves carrying out studies on the environmental behavior and impact of active ingredients from various product groups so that we can assess the possible environmental reactions of trace amounts of our pharmaceutical products.

Following the use of human pharmaceuticals by patients, trace amounts or degradation products in many cases are excreted and can thus enter wastewater. Wastewater treatment facilities reduce or degrade these substances. However, some substances are not completely removed and can thus enter natural bodies of water. A special working group at Bayer HealthCare conducts tests on ecotoxicity and on the dispersal and degradation behavior of our pharmaceuticals so as to keep trace elements in the soil and groundwater as low as possible and enable risks to be assessed. These assessments have been documented in the dossiers for the European regulatory authorities since 2006. We are not currently aware of any trace amounts of human pharmaceuticals in drinking water that present a risk to people. This is confirmed by the 2011 WHO Report on Pharmaceuticals in Drinking Water [95]. In addition to the aforementioned studies, Bayer HealthCare is currently developing a more comprehensive strategic approach to this issue. Supplementary stakeholder dialogues or the development of internal Bayer wastewater standards are among the elements of a future strategy that are being discussed.

For a number of years now, Bayer HealthCare has participated as an industrial stakeholder in important research projects dealing with pharmaceuticals in the environment. One activity being

undertaken with various cooperation partners, including from the water resources industry, is the European PILLS (Pharmaceutical Input and Elimination from Local Sources) project. The PILLS partnership [96] focuses on the development of local wastewater treatment facilities for hospitals and nursing homes. Initiated in 2007, the project has been extended until 2012. The planned pilot treatment facilities were completed and commissioned in 2011, and the analyses at these plants are currently ongoing. The results will be incorporated into a comprehensive comparative evaluation of the treatment technologies. Bayer HealthCare is represented on the scientific advisory committee of PILLS and is contributing its expertise in the assessment of the ecological risks of pharmaceutical trace amounts.

With regard to animal health products, it must be demonstrated to the regulatory authorities during the registration process that no significant risk exists for the environment when the products are used correctly. Bayer HealthCare has conducted and submitted to the responsible agencies the studies and environmental analyses required for this.

Protecting the health of animals

Bayer HealthCare has marketed products for livestock and companion animals for more than 100 years. The company today offers over 100 different products that are used in animal health and parasite control. These products not only benefit the animals, but also minimize the risk of transmission of possible pathogens to humans.

Stringent safety and quality standards – comparable with those in human medicine – apply at Animal Health for our conventional pharmaceutical products, such as antibiotics or injection solutions. In line with the statutory requirements, strict quality standards also apply to all other product classes. Here we focus particularly on the environmental compatibility of our products. Within the scope of the registration processes, Bayer HealthCare carries out studies and environmental analyses in order to rule out possible environmental risks through the use of our products. We actively contribute our experiences to the Environment and Safety expert groups of the German Association for Animal Health (BfT) and the International Federation for Animal Health (IFAH).

We train veterinarians and private users in the responsible use of our products and provide them with relevant information materials. In this context, we support the European Platform for the Responsible Use of Medicines in Animals (EPRUMA) [102] initiative, which brings together various partner organizations from politics, industry and society. We provide assistance here in minimizing the risk of infectious disease among animals and thus reducing the consumption of antibiotics.

Responsibility in the marketing of medicines

Bayer HealthCare also complies with stringent provisions for the marketing of our pharmaceuticals and observes international, regional and national industry codes. 96 WWW

Bayer HealthCare is a member of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) [97] and regional associations such as the European Federation of Pharmaceutical Industries and Associations (EFPIA), and is committed to observing the corresponding codes. These 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. 97 WWW

For Bayer HealthCare, the global minimum standard for the advertising of pharmaceutical products comprises the Ethical Criteria for Medicinal Drug Promotion [98] of the World Health Organization (WHO). 98 WWW

National ethical standards also apply and are generally specified in local industry codes such as that of the association "Voluntary Self-Monitoring by the Pharmaceutical Industry (FSA) [99]" in Germany. These local codes refine the provisions of global or regional codes based on the respective applicable local laws. 99 WWW

Wherever there are discrepancies between the provisions we have undertaken to observe, the more stringent requirement principally applies.

Also applicable are the provisions of our company-wide Corporate Compliance Policy, the new Bayer. wide Responsible Marketing & Sales Policy [100] and the Integrity & Responsibility in Communications and Marketing Directive [101]. In 2011 Bayer HealthCare began compiling all requirements for compliant and ethical conduct in a comprehensive, globally applicable compliance manual. A global training campaign for all Bayer HealthCare employees will be launched in 2012 on the basis of this manual. 100 BAYER WEB 101 BAYER WEB

Innovation in many fields – Bayer CropScience

With its global research activities, Bayer CropScience contributes to the development of innovative solutions in the areas of modern crop protection, seed and plant traits, and non-agricultural pest and weed control. This includes, for example, the development of innovative fungicides for use in cereals, potatoes and other large-area crops, as well as in fruit and vegetables. These products control diseases caused by fungal infestation. 102 WWW

Further benefits are better storability and longer shelf life of harvested produce. Bayer CropScience will continue to rely on its innovation potential in crop protection in the future: the subgroup plans to launch four new products onto the market between 2012 and 2015, supported by the introduction of new varieties and plant traits in BioScience.

CropScience is refocusing its research and development activities so that it can better respond to the future development of global markets. Bayer CropScience is thus more closely concentrating its activities on the BioScience Business Unit, with its seeds and traits, and on new growth areas in agrochemical research, such as plant health and stress tolerance. BioScience is currently researching optimized plant traits and improved seed in about 60 projects. Here, Bayer CropScience is also relying on research partnerships and collaborations – with currently around 90 ongoing research agreements with public and private partners such as the Australian research institute CSIRO – in order to pool a wide range of expertise. This broad research approach also served as the foundation for last year's new innovations. Three examples are detailed in the inset below.

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We strive to help improve people's quality of life with innovative products. Thus it is all the more important that they reach the customer efficiently. With the help of new concepts, Bayer CropScience aims to strengthen and improve its distribution and marketing activities along the entire value chain – from seed to shelf.

Focusing on product safety

The safety of our products is very important to us. This applies to both crop protection and to pest, weed and disease control in non-agricultural applications, as well as in plant biotechnology. Bayer CropScience ensures already at the research stage that its activities are compatible with our sustainability approach. As the products are further developed, we subject them to stringent and extensive testing that in turn is regulated by governmental agencies. Our toxicologists evaluate the toxicological properties of the active ingredient and its formulation, while our residue analysts determine how much product residue remains on the plants following proper application and how these amounts can be reduced through washing or processing. Before a product is ultimately introduced to the market, experts conduct numerous further safety tests with regard to its use and environmental behavior, depending on the product area.

Bayer CropScience observes the International Code of Conduct on the Distribution and Use of Pesticides of the United Nations Food and Agriculture Organization (FAO) [103]. The principles of this code cover the entire life cycle of a product, from its development to its application and beyond. Bayer CropScience implements all major aspects of responsible product handling in its Product Stewardship Program. This program adheres to the basic principles of our Product Stewardship Policy [104], which we have spelled out in a brochure.

With its commitment to the FAO Code and its Product Stewardship Policy, Bayer CropScience also meets the requirements of the responsible marketing approach described in our new Group position.

Even beyond its core business, Bayer CropScience participates in projects targeted at added product stewardship. We are a member of the Better Sugarcane Initiative (BSI) [105] and the International Sustainability & Carbon Certification system

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Sustainable innovation at Bayer CropScience

GlyTol™: protecting cotton

GlyTol™ technology makes cotton plants resistant to glyphosate herbicides. In addition, we offer two products for the cotton industry that combine different herbicide tolerance technologies for the first time. These contain both GlyTol™ and the LibertyLink™ technologies.

Emesto™: higher yields for potatoes

The new fungicidal seed treatment product Emesto™ (active ingredient: penflufen) is used in potato growing. It features outstanding efficacy against black scurf, a plant disease that impairs the yield and quality of potato harvests. Emesto™ ensures improved quality in potatoes and increases the marketable yield. In August 2011 Bayer CropScience was granted marketing authorization for this product in the United Kingdom – the first registration worldwide. Emesto™ is expected to be registered in a total of more than 30 countries around the world.

Luna™ ensures healthy plants

The Luna™ product family (active ingredient: fluopyram) was developed specifically to combat plant diseases caused by fungal pathogens. It is used in more than 70 different crops, including fruit and vegetables, potatoes and flowers. Luna™ improves the long-term health of plants, as well as the quality and storage suitability of the produce. The product has been available in the United States since February 2012. Bayer CropScience received marketing authorization for Luna™ in Germany in April 2012. Further authorizations are to follow in 2012.

(ISCC) [106], which work on behalf of sustainable sugarcane cultivation in Brazil. We also take part in the Round Table for Responsible Soy (RTRS) [107] in the context of our efforts to bring about sustainable soybean production.

Responsibility for customers and partners

A central aspect of product stewardship at Bayer CropScience is the support we provide to our customers and partners – such as farmers, dealers and medical personnel – in the proper and safe use of our products. Crop protection products in particular must be used extremely carefully. We organize targeted training programs to help ensure that our products are applied in a way that is effective and safe for users, the environment and consumers. Furthermore, we provide our customers with handbooks explaining the safe use, storage and disposal of all of our products.

We train farmers around the world in the proper use of Bayer products and the correct way to wear protective clothing and practice sustainable waste disposal. For example, in 2011 we organized training and information events in India at which we demonstrated the safe use of crop protection products to more than 1.2 million participants. Bayer CropScience also continued its AgroVida program in South and Central America. Since the 1990s we have implemented various initiatives in this region to increase farmers' safety awareness and specialist expertise. In Colombia we again trained some 13,000 farmers in 2011. As part of the AgroVida (Agro Vida Banao) program, Bayer CropScience instructed farmers in the Sancti Spiritus region of Cuba in new methods for the integrated cultivation of onions. In all we trained about 13,500 farmers in the Central America and Caribbean region (excluding Mexico) in 2011.

We are also active in the improvement of technical solutions: in Europe, we drove forward the optimization and implementation of sowing machines to provide better protection for users and the environment. The company's range of educational programs for product stewardship is rounded out by internal employee training measures. Bayer CropScience provides information on how to deal with herbicide resistances through its integrated weed management brochure [110]. This approach includes important tools and strategies for farmers such as crop rotation, crop practices and field hygiene, and the use of herbicides with different principles of action.

Gradual replacement of WHO Class I pesticides

In streamlining its portfolio, Bayer CropScience continually launches onto the market crop protection solutions with better environmental properties – for example by introducing new active ingredients, formulations, products, application technologies and types of packaging. We discontinued the sale of crop protection products containing endosulfan worldwide at the end of 2010. In the course of our portfolio streamlining process, we discontinued the marketing of nematicidal end products based on fenamiphos and ethoprophos, and of aldicarb-based products.

By the end of 2012, Bayer CropScience will allow the sale of all remaining WHO Class I insecticide formulations for leaf and soil applications and seed treatments to expire. Information on E.U.-wide requirements for crop protection products [108] can be found in the online report.

Bee health and plant protection

Bees play a key role in the pollination of many flowering plants and are an essential component of many ecosystems. The promotion of bee health [109] worldwide is, therefore, an important task for everyone, whether they are beekeepers, farmers, politicians, businesses or gardeners. For a company like Bayer, which is involved in agriculture and animal health, the safety and health of bees is very important: many agricultural crops require the pollination services of bees and this is therefore an important component of sustainable agriculture.

Although the number of colonies worldwide has been increasing for decades, in some countries, particularly in Europe and North America, a decrease has been observed. Bayer supports scientific research into the causes of this decrease. Among the scientific literature some publications have recently appeared that link a decrease in bee populations with crop protection agents. These studies were, however, performed completely or partly under unrealistic conditions and therefore cannot be applied to real-life practice. Scientists around the world agree that bee diseases, particularly caused by the *Varroa* mite, extreme environmental and climatic factors and also changes in the agricultural landscape in recent years are the main factors

News

Bayer launches global Bee Care Program

To further promote the health of bees, Bayer has started a worldwide Bee Care Program. As part of the program in 2012, two bee care centers, one in Monheim, Germany, and the other in North Carolina, United States, will be developed. These will serve as scientific and communication platforms and combine Bayer's extensive bee health experience and expertise under one roof. This includes existing and future bee health projects carried out in collaboration with external partners such as the development of new bee drugs. We will also continue to work with research institutes around the world on matters of bee health and participate in various working groups on bee safety, such as the ICPBR Bee Protection Group.

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Dialogue

Focusing on sustainability

Scientists from renowned research institutes met in September 2011 with representatives from Bayer CropScience to exchange experiences at the German Climate-KIC Center in Berlin. In addition to the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national research organization, representatives from the Potsdam Institute for Climate Research (PIK) and the German geo-research center GEZ also participated in the event. The purpose of the meeting was to present the first results of a research collaboration between CSIRO and Bayer CropScience aimed at determining the sustainability of new plant technologies and cultivation systems. Initially scheduled to run for two years, the project will aim to develop and apply methods for predicting the environmental balance of new-generation cereals and their positive contribution to food security.

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affecting bee health. The hypothesis that pesticides play a significant role is refuted by a number of scientific studies and monitoring.

To prevent erroneous applications of pesticides, as regrettably occurred in 2008 on the Upper Rhine in Baden-Wuerttemberg, when faultily treated corn seed resulted in bee losses, we conduct extensive product stewardship measures. To ensure an excellent seed dressing quality of our products, a multi-step quality program for seed dressing was developed at our Seed Treatment Application Center in Monheim.

Bayer is also working closely with users worldwide (farmers, employees of seed treating companies) to ensure that sustainable, prudent and appropriate application practices minimize unwanted dust drift during sowing. We want to ensure that the procedures for drift reduction, developed by Bayer and the agricultural machinery industry, set the standard across Europe.

Bayer is in a unique position in our industry since, through Bayer Animal Health, we have been actively researching and promoting bee health for over 25 years. As a result, we have an excellent understanding of the environmental and biotic challenges, such as pathogens, invasive species and lack of nutrition. These are increasingly having an impact on bee health and are leading to the decline of bee populations in some parts of Europe and the United States.

One of the main causes of honey bee losses is the *Varroa* mite. This parasite infects both adults and the offspring and leads to a dangerous weakening of the bees. Since 2010 Bayer has underscored its commitment to combatting *Varroa* mites with a new product. It is currently being developed further. More recently, we have been investigating methods of ensuring that hives which are *Varroa*-free are not "re-infested" by parasitized bees from other hives. A thorough evaluation of these is currently under way.

Bayer is also promoting the cultivation of nectar and pollen-rich areas on farms and in urban communities. The benefits of such bee-friendly areas have been demonstrated at the Bayer site in Monheim and also at research farms, for example, in Belgium, the United Kingdom and the United States. This concept will be developed further in 2012.

Information and dialogue through the communication of bee health is also critical to raise awareness among all stakeholders, from beekeepers to farmers and from politicians to gardeners.

In 2011 we published a new bee brochure [111] and promoted bee health with politicians and officials in Brussels, Belgium, and Washington, D.C., United States, and have been conveying our approach to bee health at high-profile meetings such as the Apimondia International Congress in Buenos Aires, Argentina.

Genetically modified rice

In 2006 traces of genetically modified rice from Bayer CropScience were identified in the long-grain rice harvest in the United States. A number of countries – including particularly E.U. states – subsequently imposed import restrictions although the rice did not present a risk to food safety.

The genetically modified rice was never commercialized. Since then, rice growers and rice mills in particular have claimed economic losses in numerous lawsuits. Bayer last year initiated a settlement program with a volume of up to US$750 million to resolve claims submitted by growers. The participation rate will be in excess of 94 percent of all of the eligible rice acreage. Bayer has already paid out a large portion of the settlement volume. Bayer also settled several claims filed by rice mills or rice importers, as well as the claims negotiated so far with growers, at a total settlement value of about US$143 million.

18 cases remain pending in the United States with business entities that are not a part of the settlement program. Bayer is hopeful that many of these cases can also be settled. However, Bayer intends to continue to defend itself vigorously in all cases in which reasonable resolutions are not possible. Insurance coverage against such risks is not available. Bayer has established appropriate provisions in the balance sheet. The case was thoroughly investigated by the U.S. Department of Agriculture and no misconduct by Bayer was determined. Bayer continuously assesses and improves these processes, however, taking into account continuous scientific advances.

Further information is available on page 260ff. of the Bayer Annual Report 2011 as well as in the respective applicable Stockholders' Newsletter.

Innovation layer by layer – Bayer MaterialScience

Bayer MaterialScience works closely with customers and partners to develop new products and applications, as well as energy-efficient technologies and production processes for polymer materials. Through our research and applications development, we convert scientific findings into customer-oriented business. The Innovation Community Council holds responsibility for the global steering of innovation activities at Bayer MaterialScience.

Bayer MaterialScience invested €237 million in innovation in the reporting year. The areas of application range from lighting technology through traffic engineering to the plastics production of tomorrow.

Bayer MaterialScience is testing a new, sustainable process for using the greenhouse gas carbon dioxide as an alternative feedstock for high-tech materials. The goal is to replace a portion of the conventional fossil resources and devise a use for CO_2 that is more viable for the future. In this connection, Bayer MaterialScience in 2011 commissioned a pilot plant at the Chempark Leverkusen site within the scope of the "Dream Production" project that produces a CO_2-based feedstock for polyurethanes. The project – in which Bayer Technology Services, RWE Power and die RWTH Aachen University are also involved – is receiving total funding of €4.5 million from the German Ministry of Education and Research (BMBF) over a period of three years.

We also support efforts to adapt to climate change through a broad range of products. For example, our high-performance materials enable the production of energy from renewable sources. Examples here range from polyurethane systems for wind turbines to polycarbonate sheet for photovoltaic modules. In addition, Bayer MaterialScience products also help to substantially reduce energy consumption and thus the emission of carbon dioxide in a variety of applications, such as automotive engineering or thermal insulation in buildings and refrigerated appliances.

Moreover, Bayer MaterialScience is a technological leader in the field of electroactive polymers. In 2011 we launched a new application under the brand name ViviTouch™ that provides a special tactile feedback for electronic games. ViviTouch™ and two other examples of our innovations are presented in the inset below.

Responsibility along the entire product life cycle

The safety of our products is also at the focus of product stewardship at Bayer MaterialScience. In implementing the Global Product Strategy, Bayer MaterialScience evaluates possible risks that its products could pose for the environment and human health as a result of the chemicals it uses and takes steps to reduce these risks. These product safety assessments take into account the entire life cycle of a product, from research and procurement through production and logistics to application, recycling and disposal. These assessments are based on clearly defined parameters that allow us to measure the safety of a product.

The product safety assessment takes place in four steps: prioritization of products, characterization of risks, management of risks and communication of risks. During the product prioritization stage, we identify the relevant chemicals; they are then assessed during the risk characterization phase. In relation to the scope of the identified risk potential, Bayer MaterialScience then initiates suitable steps to effectively minimize the risk. Such steps can include proposals for technical measures for the use of personal protective clothing or marketing restrictions. The final step involves

Sustainable innovation at Bayer MaterialScience

ViviTouch™: a true gaming experience

ViviTouch™ enables an innovative tactile feedback for electronic games. This in turn makes game situations more vivid and interactive for users. ViviTouch™ is based on electroactive polymers that change their form through electrical current, and thus requires less energy than conventional products with vibration motors. The technology will enable numerous applications for portable electronic devices in the future.

Polyurethanes: producing foams from vegetable oils

Through a new process, Bayer MaterialScience can now produce polyols from various vegetable oils that do not require any additional processing. The polyols serve as the basic components for rigid foams, which thus contain a 10 to 15 percent share of renewable raw materials. These "green" foams – which are used in applications such as building insulation – in some cases offer better material properties than conventional products.

Polyurethanes: environmentally friendly binders

Using polyurethane chemistry, high-quality binders can be manufactured from renewable raw materials and used as components in coatings and adhesives. Bayer MaterialScience offers a wide range of binders based on renewable raw materials that are solvent-free or low-solvent and can thus be processed in an environmentally friendly way.

the statutorily prescribed material safety data sheets, technical information sheets and labeling. In this connection, we also take into account all requirements of Bayer's Responsible Marketing & Sales Policy.

The integration of customers and partners is another component of product stewardship at Bayer MaterialScience. Through the BayCare platform and the BayCare Worldwide [113] internet site, we provide customers and other stakeholders with information on our activities, as well as a detailed and transparent description of the product safety assessment. This is in line with our Global Product Strategy (GPS) [112]. *Country sites with specific information are available for the United States, Canada, Mexico, Brazil and China in the respective national languages. It is planned to migrate BayCare to the new "Product Safety First" platform in 2012 and to expand the country sites to include the E.U. states (in English plus five other languages) and India (in English).*

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Target 2015

Assuming responsibility for nanotechnology

The principles for the handling of nanotechnology are summarized in Bayer's Position on Nanotechnology [114]. We work intensively on the international harmonization of terminology and test procedures at the ISO level and on the drafting of toxicological test guidelines at OECD level. Furthermore, we foster intensive and transparent stakeholder dialogue on the topic of nanotechnology with committees, associations, industry partners, customers, authorities, universities and the public.

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Bayer MaterialScience has initiated an extensive Product Stewardship Program that supports the safe handling of carbon nanotubes – from production through processing and use to disposal – in all areas in which this technology is used. We also support the carbon nanotube safety projects promoted by the German Ministry of Education and Research (BMBF) [115].

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Above-average growth rates and sales in the billions are expected in the medium term for the global carbon nanotubes market. The multi-wall carbon nanotubes marketed by Bayer MaterialScience under the name Baytubes™ are characterized by their combination of outstanding properties: they are especially mechanically durable, lightweight and electrically conductive. As a result, the application possibilities for these materials are substantial. We have attained a broad base of know-how here and are focused on certain promising application areas such as energy, environmental protection, sports and mobility. Specific research and development projects in this area deal, for example, with high-performance materials for wind turbines and batteries for electric cars.

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At the Chempark Leverkusen site, we operate a pilot plant and laboratory facility with a nominal capacity of 200 metric tons per year for the product and process development of carbon nanotubes. At a pilot facility in the southern German town of Laufenburg, H.C. Starck produces Baytubes™ on our behalf that are then sold to third parties in limited quantities for introduction to the market.

Substances in direct contact with food

Bayer MaterialScience is very attentively following the scientific discussion about the chemical bisphenol A (BPA), a feedstock for various plastics. Critics are concerned that health risks could result for users if BPA is released from polymers through heating. As documented by numerous scientifically validated studies that attest to the safety of BPA, we remain convinced that the safety of BPA is ensured in its existing areas of application. This assessment is consistent with evaluations by the responsible regulatory authorities in Europe, the United States, Australia, Japan and other countries.

Engines of innovation – the Bayer service companies

Bayer Business Services, Bayer Technology Services and Currenta are the three service companies of Bayer. Together, they employ more than 13,000 people and contribute to new and innovative solutions through their specialized services. Bayer Business Services focuses on integrated services in the core areas of IT infrastructure and applications, procurement and logistics, human resources and executive personnel services, and finance and accounting. Bayer Technology Services specializes in processes and in the planning, construction and further development of facilities. The service company Currenta – a joint venture between Bayer and Lanxess – provides services in the areas of utilities, waste management, infrastructure, safety & security, analytics and vocational training.

In line with Bayer's sustainability strategy, all three companies work to make processes and technologies more efficient and environmentally friendly. This is documented by the innovation examples [116] given in the online report.

Employees

Targets 2015

Diversity

- Increase the proportion of female managerial staff to approaching 30%

Occupational safety (new target figure)

- Reduce the number of occupational injuries with lost workdays to ≤ 0.21 LTRIR

First global Safety Day *Employees at Bayer sites around the world (here in Bangpoo, Thailand) were given information on safety at numerous events.*

Our responsible and future-oriented human resources policy addresses the challenges facing our employees due to globalization. Through this we foster performance orientation, motivation and a focus on values.

Bayer pursues a value-based and sustainable human resources policy that combines social responsibility with a performance-oriented corporate culture. This human resources strategy is based on the Bayer Group's values and leadership principles, which were introduced and implemented worldwide in 2011 under the acronym LIFE [117] – which stands for Leadership, Integrity, Flexibility and Efficiency.

On December 31, 2011 the Bayer Group had 111,800 employees worldwide, compared to 111,400 in 2010. Thus the headcount remained virtually unchanged in 2011 (+0.4 percent). The number of female employees also hardly altered at 39,000. Women thus accounted for 35 percent of the workforce. Table 8

Sustainability and social responsibility are also reflected in our approach to necessary restructuring measures. In Germany, which remains the company's largest operational base with 35,800 employees, business-related dismissals are excluded through the end of 2015 for a large proportion of employees under an agreement with the employee representatives that was again renewed in 2011. The workforce reduction initiated in November 2010 will be implemented in Germany and in the other affected countries with the maximum degree of social responsibility. For example, we systematically utilize natural fluctuations in our workforce and early retirement. Where this is not possible, the employees affected receive an appropriate severance payment. The background to this restructuring drive is Bayer's goal of concentrating its resources even more rigorously on growth and innovation, in other words increasing research and development, commercializing new products and expanding activities in the emerging markets.

In 2010 the Group-wide fluctuation rate, which includes employer- and employee-driven terminations, retirement and deaths, increased slightly to just under 10 percent. However, it varies enormously between regions. Table 9

To enable us to respond flexibly to short-term personnel requirements caused, for example, by fluctuations in the order situation, temporary projects or long-term illness, in Germany we also use temporary staff. We work exclusively with staffing agencies whose employees are covered by a collective bargaining agreement entered into with an organization belonging to the German trade union confederation (DGB). At the end of 2011 Group companies in Germany had a total of 253 temporary employees.

Respecting employee and human rights

As a socially responsible company, Bayer has long been committed to upholding and supporting human rights at various levels. The main principles used to respect human rights at Bayer are set out in our Human Rights Position [118]. We respect the United Nations' Declaration of Human Rights [119] and are a founding member of the UN Global Compact [120]. Bayer's mission, LIFE values and Corporate Compliance Policy [121] commit all employees around the world to fair and lawful conduct toward staff, colleagues, business partners and customers.

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Our commitment to respect human rights within our sphere of influence is a central element in our corporate philosophy. As a global company, we see fostering human rights as not simply representing a social and ethical commitment, but also a business-related requirement. At the heart is our reputation as an attractive, sustainability-oriented employer and business partner. We are convinced that our clear approach raises the satisfaction and identification of our employees with our company, meets customers' expectations and minimizes reputational risks that could damage our business.

To raise the awareness of employees around the world regarding the importance of human rights in our day-to-day activities, we have developed a variety of training measures within the Group. The information and training program on human rights, which was introduced in 2008, has now been integrated into mandatory human rights training sessions or obligatory compliance training at many of our sites. For example, in September 2011 we introduced a special online training program on our Human Rights Position for employees at Group companies in China. By the end of March 2012 over 1,200 employees at these companies had completed this training program. Using a variety of methods, we trained about 36,000 employees around the world on the content of our Human Rights Position and its practical application in 2011. Another 10,000 employees undertook our online training on compliance and lawful conduct.

Responsible conduct and collaboration

Employee representation is part of our commitment to responsible conduct and collaboration. The working conditions for 54 percent (2010: 55 percent) of our employees are governed by collective or company agreements. The slight drop is due to a reduction in the number of U.S. employees who are members of a labor union and an increase in the headcount in countries where there are either no collective agreements or they do not cover all employees. In the United States an ombudsman previously acted as a neutral point of contact for employees in cases of possible violations of our Human Rights Position. These duties have been assumed by the regular compliance organization since the end of last year.

In China, the establishment of unionized employee councils, which started in 1997, continued in 2011 with the inclusion of two more Group companies. This means nine companies there now have elected councils representing some 3,000 employees. In Pakistan, South Korea and Slovenia, we renewed existing collective agreements in 2011 or extended their content. Table 10

A modern corporate culture

Central elements of our human resources policy are motivating employees and steadily developing their abilities. Last year we continued to drive forward the international alignment of our human resources activities. In October 2011, for instance, we held our first Global Human Resources (HR) Conference, attended by about 100 HR managers from around the world. This was supplemented by our first global satisfaction survey. Nearly 30,000 employees used this opportunity to tell us how they view Bayer's Human Resources function.

8 Employees* by employment status, region and gender in 2011

	Permanent employees			Temporary employees			
Region	Men	Women	Total	Men	Women	Total	Total
Asia/Pacific	16,400	8,000	24,400	1,200	400	1,600	**26,000**
Europe	33,300	17,700	51,000	1,400	1,200	2,600	**53,600**
Latin America/Africa/Middle East	10,000	5,600	15,600	500	300	800	**16,400**
North America	9,700	5,600	15,300	300	200	500	**15,800**
Total	**69,400**	**36,900**	**106,300**	**3,400**	**2,100**	**5,500**	**111,800**

9 Total employee fluctuation by region and gender (percent)

Region	Men 2011	Women 2011	Total 2011	Total 2010
Asia/Pacific	11.9	15.0	12.9	12.0
Europe	5.7	8.2	6.7	7.0
Latin America/ Africa/Middle East	12.2	16.1	13.6	10.0
North America	10.8	13.0	11.6	13.0
Total employees	**8.8**	**11.5**	**9.8**	**9.2**

10 Percentage of collective agreements by region in 2010/2011 (percent)

Region/Area	Europe	North America	Latin America/ Africa/ Middle East	Asia/ Pacific	Bayer Group (total)
Percentage of employees covered by collective agreements, especially on compensation and working conditions*	88/88	8/3	46/46	20/16	55.4/ 53.6
Percentage of full-time employees with contractually agreed working weeks of max. 48 hours	100/100	100/100	100/100	99/100	100/100

* Collective or company agreement

Dialogue

Initiatives relating to demographic change

In the coming years, the average age of the workforce will rise further. "The challenge for us is to recognize the opportunities offered by demographic change, shape its consequences and provide incentives for people to work longer. That means our human resources policy needs to develop new approaches," said Dr. Richard Pott, member of the Board of Management and Labor Director of Bayer AG, at the Symposium organized by BaySEN (Bayer Senior Experts Network, see page 51) in February 2012. The measures Bayer is taking range from targeted recruitment of young professionals and talent management at the beginning of employees' working lives, through health management, family-friendly programs and knowledge transfer from experienced to more junior colleagues to secure pension provision, to a phased transition into retirement and the BaySEN initiative itself. The General Works Agreement on lifetime working and demographic change Bayer concluded in 2010 paid special attention to fostering the health and long-term employability of the company's employees.

German ex-Vice-Chancellor Franz Müntefering, futurologist Matthias Horx, Labor Director Dr. Richard Pott, Bayer employee Wolfgang Zellerhoff and Central Works Council Chairman Thomas de Win (from left) talking after the symposium

Among the measures adopted to strengthen the Leadership component of our LIFE values and promote performance orientation in the company is an innovative training program we have developed to support our managers in regularly giving their employees frank, constructive feedback on their work and conduct. The goal is to establish a feedback culture throughout the enterprise that specifically addresses employees' individual strengths and weaknesses, and thus enhances their personal and professional development over the long term. All members of the Group Leadership Circle – about 400 of the company's most senior managers – took part in the training program last year. In 2012 it has been extended to the other management levels as well.

Our endeavors to improve the feedback culture at Bayer are a response to the outcome of our first global employee survey, which was conducted in September 2010. Specific action has been taken to make a lasting improvement in areas where employees revealed scope for improvement. Steps have also been taken to achieve a further improvement in aspects which the majority of employees rated as positive. One example is our new global Safety Day to heighten awareness in the area of occupational safety. Other activities are designed to communicate the Group's strategy more directly. They include a regular newsletter from Management Board Chairman Dr. Marijn Dekkers, the "Ask the CEO" [122] feature on the Bayer News Channel (BNC), employee assemblies and management meetings with the subgroups' boards of management. The subgroups and service companies have implemented many projects to improve customer focus. There have also been numerous activities in employees' immediate work environments.

The second Group-wide employee survey, which started in March 2012, will show to what extent these activities have helped eliminate weaknesses in our corporate culture. Once again, all employees worldwide are called upon to express their views on the company and their personal working conditions anonymously by answering a total of 60 questions. As with the first survey, the focus is on employee commitment, which is seen as the most important indicator.

Employee compensation and benefits

An important principle of our human resources policy is linking employees' compensation to their performance and enabling them to share in the company's success. Regular benchmarking against competitors and a globally standardized system help us to set base salaries in line with the demands and responsibilities of each position. These salaries are supplemented by performance-related compensation components and extensive fringe benefits.

In 2011 more than €600 million in variable bonus payments were made to our employees under the Group-wide short-term incentive (STI) program, which is based on corporate performance. In addition, various employee stock participation programs [123] enable our staff to purchase shares in Bayer at a discount. In many countries, these are part of our extensive fringe benefits and offer employees a further opportunity to participate in the company's business performance. We also offer senior and middle managers throughout the Group uniform stock-based compensation programs known as "Aspire" that are based on ambitious earnings targets and – in the case of Group Leadership Circle members – require an appropriate personal investment in Bayer stock.

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Social protection and responsibility

Our human resources policy also includes ensuring a high level of social protection. Health insurance cover is provided for almost all employees worldwide either under statutory plans or through company health care offerings. In many countries we extended the private health insurance benefits provided for our employees and, in some cases, their families as well last year. Examples are Morocco, Indonesia, Pakistan, the Philippines and Poland.

The Company Pension Plans Directive in the Bayer Group confirms the enormous significance of company-financed pension plans, both in positioning Bayer as a preferred employer and as part of our responsibility toward our employees. At the end of 2011 almost 70 percent of Group employees had access to a company pension plan (more information can be found on page 173 of the Annual Report 2011). Table 11

Fostering diversity

Fostering the diversity of employees and ensuring optimal inclusion of all employee groups in our activities is one of Bayer's top strategic priorities. Since 2007 it has been firmly anchored in the Declaration on Diversity at Bayer [124]. Through workshops we aim to raise managers' awareness of the benefits of greater diversity of employees so that people have equal career opportunities at Bayer and are also able to participate in our programs to encourage the development of managers regardless of their gender, nationality, origins and beliefs. We are convinced that, especially at management level, diversity is one of the keys to the future competitiveness of our company. It 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 more diverse employee structure.

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Target 2015

To bundle our Group-wide activities in the area of diversity and drive forward their strategic application, in 2011 we created the position of Global Head of Diversity & Inclusion at Bayer AG.

11 Health insurance and pension plans for employees by region in 2010/2011 (percent)

Region/Area	Europe	North America	Latin America/ Africa/ Middle East	Asia/ Pacific	Total
Percentage of employees with health insurance*	97/96	90/89	93/94	90/90	94/94
Percentage of employees eligible to take part in a company or company-financed pension plan**	85/84	92/84	48/52	40/38	71/69

* State or employer/employee-funded
** Including programs to supplement statutory pension plans

12 Bayer Group workforce structure in 2011

	Women	Men	Total
Senior management incl. Group Leadership Circle	1,800	6,400	8,200
Junior management	8,700	15,400	24,100
Skilled employees	28,500	51,000	79,500
Total	**39,000**	**72,800**	**111,800**
Trainees	800	1,700	2,500

Promoting internationality

The growing number of people we employ in the emerging markets, especially China, reflects and spurs on our efforts to make our global workforce more diverse and international. Of the members of our Group Leadership Circle, in which 22 nationalities are currently represented, some 70 percent come from the country in which they are employed. Overall, the Bayer Group currently employs people of 127 nationalities. Upholding and fostering this cultural diversity is thus an important aspect of our diversity strategy. In 2011, for example, we introduced the innovative online tool "GlobeSmart," which gives employees access to information about etiquette and communication behaviors in more than 60 countries. The goal is to strengthen employees' competence in working with colleagues and customers from different cultures. In addition, there are a large number of employee networks [125] to encourage diversity in the Group, especially in the United States.

More women in managerial positions

One major focus of our diversity strategy is to significantly increase the number of women in management positions. Last year we set ourselves the voluntary target of raising the proportion of women in senior management (the top five out of our eight management grades) *throughout the Group toward 30 percent by 2015. Women accounted for 22 percent of employees in this management segment worldwide in 2011* – a good one percentage point more than in the previous year. In some countries the proportion has already exceeded or is very close to the target. The proportion of female managers at these grades is 34 percent in the United Kingdom, 32 percent in China, 28 percent in Switzerland, 27 percent in the United States, 26 percent in Singapore and around 25 percent in France. In 2011 just under 19 percent of senior managers in Germany were female. Table 12

Our commitment to equality of opportunity is also reflected in our compensation system, which does not make any distinction between male and female employees. 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. This also applies for the compensation of trainees.

In March 2011 the company, along with nine individual managers, was named as defendant in a lawsuit filed against Group companies in the United States by current and former employees

alleging class gender discrimination. The lawsuit, applied for as a civil law class action, seeks to cover certain female employees who are, have been or will be employed by the company from 2009 to the date of judgment. The plaintiffs seek compensatory and punitive damages, attorneys' fees and other forms of compensation. The case is at an early stage. The company believes it has meritorious defenses and will continue to vigorously defend this matter.

Combining work and family life

Flexible worktime arrangements help employees balance work with personal or family life. Such arrangements specifically benefit working parents. In all countries, Bayer offers its employees a range of opportunities to vary their working hours. These range from flexible worktime models and part-time employment through teleworking to additional leave and the provision of childcare for employees with children. In 2011 the Bayer Group had nearly 8,200 part-time employees, around 7.2 percent of the total headcount.

Around 80 percent of employees in Germany who took part in the statutory parental leave program over the past five years have now returned to work. 90 percent of them are female and 10 percent male. For technical reasons, no comparative data on the number of employees returning from parental leave are available for other countries. Table 13

Tackling demographic change in the company

Demographic change is a challenge, especially for many industrialized countries. It involves both opportunities and risks. We have prepared forecasts of the age structure of the workforce in the entire Bayer Group up to 2020 in order to assess the importance of this issue for our human resources policy. Currently, we are not facing an acute shortage of skilled staff. We are continuing to train at a high level and are also regarded as an attractive employer by skilled staff from outside. This was again confirmed by many accolades [126] in 2011. Further details of these can be found in our online report.

At the same time, we are stepping up our efforts to utilize and develop the potential of older employees even more effectively. Passing on knowledge within the company from the older to the younger generation is the aim of the Bayer Senior Experts Network, known as BaySEN [127] for short. This measure is supplemented by the ongoing expansion of occupational health management.

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The General Works Agreement on lifetime working and demographic change [128], which came into effect in Germany at the end of 2010, shows how smartly Bayer combines the various aspects of managing demographic change in its human resources policy. More information can be found in our online report. Table 14

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Integration and support for disabled employees

Integrating and supporting disabled employees is another significant issue for Bayer worldwide. We employ people with disabilities in around 40 countries. Most of them work for our companies in Germany, where they made up 4.7 percent of the workforce in 2011, compared with 4.4 percent in 2010. Around 30 percent of disabled employees were female. The relatively high proportion of employees with disabilities in Germany is due to their particularly widespread integration there.

Traditionally, advocacy of people with disabilities has also been particularly strong in the United States. Since 1999, our U.S. headquarters in Pittsburgh has run a program to foster the training and employment of people with disabilities.

Recruitment and personnel development

Bayer aims to appeal to the best and most talented people worldwide and to retain employees for long periods by providing good development

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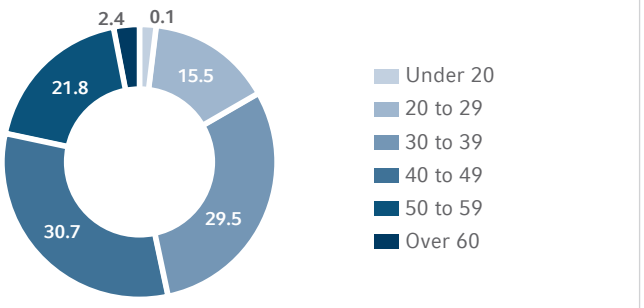
13 Percentage of part-time employees in 2011 by region and gender

Region	Employees Total	Men %	Women %	Total %
Asia/Pacific	26,000	0.5	4.6	1.8
Europe	53,600	7.7	23.2	13.4
Latin America/Africa/ Middle East	16,400	0.2	0.6	0.3
North America	15,800	0.1	2.3	0.9
Total	**111,800**	**3.9**	**13.1**	**7.2**

* incl. employees on fixed-term contracts

14 Age structure of the workforce (percent)



opportunities, a modern working environment and competitive compensation. In 2011 we again succeeded in attracting a total of more than 5,300 new academically qualified specialists and managers worldwide. More than 40 percent of them were female. We recruited nearly 1,900 university graduates in China alone, some 750 in India, roughly 400 in Germany and more than 250 in the United States.

In 2011 nearly 12,000 new people were hired across all occupations. Women also accounted for more than 40 percent of total new hires. In addition, more than 3,000 challenging internships were awarded to talented young students worldwide to give them pre-graduation insight into the variety of career opportunities at Bayer. Such young people often return to us as employees at a later date. The majority of these internships were completed by young women. Through this and the fact that more than 40 percent of new graduates recruited to the Group are female, we are confident that we will be able to achieve a significant increase in the proportion of female managers in the medium term.

This success in recruiting is partly due to our intensive marketing activities to draw the attention of students, university graduates and young professionals to the interesting entry-level opportunities [129] and career prospects at Bayer. An important recruitment tool, alongside the well-known social networks on the internet, is a presence at recruitment fairs and university events. In Italy, India, Singapore and the Philippines we have extended the strong links we already had to universities and supplemented them with further recruiting alliances. In India and Hong Kong, Bayer MaterialScience has established a scholarship and a trainee program for talented university students.

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Internationally high standards of vocational and ongoing training

Apart from the hiring of university graduates, the company's own vocational training programs for young people are among the most important steps taken to guard against a possible shortage of specialists due to demographic change. Once again in 2011 more than 900 young people began training courses in a total of some 50 occupations at our German sites. For the past seven years, Bayer has offered vocational training in excess of its own requirements through the Rhineland Vocational Training Initiative, which accepted 150 school graduates as trainees in 2011. We also train specialists to meet our requirements in other countries. One example is Finland, where 12 production workers have qualified as machine operators on a new vocational training program. For many years now, we have regularly offered a program of theoretical and practical training in different careers for young people in a number of countries in Latin America. In 2011 we had around 100 trainees in Mexico, Colombia, Brazil, Peru and Ecuador, around 12 percent more than in the previous year. They received vocational training to German standards, based on the German curriculum. Table 15

We are convinced that the quality and productivity of our employees worldwide are extremely important for Bayer's future competitiveness. In 2011 we therefore developed a new broadly based talent management strategy. Its new elements are now gradually being rolled out in the company. The goal is to support employees in the optimal development of their strengths at Bayer so they can contribute to the Group's business performance.

Ongoing training of employees has always been another important aspect of human resources policy. In 2011 we maintained our offering of advanced training courses for employees at a high level worldwide, supplementing it with numerous new programs. For example, we again provided nearly 50,000 training sessions throughout the Group in the areas of occupational safety and health protection via our successful "Pegasus" online training program. Overall, we invested more than €123 million in vocational and ongoing training of employees in 2011. In absolute terms, our expenditure on vocational training was slightly down on the previous year. The actual proportion of personnel expenses spent on ongoing training dropped more steeply to 1.4 percent, however, due to a sharp rise in other personnel expenses. Table 16

Apart from the acquisition, expansion and retention of specialist knowledge, a further focus of our training programs [130] is on improving leadership skills. In 2011 we introduced our standardized

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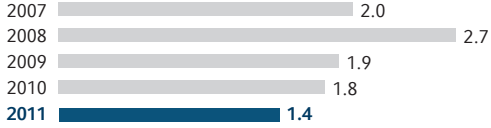
15 Trainees (all levels)

16 Vocational and ongoing training expenses
(as a percentage of personnel expenses)



Group-wide management seminar "Bayer Leadership Excellence," already offered in Europe and the United States, in Brazil and countries in the Asia/Pacific region. This extension of our program is supported by last year's launch of the global Bayer Training Community, an exchange forum for the staff who provide training for Bayer's managers. In this way, we ensure identical content and quality standards for management training worldwide.

Many programs and initiatives throughout the Group are dedicated to the professional and personal development of employees. In Australia, for instance, we have introduced "One Bayer," a uniform talent management process for sales and marketing staff there. Since last year, managers and talented employees in Poland have been able to use a new mentoring program to support their development. The "Helping Yourself Succeed" program in the United States comprises an online portal with tips and information on career development, which can be supplemented by workshops and individual coaching.

Last year the 360° feedback program was used by all managers in South Korea with personnel responsibility to help them improve their leadership style. In all, more than 1,800 employees worldwide took part in our established 360° feedback program last year. Another 4,200 used the structured Development Dialogue with their supervisor to drive forward their professional development. Exchange programs are another talent management tool that offer gifted employees the opportunity to gain experience outside their normal working environment by working on international projects. For example, in 2011 three young marketing managers from Portugal were able to play a part in the global marketing strategy for major medicines at Bayer Pharma's headquarters in Berlin.

Occupational health and safety

Preventing accidents and safeguarding the health of our employees in the workplace is a central element of our responsibility. Through our foresighted occupational safety and health management programs, we also reduce costs by avoiding damage and production stoppages. Extensive risk management to identify and assess the potential risks and shape a healthy working environment is therefore a key element of our activities in the area of Health, Safety, Environmental Protection and Quality (HSEQ).

Our HSEQ management activities support the Responsible Care Global Charter [131], a voluntary global initiative of the chemical industry. This illustrates our objective of minimizing risks to people, the environment and the company and integrating HSEQ management into all our business strategies and processes. In line with this, we have issued Group-wide directives on occupational health and safety. In addition, the subgroups and service companies have their own systems, committees and working groups to manage HSEQ. At the global Safety Day held for the first time on September 13, 2011 all Bayer companies provided a simultaneous signal of the commitment to improving occupational safety [132] and protecting health.

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Further reduction in occupational injuries

There was a further reduction in the number of occupational injuries to Bayer employees resulting in lost workdays in 2011. The long-term downtrend in this indicator therefore continued. Action taken by the subgroups and some service companies made a considerable contribution to this good performance.

In line with internationally accepted standards, we altered reporting of occupational injuries in 2011, replacing our former parameter – the number of injuries per million hours worked (MAQ rate) – by the Lost Time Recordable Incident Rate (LTRIR). The LTRIR is based on 200,000 employee working hours and includes work-related illnesses.

The occupational injury rate declined further in 2011, both for injuries leading to lost workdays and for recordable injuries requiring medical treatment. Thus in 2011 we achieved the target we had set for 2015 of an LTRIR of ~ 0.3, corresponding to 1.5 injuries per million hours worked resulting in at least one day's absence. In consultation with the Group Management Board, at the start of 2012 the HSEQ communities therefore decided to lower the target for 2015. *The ambitious new target is an LTRIR of ≤0.21.*

Target 2015

As in the past, in 2011 we hardly registered any typical injuries involving contact with chemicals; most injuries were caused by tripping or when people were walking. Numerous programs, training sessions and measures are designed to help reduce the number of injuries still further.

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News

Bayer is a top employer

Prestigious honor for Bayer: the company is one of the world's top employers in the category "Top Large Companies" according to an internet survey on the "Science Careers" career portal run by the international specialist journal "Science." Responses to the survey on this portal highlighted high-end research, social responsibility and the loyalty of Bayer employees. The global internet survey of more than 3,700 people was designed to find the 20 companies with the best reputations in the pharmaceutical and biotechnology sectors. More than 3,700 people were surveyed on the internet. Participants were asked which qualities they judged important in a leading employer in these sectors.

We also track injuries to Bayer employees requiring medical treatment that goes beyond simple first aid. This indicator covers both injuries resulting in lost workdays and those that do not lead to this. It is measured by the Recordable Incident Rate (RIR). In 2011 the RIR dropped to 0.56 per 200,000 hours worked (2010: 0.62). Regrettably, there were three work-related fatalities in 2011. They comprised two traffic accidents in India in which three people were killed. Table 17

Contemporary health management

Since employees are expected to work until they are older and the demands made on them are rising, our occupational health management is designed to maintain and strengthen the health and working ability of our workforce. Group-wide we offer our employees a wide variety of benefits to promote their health [133]. These range from medical checkups and on-site medical services to sports opportunities inside and outside the company and the provision of advice and reintegration assistance after recovery from an illness. In this way we also contribute significantly to maintaining long-term working ability. In the reporting period, 14 new cases of illness directly attributable to work-related factors were diagnosed. We report such cases as soon as they have been diagnosed by a medical officer and officially recognized.

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In the United States the "B Well" health promotion program was introduced for employees and their families. The goal is to add a new quality to the health culture. The aims are to reduce health risks through information and prevention, improve case management of illnesses and achieve a higher participation rate than in previous programs. Phone-based health coaching was also introduced, supplemented by advice from company medical officers. In Germany, we introduced a range of voluntary health check-ups under the General Works Agreement on lifetime working and demographic change to encourage employees to adopt a more healthy lifestyle.

Bayer companies in other countries organize similar programs. For example, a "Work-Life Balance Program" was initiated in Brazil in 2011, with offerings ranging from free vaccinations through sports to "company clinics" with local physicians. In Colombia Bayer supports its employees by offering health check-ups, and fitness and stress prevention programs. Last year Bayer Indonesia introduced a cholesterol check as part of its annual health screening. In Australia and New Zealand we also produce an online health magazine to give employees sports and dietary tips.

In countries where there are shortfalls in the public health care offering we offer our employees supplementary private health insurance. The scope of such programs is regularly reviewed and extended where possible. Information on possible health risks is provided via the intranet for employees going on business trips and foreign assignments. The Group has a dedicated directive that defines the action to be taken in the event of pandemics since these tend to bring new and unforeseen health risks.

17 Occupational injuries to Bayer employees

	2007	2008	2009	2010	2011	Target 2015
Occupational injuries to Bayer employees resulting in lost workdays (LTRIR*)	0.48	0.44	0.40	0.34	0.31	**≤ 0.21**
Recordable occupational injuries to Bayer employees (RIR*)	0.74	0.72	0.62	0.62	0.56	
Fatal accidents (total)	4	2	4	4	3	
– of which Bayer employees	4	2	4	4	2	
– of which contractor employees**	0	0	0	0	1	

* The RIR and LTRIR values for 2007 to 2010 were calculated from the former MAQ values and do not include work-related illnesses.
** Employees working for third parties, whose accidents occurred on Bayer company premises

Ecology

Targets 2015

Climate protection (target 2020)

- Reduce specific greenhouse gas emissions in the Group by 35% (direct and indirect emissions in relation to manufactured sales volume in t) between 2005 and 2020

Process and plant safety (target 2015)

- Implement the Bayer-wide initiative to increase process and plant safety; dedicated process and plant safety training for approx. 26,000 employees worldwide by the end of 2012

Emissions (target 2015)

- Reduce other relevant emissions (ozone-depleting substances -70%, volatile organic compounds -50%)

Waste (target 2015)

- Reduce specific hazardous waste from production to 2.5% in relation to manufactured sales volume

High-quality plastics made using CO_2 *In the "Dream Production" project – a collaboration between industry and the scientific community – CO_2 has been incorporated into polyurethanes for the first time. Alexandra Keldenich from the CAT Catalytic Center of RWTH Aachen works on the rotary evaporator.*

Bayer places great importance on protecting the environment and using natural resources responsibly. But environmental protection is also in harmony with our economic interests – it creates the foundation for our business activities and can help cut costs.

In addition to meeting legal and other requirements, our responsibility and our commercial license to operate lie in constantly improving our environmental protection, health and safety performance. The fact that we joined the Responsible Care® [135] initiative of the chemical industry at an early stage underlines this intention and our voluntary commitment. Our Bayer Sustainable Development Policy [136] sets out the framework for our environmental action. We use efficient HSEQ management systems to control the implementation of our environmental protection measures.

We leverage our expertise in technology, process optimization and innovative products to protect nature, the environment and the climate. For example, our improvements in energy efficiency mean we are using less and less energy in the manufacture of many of our products. This cuts costs, while the resultant reduction in CO_2 emissions means less needs to be spent on emissions trading.

Use of materials and energy

Now more than ever, material and energy efficiency, together with innovation in processes and products, are a crucial factor in competition. Analyzing and optimizing the use of resources, minimizing consumption, reducing emissions and avoiding waste are factors of strategic importance for us.

That is why Bayer has initiated the Resource Efficiency Check [134] as part of its Sustainability Program. This method was tested in 2011 in pilot projects in the MaterialScience and CropScience subgroups and has already identified savings potential in the major categories of raw materials, energy, water and waste. In November 2011 the Community Board for Sustainable Development thus decided to use this tool systematically in the subgroups in the future.

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Given the diverse nature of our business operations, production-specific procurement activities are organized separately for each subgroup. Detailed information on the procurement and use of raw materials, consumables and supplies for the respective subgroup can be found on page 63ff. of the Annual Report 2011. Germany and German industry are dependent on imports from around the world for many important raw materials. Export restrictions put in place for rare earths are an example of how the perspective on the availability of raw materials has changed considerably in past years. At the start of 2012 Bayer and a number of other major German companies joined forces to establish the raw materials alliance "Rohstoffallianz GmbH" on the initiative of the Federation of German Industry (BDI). Its strategic goal is to act jointly on the global market in order to safeguard access to important raw materials. What form this cooperation will take depends on each individual case and the interests of each of the participating companies.

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We use renewable raw materials when it makes technical, economic and ecological sense to do so. They still play a relatively minor role in terms of our total utilization of raw materials, but they are steadily gaining in significance in selected areas.

Bayer MaterialScience is increasingly working on the use of renewable raw materials and carbon dioxide as feedstocks for polymers to produce the required polyurethane raw materials with minimum energy consumption and greenhouse gas emissions. At Bayer HealthCare some hormones are synthesized from plant sources. This requires certain types of sterols/phytosterols, which we procure via suppliers. These substances are generated (as a by-product) during the refining of vegetable oils from soybean, canola or sunflowers. Palm oil or palm kernel oil is not used, due to its low concentration of sterols. We also purchase various steroids, which are manufactured from diosgenin. Today, this substance is usually obtained from yam grown in countries such as China. This is not an endangered species. In the steps we follow in the fermentation process, we also use raw materials such as water, glucose, yeast, soybean starch, coconut oil and corn steep water, which

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are not endangered either. Extracts of plant leaves (Centella asiatica) are used in some Consumer Care products. This plant is common in Asia and is also not an endangered species.

The consumption of materials and energy and the level of emissions are determined to a large extent by the manufactured sales volume. We utilize this reference figure to measure the efficiency of energy and resources. In 2011 Bayer increased the manufactured sales volume by 5.2 percent. Despite this increase, we were able to further improve many of our performance indicators.

The Group's energy consumption fell by about 1 percent on the previous year to 85 petajoules. For 2011 we are publishing the figures of the Bayer Group's energy consumption in a new format. We now differentiate between primary energy consumption at our sites, mainly in the form of fossil fuels, and secondary energy consumption that reflects the purchase of electricity, steam and refrigeration energy and the use of process heat. To ensure consistency, we are providing figures retrospectively for each individual energy item over the last five years. This ensures transparency, making it even easier to track changes within these areas.

Primary energy consumption yielded a change of minus 3.0 percent, while secondary energy consumption increased by almost 2.3 percent. Table 18

18 Energy consumption (terajoules)

	2007	2008	2009	2010	2011
Primary energy consumption for generating electricity & steam (in petajoules)	53.3	51.9	48.1	51.6	50.1
Natural gas	30,080	29,848	29,413	31,847	31,162
Coal	18,728	19,103	16,976	17,801	16,776
Liquid fuels	1,608	1,077	772	532	660
Waste	870	775	-33	678	515
Other*	1,430	1,078	996	774	983
Secondary energy consumption as steam, electricity, refrigeration energy (net) (petajoules)	32.0	30.9	29.2	34.1	34.8
Electricity (net)	25,868	26,183	23,675	25,229	25,475
Steam (net from purchase/sale)	-2,566	-4,008	-2,092	722	1,054
Steam from waste heat (process heat)	9,481	9,580	8,273	8,722	9,000
Refrigeration energy (net from purchase/sale)	-826	-850	-654	-595	-683
Manufactured sales volume (million metric tons)	10.6	10.0	8.7	10.4	11.0

*Other, e.g. hydrogen

19 Greenhouse gas emissions* in the Group (million metric tons of CO_2 equivalents)

	2007	2008	2009	2010	2011	Target 2020
Direct greenhouse gas emissions**	5.59	5.09	4.57	4.80	4.23	
Indirect greenhouse gas emissions***	3.71	3.57	3.53	3.70	3.92	
Total greenhouse gas emissions	9.30	8.66	8.10	8.50	8.15	
Specific greenhouse gas emissions***** (metric tons of CO_2 equivalents per metric ton of product)	1.15	1.14	1.23	1.09	0.95	0.79**** -35%

* Portfolio-adjusted in accordance with the GHG Protocol
** In 2011, 90.8% of greenhouse gas emissions were CO_2 emissions, 8.7% were N_2O emissions, just under 0.5% were partially fluorinated hydrocarbons and 0.04% was methane.
*** Typically, CO_2 in incineration processes accounts for over 99% of all greenhouse gas emissions. Therefore, when determining indirect emissions, our calculations are limited to CO_2.
**** Based on 2005 figures. The presentation of greenhouse gas emissions is portfolio-adjusted, with no portfolio adjustment of production volumes; emissions reported for Currenta attributable to the provision of energy to other companies have been deducted, and at Bayer MaterialScience the by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the production volume as they will occur in much smaller amounts in the future, thanks to measures aimed at enhancing energy efficiency. Trade products are also not included.
***** Specific Group emissions are calculated from the total volume of direct and indirect emissions divided by the manufactured sales volume of the three subgroups. Quantities attributable to the supply of energy to external companies (not Bayer) are deducted from the direct and indirect emissions. For the Bayer MaterialScience subgroup, only manufactured sales volumes that also form the basis for calculating Bayer MaterialScience-specific emissions are taken into account.

Air emissions

Bayer reports its greenhouse gas emissions in accordance with the Greenhouse Gas Protocol (GHG Protocol) [137]. This involves presenting emissions from previous years in a portfolio-adjusted format in accordance with the financial control approach of the GHG Protocol. Direct greenhouse gas emissions from power plants, waste incineration plants and production facilities (Scope 1 of the GHG Protocol) are determined at all production locations and sites with a high environmental impact. In 2011 90.8 percent of greenhouse gas emissions (measured in metric tons of CO_2 equivalents) were CO_2 emissions, 8.7 percent were N_2O emissions, just under 0.5 percent were partially fluorinated hydrocarbons and 0.04 percent was methane.

Although the manufactured sales volume rose by 5.2 percent in 2011, direct greenhouse gas emissions were reduced by 11.9 percent. This was due largely to process improvements and energy-saving measures. At the Baytown site in the United States, we cut our local greenhouse gas emissions by more than 64 percent. This is equivalent to 438,300 metric tons of CO_2 equivalents. Nitrous oxide emissions (N_2O) accounted for the largest share of this. A new catalyst has been deployed in the site's nitric acid manufacturing facility

since October 2011, so further decreases can be expected.

Our own power plants are responsible for a sizable proportion of the direct greenhouse gas emissions. As we also supply energy to third parties, a reduction in energy use at Bayer's production plants does not necessarily lead to a proportional drop in our direct greenhouse gas emissions.

Chempark operator and service company Currenta continues to rigorously push ahead with its "Energy Efficiency Rating A++" climate program. Around 200 individual projects implemented helped cut CO_2 emissions by around 159,000 metric tons in 2011.

In the year under review, Group-wide indirect greenhouse gas emissions (Scope 2 of the GHG Protocol) rose by 5.7 percent compared to the previous year, partly due to the fact that the positive economic climate increased the procurement of electricity and steam. Total direct and indirect greenhouse gas emissions in 2011 decreased by 4.2 percent on the previous year. As the manufactured sales volume rose by 5.2 percent in the same period, this results in a further drop in specific greenhouse gas emissions per metric ton of sales product. Tables 19 and 20

Bayer is currently involved in emissions trading throughout the E.U. with 11 incineration plants and approximately 2.4 million metric tons of CO_2. The second trading period (2008-2012) takes the environmentally friendly energy generation at our combined heat and power plants into account. However, the E.U. emissions trading directive for the third trading period (2013-2020) stipulates that industry has to purchase allowances for electricity generation. For additional chemical plants, the allocation of allowances will be based on stringent benchmarks. Although the burden on "exposed sectors" (facilities at risk on global markets due to the cost of emissions trading) is set to be reduced significantly through the European Commission's planned regulations, we must expect further cost increases from 2013 onward.

In fall 2011 the Greenhouse Gas Protocol (GHG) published a new standard – the Corporate Value Chain (Scope 3) Accounting & Reporting Standard – to govern the binding reporting of all relevant indirect Scope 3 emissions. We used this as an opportunity, alongside emissions already being recorded, to analyze and record such Scope 3 emissions that help us identify reasonable potential for reducing emissions. Further details can be found in our CDP Report (see page 27).

Other direct emissions

Emissions of ozone-depleting substances (ODS emissions) fell by around 21.5 percent to 16.3 metric tons in 2011. In 2011 no ODS emissions were attributable to relevant individual incidents. The rise in ODS emissions in the previous year was due in large measure to temporary leaks in the cooling systems at both the Baytown, United States, and Dormagen, Germany, sites. An HVAC (Heating, Ventilating, Air-Conditioning) strategy was introduced in Baytown with the aim of preventing the risk of leaks in the future and of generating additional potential savings through the use of optimized cooling systems and more eco-friendly cooling agents. The Vapi site

20 Greenhouse gas emissions for subgroups and service companies (total direct and indirect emissions in million metric tons of CO_2 equivalents)

	2007	2008	2009	2010	2011	Target 2020*
Bayer MaterialScience	5.55	5.06	4.83	5.24	4.63	
Bayer HealthCare	0.57	0.56	0.55	0.54	0.54	0.53 -10 %
Bayer CropScience	1.18	1.20	1.09	1.09	1.00	1.03 -15 %
Others**	0.02	0.02	0.02	0.02	0.01	
Currenta***	1.98	1.82	1.62	1.62	1.97	
Specific greenhouse gas emissions for Bayer MaterialScience (metric tons of CO_2 equivalents per metric ton of product)****	1.01	0.99	1.09	0.96	0.82	0.70 -40 %

* Portfolio-adjusted, based on 2005 figures
** Total greenhouse gas emissions for Bayer Technology Services and Bayer Business Services
*** The emissions reported for Currenta are attributable to the provision of energy to other companies at the Chempark sites.
**** The by-products sodium hydroxide solution and hydrochloric acid generated during production are not included in the production volume as they will occur in much smaller amounts in the future, thanks to measures aimed at enhancing energy efficiency. Trade products are also not included. Internal studies at Bayer MaterialScience have revealed that in previous years selected polycarbonate materials (so-called compounds) were not included in the calculation, because this would seemingly have led to double counting. On closer inspection this proved to be incorrect. For this reason these materials have been included retrospectively in the annual Bayer MaterialScience product volumes calculated.

21 Emissions of ozone-depleting substances*

	2007	2008	2009	2010	2011	Target 2015**
ODS in metric tons p.a.	14.7	17.1	17.5	20.8	16.3	6.2 -70 %

* In CFC-11 equivalents
** Target to be achieved by 2015 based on 2010 figures

22 VOC emissions

	2007	2008	2009	2010	2011	Target 2015*
VOC in 1,000 metric tons p.a.	2.87	3.16	2.59	2.54	2.69	
VOC in kg per metric ton of sales product	0.2708	0.3160	0.2979	0.2436	0.2457	0.1218 -50 %

* Target to be achieved by 2015 based on 2010 figures

23 Other important air emissions (1,000 metric tons p.a.)

	2007	2008	2009	2010	2011
CO	2.0	1.7	1.4	1.4	1.3
NOx	4.0	3.9	3.5	3.7	3.7
SOx	3.6	3.2	2.8	2.7	2.3
Particulates	0.2	0.2	0.2	0.2	0.2

News

Bayer's new Water Position

Many regions of the world have only limited access to fresh water and often cannot even cover their basic water requirements for sanitary facilities – not to mention industry. Bayer is therefore committed to the protection of water resources beyond its own requirements. The Group-wide Water Position adopted in December 2011 reflects this willingness to conserve water and to use it responsibly at all sites worldwide. Measures include using the company's own water resources more efficiently, developing and marketing innovative products and technologies, and supporting local non-profit water projects.

Direct seeding of rice increases crop yields while cutting water consumption.

of Bayer CropScience in India accounts for by far the biggest share of the Group's ODS emissions (92 percent). Table 21

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The volume of volatile organic compounds (VOC) rose by 6.1 percent compared with the previous year. This was mainly due to growth in production. The biggest VOC increases were reported at the two Bayer CropScience sites in India – Vapi (+ 6 percent) and Ankleshwar (+ 45 percent). At Vapi in 2011, work started on the construction of a central waste air treatment plant. Completion of the first building phase at the end of 2012 is expected to lead to a significant fall in VOC and ODS emissions.

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Target 2015

By 2015 this project is expected to cut ODS emissions by 70 percent and halve the VOC emissions of the Group as a whole. Table 22

Other important emissions also fell in the period under review. Carbon monoxide (CO) emissions fell by 4.5 percent. This is largely due to the closure of a manufacturing facility for the production of a polyurethane precursor at the Bayer MaterialScience site in Niihama, Japan.

Sulfur oxide (SO_x) emissions fell by 16.7 percent. The biggest reductions were recorded at the Chempark sites in Leverkusen and Krefeld-Uerdingen in Germany, where increasing quantities of imported coal containing far lower levels of sulfur are being used. The volume of particulate matter in 2011 amounted to around 176 metric tons worldwide (down 13 percent). Table 23

Use of water and emissions into water

Water is essential to sustaining life, but it is growing increasingly scarce in many parts of the world and is becoming ever more expensive to supply and clean. It is therefore all the more important from both an economic and ecological perspective that global manufacturing companies like Bayer take a responsible attitude to water usage. Bayer signed the CEO Water Mandate [138] of the UN Global Compact at the end of 2008 with the aim of working with key stakeholders to develop sustainable strategies for water use. Bayer publishes comprehensive information on its systematic commitment, the measures implemented and results achieved thus far in its response to the CDP Water Disclosure [139] 2011. In this survey initiated by the Carbon Disclosure Project, 354 institutional investors called on 315 of the world's biggest companies to disclose details of their water management along with opportunities and risks identified in connection with the use of water.

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In December 2011 Bayer adopted a Water Position [140] as part of its sustainability strategy. We plan to implement a range of specific, continuous improvements in our own operating procedures with a view to protecting water resources, using water more efficiently and setting water reduction targets for sites particularly affected by water shortage or water quality risks. We also aim to develop innovative products and technologies for the market to improve water efficiency and quality in areas such as agriculture. Another element of the program involves support for projects that ensure our employees and the communities near our sites have access to clean drinking water and basic sanitation.

All three subgroups at Bayer have implemented systems and standards that meet their specific challenges with regard to water usage. In its Water Protection Directive, Bayer HealthCare commits itself to using water responsibly. Bayer CropScience has also committed itself to conserving water and using it sustainably, while Bayer MaterialScience regulates the efficient use of water in its HSEQ Policy.

Water consumption

Overall, Bayer's water consumption fell by 13.2 percent in 2011 compared to the previous year. This reduction is due in part to the repair of a leak in the cooling water system at the Bayer CropScience site in Institute, United States. This had increased the amount of cooling water considerably the year before. In addition, a large production facility at the Antwerp site in Belgium remained out of operation

for several weeks in the year under review, which also reduced water consumption significantly. At Institute, the consumption of surface water fell by 29 percent. Group-wide, the volume of surface water used dropped by 20 percent. Water taken from boreholes and springs was also down slightly on the prior-year level (minus 0.8 percent in absolute terms). However, as the total volume of water used dropped even more sharply, the percentage share of water taken from boreholes and springs rose by 11 percent relative to the Group's overall consumption. Tables 24 and 25

Usage of water

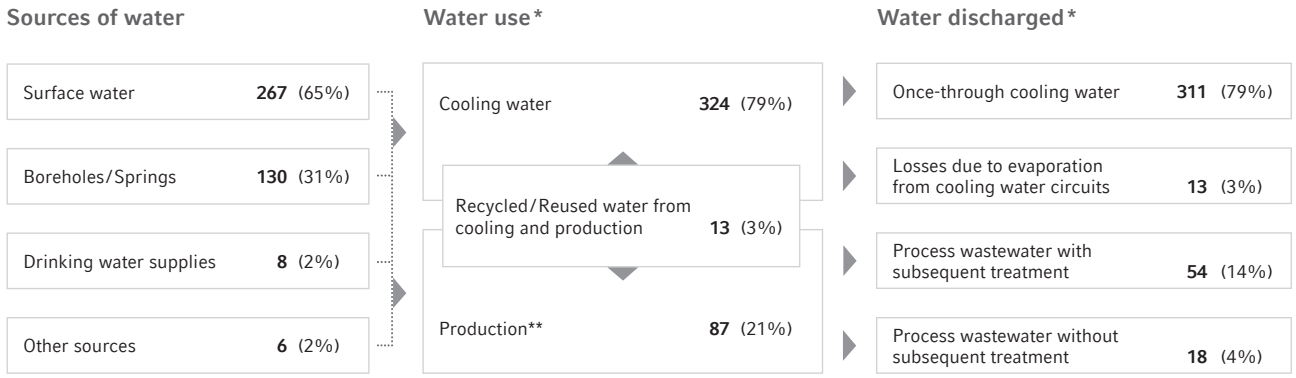
In 2011 total cooling water consumption amounted to 324 million cubic meters, equivalent to a reduction of over 18 percent. Some 79 percent of the water used by Bayer is once-through cooling water. This water is only heated and does not come into contact with products. This water can be returned to the water cycle without further treatment in line with the relevant official permits. In our production activities, we aim to use water several times and to recycle it. Water is already recycled and reused at 38 sites, e.g. in closed cooling cycles, through the reuse of treated wastewater or the recirculation of steam condensates as process water. A total of 13 million cubic meters of water were reused in the year under review. Table 24

As with surface water, the drop in once-through cooling water consumption is also mainly due to measures implemented at the sites in Antwerp and Institute. Globally, once-through cooling water consumption fell by 74 million cubic meters to 311 million cubic meters.

Discharge of water

In 2011 the total wastewater volume rose by just under 4 percent. All wastewater, including that which is not treated, is subject to strict monitoring and assessment before it is discharged into disposal channels. Some 75 percent of Bayer's wastewater worldwide is purified in a wastewater treatment plant (Bayer or third-party facilities). The volume of treated wastewater remained virtually on a par with the previous year. The rise in the volume of non-treated wastewater in 2011 occurred mainly at the Bayer MaterialScience sites in Dormagen and Uerdingen, Germany, and Caojing, China, where, for example, new production capacities for TDI (toluene-2,4-diisocyanate; intermediate product for plastic) led to a substantial increase in the amount of cooling water used. Once-through

24 Water consumption in the Bayer Group (million m³)



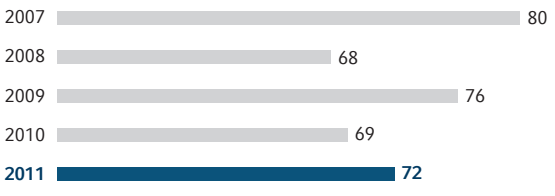
* The differences between volumes of water consumed and water discharged can be explained, for example, by unquantified losses due to evaporation, leaks, quantities of water used as raw materials in products and volumes of condensate generated through the use of steam as a source of energy.
** Sum from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

25 Net water intake by source

	2007	2008	2009	2010	2011
Water consumption (million m³ per year)	447	439	407	474	411*
– Proportion from surface water (%)	57	58	58	71	65
– Proportion from boreholes/springs (%)	32	32	32	25	31
– Proportion from public drinking water supplies (%)	2	1	1	3	2
– Proportion from other sources, generally rainwater (%)	9	9	9	1**	2

* The figure of 437 million m³ recorded for water consumption and published in our Annual Report 2011 was too high. The correct figure is 411 million m³. At one of our sites, a large amount of process water, which is continually recirculated in a closed cooling system, was mistakenly recorded as "consumed water."
** Through optimized accounting of water use, water consumption from other sources as from 2010 was assigned to the actual sources in most cases.

26 Volume of wastewater (million m³)



News

Emissions-neutral office building in India cuts CO_2 by 67 metric tons

One year after the inauguration of Bayer MaterialScience's emissions-neutral office building in Greater Noida, 40 kilometers southeast of the Indian capital of New Delhi, the energy balance is positive. In 2011, 72,000 kilowatt hours (kWh) of electricity were generated with the help of the photovoltaic system installed on the roof, whereas the building used just under 64,000 kWh of energy over the same period. Polyisocyanurate thermal insulation shields the building envelope against the heat, reducing the amount of energy required for air conditioning. The products and systems used were sourced from the region. This building underlines the functionality of Bayer's EcoCommercial Building (ECB) Program, one of the lighthouse projects of the Bayer Sustainability Program.

cooling water in the energy/power plant sector at the Currenta site in Leverkusen rose, thus increasing the volume of wastewater not requiring treatment by 2 million cubic meters to 4.2 million cubic meters. Table 26

Emissions into water

The goal of our water management system is to keep harmful emissions released into water as low as possible. Our total phosphorus emissions fell by a further 7 percent in 2011 due to the fact that production of products containing phosphates was scaled down at a number of sites. Nitrogen emissions rose by 7.8 percent, mainly due to a rise in production at the Bayer CropScience sites in Dormagen, Germany, and Roussillon, France as a result of the economic situation. Emissions of total organic carbon (TOC) in the reporting period rose by 6.2 percent due to the opening of a new TDI production facility at the Bayer MaterialScience site in Caojing, China, and changes to the product portfolio and process engineering procedures at the Bayer CropScience site in Kansas City, United States.

Despite a rise in production (+ 5 percent) and wastewater volumes (+ 3.7 percent on the previous year), heavy metal emissions throughout the Group fell by almost 5 percent and stood at just under 11 metric tons. The two biggest dischargers are based in Leverkusen in Germany, and Roussillon (Bayer CropScience) in France. Heavy metal volumes at the Bayer MaterialScience site in Brunsbüttel in Germany dropped substantially. Here, an improved wastewater management system and technical improvements reduced metal emissions by 44 percent compared to the previous year. The increase of almost 7 percent in emissions of inorganic salts is primarily due to increasing production volumes at the Bayer MaterialScience site in Caojing, China, and at Bayer CropScience at the Chempark Dormagen site in Germany. Table 27

Waste and recycling

Recycling and a reduction in waste can improve cost efficiency while also helping to protect the environment. In order to minimize material use and waste volumes, Bayer strives wherever technically feasible and justifiable in terms of cost to reuse materials or divert them to other processes. Direct influencing factors, such as increases in production owing to changes in the economic climate and unscheduled clean-up measures, can have a dramatic impact on the development of waste figures and recycling options.

Waste generation and disposal

The total volume of waste generated rose by 18.7 percent to 958,000 metric tons in 2011. Table 28

This rise was due to increased production volumes at various sites, such as the Chempark sites in Dormagen, Leverkusen and Krefeld-Uerdingen in Germany and the Caojing site in China, but primarily as a result of a renovation project at the Bayer CropScience site in Thane in India (roughly 76,000 metric tons in 2011). The latter is a large-scale groundwater and soil remediation project. Since 1963 Bayer has operated several production processes in Thane mainly for the manufacture of active ingredients for crop protection agent production. This project is scheduled for completion in 2013

27 Emissions into water (absolute)

	2007	2008	2009	2010	2011
Phosphorus (1,000 metric tons p.a.)	0.99	0.78	0.74	0.09	0.08
Nitrogen (1,000 metric tons p.a.)	0.68	0.67	0.64	0.49	0.53
Nitrogen (kg per metric ton of sales product)	0.0642	0.0669	0.0737	0.0474	0.0486
TOC* (1,000 metric tons p.a. of organically bound carbon)	1.77	1.59	1.35	1.42	1.50
TOC (kg per metric ton of sales product)	0.167	0.159	0.155	0.136	0.137
Heavy metals (metric tons p.a.)	8.9	10.4	9.0	11.4	10.8
Inorganic salts (1,000 metric tons p.a.)	825	812	726	866	926
COD** – chemical oxygen demand (1,000 metric tons p.a.)	5.31	4.77	4.05	4.26	4.51

* Total organic carbon
** Calculated value based on TOC figures (TOC x 3 = COD)

28 Waste generated*

	2007	2008	2009	2010	2011	Target 2015
Total waste generated (1,000 metric tons p.a.)	928	1,077	914	807	958	
– Hazardous waste generated** (1,000 metric tons p.a.)	342	365	375	354	474	
– of which hazardous waste from production (1,000 metric tons p.a.)	275	305	302	325	354	
Specific volume of hazardous production waste (percent)	2.59	3.05	3.47	3.12	3.23	**2.5**

* Only waste generated by Bayer
** Definition of hazardous waste in accordance with the local laws in each instance

and will affect the Group's statistics accordingly. The volume of hazardous waste in 2011 was up 33.8 percent on the previous year. Here, too, the main influencing factor is the clean-up project in India. The excavated earth and rubble from deconstruction activity are classed as "hazardous" under national law and are being disposed of at an external landfill site that does not belong to the Bayer Group.

The specific volume of hazardous production waste increased in 2011. As things stand today, we will not be able to achieve our declared target of *limiting this figure to 2.5 percent of the total production volume by 2015*. This is due to changes in process steps, mainly in the CropScience subgroup. Here, for example, production waste is generated during the synthesis of active ingredients in the form of by-products that cannot be further processed or used. Due to the legal regulations in many countries, we have to declare this as "hazardous waste" and dispose of it accordingly. We will continue to report these figures in the interests of our stakeholders. Tables 28 and 30

In parallel to waste generated, the total volume of waste disposed of also rose; in this case by 19 percent to 966,000 metric tons. Here, too, the substantial volume of waste generated by the clean-up project in India (see also page 60) is having an impact on the overall balance. As a result, the Group's total volume of waste disposed of in landfill increased by almost 40 percent. Without this increase in waste, the Group's total volume of waste disposed of in landfill would have fallen by around 25 percent on the previous year. The absolute volume of incinerated waste rose by 11 percent globally in 2011 and recycled waste by 10 percent. Table 29

Recycling at Bayer

Recycling is not possible for a large proportion of our end products owing to legal requirements, particularly for pharmaceuticals and crop protection agents. We are constantly searching for new opportunities for extensive recycling within the framework of legal regulations. In the year under review, the volume of recycled waste amounted to 273,000 metric tons (equivalent to 28 percent of the total waste disposed of), up almost 10 percent on the prior year figure.

The Bayer HealthCare site in Myerstown, United States, inaugurated a new vitamin production line in 2011. A partner was found to recycle the 243 metric tons of recyclable waste vitamins produced in 2011, using them as a feed additive for cattle and poultry in compliance with all the relevant legal requirements.

Target 2015

The Global Sideline Business of Bayer MaterialScience is endeavoring to recycle, instead of scrap, a whole range of systems and tools that are fully functional but no longer required. In 2011 it sold some 75 tangible assets to third parties, including a large reaction injection molding machine. In addition, around 7,500 metric tons of scrap metal were returned to the system.

Bayer CropScience also actively supported the return of crop protection product packaging via national industrial associations and corresponding reclamation organizations in 2011. 2011 saw the collection and, to a large extent, reuse of around 10,000 metric tons of rinsed primary packaging. Bayer CropScience is also working on the establishment of efficient take-back systems in Africa, Asia and Eastern Europe. Currenta's patented pretreatment process for electronic scrap allows up to 99 percent of precious metals such as gold, silver and copper to be recovered from old computer circuit boards and cell phones. Currenta also focuses on "building recycling" at the Chempark sites. This involves the inspection of buildings for contamination, the environmentally sound disposal of huge quantities of rubble from deconstruction activity and the reuse of any recyclable materials.

Protection of biodiversity

The protection of biodiversity is gaining in importance worldwide. The United Nations' Decade on Biodiversity from 2011 to 2020 serves to implement further measures with the goal of maintaining and

29 Waste disposed of according to means of disposal

	2007	2008	2009	2010	2011
Total volume of waste disposed of* (1,000 metric tons p.a.)	931	1,061	918	809	966
– Proportion removed to landfill (%)	48	45	40	32	38
– Proportion incinerated (%)	26	24	28	36	33
– Proportion recycled (%)	23	28	31	31	28
Waste that cannot definitively be categorized according to one of the above disposal methods (%)	3	3	1	1	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). There is therefore a somewhat larger amount of waste disposed of than Bayer has generated itself.

30 Hazardous waste* disposed of according to means of disposal

	2007	2008	2009	2010	2011
Total volume of hazardous waste disposed of (1,000 metric tons p.a.)	342	365	375	354	474
– Volume landfilled (1,000 metric tons p.a.)	101	81	89	56	122
– Volume incinerated/recycled (1,000 metric tons p.a.)	241	284	286	298	352

* Only waste generated by Bayer

Dialogue

Handling energy raw materials responsibly

Highly developed industrial nations are reliant on the availability of a range of raw materials including oil, natural gas and metals. However, rising global demand, including from emerging markets, and predictions are giving rise to fears of a raw materials crisis. President of the German Federal Institute for Geosciences and Natural Resources (BGR) Professor Hans-Joachim Kümpel addressed this issue in October 2011 in front of an audience of top-level managers from Bayer. Prof. Kümpel is convinced that, from a geological perspective, generalized fears of raw material shortages are unfounded. However, he also stressed that restrictions do need to be imposed, as availability from a geological perspective does not necessarily mean those same reserves are actually accessible technologically. It is necessary to consider raw material availability on a case-by-case basis. The expert called for a more responsible approach to dealing with raw materials. Even if raw materials are not about to suddenly run out, conserving these resources as much as possible should be embraced as a logical step, as should driving forward the development of alternative resources.

Industrialized countries are dependent on raw materials such as oil. It therefore goes without saying that raw materials should be handled responsibly.

promoting biodiversity in accordance with the objectives set out in the Convention on Biological Diversity (CBD) [141] in 1992.

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As a result of factors such as urbanization and industrialization, less and less land is available for agricultural production. Modern agriculture must be highly productive to be able to achieve its mission of producing high yields to satisfy demand for agricultural raw materials. The conservation and protection of biodiversity represents a major challenge for agricultural production.

Our Bayer CropScience subgroup promotes the protection of biodiversity and the conservation of natural ecosystems as part of a sustainable agricultural policy. Bayer CropScience's strategy encompasses research and development activities, including the identification of solutions for improving plant health, assistance in tackling invasive species and the support and implementation of measures to promote integrated crop management. Our own Conserving Biodiversity Position [142] governs our obligation to maintain and increase the diversity of species. Information on Bayer CropScience's biodiversity projects and on other specific examples of our commitment to the protection of species [143] is available on the internet.

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As a member of the German Association of Research-Based Pharmaceutical Companies (VFA) [144], Bayer HealthCare supports the association's current position on the UN Convention on Biological Diversity. In the search for potential active ingredients, we concentrate on the chemical synthesis of substances using state-of-the-art technologies in medicinal, combinatorial and computational chemistry. Our work does not encompass research into drug products derived from natural substances. If natural substances are needed in research, they are meticulously reviewed in advance in accordance with the Rio Convention. For example, while the drug we market as Glucobay™ is obtained from the soil bacterium Actinoplanes by a biotechnological process, it is not, however, considered a scarce natural substance, as it is present universally in the soil.

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Through a company directive and accompanying internal approval procedure we have specified that new production sites may not be set up in areas that are protected by statutory requirements of the countries concerned with respect to natural characteristics, biodiversity or similar factors. In every case, the stipulated minimum distances to protected areas are complied with. In order to limit the total area of land use at our production sites, we are committed to land recycling, e.g. by renaturizing unused sites at the Chempark locations.

Management systems for the implementation of our HSEQ targets

Bayer's objective is to achieve an appropriate and consistently high standard of HSEQ (health, safety, environmental protection and quality) throughout the Bayer Group worldwide and to steadily improve it. To meet this goal, the company has established HSEQ management systems in all subgroups and service companies that are based on recognized international standards and are regularly reviewed and updated.

The boards of management/executive boards of the respective subgroups and service companies and the corresponding line organizations bear operational responsibility for HSEQ. Through continuous updating and development of HSEQ directives and through internal audits, each organizational unit ensures that its HSEQ management systems meet the specific requirements.

International standards and certifications

In contrast to earlier reports, since 2010 we have amended the audit of the extent to which our business activities are covered by HSEQ management systems and adjusted the presentation of results to a convention that is more customary in the industry. We now no longer present the coverage only in relation to the number of externally certified sites but instead also use the scope of our activities as a reference figure, which is essentially reflected in the production volume and energy consumption.

More than 80 percent of our business activity worldwide (in relation to production volume and energy consumption) takes place at sites that are externally certified or validated according to recognized international standards such as ISO 14001, EMAS and OHSAS 18001 or local standards such as Industria Limpia in Mexico. As part of a Group-wide certification master plan, we are seeking to further increase the level of coverage by 2017. The extent to which each individual subgroup is covered by internationally recognized standards in terms of both environmental protection and occupational health and safety should be at least 80 percent based on energy consumption.

In 2011 around 90 percent of all our production sites were equipped with an HSE management system audited by Bayer. Table 31

All subgroups also have industry-specific international quality management systems such as to ISO 9001, ISO 17025, ISO 13485 or GMP (Good Manufacturing Practice). If energy consumption is taken as the benchmark for coverage with quality management systems, Group-wide coverage amounts to 94 percent. In relation to production volume, it comes in at around 83 percent.

Plant and process safety initiative

In 2010 Bayer launched a Group-wide process and plant safety initiative. The goal of the measures is to develop the culture of safety and safety standards at the plants and in the laboratories and to optimize the safety technology. The most important principles and related organizational structures were set forth in the Group Directive on Process and Plant Safety.

Target 2015

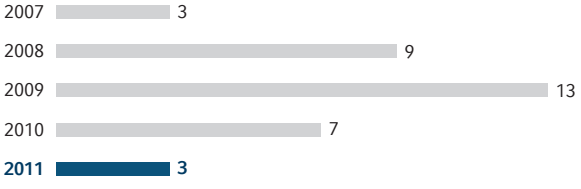
Organizational adjustments and numerous training programs were implemented in the year under review. Our target is to have trained around 26,000 employees worldwide specifically in process and plant safety by the end of 2012. Originally, the target was to train 40,000 employees. The number of participants given in 2009 was a rough estimate. This original figure was based on all employees working in "production organizations." Following successful pilot training programs at sites in Wuppertal-Elberfeld (Bayer HealthCare) and Hürth-Knapsack (Bayer CropScience) in Germany and Map Ta Phut (Bayer MaterialScience) in Thailand, the planning began for the worldwide implementation of similar programs. To directly address as many employees as possible, the training materials are available in around 20 languages. In 2010 and at the start of 2011 concrete planning took place across all organizational units, with professional supervision by the first group of trained process and plant safety specialists. As a result of this process, it was only in 2011 that employees who would benefit from this training were

31 Certifications

Certifications to internationally recognized regulations and internal Bayer audits	Certified to ISO 14001/Validated to EMAS standards	HSE management systems based on other external standards*	Certified to OHSAS 18001	Bayer-audited HSE management systems	
Percentage of our operations **(with respect to production volume and/or energy consumption)** at certified or validated Bayer sites	62	38	9	92	2010
Percentage of our operations **(with respect to energy consumption)** at certified or validated Bayer sites	66	54	27	99	2011
Percentage of our operations **(with respect to production volume)** at certified or validated Bayer sites	62	70	9	84	2011

* RCMS (Responsible Care Management System) in the United States or Industria Limpia (clean industry) in Mexico

32 Environmental incidents (number p.a.)



33 Transport accidents according to means of transport (number p.a.)

	2007	2008	2009	2010	2011
Road	9	8	8	6	6
Rail	1	1	2	1	1
Inland waterways	0	0	0	1	0
Sea	0	1	0	0	0
Air	0	0	0	0	0
Pipeline	0	0	0	0	0
Total	10	10	10	8	7

identified by the relevant organizational units. This made it possible to reduce the number of employees needing training from 40,000 to around 26,000. The training is taking place on four levels via a training cascade. First, two-week courses were already held to train experts in process and plant safety. These experts will then train the next level and so on through to the biggest group at operator level (level 4), for whom training will start in the second half of 2012. In 2011 around 3,700 employees completed the training. For this purpose, dedicated training programs have been developed that are specially geared to the activities of various employee groups.

A second Process and Plant Safety Symposium is scheduled to take place in 2012 to discuss the level of cooperation achieved thus far between the various subgroups and countries and to further develop this collaboration.

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Environmental incidents and transport accidents

Unfortunately, even our extensive safety precautions and training procedures cannot entirely prevent environmental incidents or transport accidents from occurring. Bayer uses the term "environmental incidents" to cover incidents at plants operated by Bayer resulting in the release of substances into the environment. Factors that influence reporting obligations include, in particular, the quantity and nature of the substance, the amount of damage caused and any consequences for residents. In accordance with our internal voluntary commitment, we report any leakage of substances with a high hazard potential from a quantity of 100 kilograms. Under "transport incidents," we record incidents involving our own chemical transport services and those commissioned and paid for by us, in accordance with stipulated criteria. These include leakage of the load, graded according to the volume and dangerous goods class, personal injury and blocked transport routes.

The number of reportable environmental incidents in accordance with these Group specifications fell again in 2011 – from seven the previous year to just three. The number of transport accidents fell by one reportable event to seven. Tables 32 and 33

On the internet we have also listed and commented on other incidents that were observed and reported by stakeholders [145] but that do not meet our requirements for environmental incidents and transport accidents.

Table 34 shows the development of figures for transport accidents, broken down according to the means of transport. In total, around one million transport movements took place in 2011.

34 Environmental incidents and transport accidents in 2011

	Personal injuries
Environmental incidents	
Bayer CropScience, Institute, United States, September 28, 2011: During routine maintenance work on a wastewater pump system, process wastewater was released into the Kanawha river.	no
Currenta, Krefeld-Uerdingen, Germany, November 18, 2011: Approximately 10 kg of ammonia was released as a result of incorrect instrument operation during the unloading of a rail tank wagon. Five people were taken to the outpatient clinic by the rescue services but were released on the same day.	yes
Transport accident that was also an environmental incident	
Bayer CropScience, Beijing, China, May 19, 2011: A truck transporting Bayer CropScience products from our Hangzhou site collided with another vehicle on the highway. A fire broke out and both drivers died.	yes
Transport accidents*	
Bayer MaterialScience, South Charleston, United States, January 20, 2011: A train including wagons carrying the Bayer MaterialScience polyol Hyberlite E833 derailed. There were no leaks, environmental pollution or personal injuries.	no
Bayer CropScience, Amatitlan, Guatemala, February 1, 2011: Road traffic accident involving a truck carrying Bayer CropScience products. The driver and security escort died. The accident caused chemicals to spill onto the road, which meant the road had to be blocked off for cleaning. No environmental pollution.	yes
Bayer MaterialScience, Belford Roxo, Brazil, March 16, 2011: Traffic accident involving a truck carrying polyol F-3040 from Bayer MaterialScience. The driver died. No product leaked.	yes
Bayer CropScience, Kwinana, Australia, March 17, 2011: Due to excessive speed and an unsatisfactorily secured load, a Bayer CropScience truck lost part of its cargo when entering an expressway. Around 200 liters of the product (Jaguar) spilled onto the road, which meant this had to be blocked off for cleaning. No environmental pollution.	no
Bayer CropScience, Dormagen, Germany, June 25, 2011: Traffic accident involving a truck carrying hazardous waste caused by an error on the part of the driver. Minimal product leakage from waste containers, therefore no environmental pollution, but around 300 liters of diesel leaked from the vehicle's fuel tank.	no
Bayer CropScience, Dormagen, Germany, October 25, 2011: A truck carrying Bayer CropScience products was involved in a collision at the end of a traffic jam. No environmental pollution.	no

* The regrettable fatalities mentioned in the table did not involve Bayer employees but employees of various transport carriers who were transporting Bayer products at the time of the accident in question.

Social Commitment

Targets 2015

Social Commitment

- Focus our global commitment further on scientific education, fostering talent, cutting-edge research, health care and, in Germany, additionally on recreational, youth and disabled sports

"Simply Soccer" *Together with the German Soccer Federation (DFB) Bayer supports schoolchildren with mental and learning disabilities and helps them gain access to club-level soccer. At the same time, the participants' contact with children who do not have disabilities promotes mutual understanding. The "Germany – Land of Ideas" initiative organized by the German government and German industry honored this program as one of the "Selected Landmarks 2012," thus marking it out as one of the most pioneering ideas in the country.*

Social commitment is an established part of Bayer's sustainability strategy and corporate policy. We consider ourselves part of society and see our commitment as living up to the role of a good corporate citizen. We view the promotion of worthy causes in the areas of education, health care, environment, sports and culture as a long-term investment in society's future viability and as a contribution to a positive business environment.

A large company like Bayer has many ways of contributing to society. Its activities focus first and foremost on generating industrial added value, thereby creating jobs, stimulating purchasing power through wages and salaries and boosting public finances by paying taxes. At the same time, as a company that thrives on innovation, Bayer considers it essential to look to the future. In the areas of society that are of relevance to us, we must help create the foundation to ensure that our business remains sustainable and futureproof in the long term. With a voluntary social commitment that is not geared toward direct or material benefits, we make a contribution to society and public welfare that ultimately pays dividends for our company, too.

Our commitment focuses on four clearly outlined areas: education and research, environment and nature, health and social needs, and sports and culture. In many parts of the world, we promote education opportunities for the next generation, focus on improving social conditions and health care, raise awareness of the judicious use of natural resources and make major contributions to social interaction through recreational sports and cultural projects.

Organization and steering

The Bayer Group's social commitment is shaped by our three foundations [146]: the research-oriented Bayer Science & Education Foundation, the Bayer Cares Foundation, our foundation for the promotion of independent social initiatives, and the U.S.-based Bayer USA Foundation. Our subgroups and national companies also run their own projects. In 2011 Bayer set aside around €54 million (previous year €57 million) for its social commitment activities [147]. Table 35.

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The Foundation & Donations Management Department within the Corporate Office of Bayer AG is responsible for strategically aligning our social commitment, coordinating the budget and conducting the related monitoring and reporting activities.

The selection criteria for our provision of support are innovation capability, a sustainable effect and efficient project implementation. We focus on countries in which Bayer is represented and on issues that are of relevance to our subgroups and their areas of business, because it is here that we can offer not just financial support but also the involvement of our employees and our technical and commercial expertise. All project sponsoring is subject to the provisions of a Group-wide directive that establishes a framework for its content-related and strategic alignment, as well as for the proper handling of our funds.

In 2012 we intend to keep the funds earmarked for social commitment on a par with the prior year level and conduct a systematic impact study worldwide.

Target 2015

In the future, we plan to further internationalize our activities, base our scholarship schemes and social programs even more closely on the company's mission and develop our portfolio step-by-step by

changing how we use our resources. We want to allocate our funds on a more multinational basis, focusing on core areas closely associated with our business, and sponsor programs that strictly support our business strategy. For example, we plan to redouble our efforts for social innovations in health care and education and link the scholarship programs we finance more closely with our talent management program. Our plans for the immediate future are rounded off by the continuous improvement of our operational management processes, e.g. by enhancing our approval and recording processes with IT systems.

Our social commitment supports our business objectives by enabling us to achieve brand awareness among target groups outside our narrower customer base. This includes, for example, a positive media response to our activities in the international business press. Our science competitions draw the attention of young academics to Bayer, some of whom may be suitable as future employees. Our activities also encourage our employees to identify with the company.

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Education and research

For all societies, education is a vital factor in achieving sustainable prosperity. As a company that undertakes intensive research work, it is essential for Bayer to have highly trained employees and to be represented in locations that support education and research. This is why Bayer supports education initiatives in our social environment that extend beyond the company's boundaries. We hope that, in doing so, we will recruit new young talent in the long term and raise society's acceptance of technology as a whole.

150 BAYER WEB

The funding programs of the Bayer Science & Education Foundation cover the entire scientific training and career path. In 2011 the foundation approved total funding of about €1.2 million for dedicated school students, innovative school projects, ambitious trainees, exceptional university students, outstanding young scientists and leading researchers.

151 BAYER WEB

35 Social commitment

	In € million 2010	Share of total 2010	In € million 2011	Share of total 2011
Total	56.7	100	54.3	100
Education and research	6.6	12	7.5	13.8
Health and social needs	26.0	46	24.2	44.6
Environment and nature	2.9	5	2.5	4.6
Sports and culture	21.1	37	20.1	37.1

* Discrepancies in the addition are due to rounding differences.

In 2011 the foundation added a further 52 teaching projects to its school funding program in the communities near Bayer's German sites, bringing total funding for such projects to some €462,000. As part of Bayer's support program for university and school students, around €237,000 was pledged in scholarships for 49 young people to study abroad. The foundation also made available a total of €179,000 to enable international young scientists to attend the Nobel Prize laureate meeting in Lindau, Germany, and to provide Bayer scholarships under the government's "Germany Scholarships" program. In total, the foundation entered into sponsorship agreements with 22 top universities to support 100 students.

Alongside these sponsorship activities, our Bayer student laboratories (BayLabs) [148] are designed to improve science teaching and help support the promotion of scientific expertise. The "Making Science Make Sense" [149] program founded in the United States pursues similar goals. Due to the success of this program in the United States, Bayer has launched similar initiatives in a total of 14 countries on four continents, with Poland, Switzerland and Turkey joining the network of participating countries in 2011.

Progress in fundamental and industrial research is the company's capital for the future. That is why the Bayer Science & Education Foundation recognizes outstanding research achievements with scientific awards [150]. More information is available on the internet.

Health and social needs

Bayer demonstrates an active commitment to improving health services and social conditions in many regions of the world, thereby promoting stability in the communities around our sites and helping to solve global health challenges.

The support provided by the Bayer Cares Foundation for volunteering projects helps improve living conditions in the communities in which Bayer operates, while its Aspirin Social Award [151] – with a prize fund of €35,000 – promotes innovative, nonprofit social projects in the health care sector.

The Bayer Cares Foundation spent a total of roughly €126,000 in 2011 to support 40 charity projects in the communities near the company's sites in Germany. In addition, the Bayer Volunteering Program was launched in 13 countries of Central and Latin America based on the successful German model, with total funding of €55,000 per year. In this way the foundation is rewarding voluntary efforts by Bayer employees and other citizens who dedicate their free time to improving social conditions in their communities.

Disaster aid is another focal point of the Bayer Cares Foundation. While the company provides

areas hit by natural disasters with immediate aid in the form of donations of money and goods, the foundation supports sustainable reconstruction projects to help people who find themselves in acute hardship. The foundation initiated a Group-wide appeal to help the victims of the earthquake and subsequent tsunami in Japan, to which employees from 20 countries responded with total donations exceeding €300,000. Bayer headquarters and the Japanese subsidiary topped this up to €700,000. Bayer is using this amount to support the relief organization Ashinaga [152] in building a care and education center for children who live in the affected region and lost their parents as a result of the disaster. In addition, the company donated €880,000 to the Japanese Red Cross and, via Bayer HealthCare, medicines worth €367,000 to the Japanese health authorities immediately after the disaster. In 2011 we also provided emergency relief and reconstruction aid totaling around €680,000 for flood victims in Australia, Brazil, Cambodia, New Zealand, Thailand and the Philippines and to famine victims in eastern Africa among other recipients.

As part of its ongoing aid programs, Bayer HealthCare again supported the World Health Organization (WHO) in 2011 in the fight against neglected tropical diseases and multiresistant tuberculosis in China. More information can be found on page 14ff.

Environment and nature

The company as a whole attaches great importance to environmental protection and the judicious use of natural resources. Young people worldwide play an important role in sustainable development. Those actively involved in environmental protection at a young age today could well be the decision-makers of tomorrow. One thing is certain – they will all be affected by the consequences of how we handle natural resources today. This is why Bayer's social commitment toward the environment and nature is designed first and foremost to raise awareness of environmental protection among young people and encourage their development.

As part of our global cooperation with the United Nations Environment Programme (UNEP) [156], we organized again a dozen environmental projects for young people and children in 2011. These activities centered on the International Children's Conference on the Environment in Bandung, Indonesia, attended by some 1,400 young people from 100 countries, the theme of which was "Reshaping Our Future Through Green Economy and Sustainable Lifestyles." As part of the Bayer Young Environmental Envoy Program, a total of about 50 young people from 18 countries took part in a week-long study trip to Germany to learn more about environmental protection. Once again in 2011, the sponsorship budget for the UNEP cooperation was set at around €1.2 million. Thanks to its particular popularity in China, the annual UNEP children's painting competition received a record 4 million entries from 99 countries in 2011. The subject for the 2011 contest was "Life in the Forests."

In 2011, as part of the Bayer Climate Program, the Bayer Science & Education Foundation once more awarded scholarships enabling dedicated young people with an interest in science from Germany and the United States to attend the Bayer Sustainability Camp in Pittsburgh, United States.

152 WWW

We also supported sponsorship projects in 2011 aimed at raising environmental awareness among children in communities around the Bayer sites. Bayer Australia joined forces with the Commonwealth Scientific and Research Organisation (CSIRO) to sponsor a school education program on climate change known as "Carbon Kids" [153], while Bayer in Brazil is implementing the "Escola Verde" project at its Belford Roxo site.

153 BAYER WEB

Sports and culture

For over 100 years Bayer has been running various initiatives and clubs – originally designed with its workforce in mind – to help enhance the attractiveness of its sites to employees and citizens alike. Our involvement in professional soccer is not part of our social sports sponsorship activities but plays a role in the Group's image advertising.

Bayer is restructuring its sports sponsorship [154] in the communities around its Lower Rhine sites in Germany and will gradually shift its focus to six large clubs by 2015. These clubs will receive a total of some €13 million annually for activities in the areas of recreational, youth and disabled sports.

154 BAYER WEB

Another seven clubs have joined the "Simply Soccer" [155] initiative that was founded in 2010 in cooperation with the German Soccer Federation (DFB) as part of Bayer's social commitment with the aim of promoting participation in the sport by schoolchildren with mental and learning disabilities. As a result, some 200 girls and boys with mental or learning disabilities regularly played soccer in 13 ordinary sports clubs in 2011. For many years Bayer has also supported a soccer school for children from socially disadvantaged families in areas close to the Belford Roxo site in Brazil. To take part in training, children must be able to prove that they attend school and are obtaining good grades.

155 BAYER WEB

156 BAYER WEB

Our commitment to arts and culture [157] is evidenced by the existence of 18 dedicated clubs in Germany alone, some of which are more than 100 years old. The company's cultural activities also include high-quality artistic programs with partner organizations in Leverkusen and Berlin as well as independent initiatives put in place by numerous national companies.

157 BAYER WEB

Reporting Principles

Our Sustainable Development Report provides clear and concise information on all issues that we and our stakeholders consider to be of relevance for sustainability. Our reporting meets the requirements established in the internationally recognized G3.1 guidelines of the Global Reporting Initiative (GRI) and covers all financial and non-financial indicators corresponding to GRI level A+. Our reporting is also based on the content of the 10 principles of the UN Global Compact (UNGC), on the Blueprint for Corporate Sustainability Leadership, and on OECD guidelines [158].

158 WWW

By transparently communicating our corporate responsibility to pursue sustainable development and by comprehensively reporting according to the highest standard of the GRI (A+), we meet the requirements of the German Sustainability Code [159].

159 WWW

You can find a summarized GRI index with reference to the corresponding UNGC principles inside the back cover. A comprehensive overview of the GRI indicators [160] and our progress in implementing the 10 UNGC [161] principles at the Advanced Level and additional aspects according to the Blueprint for Corporate Sustainability Leadership can be found on the internet.

160 BAYER WEB

161 BAYER WEB

When selecting and measuring indicators, we also took recommendations by the following into consideration: World Business Council for Sustainable Development (WBCSD), Greenhouse Gas Protocol (GHG Protocol), European Chemical Industry Council (Conseil Européen de l'Industrie Chimique, CEFIC) [162], Society of Investment Professionals in Germany (Deutsche Vereinigung für Finanzanalyse und Asset Management, DVFA) [163] in conjunction with the European Federation of Financial Analysts Societies (EFFAS) [164] for the reporting of non-financial indicators.

162 WWW

163 WWW

164 WWW

Recording our sustainability indicators

Transparent reporting is based on the acquisition of valid and plausible data. All HSE (health, safety and environmental protection) performance indicators for the Group are recorded in BaySIS, our Group-wide, site-based information system. The data undergo plausibility checks and cross-checks to ensure a high level of data integrity. The HSE data cover all companies in which we have a holding of at least 50 percent. The performance indicators of these companies are fully consolidated regardless of Bayer's share in them.

Data on occupational injuries, transport accidents and environmental incidents are captured worldwide at all sites of subgroups and service companies. Environmentally relevant indicators are recorded at all (production) sites.

We use various other information systems to gather HR performance indicators and social data worldwide, such as ProKon, the Global HR Productive System and the Human Resources Controlling Tool reporting database.

The reported indicators are rounded in accordance with standard commercial practice. In some cases, the sum of the figures given in this report may not precisely equal the stated totals and percentages may not be exact due to rounding.

We register the data of all relevant organizational units and companies worldwide that fall within the scope of the Bayer Group's consolidated financial statements. The following information on the reporting group applies to all indicators with the exception of greenhouse gas emissions: the years 2007 to 2011 are shown as continuing operations. The Wolff Walsrode and H.C. Starck sites and the Diagnostics Division are no longer included in the reporting group.

The auditing company Ernst & Young reviewed the data capture process and statements made in the entire Sustainable Development Report, both the printed version and the additional online content, to verify that they are consistent, appropriate and plausible (see page 69f.). Furthermore, on-site visits were made to 10 reporting objects in Germany, Finland, France, India, Italy and the United States. During these visits, random checks were made on the gathering and reporting of HSE data.

ERNST & YOUNG
Quality In Everything We Do

To the Management Board of Bayer AG, Leverkusen

Our engagement

We have been engaged to perform a limited assurance engagement on all parts of the Bayer Sustainable Development Report (hereinafter: the report) for the reporting period from January 1, 2011 to December 31, 2011. The report is published both as a printable version and as an online version on Bayer's web presence www.sustainability2011.bayer.com and www.nachhaltigkeit2011.bayer.de respectively.

Limitations of our engagement

Our engagement is exclusively limited to the German and English printable version as well as to the German and English online version on Bayer's web presence www.sustainability2011.bayer.com and www.nachhaltigkeit2011.bayer.de respectively. Any data or links that refer to sections beyond these websites were not part of our limited assurance. Our engagement also did not include any prospective statements or statements from external experts on pages 11, 14, 18 and 20 in the printable version and on the online version respectively.

Criteria

We assessed the report against the criteria set out in the Sustainability Reporting Guidelines Vol. 3.1 issued by the Global Reporting Initiative and the reporting principles presented on the front flap of the report. We believe that these criteria are suitable for our assurance engagement.

Responsibility of the Management Board of Bayer AG

The Management Board of Bayer AG is responsible for the preparation and the content of the report in accordance with the above-mentioned criteria. This responsibility includes the design, implementation and maintenance of internal controls for the preparation of a report that is free from material misstatements, in accordance with the above criteria and based on suitable methods for gathering source data.

Our responsibility

Our responsibility is to issue an assurance report on the report based on our work performed. Our responsibility in performing our assurance activities is to the management of Bayer AG only and in accordance with the terms of reference agreed with them.

We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000. This standard requires that we comply with our professional duties and plan and perform the assurance engagement to obtain a limited level of assurance to preclude that the report is not in accordance, in material respects, with the aforementioned reporting principles and criteria. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement.

We performed the engagement in accordance with the independence requirements of the IFAC Code of Ethics for Professional Accountants.

Procedures

Within the scope of our engagement, we requested evidence on a sample basis based on risk and materiality criteria to obtain a limited level of assurance on the compliance of the report with the reporting principles and criteria. The nature and scope of our work was based on our professional judgment and we have performed all the procedures deemed necessary to provide a basis for our conclusions. The performance of our engagement mainly involved the following work:

- Assessment of the suitability of the underlying criteria and their consistent application.
- Inquiries of employees responsible for data capture and preparation of the Sustainable Development Report designed to assess the sustainable development reporting system, the data capture and compilation methods as well as internal controls to the extent relevant for a review of the Sustainable Development Report.
- Inspection of the relevant documents and systems for gathering, analyzing and aggregating data from the areas Health, Safety & Environment (HSE) and Human Resources in the reporting period as well as tests on a sample basis.
- Inspection of the relevant documents and systems for determining and calculating direct and indirect CO_2 emissions data in accordance with the internationally acknowledged Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol) in the areas Scope 1 and Scope 2.
- Analytical considerations at Group level, subgroup level and the level of significant reporting units with regard to analysis and aggregation of data in the preparation of the report.
- Inquiries and inspection of documents on a sample basis relating to the collection and reporting of HSE data during site visits for the following 10 reporting units: Bayer CropScience Kansas City (United States of America), Bayer CropScience Roussillon (France), Bayer CropScience Vapi (India), Bayer HealthCare Garbagnate (Italy), Bayer HealthCare Kiel (Germany), Bayer HealthCare Turku (Finland), Bayer MaterialScience Filago (Italy), Bayer MaterialScience Darmstadt/Weiterstadt (Germany), Bayer Business Services Leverkusen (Germany), Currenta Krefeld-Uerdingen (Germany).
- Review of material qualitative statements in the report with regard to consistency and plausibility.

- Inquiries of employees from selected departments at the Group's headquarters, at subgroup level and the service companies and at the sites visited relating to significant qualitative statements made in the report as well as inspection of underlying documents.

- Review of selected press articles to ascertain whether they reflect company-specific topics of relevance for sustainable development considered in the report.

Our conclusion

Based on our procedures performed, nothing has come to our attention that causes us to believe that the printable version of Bayer's Sustainable Development Report 2011 and the online version on Bayer's web presence www.sustainability2011.bayer.com and www.nachhaltigkeit2011.bayer.de respectively are not presented fairly, in material respects, in accordance with the reporting principles and criteria.

Recommendations

Without qualifying our conclusion above, we recommend for the further development of Bayer's sustainability management and reporting the following:

- For Bayer, ensuring adequate nutrition for a steadily growing global population is one of the most challenging megatrends of the 21st century. The company is investing significantly in research and development to generate products and services that increase the sustainability and productivity of agriculture. We recommend the systematic implementation of the four elements of the growth strategy recently formulated for the Bayer CropScience subgroup and the company to actively seek transparent dialogue with the population and other stakeholders.

- Bayer assigns high priority to environmental protection and the conservation of natural resources. Material and energy efficiency in particular is an essential control factor that leads both to ecological and economic improvements. To make progress measurable, since 2010 Bayer has reported the degree of coverage of activities with HSE management systems at certified and/or validated sites by way of production volume and energy consumption. Owing to the heterogeneous corporate structure and range of products involved, we consider energy consumption to be the more meaningful parameter that better reflects the degree of coverage and thus recommend that it is the only one used in the future.

- One focus of the current strategic alignment of the Group is on growing markets, particularly in Asia. This increases the significance of sites that were previously less the focus of attention. To continue to ensure balanced reporting on sustainability issues we recommend the development of an information system that allows access to site-specific data.

Peter Nolden
Wirtschaftsprüfer
[German Public Auditor]

Annette Johne
Wirtschaftsprüferin
[German Public Auditor]

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Düsseldorf, May 28, 2012

Glossary

A

African sleeping sickness Infection caused by trypanosome parasites. These are single-cell parasites (protozoa) that are transmitted by tsetse fly bites.

ATM ("Access-to-medicine") indicates the performance of pharmaceutical companies in terms of promoting general access to vital drugs and improving knowledge of health issues.

B

BioScience Bayer CropScience business unit in which state-of-the-art breeding methods (including plant biotechnology) are used to develop crop seeds and plant traits for agricultural crops and vegetables with improved properties

C

Carbon nanotubes Microscopically small tube-shaped structures (molecular nanotubes) made of carbon

CDP (Carbon Disclosure Project) is an independent not-for-profit organization that works on behalf of analysts and investors to promote transparent reporting on greenhouse gas emissions and water usage by companies. The Carbon Disclosure Leadership Index (CDLI) has been published as part of the CDP since 2007. Criteria for the CDLI ranking comprise the level and quality of disclosure of climate-relevant data and reporting on long-term climate strategy, ambitious objectives and specific achievements in reducing greenhouse gas emissions. The Carbon Performance Leadership Index (CPLI) evaluates the efforts of around 500 large companies to cut their CO_2 emissions. In 2010 participants in the Carbon Disclosure Project (CDP) launched the CDP Water Disclosure Program.

Chagas Chagas (South American trypanosomiasis) is an infectious disease caused by parasites (*Trypanosoma cruzi*). It is transmitted to humans by the so-called assassin bug (Reduviidae).

COD (chemical oxygen demand) Measure of the total of all organic compounds in water, including compounds that are poorly degradable

Compliance

- Corporate compliance refers to compliance with statutory and company regulations on lawful and responsible conduct by the company, its employees and its management and supervisory bodies.
- Compliance with respect to drug safety comprises the observation of regulatory requirements in quality assurance and monitoring of the risk-benefit ratio in human and veterinary medicine.

Corporate Citizen Term denoting the status of a company as a responsible member of society. Corporate citizenship is often employed as a synonym for voluntary corporate social responsibility, a concept which enables companies to position themselves as "good citizens."

D

Diversity designates the variation within the workforce in terms of gender, origin, nationality, age, religion and physical incapacitation.

Dressing (seed dressing) Treatment of seeds with crop protection agents prior to sowing

E

Ecotoxicity Harmful effects that chemical substances, preparations or formulations have on living organisms, their population and the natural environment

EMAS (Eco Management and Audit Scheme), also known as E.U. Eco-Audit or Eco-Audit. This is an E.U. regulation. Introduction of EMAS is voluntary. Examples of organizations that can be validated under EMAS are industrial companies, service providers and administrative centers.

Energy consumption (calculated in petajoules) Unit of labor, energy and heat volume (1 joule = 1 watt x second = 0.2239 calories; 1 petajoule = 10^{15} joules)

ESG indicators ESG stands for Environment, Social, Governance. Indicators in these areas are playing an increasingly important role in assessing companies' achievements in the field of sustainability.

Essential Drug List As defined by the World Health Organization (WHO), this list details the drugs required to meet the most urgent needs of the population in terms of medical care. Within any health care system, these should be available in sufficient quantities, the correct dosage forms, good quality and at a price affordable to patients.

G

GHG Protocol The Greenhouse Gas Protocol is a standard for the recording and reporting of greenhouse gas emissions. The various standards summarized in the GHG Protocol were developed by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI). They cover direct and indirect greenhouse gas emissions and emissions relating to a company's value-added chains. Detailed definitions (Scope 1, 2, 3) can be found in the standards. The International Organization for Standardization (ISO) has based ISO 14064-I on the Corporate Standard of the Greenhouse Gas Protocol. The standards are recognized worldwide.

Green IT Efficiency-raising and resource-conserving measures in the information and communications technology sector for reducing greenhouse gas emissions

GRI (Global Reporting Initiative) A non-profit multistakeholder foundation created by CERES (Coalition of Environmentally Responsible Economies) and UNEP (United Nations Environment Programme) in the United States in 1997. In a participatory process, the GRI has developed a comprehensive framework for sustainability reporting that is used throughout the world. The reporting framework including the guidelines sets out the principles and indicators that organizations can use to measure their economic, environmental and social performance. The guidelines are continuously developed as part of multistakeholder processes.

H

Hybrid varieties High-yield seeds produced by crossing two pure, genetically different parent lines

I

IPCC (Intergovernmental Panel on Climate Change) Founded in 1998 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). The IPCC is tasked with researching and documenting the causes of climate change, its potential consequences for the environment, society and the economy and options for adapting to it and reducing it.

ISO 14001 International standard specifying requirements for environmental management systems

L

License to operate License where the focus is less on the law and more on the socially perceived legitimacy of business activities

M

Materiality Relevance of particular aspects of management in the context of corporate sustainability, with reference to the priority of particular topics that are frequently discussed in stakeholder dialogues. It is frequently represented in a materiality matrix.

Millennium Development Goals Representatives of 189 states agreed a Millennium Declaration in New York in September 2000. They committed themselves to a list of fundamental, binding objectives, including democratization, equal opportunities and environmental protection. A working group of representatives from the UN, the World Bank, the OECD and several NGOs developed a list of targets in 2001 for implementing the provisions of the UN Millennium Declaration. These eight targets, such as fighting poverty and hunger and improving health care for mothers, which are supposed to be achieved in 2015, were declared Millennium Development Goals.

N

Neglected tropical diseases (NTDs) A group of infectious diseases that occur mainly in tropical and subtropical countries and are often poverty-associated diseases. In endemic areas they can be extremely widespread and are usually caused by parasites, such diseases including African sleeping sickness, elephantiasis, bilharziosis, Chagas and dengue fever.

Nexus (Latin: connection, structure) refers in general terms to a reference framework, background and interdependency. A nexus perspective refers to an integrated overview of dependencies and correlations, for instance between levels of global demand for energy, food and water.

O

ODS – ozone-depleting substances Ozone-depleting substances include fluorochlorohydrocarbons, other fully halogenated fluorochlorohydrocarbons, halons, tetrachlorocarbon, 1,1,1-trichloroethane, methyl bromide, partially halogenated fluorobromohydrocarbons and partially halogenated fluorochlorohydrocarbons. The successive discontinuation of their use was resolved in 1987 by the Montreal Protocol.

OHSAS 18001 stands for Occupational Health and Safety Assessment Series, which contains a management system for occupational health and safety.

Open innovation approach This approach describes the optimization and opening up of the innovation processes of companies and thus the active strategic use of outside sources to expand one's own innovation potential.

P

Pharmacogenetics Subdiscipline of medicine that deals with the potential impact of hereditary factors on the effects of drug products

Phase I-III studies Phases in the development of a drug product. The active ingredient candidate is tested in healthy subjects (with the exception of oncology) in Phase I, and in sick patients in Phases II and III. The studies are bound to strict legal requirements and documentation obligations.

Precautionary principle Essential component of current environmental and health policy according to which impact on or damage to the environment or human health should be completely avoided or minimited in advance (despite incomplete knowledge). It thus serves the purpose of risk or hazard prevention.

Product stewardship The monitoring of a product over its entire life cycle as an integral element of activities that satisfy the principles of sustainable development and Responsible Care

R

Responsible Care (RC) initiative Voluntary global initiative by the chemical industry aimed at achieving continuous improvement in environmental protection, occupational health and safety, product stewardship, and the safety of sites and their immediate surroundings

3R principle ("Refinement-Reduction-Replacement") Scientific concept by the European Partnership for Alternative Approaches to Animal Testing (EPAA), in which Bayer is an active member. It is committed to developing alternative and supplementary methods in animal testing to protect animals and minimize their suffering.

S

Seed Treatment Application Center (STAC) STAC in Monheim is a center of expertise for seed treatment that offers consulting, technical services, support and training for customers.

Socially responsible investment This umbrella term covers very varied investment concepts, including strict sustainable investments that meet environmental, social and ethical criteria and responsible investments.

T

TDI (toluene-2,4-diisocyanate) Intermediate in plastics production

TOC (total organic carbon) Total volume of organically bound carbon in water

U

UN Global Compact (UNGC) This global pact represents an agreement between companies and the United Nations. It calls upon transnational companies to participate in sustainable globalization in a constructive, responsible manner. Participating companies have undertaken to engage in responsible business practices based on compliance with minimum social and ecological standards, and to document their company's commitment in this area. These standards have been encapsulated in 10 principles based on the areas of human rights, labor standards, environmental protection and anti-corruption. In 2011 the UNGC introduced the new platform "Corporate Sustainability Leadership - Global Compact LEAD." The participating companies are requested to implement the Blueprint for Corporate Sustainability Leadership, an extensive catalogue of measures.

UNEP The United Nations Environment Programme was founded in 1972 and is based in Nairobi, Kenya. UNEP is a suborgan of the UN General Assembly.

USAID (United States Agency for International Development) State-run agency for development aid in the United States

V

Vector control Methods for the avoidance or targeted control of organisms that transmit pathogens triggering infectious diseases. Possible vectors are blood-sucking insects such as the Anopheles mosquito, which can cause malaria in humans.

VOC (volatile organic compounds) Volatile organic compounds are gaseous chemicals that contribute to smog or ozone formation. These enter the environment primarily from production processes, waste incineration or fuel consumption.

W

WHO Class I The World Health Organization (WHO) divides crop protection agents into various hazard classes. Class 1 products are deemed to be extremely hazardous.

Global Reporting Initiative™

Statement
GRI Application Level Check

GRI hereby states that **Bayer AG** has presented its report "Sustainable Development Report 2011" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 16 May 2012

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative

A+ GRI REPORT GRI CHECKED

The "+" has been added to this Application Level because **Bayer AG** has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

***Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 8 May 2012. GRI explicitly excludes the statement being applied to any later changes to such material.*

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Financial Calendar

Q2 2012 Interim Report	July 31, 2012
Q3 2012 Interim Report	October 30, 2012
Annual Report 2012	February 28, 2013
Q1 2013 Interim Report	April 25, 2013
Annual Stockholders' Meeting 2013	April 26, 2013
Sustainable Development Report 2012	scheduled for May 2013

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Dialogue
If you have any comments or questions regarding our report, please send us an e-mail: sd@bayer.com

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Forward-looking statements
This Sustainable Development Report may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports, which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

Main risks from law suits
A detailed description of the main risks arising from the law suits beyond those cited in this report can be found in the Annual Report 2011.

UNGC principles	(Core) Indicators version GRI G3.1		Page reference and links
	1. Strategy and analysis		
1-10	**1.1**	Statement from the most senior decision-maker of the organization	3 (Foreword)
	1.2	Description of key impacts, risks, and opportunities	front cover (Targets 2015), 8-13, 24-27, 31f., M+CG 51
	2. Organizational Profile		
	2.1	Name of the organization	4
	2.2	Primary brands, products, and/or services	4, 6f., 39, 42, 45
	2.3	Operational structure of the organization	4
	2.4	Location of organization's headquarters	4
	2.5	Number of countries where the organization operates, and names of countries with major operations	front cover (world map), 6f.
	2.6	Nature of ownership and legal form	4f.
	2.7	Markets served	front cover (world map), 4, 6f.
	2.8	Scale of the reporting organization	front cover (Key Data), 5, 48; AR 154
	2.9	Significant changes during the reporting period	5
	2.10	Awards received in the reporting period	33; weblink 64; EM 126
	3. Report Parameters		
	3.1	Reporting period (eg, fiscal/calendar year) for information provided	front cover fiscal year 2011 (01.01.2011-31.12.2011)
	3.2	Date of most recent previous report (if any)	May 2011
	3.3	Reporting cycle (annual, biennial, etc.)	annually
	3.4	Contact point for questions regarding the report or its contents	back cover (masthead)
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1-10	**4.8**	Statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance	11, 24-26
	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of sustainability performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	11f., 25f.
	4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to sustainability	25f.; AR 102-107
7	**4.11**	Explanation if precautionary approach or principle is addressed	36; M+CG 51, I+P 72
1-10	**4.12**	Support of externally developed economic, environmental, and social charters, principles, or other initiatives	11, 15, 18, 24f., 28, 32, 36f.
	4.13	Principal memberships in associations in industry associations and/or national/international advocacy organizations	M+CG 53, S+FI 13; AR 280
1-10	**4.14**	List of stakeholder groups engaged by the organization	27f.; M+CG 53
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1-10	**4.17**	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded	front cover (Reporting Profile), 10-13; weblink 12
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7	**EC2**	Financial implications and other risks and opportunities due to climate change	10f., 20f., 27, 57; weblink 52
1, 6	**EC3**	Coverage of the organization's defined benefit plan obligations	front cover (Key Data), 49-50; AR 230-237
	EC4	Significant financial assistance received from government	35f.
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	31-33
6	**EC7**	Local hiring and proportion of senior management hired from the local community	50
	EC8	Infrastructure investments and services provided primarily for public benefit	29-31, 65ff.
7, 8, 9	**Environmental performance – Management approach**		front cover (Targets 2015), 11, 20, 22, 25, 55-60, 61f., 63; AR 63-65
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8, 9	**EN2**	Percentage of materials used that are recycled input materials	not reported; infos: 45, 55, 61
8	**EN3/4**	Direct and indirect energy consumption by primary energy source	56f.
7	**EN5**	Energy saved due to conservation and efficiency improvements	partially reported; 21, 56
8	**EN8**	Total water withdrawal by source	58, 59
	EN10	Percentage and total volume of water recycled and reused	59
8	**EN11**	Use of land in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	62; Eco 143
8	**EN12**	Significant impacts of activities, products, and services on biodiversity in protected areas	61f.; Eco 143
8, 9	**EN16**	Total direct and indirect greenhouse gas emissions by weight	56f.
8	**EN17**	Other relevant indirect greenhouse gas emissions by weight	57f.
7, 8, 9	**EN18**	Initiatives to reduce greenhouse gas emissions and reductions achieved	20f., 56f.
8	**EN19**	Emissions of ozone-depleting substances by weight	57
8	**EN20**	NOx, SOx, and other significant air emissions by type and weight	57
8	**EN21**	Total water discharge by quality and destination	59f.; Eco 140
8	**EN22**	Total weight of waste by type and disposal method	60f.
8	**EN23**	Total number and volume of significant spills	64
7, 8, 9	**EN26**	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	20-22, 36-46
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category	not reported
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	27; AR 260-262
1, 3, 6	**Social performance: Labor Practices and Decent Work – Management approach**		front cover (Targets 2015), 11, 47, 48, 50-53, 62f.
	LA1	Total workforce by employment type, employment contract, and region, broken down by gender	48, 51
6	**LA2**	Total number and rate of new employee hires and employee turnover by age group, gender, and region	partially reported; 48
1, 3	**LA4**	Percentage of employees covered by collective bargaining agreements	48
1, 3	**LA5**	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	48f.; M+CG 53
1	**LA7**	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender	partially reported; 53f.
	LA8	Prevention and risk-control programs in place regarding serious diseases	53f; Em 128,130,132, 133
	LA10	Average hours of training per year per employee by gender, and by employee category	not reported; info: 52f.
	LA11	Programs for skills management and lifelong learning that support the continued employability	52f.; Em 130
1, 6	**LA13**	Composition of governance bodies and breakdown of employees per category (gender, age group, minority group and other indicators)	partially reported; 48, 50f.; AR 271f.
1, 6	**LA14**	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	partially reported; 50f.
1, 6	**LA15**	Return to work and retention rates after parental leave, by gender	51
1-6	**Social performance: Human Rights – Management approach**		front cover (Targets 2015), 11, 13, 26, 28, 31-33, 47ff., 50
1-6	**HR1**	Significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening (percentage and total number)	31
1-6	**HR2**	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken	31f.
1-6	**HR3**	Employee training on human rights, including the percentage of employees trained	25, 31
1, 2, 6	**HR4**	Total number of incidents of discrimination and corrective actions taken	25f., 48, 50f.
1-5	**HR5-7**	Operations and significant suppliers: support of freedom of association and collective bargaining, abolition of child labor, elimination of all forms of forced or compulsory labor	31-33, 47f.
	HR11	Number of grievances related to human rights filed, addressed and resolved	partially reported; 26
10	**Social performance: Society – Management approach**		front cover (Targets 2015), 11, 25f., 28-31, 63f., M+CG 53, Eco 145
	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	28, 29-31, 65f.
10	**SO2**	Corruption: Percentage and total number of business units analyzed	not reported; info: 25f.
10	**SO3**	Corruption: Percentage of employees trained in anti-corruption	25f.
10	**SO4**	Actions taken in response to incidents of corruption	25f.; AR 260
10	**SO5**	Public policy positions and participation in public policy development and lobbying	28f.
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	28f.
	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	partially reported; AR 255f., 257, 259, 260, 262
	SO8	Monetary value of significant fines and sanctions for non-compliance with laws and regulations	27; AR 255-262
	SO9	Operations with significant potential or actual negative impacts on local communities	28, 29-31, 65f.
	S10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	28, 63f.; M+CG 53, Eco 145
1, 8	**Social performance: Product Responsibility – Management approach**		front cover (Targets 2015), 11, 25, 26, 35, 26ff., 40, 42, 45f., M+CG 53, I+P 82
1, 8	**PR1**	Product life cycle stages for which health and safety impacts are assessed and percentage of products subject to such procedures	36-38, 40f., 42f., 45f.
8	**PR3**	Type of product information required by procedures, and percentage of products subject to such information requirements	37, 40, 45f.; I+P 82, 108
10	**PR6**	Programs for adherence to laws, standards, and voluntary codes related to marketing communications	11, 26, 41
	PR9	Significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	27, 44f.; AR 255-257, 260-262

AR = Annual Report 2011
Blue links refer to additional online information
Online report chapters: S+FI = Strategy & Focus Issues, M+CG = Management & Corporate Governance, I+P = Innovation & Product Stewardship, Em = Employees, Eco = Ecology

Cover picture: Global access to health care is an important part of Bayer's sustainability strategy. Through its "Go West" program in China, Bayer has been committed to improving medical care for the population in the underdeveloped western part of the country since 2007. In cooperation with the Chinese government and local universities, Bayer organizes continuing education seminars for local physicians so that the rural population too can gain access to highly developed diagnosis techniques and efficient therapies. As part of the "Go West" program the young physician Xia Wang works at the County Hospital of Lin Tao in the Province of Gansu. She is learning a great deal about modern treatment methods and dealing with patients. This is knowledge that will later benefit her significantly.

SUSTAINABLE DEVELOPMENT REPORT

2011

ONLINE REPORT

In-depth information to supplement the printed report

Science For A Better Life

Strategy

5 **LIFE: our values**

Bayer's corporate culture is an important factor in the company's success. Central to this culture are our values: Leadership, Integrity, Flexibility and Efficiency – or LIFE for short. These provide us with guidance for our daily work as we seek solutions to the major challenges of our time, in line with our mission "Bayer: Science For A Better Life."

L – Be passionate for people and performance
- Show personal drive, inspire and motivate others
- Be accountable for actions and results, successes and failures
- Treat others fairly and with respect
- Give clear, candid and timely feedback
- Resolve conflicts constructively
- Create value for our stockholders, customers, employees and society

I – Be a role model
- Comply with laws, regulations and rules
- Trust others and build trustful relationships
- Be honest and reliable
- Listen attentively and communicate appropriately
- Act in a sustainable manner: balance short-term results with long-term requirements
- Protect people and the environment, ensure safety

F – Drive change actively
- Address trends at an early stage and adapt to future needs
- Challenge the status quo
- Think and act with customers in mind
- Seek out opportunities and take calculated risks
- Be open to new things
- Embrace lifelong learning

E – Manage resources optimally
- Focus on activities that create value
- Perform tasks simply and effectively
- Deliver with appropriate quality, speed and costs
- Speed up good decision-making
- Implement decisions systematically
- Work together to find better solutions

13 Memberships in initiatives and associations: global commitment to sustainability

Bayer is a member of numerous international initiatives and projects for sustainability and corporate social responsibility. This page provides a selection of our activities with a description and logo.

Bayer has long practiced the concept of Responsible Care. To achieve continuous improvement in the areas of health, safety and environmental protection, the company has been guided by the principles of the voluntary **Responsible Care® initiative** of the chemical and pharmaceutical industry since 1994 and by the **Responsible Care Global Charter**, which was last revised in 2006.

Bayer has been a member of the World Business Council for Sustainable Development **(WBCSD)** since 1997.

Bayer is a founding member of the United Nations Global Compact **(UNGC)** initiative that was established in 2000. The company supports the 10 principles of the UNGC by supporting the **"LEAD," "Caring for Climate"** and **"CEO Water Mandate"** initiatives.

Bayer was a co-founder of German industry's sustainable development forum **econsense** in 2000.

Bayer's partnership with the United Nations Environment Programme **(UNEP)**, which has existed since 2004, has set standards in public-private partnerships. Among the long-standing joint activities is the "Bayer Young Environmental Envoy in Partnership with UNEP" program involving young people from 18 countries on three continents.

Since 2008 Bayer has been involved with the **WEC** (World Environment Center), United States, an impartial, non-profit organization that drives sustainable development with support from companies. The company also cooperates with national governments, international organizations, universities and non-governmental organizations (NGOs).

In 2009 Bayer joined the **UNEP Climate Neutral Network**, which promotes industrial structures and societies with low CO_2 emissions. To help reduce greenhouse gas emissions from buildings worldwide, Bayer is also supporting the Sustainable Buildings and Climate Initiative of the U.N. Environment Programme **(SBCI)** as part of its EcoCommercial Building Program.

Bayer CropScience joined the global "New Vision for Agriculture" initiative of the **World Economic Forum (WEF)** in 2011. As part of this initiative, 27 companies from a highly diverse range of industries have joined forces with the goal of promoting the sustainable intensification of agriculture through an innovative partnership model involving public and private cooperations.

For more than 50 years, Bayer has supported family planning programs in over 130 countries, focusing on cooperation with private and public relief organizations such as the United Nations Population Fund **(UNFPA)** and the United States Agency for International Development **(USAID)**. In the fight against tuberculosis, Bayer is cooperating with the **Global Alliance for TB Drug Development**, a U.S. non-profit organization, to investigate whether the Bayer active ingredient moxifloxacin can help shorten treatment. Activities in the area of family planning also include educating teenagers on sexuality and health issues. In Uganda, for example, Bayer is cooperating with the **German Foundation for World Population (DSW)** in this field.

Our sustainability reporting is based on the guidelines of the **Global Reporting Initiative (GRI)**, which Bayer has been actively supporting as an organizational stakeholder since 2003.

17 Targets 2015: brief overview of status in 2011

Targets 2015*	Status 2011
Management & Corporate Governance	
Compliance ■ Extend compliance training to 100% of all Bayer managers	■ About 90% of all Bayer managers had participated in a compliance training course by the end of 2011.
Supplier management ■ Inform all suppliers with purchase-order-relevant volumes about the Bayer Supplier Code of Conduct ■ Assess the sustainability performance of suppliers that represent ≥75% of the total procurement volume and ≥75% of the procurement volume from risk areas ■ Annually audit the sustainability performance of at least 10% of the suppliers from risk areas or at least 15 suppliers	■ The Bayer Supplier Code of Conduct is a fixed element of our supplier selection and evaluation process, and is integrated as binding into our electronic ordering systems and contracts throughout the Group through a special clause. ■ In 2011 the supplier self-assessments covered 25% of the total procurement volume and 56% of the procurement volume in high-risk countries. In addition, 104 country-specific assessments were carried out in India. ■ Sustainability audits of 15 suppliers in four countries (China, Thailand, India and Japan) were conducted in cooperation with independent external auditors. In the year under review Bayer also conducted 205 audits of suppliers focusing on HSE (Health, Safety, Environmental Protection).
Innovation & Product Stewardship	
Research & development ■ Maintain or increase R&D spending in relation to sales	■ The company spent €2.9 billion on R&D in 2011. This was equivalent to 8.0% (2010: 8.7%) of sales.
Product stewardship ■ Roll out Global Product Strategy in another 10 countries with different languages	■ The Global Product Strategy (GPS) is rolled out via our BayCare platform. ■ Country sites with specific information are available for the United States, Canada, Mexico, Brazil and China in the respective national languages. ■ It is planned to expand the country sites to include the E.U. states (in English plus five other languages) and India (in English) in 2012.
Employees	
Diversity ■ Increase the proportion of female managerial staff to approaching 30%	■ Women accounted for 22% of employees in the senior management segment worldwide in 2011, one percentage point more than in the previous year. ■ To bundle our existing activities in the area of diversity and drive forward their strategic application, in 2011 we created the position of the Groupwide Global Head of Diversity & Inclusion.
Occupational safety (new target figure) ■ Reduce the number of occupational injuries with lost workdays ≤ 0.21 LTRIR**	■ With an LTRIR of 0.31, we already achieved in 2011 the target we set for 2015 of an LTRIR ~ 0.3, corresponding to 1.5 injuries per million hours worked resulting in at least one day's absence. ■ Therefore the new Group target figure for 2015 was lowered again.

Ecology	
Climate protection ■ Reduce specific greenhouse gas emissions in the Group by 35% (direct and indirect emissions in relation to manufactured sales volume in t) between 2005 and 2020	■ Specific greenhouse gas emissions declined from 1.09 metric tons CO_2 equivalents per metric ton of product in 2010 to 0.95 in 2011 (-12.8%) ■ Degree of target achievement since 2005: reduction of 22.1% ■ Target figure based on 2005 figures: 0.79 metric tons CO_2 equivalents per metric ton of product
Emissions ■ Reduce other relevant emissions (ozone-depleting substances (ODS) -70%, volatile organic compounds (VOC) -50%)	■ Emissions of ozone-depleting substances (ODS) fell by around 21.5% to 16.3 metric tons in 2011 (target figure based on 2010 figures: 6.2 metric tons p.a.) ■ The volume of volatile organic compounds (VOC) rose by 0.9% compared with the previous year to 0.2457 kg per metric ton of sales product (target figure based on 2010 figures: 0.1218 kg per metric ton of sales product).
Waste ■ Reduce specific hazardous waste from production to 2.5% in relation to manufactured sales volume	■ The specific volume of hazardous production waste increased to 3.23% in 2011.
Process and plant safety ■ Implement the Bayer-wide initiative to increase process and plant safety; dedicated process and plant safety training for around 26,000 employees worldwide by the end of 2012	■ In 2011 around 3,700 employees completed the training. ■ Originally, the target was to train 40,000 employees. The number of participants given in 2009 was a rough estimate. At the start of the project the number of employees needing training was reduced to around 26,000. ■ First, the experts in process and plant safety were trained.
Social Commitment	
■ Focus our global commitment further on scientific education, fostering talent, cutting-edge research, health care and, in Germany, additionally on recreational, youth and disabled sports	■ In 2011 Bayer set aside around €54 million for its social commitment activities. In 2012 we intend to keep the funds earmarked for social commitment on a par with the prior year level. ■ The focus in project selection is on countries in which Bayer is represented and on issues that are of relevance to our subgroups and their areas of business.

* Unless indicated otherwise
** Lost Time Recordable Incident Rate = the number of reported occupational injuries and work-related illnesses resulting in at least one or more days lost per 200,000 hours worked

18 Development of sustainability at Bayer

Bayer maintained programs and measures already in the 1970s and 1980s that were focused on responsible conduct as a goal of the company's business policy. This was reflected, for example, in our program "Bayer: research for a clean environment," in our commitment to the Responsible Care® initiative and in our agreements to safeguard employment. We published our first Environment and Social Report in 1976 and our first international Environmental Protection Report 16 years later. In 2000 Bayer became a founding member of the United Nations Global Compact. This basic understanding is integral to our company values and principles to this day. This is reflected in our mission "Bayer: Science For A Better Life" and in our LIFE values.

Our path to the development of sustainability in the company

	Strategic steps	Projects and measures
From 2011 on-ward	Systematic integration of sustainability into businesses, functions and regions ■ New growth strategy for sustainable agriculture ■ Further development and implementation of the Access to Medicine strategy 2012: Responsible Marketing & Sales Policy 2012: New target for the reduction of industrial injuries 2012: Updating of Anti-Corruption Procedure 2012: Implementation of the CSO (Chief Sustainability Officer) function on the Board of Management 2011: Water Position 2011: Directive on Integrity & Responsibility in Communications and Marketing	■ Rollout and implementation of the sustainability targets for 2015, including new and ambitious climate goals ■ Expansion of Sustainability Program ■ Implementation of the process and plant safety initiative ■ 2011/12: Revision of the materiality matrix ■ 2011/12: Pilot projects: Stakeholder Check ■ Support for the UNGC's LEAD initiative since 2011 ■ 2012: Third party due diligence project launched ■ 2011: Introduction of Group Compliance Office ■ 2011: Co-founder of supply chain initiative in the chemical industry
2008 – 2010	2010: Completion of the Program of Objectives for 2006–2010 2010: Directive on the Management of Compliance Incidents 2010: Procedure for recording and reporting greenhouse gas emissions at Bayer 2009: Bayer Sustainability Program 2009: Directives on process and plant safety, occupational safety and occupational health 2009: Code of Conduct for Responsible Lobbying 2008: Corporate Compliance Policy 2008: Expansion of the strategy for sustainability in procurement	2010: Pilot projects for the Resource Efficiency Check 2010: Introduction of the STRUCTese™ energy efficiency management system 2010: Rollout of the Sustainability Check 2009: Launch of the worldwide implementation of the Bayer Supplier Code of Conduct 2009: Implementation of the Bayer Climate Check Since 2008: Support of the "UN Global Compact"-initiatives: "CEO Water Mandate" and "Caring for Climate" 2008: Implementation of REACH 2008: Inaugural presentation of the Bayer Climate Award
2006 – 2007	2007: Launch of the Bayer Climate Program 2006: Sustainable Development Policy 2006: Signing of the Responsible Care Global Charter	2007: Bayer positions on the themes of human rights, biomonitoring, the responsible use of gene technology and nanotechnology 2007: Bayer Code of Good Practice on Nanomaterials Since 2006: "Triple-i" innovation initiative
2003 – 2005	2005: Directive on Health, Safety, Environment and Quality (HSEQ) Audits 2004: Formulation of a mission statement, values and leadership principles for the Bayer Group 2003: Development of a strategy for sustainable agriculture	2005: Launch of systematic initiatives to reduce child labor in India 2004: Sustainability committees anchored in the Bayer Group organization 2004: Organizational stakeholder in the Global Reporting Initiative (GRI) 2003: Definition of key performance indicators for health, safety and environmental protection (HSE)

Focus Issue: Health

23 Education program with the German Foundation for World Population (DSW) in Uganda

In tandem with the German Foundation for World Population (DSW), Bayer is actively involved in educational projects in Uganda to improve the sexual and reproductive health of young people. The joint prevention program provides sex education to young people aged between 10 and 14 to ensure they act responsibly and avoid health risks in their first sexual experiences.

The key component of the project "Improving the Sexual and Reproductive Health of Young Adolescents in Uganda" is a comprehensive, age-appropriate educational initiative in schools and communities. An important element of the project is the involvement of the young people's social environment. This helps improve their situation in the long term. The production of a method-based handbook ensures the sustainability of the concept and enables it to be applied to other regions and countries.

In 2011 alone over 6,000 10- to 14-year-olds were given important information on family planning and the prevention of HIV/AIDS as part of the Young Adolescents Project (YAP). And more than 1,000 parents were supported with information on parenting skills and children's rights.

A study has shown that the know-how and behavior of the young people, their parents and teachers improved considerably within a year as a result of these YAP projects.

- Knowledge of sexually transmitted diseases and family planning among students at participating schools has risen significantly.
- Over 90 percent of students were able to name more than two ways in which HIV/AIDS is transmitted.
- Almost 70 percent of students have extensive knowledge of family planning matters today. Before the program started, less than 20 percent of students were able to name more than two methods of family planning.
- Students are now in a position to make conscious and informed decisions about family planning, with almost 90 percent indicating that they want four children or fewer.
- More than 90 percent of students said they would like to have their first child at 21 years of age or older.

As part of the project, an innovative guide to sex education for girls and boys aged between 10 and 14 was launched in September 2011. This guide contains a collection of successes and experiences gathered from the YAP project. So far, 850 copies have been distributed to partner organizations.

27 "Go West"

Our "Go West" project supports continuing education for physicians from rural regions in the underdeveloped western part of China. We align our activities to the stated goal of the Chinese Health Ministry to improve medical care in this region, partly through better training for medical personnel. In cooperation with the Chinese government and local authorities and hospitals, Bayer organizes seminars for local physicians and hospital directors in order to improve diagnosis, treatment and patient counseling.

In the first phase of the project from 2007 to the end of 2011, 83 three-month further education courses in the areas of internal medicine, general surgery, gynecology and obstetrics, pediatrics, laboratory diagnostics and radiology were offered in 18 provinces and were attended by 3,500 physicians and around 3,100 hospital staff.

In June 2011 Bayer and the Chinese Health Ministry agreed to extend their project cooperation by a further five years through 2017. Bayer plans to invest a further RMB 20 million (approximately €2.4 million) in the "Go West" project for ongoing medical education.

Focus Issue: Climate

40 Dream Production

Bayer is taking a new direction in the production of high-quality plastics with the help of carbon dioxide (CO_2) from the energy sector. A pilot plant has been taken on stream at the Chempark Leverkusen site to trial the new process on an industrial scale. The plant produces a chemical precursor into which CO_2 is incorporated. This substance is processed into polyurethanes that are used in many everyday items. As a result, CO_2 – a waste gas and contributor to climate change – can now be recycled and used as a raw material and substitute for petroleum, which has until now been the chemical sector's main source of the key element carbon. The innovative process is the outcome of the "Dream Production" project – a collaboration between industry and the scientific community. Bayer is working on the project with the energy company RWE, which supplies the CO_2 used in the process. Other project partners are RWTH Aachen University and the CAT Catalytic Center, which is run jointly by the university and Bayer. Its tasks include testing the compatibility of the catalyst with CO_2 from the power plant. RWTH Aachen University is subjecting the new process to a comprehensive ecoefficiency analysis and comparing it with conventional processes and products. The "Dream Production" project is receiving federal funding of some €5 million. Including the investment by Bayer and RWE, the total budget amounts to some €9 million. If the test phase yields positive results, the industrial production of plastics based on CO_2 is scheduled to start in 2015.

This process was only made possible because Bayer researchers found a suitable catalyst, for which experts had been searching for four decades. In the forerunner "Dream Reactions" project, which was also funded by the German government, Bayer researchers working with scientists from the CAT Catalytic Center developed this catalyst to enable the efficient reaction of CO_2, which is otherwise normally slow to react.

Awards for Dream Production

The "Dream Production" research project was among the top three candidates in the "Germany's Most Sustainable Initiatives" category of the German Sustainability Award in November 2011. The judging panel acknowledged Bayer's commitment to the "energy-efficient, conservational and environmentally compatible use of CO_2." The use of the greenhouse gas in a production process is a "dream" that Bayer is pursuing with a "viable prospect of success" according to the citation.

The "Dream Production" project is also one of Germany's most promising ideas for the future. The research initiative is one of the award winners in the 2012 "365 Landmarks in the Land of Ideas" competition. In May the pilot plant in Leverkusen was chosen as one of the "Selected Landmarks 2012."

47 **Integration of sustainability**

Integration of sustainability at Bayer

Group level: General

Bayer mission: "Science For A Better Life"

LIFE values and leadership principles

Group level: Sustainability

Sustainability strategy

Steering

- Member of the Group Management Board responsible for Technology, Innovation and Sustainability
- Environment & Sustainability Department in the Corporate Center
- Supported by bodies such as
  - Sustainable Development Committee
  - HSEQ Committee
  - Bayer Safety Council

Relevant positions such as

- Sustainable Development
- Human Rights
- Corporate Compliance
- Responsible Marketing & Sales
- Responsible Lobbying

Measurement and documentation of the sustainability performance

- Sustainability Program
- Targets/Indicators
- Sustainability reporting with assurance

Commitments

- UN Global Compact
- Responsible Care
- WBCSD*
- Global Reporting Initiative (GRI)

Subgroup and service company level (including regions and countries)

- **Policies, objectives and strategies**
- **HSEQ management systems and audits**
- **Responsible Care programs and initiatives**
- **Opportunity and risk management**

* World Business Council for Sustainable Development

Management & Corporate Governance

51 Risk management in the subgroups

All subgroups continued to implement their risk management processes in 2011.

Bayer HealthCare

In 2009 Bayer HealthCare published its Directive on Enterprise Risk Management, which governs the risk management process for all production operations. The company has introduced a uniform global procedure to ensure timely identification and foresighted management of risks. The goal is to minimize the impact of potential risk factors on the supply of our products to patients and to limit the possible negative implications for the company.

Potential risks are identified and evaluated using a uniform method at all of Bayer HealthCare's production sites and action is taken where necessary. In addition to production-related risks, the procedure takes account of procurement and health, safety, environmental protection and quality (HSEQ) risks and those caused by natural disasters. Risks can be depicted in a comparable and transparent way thanks to the globally standardized method. This in turn improves the decision-making basis for possible countermeasures.

Bayer HealthCare is also aware of its responsibility to patients in the event of global crises. In particular, that includes being prepared for pandemics. Bayer HealthCare has therefore defined specific global and local contingency plans. Both production and other areas of the company have their own risk management systems.

Bayer CropScience

Bayer CropScience takes a comprehensive approach to risk management, which it regards as an integral part of its organizational structure and planning processes. Risk management at Bayer CropScience is based on four pillars: first, we focus on external compliance, in other words ensuring we comply with the applicable laws, respect effective patent rights and do not cause any hazards in the area of HSEQ. Second, we endeavor to minimize operational and strategic risks by continually monitoring our strategy. Third, we always take account of risks resulting from events or developments (event risks) both outside and inside the company that could jeopardize a sustainable increase in the value of the company. The fourth pillar of risk management at Bayer CropScience focuses on internal compliance, which is monitored with the aid of internal audits. In addition, incident command systems are generally used to minimize our financial risks.

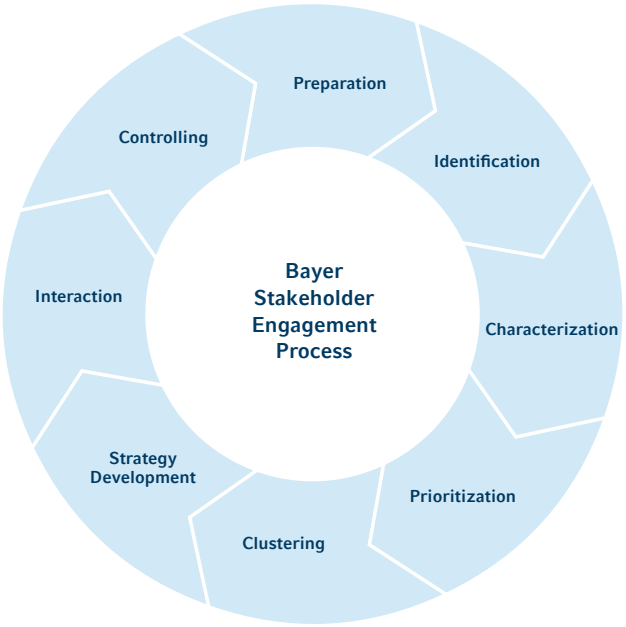
Bayer MaterialScience

The management system at Bayer MaterialScience breaks down risks into four categories: process and organizational risks, event risks, planning and market risks, and legal risks. In the first category, we have introduced an internal control system. To manage event risks, Bayer MaterialScience has developed a system in keeping with the German Stock Corporation Act (AktG) to ensure timely identification of risks. Risk management is the responsibility of an "overall risk coordinator," supported by a number of "functional risk coordinators" and appropriate experts. Their task is to identify and evaluate risks and document them where appropriate in BayRisk, Bayer's Group-wide database. Planning and market risks are addressed centrally by the Bayer Group. The key tools used for this are strategy and portfolio management and Group planning and auditing conferences. Bayer MaterialScience minimizes legal risks principally through systematic implementation of its Corporate Governance Policy.

53 Stakeholder dialogue

As an internationally operating company, we know that social acceptance of business activities cannot be achieved without communication with stakeholders in transparent and open dialogue. To create a more systematic foundation for our stakeholder integration approaches, we worked together with Leipzig Commercial College (HHL) to produce a manual nearly two years ago that describes Bayer's stakeholder engagement process. The process demonstrates how – throughout the Group and on a project-by-project basis – we can identify stakeholder groups, catalogue their expectations and steer dialogue with them. With this clear procedure, we want to develop sustainability activities that are supported by a more intensively partnership-based dialogue.

The steps of the stakeholder engagement process



We seek targeted dialogue with stakeholders from parts of society that are directly impacted by our business activity (Group A in the table) and which for their part can directly or indirectly exert influence on our business activity (Group B).

A. Stakeholders who are impacted by our business activity	■ Employees ■ Customers ■ Suppliers ■ Investors ■ Neighbors/Residents
B. Stakeholders who can impact our business activity	■ Employees ■ Customers ■ Suppliers ■ Neighbors/Residents ■ Investors ■ Politicians/Administration ■ Schools/Scientific community/Research ■ Non-governmental organizations (NGOs)

The interests of our stakeholders are not always identical with those of the company. Rather, they occasionally harbor a certain potential for conflict against the background of which Bayer must find flexibility in decision-making. Our dialogue with our stakeholders is aimed at establishing mutual understanding and trust by enabling all parties involved to voice their positions. Dialogue helps us to more clearly identify potential challenges and view them from various perspectives. We want cooperative and constructive dialogue to create value for all partners: the suggestions of our stakeholders serve as important impulses for our company and help us to avoid risks, as well as to recognize at an early stage both trends and markets – and thus also to define focus areas for our activities. These analyses are incorporated, for example, into our materiality matrix (page 13 of the Sustainable Development Report 2011), which serves as a key basis for business decisions in the Bayer Group. Our systematic dialogue therefore makes an important contribution to both more sustainable innovation and risk management.

In 2011 we decided that a systematic stakeholder analysis will play an important role in any future decisions regarding capital expenditures with a volume of €20 million or more to ensure that societal acceptance of major projects is also examined at an early planning phase. The pilot phase lasted until the end of the year. The results will be evaluated in 2012 and integrated into the planning processes.

Our stakeholder activities range from local projects through participation in committees and specialist workshops to comprehensive information programs and collaboration in international initiatives. Listed below are examples of our activities with various stakeholder groups in 2011.

New stakeholder survey on sustainability

Between December 1, 2011 and January 3, 2012, a total of 328 people worldwide – of whom almost three quarters were from Europe, around 10 percent were from North America and another 10 percent from Asia, and approximately 7 percent were from Central and South America – took part in an online Bayer survey on sustainability. The surveyed stakeholder group was comprised this time mainly of customers and business partners, suppliers, NGOs (non-governmental organizations) and NPOs (non-profit organizations), scientists and researchers, community members, organizations and associations.

We surveyed the stakeholders on major issues of sustainability in general – contrasted with the issues they feel are of importance to Bayer – as well as on their opinions of the company's sustainability performance and the quality of its sustainability communication.

The results were incorporated into our new materiality matrix (page 13 of the Sustainable Development Report 2011), in which we have linked the relevance for our stakeholders with relevance for Bayer.

Results across all surveyed stakeholders:

- 96.7 percent of stakeholders consider sustainability to be important or very important.
- For the surveyed stakeholders, the five most important fields of activity for sustainability are in general:
  1. Careful management of limited resources
  2. Protecting health and safety at the workplace
  3. Observation and promotion of human rights
  4. Observation of employee rights
  5. Reduction of emissions
- In the stakeholders' opinion, the five most important fields of activity for sustainability that Bayer should focus on are:
  1. Careful management of limited resources
  2. Protecting health and safety at the workplace
  3. Drinking water conservation
  4. Reduction of emissions
  5. Observation of employee rights
- The stakeholders consider Bayer's performance to be strongest in the following five fields of activity:
  1. Protecting health and safety at the workplace
  2. Protection of intellectual property (e.g. patent protection)
  3. Application of international standards/certifications
  4. Observation of employee rights
  5. Promotion of innovation (e.g. product and process innovations)

The stakeholders feel that the issues Bayer has defined as strategic sustainability projects are very important; here the theme of water has the highest priority (93.1 percent) for the stakeholders, followed by nutrition for a growing world population; climate protection; safety (process and plant safety, occupational safety, transport safety); alliances for sustainable health care; and supplier management.

Almost 56 percent of stakeholders obtain their information about Bayer's sustainability performance from the Sustainable Development Report (28.9 percent) or the Annual Report (26.7 percent).

Just under 82 percent of respondees rate the Sustainable Development Report as positive or very positive. Neutral evaluation by a corporate auditor plays an important to very important role here (important for nearly 83 percent).

Bayer's sustainable development website (28.2 percent), direct dialogue (19.7 percent) and the printed Sustainable Development Report (16.2 percent) are the most common sources for finding general information about sustainability issues at Bayer.

Nearly 94 percent of those surveyed feel that our sustainable development efforts play a key role in shaping the Bayer Group's image.

Investors/Analysts

Intensive dialogue with the capital market is a high priority for our company.

In 2011 our Investor Relations team visited 22 financial centers – often accompanied by members of the Board of Management – and held more than 400 one-on-one meetings. In addition to our regular quarterly, half-yearly and annual reporting, we update stockholders on the development status of products, for example through conference calls.

An investor relations conference was held for the first time in Shanghai, China, to explain to our investors the growing importance of the Chinese market for our businesses. Analysts and investors were given the opportunity to get to know local managers as well as Group and subgroup board members. Program options also included a tour of our largest fully integrated chemical production facilities in Shanghai and a chance to learn about our activities in the health care field in China on location. The very positive feedback we received following this event has encouraged us to make further investor events in Asia and the United States a regular part of our investor relations program.

In 2011 we reported to sustainability-minded investors during one-on-one meetings and an SRI (socially responsible investment) roadshow on Bayer's commitment in this area. Bayer actively participates in discussions and events on the subject of sustainable investment. For example, among other discussions we were involved in the dialogue surrounding the draft proposed by the Sustainable Development Council of the German government for a German Sustainability Code.

Customers

Our conduct toward customers is also characterized by responsibility. The long-term success of our company is dependent not just on the provision of innovative products, but also on a partnership-based relationship with – and a high level of satisfaction on the part of – our customers. In our view, products that satisfy customer demands while at the same time providing a societal benefit are the key to sustainability. Due to our highly diversified business activities, our resulting widely varying product range and the customer structure, all three Bayer subgroups have put in place both specific systems for measuring customer satisfaction and their own complaint management systems.

Bayer HealthCare combines the activities of the Animal Health, Consumer Care, Medical Care and Pharmaceuticals divisions. These divisions maintain an active dialogue with target groups that vary widely due to our portfolio. The sales organizations of the divisions carry out different satisfaction studies – for example with physicians from various disciplines, with veterinarians in the animal health business, and with pharmacists and other partners in the health care system. What's more, special consumer studies are carried out and systematically evaluated so that we can better understand the needs of physicians on the one hand and patients on the other. In general, however, it must be kept in mind that different legal requirements apply for prescription medicines than for non-prescription or medical products.

We are concerned to protect patients from risks to which counterfeit drugs expose them. Counterfeit drugs have become a serious challenge worldwide in recent years and can present a risk to human life. Bayer HealthCare is intensifying its efforts to educate in this area, and has launched the "Beware of Counterfeits" campaign with a special website. The focus is on education and information, as well as on steps aimed at minimizing illegal trade and ensuring the reliable identification of our original products.

Bayer CropScience is continuing its analysis of customer satisfaction among distributors and farmers with the aid of standardized surveys. This method has led to valuable findings on the satisfaction of customers with Bayer CropScience in a number of countries in Europe (e.g. Germany, France and Russia), North America (United States and Canada), Central and South America (e.g. Mexico, Brazil and Argentina) and Asia (e.g. South Korea, Indonesia and Malaysia). Bayer CropScience regularly conducts customer surveys on specific products or topics using state-of-the-art market research methods.

At **Bayer MaterialScience**, four global Supply Chain Centers serve as the central link to the customers. At their disposal are Customer Service Centers in the Europe/Middle East/Africa, Latin America, NAFTA and Asia/Pacific regions. This means that all information streams are pooled – from order acceptance to dispatch planning, delivery and complaint acceptance. Through the online information platform BayerONE, customers of Bayer MaterialScience can check the status of their orders at any time.

Customer satisfaction data are systematically compiled at Bayer MaterialScience as well. To ensure optimal quality of service, customers are surveyed, their complaints systematically evaluated in the global complaints management system, and the Bayer MaterialScience supplier evaluations carried out by customers analyzed in detail.

Suppliers

Dialogue with our suppliers is essential to establish smooth production processes. It is also aimed at making supplier and purchaser relations more transparent and establishing reliable relationships. We want our suppliers to be able to better understand our requirements – but we, too, want to know more about our suppliers' situation.

Dialogue about sustainability issues also plays an important role. After all, our products benefit overall when our suppliers also support our sustainability policy. What's more, this enables us to better address the needs of our customers and other stakeholders.

Examples of activities in 2011:

- Constructive dialogue with our suppliers to ensure REACH compliance promotes long-term business ties with resulting advantages for our customers' supply security.
- Regular dialogue with suppliers through participation in trade fairs (e.g. for packaging)
- Audits to monitor compliance with the Bayer Supplier Code of Conduct, and corresponding discussions about improvement potential (page 31 of the Sustainable Development Report 2011).
- Dialogue with office paper suppliers in connection with the global switch at Bayer to FSC paper for printers and copiers
- Events such as Supplier Day in Finland, BayBuy Awards in India, the Procurement Conference of Bayer HealthCare in Bad Nauheim in September 2011 with 77 participants from 18 countries, etc.
- Occupational safety training courses for suppliers at Bayer MaterialScience with the help of the safety award mascot and specially produced short films

Employees

The know-how and engagement of our employees safeguard our business success. To sustain this performance, the Bayer Group needs a modern human resources and talent management organization with competitive structures and processes. This includes regularly providing up-to-date information to our workforce, as well as involving our employees through active and targeted dialogue.

Active employee dialogue at all levels	
"Ask the CEO": employees e-mail questions to the CEO	Quarterly
"Bayer Talk" with the Management Board Chairman	Once a year
Town hall meetings with a direct question-and-answer session	Quarterly in the Corporate Center, and also at various Bayer sites around the world, with Management Board Chairman Dr. Dekkers Semi-regularly in the subgroups and service companies as well
Regular Global Leadership Conferences in workshop form	At least once a year
Global employee surveys	Regularly, of late every 1.5 years
Forums for the exchange of information about changes in the company	
Information meeting for managerial employees	Regularly in the Corporate Center and in all subgroups and service companies
Employee assemblies	Regularly, at unspecified intervals at least once a year at each German site
European Forum: discussion between the Board of Management and Bayer employee representatives from all European countries	Once a year
Discussions on performance, motivation and development perspectives	
Yearly conversations	Spring, late summer
360 degree feedback surveys for managerial staff	As needed
Examples of theme-specific dialogues and events	
W11 dialogues: national and international stakeholders in discourse with Bayer's top management	Regularly, at unspecified intervals
Expert Club Meeting: exchange of experiences on the theme of innovation among the scientific network of experts comprising Bayer scientists from our research and development units and the member of the Board of Management responsible for Innovation, Technology & Sustainability	At least once a year
Process and Plant Safety Symposium with approximately 100 Bayer experts from around the world and international experts	Annually

Global Safety Day	Annually in September since 2011
Continuing education seminars in the areas of compliance, human rights, sustainability in procurement, and diversity	Continuous (see "Continuing education")
Sustainability at Bayer CropScience: business briefings for 200 employees	Twice in 2011
Discussion session with experts on Russia and centered around the political cooperation between the E.U. and Russia as well as perspectives and challenges for companies in Russia	June 2011
Regular exchange between the Public & Governmental Affairs departments in the emerging market of China with respect to legal and political framework conditions and dealing with public authorities	Regularly, at unspecified intervals
Exchange of experiences on Brazil's role in the world market and the country's growth opportunities and economic policy – featuring two experts on Brazil from the German Institute for International and Security Affairs in Berlin and the Department of International Relations at the European trade association BusinessEurope	January 2012
Women's Networking Program at Bayer MaterialScience: dialogue between talented female employees and managers is a core element of the program and a valuable aid for career development. The focus of this new variation of the already established mentoring program is on networking between female employees.	Pilot project launched in June 2011
Conference of Bayer data protection experts in Leverkusen, Germany, on data protection in social media – more than 50 Group-internal and external experts talked about topical issues relating to this subject	December 2011
Publications for employees	
Bayer Group publications: print and online	Employee magazines; intranet; Bayer News Channel, numerous regular newsletters and occasion-related mailings, social media: Facebook, etc.
Print and online media by the subgroups and service companies for their employees	Employee magazines; intranet; newsletters and occasion-related mailings, social media: Facebook, etc.

Society/Community

The communities near our sites play a key role in our success: we can only be successful if we gain the trust and support of our neighbors. For this reason, we endeavor to be recognized at all of our sites as a reliable partner and attractive employer that meets its social responsibility. This makes both the region and the company more competitive.

- September 2011: As part of the International Year of Chemistry 2011 the VCI (German Chemical Industry Association) held an Open House Day for the chemical industry under the motto "Dialogue with the chemical industry" in which many Bayer sites participated. 90,000 visitors took up Bayer's invitation.

Bayer HealthCare

- Cooperation between Bayer HealthCare Animal Health and the Otto Hahn Gymnasium school in Monheim (since 2004): practical education for school students to convey knowledge, broaden their horizon and teach the young people about the world of work. The activities are now an established part of the curriculum, and are taught by employees of the company in cooperation with the respective teachers.
- Annual *KunstGenuss* ("Enjoying Art") of Consumer Care in Basel: network event for Swiss stakeholders of the division: representatives from industry and society, business partners and neighbors
- Support for the campaign launched by the Berlin Senate to strengthen the city as a base of industry. Bayer HealthCare contributes its own logo: "Ich bin eine Berlinerin" – with a stylized contraceptive pack.

Bayer CropScience

- November (Monheim, Germany): tour of the Bayer CropScience premises, organized by the local adult education center
- December, Bonn adult education center and Deutsches Museum Bonn: "Foolish and Sensible Approaches to Global Nutrition" – discussion with experts

Bayer MaterialScience

- Regular dialogue with residents and communities about current capital expenditure projects such as the CO pipeline and the TDI plant in Dormagen, Germany
- Bayer MaterialScience/North-Rhine Westphalian site network: open and intense dialogue with residents, environmental organizations, associations, public authorities and politicians about the industrial projects and capital expenditure plans in Leverkusen, Dormagen and Krefeld-Uerdingen. Dialogue events, information evenings and online information portals ensure a new transparency in discourse with stakeholders.

Service companies

- Open house event at Currenta's Waste Management Center in Bürrig; demonstration of the new hazardous waste incineration facility (July, Leverkusen, Germany)

Girls' Day:

- As in the previous years, the Bayer Chempark sites took part in Germany-wide Girls' Day on April 26 with a broad range of activities. At Currenta, the focus this time was on environmental services
- Bayer Business Services presented vocational careers in the IT field to female students as part of the Germany-wide "Girls' Day of the Future."

Currenta: information for citizens

- on the construction of a gas and steam turbine power plant in Leverkusen (continued)
- on the planned capacity expansion of the hazardous waste incineration facility in Leverkusen
- on the construction of a planned TDI production plant in Dormagen

NGOs/Supranational organizations

Bayer participates in a number of projects, thematic initiatives and specialist conferences at national and international level to help jointly shape sustainable development. This includes our cooperation with NGOs and supranational organizations.

Bayer AG

- Dialogue with the Access to Medicine Foundation (events, discussions) together with Bayer HealthCare
- Membership and participation in the UN Global Compact and the "LEAD," "Caring for Climate" and "CEO Water Mandate" initiatives as well as in the UN-SBCI for sustainable building projects together with Bayer MaterialScience
- Cooperation with the United Nations Environment Programme (UNEP)
- Organizational stakeholder in the Global Reporting Initiative (GRI)
- Participation on the Board of Directors and in events of the WEC (World Environment Center)

Bayer HealthCare

- Projects with the German Foundation for World Population (DSW)
- International Dialogue on Population and Sustainable Development – annual series of events in Berlin organized by the German Foundation for World Population (DSW), the German Society for International Cooperation (GIZ), the International Planned Parenthood Federation (IPPF) and the development bank KfW Entwicklungsbank, in close cooperation with the German Ministry for Economic Cooperation and Development (BMZ). The conferences underscore the interdisciplinary significance of sexual and reproductive health and the corresponding rights and of population growth as key factors in the achievement of major international development goals such as the Millennium Goals.
- Cooperation in the area of reproductive health with the United Nations Population Fund (UNFPA), the non-governmental organization International Planned Parenthood Federation (IPPF), the United States Agency for International Development (USAID) and other partners

Bayer CropScience

- Courses at the vocational center "Bayer-Ramanaidu Vignana Jyothi School of Agriculture" near Hyderabad, India, together with the non-governmental organization Vignana Jyothi
- Intensive cooperation with Naandi Foundation in India to enable children in that country to attend school
- Bayer CropScience works together with the local Indian non-governmental organizations Vigyan Ashram and Prajayatna on its Introduction to Basic Technology Program in the Indian state of Karnataka. This enables vocation-related educational elements to be incorporated into the curricula at government schools. School is beneficial in everyday life and for the future – this is the message.
- As part of Pforzheim University's baseline study in the Model Village Project, interviewers from the non-governmental organization BELAKU conducted a survey on the local economic and living situation.
- Bayer CropScience participates, for example, in BIAC (the Business and Industry Advisory Committee to the OECD), the Food & Agriculture Committee and various committees of CropLife International to represent its interests at an international level.

Bayer MaterialScience

- Bayer MaterialScience hosted the Annual General Meeting of the Sustainable Building and Climate Initiative (SBCI) of the United Nations Environment Programme (UNEP) and the subsequent symposium. May (Leverkusen, Germany)
- Discussion at the Heinrich Böll Society with Bayer MaterialScience Board of Management member Tony van Osselaer on the subject of the "Green New Deal." November (Hamburg, Germany)
- Discussion session: "Going Green – Perspectives of the Chemical Industry." Professor Uwe Lahl presented his study "Transformation of major industrial sectors as illustrated by the example of the chemical industry." Thereafter, Oliver Krischer, Member of the German Parliament (Alliance 90/The Greens), Reiner Hoffmann (German Mining, Chemical and Energy Industrial Union), Professor Lahl and Tony van Osselaer (member of the Board of Management of Bayer MaterialScience) discussed the changes taking place in the chemical industry. December (Leverkusen, Germany)

Service companies

- Currenta is participating in the construction of a gas and steam power plant at the Chempark Uerdingen site and will procure the steam. Environmental associations and citizens' initiatives praised the project. August/September (Uerdingen, Germany)
- Currenta discusses the planned expansion of the hazardous waste incineration facility at the Waste Management Center in Bürrig with environmental associations and community representatives. September (Leverkusen, Germany)

Associations/Politicians

Bayer is an active member of numerous national, European and international associations and their committees, while the Bayer subgroups are additionally active in their respective industry associations. Bayer chairs the Board of Management of the sustainable development forum of German industry, econsense. We also participate in political activities (page 28 of the Sustainable Development Report 2011).

- February: CEFIC (European Chemical Industry Council) workshop chaired by Bayer and attended by E.U. authorities and political representatives from E.U. Member States on the subject of the combination effects of chemicals. Focus theme: risk assessment of combination effects
- February: dialogue with the German Environment Minister on innovation in climate protection and industry policy questions
- May (Berlin, Germany): Bayer HealthCare event on the topic of protecting patients from counterfeit pharmaceuticals, with the target groups of Federal and state politicians as well as associations
- May (Berlin, Germany): Bayer HealthCare dialogue event on supplying patients with innovative pharmaceuticals, with the target group of Federal politicians
- May (Berlin, Germany): presentation of the Bayer CropScience Child Care Program at the annual meeting of the Christian Democratic Workers' Association of Germany (CDA)
- June (Huldenberg near Brussels, Belgium): demonstration of sustainable agriculture at a Bayer CropScience research farm with 50 representatives from European and international political organizations
- July (Brussels, Belgium): Bayer "Bee Health Event" in Brussels: current topics related to bee health in Europe, new technologies to maintain healthy bee colonies, and political and social framework conditions for regulating bee protection were discussed with more than 100 participants from politics (European Commission, E.U. Parliament), the scientific community, agriculture and beekeeping.
- September (Berlin, Germany): Bayer HealthCare dialogue event on pricing for new pharmaceuticals, with the target group of Federal politicians
- October (Berlin, Germany): Bayer HealthCare event with representatives from the Federal and state parliaments, media and associations concerning the question of whether German society is prepared to address the disorders of a continuously aging population

- October (Bogotá, Colombia): the National Congress of Colombia honored Bayer in a ceremony with the Pedro Nel Ospina award for the company's contribution to Colombia's innovative capability and for Bayer's social and ecological projects.
- November (Düsseldorf, Germany): at the invitation of the state government of North Rhine-Westphalia, Bayer MaterialScience Board of Management member Tony van Osselaer spoke at the Sustainable Development in NRW Congress on the issue of controversial discussions about major industrial projects.
- November (Dormagen, Germany): at the invitation of Currenta, North Rhine-Westphalia Climate Protection Minster Johannes Remmel and Leverkusen Mayor Peter-Olaf Hoffmann visited the Chempark Dormagen site.
- November (Berlin, Germany): "16th Bad Orber Discussions": symposium on the theme "Efficiency and Effectiveness in the Health System," with prominent experts from politics, the scientific community and industry
- December (Bad Orb, Germany): at the "16th Bad Orber Discussions" some 30 prominent experts from politics, the scientific community and industry discussed the discrepancy between high-quality patient care and budget constraints in the health care system.
- December (Leverkusen, Germany): discussions with Jürgen Trittin, Fraction Leader for Alliance 90/The Greens in the German Parliament, on financial, research and energy policy questions
- December (Borneo, Malaysia): participation by Bayer CropScience in the 9th Roundtable Meeting on Sustainable Palm Oil, with numerous opinion leaders from politics, industry and NGOs
- Participation in the Steering and Expert Committee of the cooperation project between the VCI (German Chemical Industry Association) and the German Environment Ministry on the topic of human biomonitoring
- With two events in the European Parliament, Bayer CropScience joined with politicians and scientists in pointing out the importance of the European agricultural industry as regards global nutrition and protection of the climate and species.
- At the World Agricultural Forum in Brussels, Sandra Peterson (CEO of Bayer CropScience) urgently stressed the role of industry and politics in safeguarding food supplies in connection with sustainable yield increases and innovation, and cited examples of Bayer's commitment in this area.
- Discussion with the acting E.U. General Director for the Food Chain in the Directorate-General for Health and Consumers of the European Commission
- With its collaboration in connection with the Global Forum for Food and Agriculture (GFFA) and the international agriculture ministers' conference in Berlin, Bayer CropScience is strongly committed to issues of food security through sustainable growth.
- Series of discussions with agricultural and environmental politicians on the amendment of crop protection law in Germany
- Dialogue with Federal and state politicians on the issue of bee health and biodiversity projects
- Bayer HealthCare: dialogue with politicians at http://www.bayerpharma.com/en/company/public-policy/index.php

Schools, universities and scientific institutions

Bayer traditionally places great importance on support for education and research because, as a research-based company, we depend heavily on recruiting highly trained personnel and on society's acceptance of technology.

Schoolchildren/Students

- Baylabs: in Bayer's school laboratories, schoolchildren are taught throughout the year in small groups about the natural sciences. A Baylab opened in Mexico in December 2011.
- Constructive dialogue and support for environmentally engaged youngsters, for example through our cooperation with UNEP
- Young Environmental Envoys from 18 countries visited Bayer for a week again in October 2011 as part of our partnership with UNEP. Topic: environmental protection and sustainability
- Further expansion of the "Making Science Make Sense" education program founded in the United States
- Presentations, discussion and tours for student groups from various disciplines and from around the world on the issue of sustainability at the Bayer Communication Center
- Cooperation with Pforzheim University. The university is implementing scientific monitoring in the Model Village Project of Bayer CropScience. Each winter semester, a group of students works on a theme specified jointly with Bayer CropScience. In the 2011/12 winter semester, for example, the project focused on the issue of water. Interns from the university also work locally in India. In 2011 an MBA thesis was presented with the model village theme. In 2011 the successful collaboration for the students of the Company Project 2010/11 was honored with the university's award. Pforzheim University also conducts the scientific evaluation of the Model Village Project. To determine the starting situation, 2,306 persons in approximately 1,000 households from the model villages and a control group were surveyed in 2011. Within the scope of the collaboration, Bayer CropScience also presents its CSR projects in lectures at the university.
- Case study on the Bayer CropScience Child Care Project published by the Richard Ivey School of Business at the University of Western Ontario, Canada. This is used in academic instruction as an example of how a company deals with dilemma situations.

- Organization of an education day in conjunction with "Green Week" on the occasion of the landing of the Solar Impulse aircraft in Brussels: event on the topic of sustainability and energy attended by some 300 schoolchildren and teachers from the European School Network, as well as by representatives of the European Commission
- Bayer International Summer Sustainability Camp 2011 in Pittsburgh, Pennsylvania, United States for German and American schoolchildren
- In August the Bayer USA Foundation provided funding of US$500,000 for the "SySTEMic Innovations" science education reform program in Kansas City.
- Continuing education event for pre-school, children's daycare and elementary school teachers organized in Monheim am Rhein, Frankfurt am Main and Stuttgart, Germany, in cooperation with 3-up and dealing with the topic of early childhood science education. More than 1,700 teachers had taken part in this event already by November 2011. The teachers are trained not only through practical experiments, but also using material from a "chemistry kit" or, since 2011, from a "biology kit" as well.
- Since 2007 Bayer has discussed business management issues with students and professors in Leverkusen at the annual "BayDay."
- Participants in the International Chemistry Olympics 2011 from North Rhine-Westphalia conducted experiments at Bayer HealthCare with the assistance of Bayer trainees in the training laboratories at Bayer HealthCare's site in Bergkamen.
- In December more than 30 students at Ostwestfalen-Lippe University of Applied Sciences gained insight into biotechnological pharmaceutical research at Bayer HealthCare's site in Bergkamen.

Bayer's research and development activities are supported by an international network of collaborations with leading universities, public-sector research institutes and partner companies. Bayer's researchers maintain a constant dialogue with scientists from leading universities, as well as with customers and cooperation partners.

Universities and scientific institutions

- Professorships at universities in the fields of medicine, pharmacy and chemistry
- Strategic collaborations with universities in Cologne, Germany; the NUS, Singapore; Tsinghua University, Beijing, China; University of California, San Francisco, United States; and the DKFZ, Heidelberg, Germany
- Collaboration between Pforzheim University and Bayer CropScience in the further development of the Model Village Project in India

- January (Heidelberg, Germany): decision to extend the collaboration between Bayer HealthCare and the German Cancer Research Center for a further three years
- March (Berlin, Germany): launch of the OncoTrack project – scheduled to run for a period of five years – for the development of new colorectal cancer markers together with the Max Planck Institute for Molecular Genetics and with funding from the Innovative Medicines Initiative (IMI) of the E.U.
- March (U.S. State of Pennsylvania): the Bayer USA Foundation donated US$750,000 to the organization ASSET Inc., with the help of which the Bayer Professional Development Academy was founded.
- March (East Bay, California, United States): with a donation of US$540,000, the Bayer USA Foundation established the Center for STEM Education at California State University. STEM stands for "Science, Technology, Engineering and Math."
- June (Berlin, Germany): Bayer HealthCare subsidiary GDD Global Innovation Sourcing helped to organize the "Enterprising Knowledge" conference on new forms of innovation partnerships between industry and the scientific community.
- September (Bremen, Germany): as part of the Chemistry Science Forum of the Society of German Chemists, Board of Management member responsible for research Prof. Wolfgang Plischke gave a presentation to around 800 professors, students and other interested persons on the subject of strengthening sustainability through innovation.
- October (Leverkusen, Germany): Bayer representatives met with the President of the German Federal Institute for Geosciences and Natural Resources to discuss the responsible use of finite resources.
- October (Leverkusen, Germany): at the Bayer Science and Innovation Dialogue, Bayer research management participated in discussions with leading external researchers from around the world.
- November (Graz, Austria): launch of a new collaboration between Bayer HealthCare and the Ludwig Boltzmann Institute for Translational Heart Failure Research for more targeted research into myocardial insufficiency
- November (Wuppertal, Germany): scientists from the University of Bonn and Bayer Pharma AG met at a symposium on pharmaceutical research and biomedicine.
- November (Aachen, Germany): Bayer MaterialScience participated in an international scientific symposium on CO_2 use, which took place at the invitation of RWTH Aachen University and the CAT Catalytic Center. Topic: "Innovation in Large-volume CO_2 Recycling with Sustainable Energy Sources: Science, Politics and Business Opportunities."
- December: Bayer MaterialScience and the Bayer Foundation announced a further collaboration between Bayer and Tongji University: the founding of the Bayer-Tongji Eco-Construction & Material Academy, the first academy of its kind in the area of construction and architecture in China.

Theme-based dialogue

We work closely with our stakeholders on a number of initiatives. The topics of these initiatives and the perspectives of the various stakeholder groups are extremely diverse by nature. Although sustainability is a global issue, regional priorities and perspectives can vary widely. We constantly strive to view the various challenges in a differentiated manner and take account of context in order to develop solutions on a case-by-case basis that satisfy the framework conditions. For this reason, stakeholder dialogue is an important task for the various functions, organizational units and regions.

Below we present examples of our dialogue in the context of different topics that relate to our business areas.

Biotechnology

- Bayer CropScience: students at the Ruhr University Bochum discussed ethical aspects of genetic engineering in plant breeding within the context of the seminar "Food ethics: current controversies surrounding genetic engineering in plant breeding" – organized by the Department of Moral Theology (February 9, Bayer CropScience Headquarters, Monheim, Germany).
- Bayer CropScience: participation in a discussion session and a "world café" of the dialogue forum "Ethics – establishing and communicating European biodiversity strategies." The event took place in the context of the implementation and dialogue process of the national strategy for biodiversity in collaboration with the German Federal Agency for Nature Conservation (Bonn), the Austrian Federal Environment Agency and the Swiss Federal Ministry for the Environment (March 3 and 4, Academy of the Diocese of Rottenburg-Stuttgart in Stuttgart-Hohenheim, Germany).
- Bayer CropScience: participation in workshop groups of the German Federal Ministry of Education and Research (BMBF) forum "Biological Safety Research in Dialogue" (March 30, Berlin, Germany)

Family planning

- Cooperation with the Contraceptive Security Initiative of the United States Agency for International Development (USAID) facilitates access by middle-income women in sub-Saharan Africa to affordable oral contraceptives. For Bayer HealthCare, the initiative represents a new strategic approach and an innovative way to open up markets in developing countries.
- Bayer HealthCare supports World Contraception Day, which is held each year on September 26 in about 70 countries. Various initiatives are organized to draw attention to the responsible use of reliable methods of contraception, including educational events in schools and universities, quiz sessions on the internet, radio talk shows, design competitions, charity events and campaigns in discotheques. In addition to Bayer HealthCare Pharmaceuticals, the following organizations support World Contraception Day: Marie Stopes International, European Society of Contraception and Reproductive Health, International Planned Parenthood Federation, U.S. Agency for International Development, Population Council, Asia Pacific Council on Contraception, International Federation of Pediatric and Adolescent Gynecology, Pan American Health and Education Foundation, German Foundation for World Population, Centro Latinoamericano Salud y Mujer.
- Projects with the German Foundation for World Population (DSW), such as "Youth2Youth" in Uganda
- The "Parliamentary Evening on Reproductive Health" series is a cooperation project between Bayer HealthCare and the DSW. Stakeholders from the German development cooperation field, members of parliament and interested members of the public discuss matters of reproductive health. This includes support for women and girls, access to contraceptives, and educational initiatives.
- Lighthouse projects with external partners (page 16ff. of the Sustainable Development Report 2011)
- Series of conferences entitled "International Dialogue for Population and Sustainable Development" – jointly organized each year with the International Planned Parenthood Federation (the world's biggest non-governmental organization for reproductive health), the German Foundation for World Population, the German Society for International Cooperation, the international continuing education and development organization Inwent GmbH, and the development bank KfW Entwicklungsbank, in cooperation with the German Ministry for Economic Cooperation and Development

Protection of resources and the climate

- Cooperation with the Potsdam Institute for Climate Impact Research (PIK)
- Participation in the "Caring for Climate" and "CEO Water Mandate" initiatives of the UN Global Compact
- Bayer is among the founding members of the new European Climate Knowledge and Innovation Community (Climate KIC) – an initiative of the European Institute of Innovation and Technology (EIT).
- September (Budapest, Hungary): Climate KIC 2011 Innovation Festival with Bayer Technology Services as a corporate partner
- September (Berlin, Germany): "Sustainability in Focus" – Bayer CropScience met with experts from renowned international research institutes within the context of the Climate KIC Initiative to discuss the climate protection contribution of new crops.
- September (Düsseldorf and Mülheim an der Ruhr, Germany): citizens' dialogue with Bayer representatives among others on the economic dimension of the changes in energy policy in Germany
- Lighthouse projects, in many cases with external partners such as universities and other companies (page 21ff. of the Sustainable Development Report 2011)

Nanotechnology

- On a global level, Bayer actively and transparently participates in multi-stakeholder dialogues about nanotechnology through associations such as the American Chemical Council and the European Chemical Industry Council (CEFIC).
- In Germany we take part in the national stakeholder dialogue through the "Nano Dialogues" program of the German Environment Ministry.
- Presentations at national and international conferences and workshops
- Furthermore, we foster intensive stakeholder dialogue with committees, associations, industry partners, customers, authorities, universities and the public.
- We actively participate in projects promoted by the German Ministry of Education and Research, such as NanoGEM and CarboTox for the safety of nanomaterials in general, and – in the context of the "Carbon Nanotubes" innovation alliance (Inno.CNT) – in CarboSafe and CarboLifeCycle to ensure the safety of carbon nanotubes.
- We are intensively collaborating on the national and international standardization of terminology and test procedures for nanomaterials as promoted by the German standardization institute DIN and at the ISO level, as well as on the development of toxicological testing guidelines at the OECD level.

Animal studies

- Participation in the EPAA (European Partnership for Alternative Approaches to Animal Testing)
- Dialogue and support for the Foundation for the Promotion of Alternate and Complementary Methods to Reduce Animal Testing (SET)
- The Bayer Corporate Animal Welfare Committee discusses and cooperates regularly with animal welfare organizations.
- Dialogue with politicians from the North Rhine-Westphalia State Parliament and union representatives, including tour of Bayer animal study laboratories at the Wuppertal site in Germany

Innovation & Product Stewardship

66 **More innovation with Triple-i:**

"Triple-i" – which stands for "inspiration, ideas, innovation" – is the name of our global employee initiative to network innovative Bayer employees across all countries. Ideas are centrally collected and evaluated with experts from the subgroups and service companies. More than 13,000 ideas have been submitted since 2006. Through campaigns, impulses for the innovation activities of our operational business are derived from specific questions from business operations. For example, the global campaign launched in 2010 under the slogan "Your Heart" focused on the theme of cardiac health. As a result, Bayer HealthCare received 655 ideas just in 2011 within the scope of the campaign. At the end of 2011 an idea submitted by a service company employee led to the first Eco Commercial Building Program partner for Bayer MaterialScience in Brazil.

67 **Company suggestion system: Bayer Ideas Pool**

Improvement suggestions can provide a key competitive advantage. The company suggestion system in the Bayer Group is the Bayer Ideas Pool – a "pool for clever ideas." Last year 4,840 suggestions were submitted via the Bayer Ideas Pool, more than half of which were implemented. Rewards were given for 1,095 suggestions that improved occupational safety, while 82 suggestions contributed to environmental protection. The company calculated that 197 suggestions resulted in savings of around €4.3 million in 2011 just in the first year after their implementation. Suggestions also play a key role in improving production processes. In a time of rising energy and raw material costs, the employees' suggestions improve the company's earnings and help to reduce waste and emissions.

72 **Precautionary principle**

Bayer accepts the precautionary principle as a possible tool for consumer protection and risk management. The precautionary principle is defined in Article 15 of the Rio Declaration of the United Nations Conference on Environment and Development (1992) and in the Communication from the European Commission (COM 2000/1). It is applied whenever there is scientific uncertainty in a given area and sufficient evidence also exists that people or the environment could suffer significant or irreversible damage.

We support the application of the precautionary principle according to the stipulations of the European Commission. These measures should be proportionate – i.e. they should: meet the desired level of protection; be applicable without discrimination, in other words comparable circumstances must not be treated in different manners; be consistent with similar measures undertaken previously; and be examined to determine which costs and benefits are associated with the application of the precautionary principle. The measures undertaken are evaluated as soon as new scientific data are available for the particular circumstance.

80 **International commitment to enhanced product safety**

International associations such as CEFIC, ICCA or OECD, and political initiatives such as ECETOC or EPAA work to evolve the scientific assessment of chemicals, research new test methods and implement statutory regulations. Bayer actively accompanies these efforts.

We are also active in the Long-Range Research Initiative of the International Council of Chemical Associations (ICCA). At the European and international levels, we organize workshops and further events with relevant authorities and other stakeholders. For example, in 2011 we supported a joint workshop of the ICCA and Health Canada.

We also endorse the goals of the World Health Organization (WHO) and European Union action plans for improving health and the environment, for example with the further development of human biomonitoring. We play a leading role in a human biomonitoring alliance established in February 2010 by the German Chemical Industry Association (VCI) and the German Environment Ministry (BMU) and scheduled to run for 10 years. The VCI develops analytical methods for relevant substances that are not yet measurable in the human body. The BMU applies these methods within the context of suitable population studies. The common objective of the alliance is to make previously immeasurable chemicals in the human body identifiable with analytical methods, apply these methods in suitable investigations and thereby gain new findings about the real impact the respective substances have on the population.

82 Group-wide registration of product data

All subgroups compile product information enabling them to meet the respective product safety and information obligations for raw materials, intermediates or end products. Targets and procedure for providing useful information about substance properties in response to inquiries and incidents are established in the Directive on Substance Information and Information Capability.

Bayer HealthCare further expanded its substance databases worldwide in 2011 to further improve the accessibility of data for the assessment of possible environmental and health hazards. With the international rollout of the IT systems, standard processes are being defined that put in place a global obligation to uphold a high safety and environmental protection level. Bayer CropScience uses the "E-Label Server" to record printing templates for all product packaging marketed in Europe and parts of Asia, South America and Africa. In 2011 the global rollout focused on China, South Korea and Guatemala. Furthermore, the External Adverse Incident Guideline governs the internal reporting channels worldwide for incidents involving products of Bayer CropScience. Bayer MaterialScience also maintains a global product safety database. Bayer MaterialScience is prepared to deal with potential incidents involving its products thanks to regulations covering product surveillance and recall management.

108 New E.U.-wide crop protection product requirements

Bayer CropScience only distributes crop protection products that have been granted regulatory approval by the responsible authorities, which, when used responsibly and as intended, are safe and pose no risk to either people or the environment. The provisions of the new E.U. Registration Regulation (EC No. 1107/2009) imposing requirements on crop protection products took effect throughout Europe on June 14, 2011, replacing the 91/414/EEC and 79/117/EEC directives. The regulation has direct legal authority in the Member States and does not require conversion into national law. Nonetheless, amendments to the national crop protection laws were implemented in numerous member states so as to ensure consistency between E.U. law and national law.

It is of major importance for Bayer CropScience and the European agricultural industry that the new crop protection regulations are enacted based on independent scientific findings, so that the desired harmonization goals can be achieved in a way that is practiccal as intended in the national plans of action. Bayer CropScience will continue to contribute its experience and expertise so as to support appropriate solutions in scientific committees and partnership-based collaborations. In this context, we place particular value on the further development of agricultural production systems to satisfy the increasing requirements as regards biodiversity and climate and water protection, as well as the sustainable production of high-quality, affordable food products.

116 The Bayer service companies – engines of innovation

Bayer Business Services, Bayer Technology Services and Currenta are the three service companies of Bayer. They contribute to new and innovative solutions with specialized services. In line with Bayer's sustainability strategy, all three companies work to make processes and technologies more efficient and environmentally friendly. This is documented by the innovation examples listed below.

Bayer Business Services

Digital pen

With the support of the local innovation group in the Philippines, a team from Bayer Business Services further developed part of the CRM (Customer Relationship Management) process. Using digital pens, the local sales force of the Pharmaceuticals Division of Bayer HealthCare can now directly enter the results of conversations with physicians into the CRM system. The prior process involved paper, fax machines and manual data entry. The new process is digital and not subject to media interruptions. Bluetooth is used to connect the pens to the employees' mobile devices, and this in turn communicates with the server receiving the data. This server converts the transmitted data into the desired format. The process is now more time-efficient, it improves quality – as handwritten inaccuracies can be avoided – and it saves money.

Bayer Technology Services (with Bayer MaterialScience)

Manufacturing polyurethane with CO_2

Design and construction of a pilot plant in which the greenhouse gas CO_2 is combined with an epoxide and processed into polyol, one of the two components in the manufacture of polyurethane. The reaction with the chemically inert compound CO_2 is facilitated with a catalyst discovered by Bayer. The objective is to use this innovative "CO_2 foam" for commercial products such as mattresses.

Currenta

Faster measurement of the groundwater level

Currenta's Water Supply Department is taking an innovative approach to groundwater measurement. Instead of the previous manual approach, measurements are now performed through an automated process using GSM data loggers – devices that store and transmit data recorded with sensors. This means the frequency of measurements does not depend on the water level of the Rhine, fewer personnel are needed and flood measurements can be undertaken independently according to intervals set forth in an alarm plan and to the respective situation. The recorded data are immediately sent to an FTP server or transmitted by mobile text message. This gives the responsible employees immediate access to current data and enables faster reaction to extreme water events in the Rhine.

Employees

122 "Ask the CEO"

Employees question the CEO

"Ask the CEO" is an ideal supplement to other forms of employee communication. It gives employees a chance to determine which issues they would like to receive more information on – directly from the Chairman of our Board of Management, Dr. Marijn Dekkers. Any employee is able to post a question in the intranet via the Bayer News Channel. Last year it was the case that their colleagues then ranked the most relevant issues. Around 400 suggestions have been submitted since the start of the initiative in November 2011. In all, Dr. Dekkers has answered about 60 questions. In the future, all new questions will be answered. If they relate to topics that are too highly specialized, Dr. Dekkers will forward them to the relevant departments.

The success of "Ask the CEO" speaks for itself. In 2011 alone the site registered some 170,000 hits.

As an example, here is a question submitted:

An employee at Bayer Hellas in Greece

Bayer's future in Europe

Dear Dr. Dekkers,

I've been working for Bayer for two years and the whole of last year we kept hearing that the company needs to invest in new areas/countries, mainly outside of Europe. Should I be worried about the European future of the company?

Dr. Marijn Dekkers' reply:

Dear colleague,

We all work to ensure Bayer's future success – in Europe and throughout the world. Our roots lie in Germany, and thus in Europe. It is from here that we manage many of our businesses. We had more than 54,000 employees last year in Europe, accounting for about half of our workforce. Here we have well-trained employees and first-class research, development and production facilities. Capital expenditures in Europe in 2010 came to roughly €840 million, corresponding to about half of our total investment volume last year. As you can see, our business in Europe is a major part of Bayer.

However, we operate a global business with customers and competitors in every country in the world. That is why we have to focus more closely on the emerging markets as they still harbor the greatest growth potential. We must exploit this potential if we are to be successful in the international arena. This doesn't mean that we are abandoning our home markets, however. On the contrary: our global growth also safeguards jobs in Europe.

125 Bayer employee networks contribute to our culture of diversity

Many of Bayer's sites in the United States have employee networking organizations and affinity groups. These and other platforms enable employees to share their experience, build valuable contacts that foster collaboration and drive forward their personal development. These network groups work to further improve our activities within the organization and the communities which we serve. Bayer provides an annual budget of US$5,000 for each networking group.

Every employee network is tailored to specific interests, but the prime goal is always to reflect the diversity of the workforce. The 11 networking groups that inspire a culture of diversity at Bayer are:

- African American Employee Network (AAEN) – promotes greater cultural diversity, enhanced awareness and more educational opportunities for African American employees
- ANGLE B – a network of lesbian, gay, bisexual and transsexual (LGBT) employees. This is the first network of its type in the global Bayer organization
- Bayer Asian Society in America (BASIA) – a network for Bayer employees who wish to broaden their awareness and understanding of Asian culture and its values

- African American/Hispanic Association (AAHA) – fosters the ability of the company to improve its business performance, the recruitment and development of talents with Afro-American or Hispanic roots and its contact with their community through increased diversity
- Pharmacists at Bayer (PhAB) – enhances employees' awareness and understanding of the value and contributions made by pharmacists
- Professional Moms (ProMoms) – a forum where working mothers can learn from one another and provide mutual support
- Professional Networking Group (Links) – the purpose of this network is to connect a new generation of employees with the Bayer community.
- Sandwich Generation Networking Group (SGNG) – seeks to reduce the distress felt by caregivers that is often associated with the searching, selecting and supporting efforts of providing care. This provides a platform to assist both caregivers and care recipients of all ages
- Women's Leadership Initiative (WLI) – provides networks, continuing professional development and mentoring programs and other resources for female managers at Bayer HealthCare. The goals of the WLI are attracting more highly able women to the company, fostering the professional development of women through focused career planning, management training and supportive networks, and creating an environment that opens up career prospects in the company to top-performing women.
- Women's Advocacy Through Visioning and Education (WAVE) – cultivates a professional environment for women that recognizes and supports their development in accordance with Bayer's values and leadership principles
- Women's Initiative Networking Group (WINGs) – dedicated to the advancement of women; also supports work-life balance at Bayer's site in Pittsburgh

Alongside these employee networks, whose goals and activities are geared principally to work at Bayer, there are a number of other employee associations at Bayer Group companies in the United States with a greater focus on social issues or private educational opportunities:

- Bayer Association for Science in Communities (BASIC) – this is a group of volunteers who take part locally in Bayer's "Making Science Make Sense" initiative, which aims to improve scientific education in Pittsburgh and foster scientific knowledge.
- Baytown Employee Recreation Association (BERA) – this network is dedicated to developing recreation activities for Bayer employees in Baytown, Texas.
- Employee Connection – fosters employee appreciation and interaction through voluntary activities that inspire and motivate us to be an employer of choice offering a healthy work-life balance
- Junior Board – endeavors to improve the quality of working life for employees by identifying and implementing projects that extend beyond the scope of functional groups
- Kansas City FUN Committee – develops and implements employee initiatives and activities to increase the sense of community and morale of employees in support of the present ongoing cultural changes
- Toastmasters International – promotes a positive learning environment to help employees improve their communication and leadership skills

126 Accolades for Bayer as an employer

Bayer and its subgroups were once again ranked among the top employers on many continents in 2011. Here is a selection:

Bayer is one of the world's top employers in the pharmaceuticals and biotechnology industries according to an internet survey conducted for the "Science Careers" job portal of the international journal "Science." Aspects that the respondents particularly highlighted were high-end research, social responsibility and the loyalty of Bayer employees.

Bayer was also among the top 10 large companies in the prestigious ranking "The Scientist's Best Places to Work in Industry." This ranking is based on a survey of 2,200 scientists, who rate their working conditions on the basis of a list of 43 criteria, including research environment, management and factors such as integrity, communication, job satisfaction, initial and ongoing training, compensation and fringe benefits.

Our endeavors in the areas of diversity and equality of opportunity have frequently received positive ratings from outside the company. In the United States, Bayer received the Catalyst Award, the highest honor for corporate diversity, for its programs and initiatives to support women and minorities. In addition, Bayer Corporation was again recognized by the magazine "Working Mother" as one of the 100 best companies for working mothers. That was the eighth time in the past nine years that it has been included in this annual ranking. At the "Woman & Work" exhibition In Germany in May 2011, Bayer was presented with the Female Recruiting Award 2011 as the most attractive employer. In October Bayer received the Total E-Quality Award from the non-profit organization of the same name for the fifth time. Life'sWork of Western Pennsylvania, an organization that represents the interests of people with disabilities, presented Bayer with the Joseph F. Mulach Award for removing barriers to the employment of disabled people.

Bayer is also seen as a preferred employer in Latin America. In Argentina, for example, it is ranked among the employers with the best reputation: in the RepTrak Pulse corporate image study run by the newspaper "La Nacion" Bayer was ranked eighth in a survey of some 6,000 people. In Brazil, Bayer received the "Época Negócios 100" award for the fourth time, placing it among the country's 30 leading companies ("Empresas de Major Prestígio do Brasil"). More than 15,000 internet users took part in this survey. The criteria included quality of goods and services, trust, ethical conduct, social and ecological commitment, innovation, prestige, tradition and momentum.

Bayer is a preferred employer for the younger generation

Students also regard Bayer as one of the most attractive employers. In a survey by the market research and consultancy company Universum, science students in Germany ranked Bayer third behind the Max Planck and Fraunhofer organizations. It was thus the top-placed private-sector employer in this survey. 5,000 upcoming scientists took part in the survey, which was published by the weekly news magazine "WirtschaftsWoche" in May 2011. In the ranking by students from all disciplines, Bayer gained 37th place in Germany. In Universum's worldwide survey, which only subdivides prospective graduate employers into the categories business and engineering, Bayer ranked 35th in engineering, as the fifth most popular German company in this category (after BMW, Siemens, Volkswagen and Daimler). In Germany, the company also received the "Karrieremacher" ("career developer") seal of approval awarded by the Unicum-Verlag publishing house.

128 General Works Agreement on lifetime working and demographic change

This General Works Agreement entitles non-managerial employees working 24/7 or semi-continuous shift rosters to up to 20 additional shift-free days a year from the age of 55. The additional free shifts are compensated via a long-term account financed from a demography fund into which Bayer pays around €4.8 million a year. The goal is to achieve a perceptible reduction in the working hours of employees in physically demanding jobs in the final years of employment to help them with the transition to retirement.

Through this agreement the company can continue to benefit from valuable older employees, even if they have physically challenging jobs. Reducing their workload means that they have a realistic chance of remaining in employment until they reach the statutory employment age. At the same time it creates additional employment opportunities for younger people because the resultant gaps in shift rosters are filled by hiring new employees, frequently former trainees. In this way, skilled workers are kept in the company, so they can pass their practical experience on to the next generation.

Other aspects of the General Works Agreement on lifetime working and demographic change include a reduction in the workload for employees returning to work after a long illness – under a special reintegration management program, they can claim 80 additional hours of paid leave – and a special medical-check-up program for around 21,000 employees in Germany. Around 25 percent of eligible employees took up this offer in the first year. The reduction in working hours for older shift workers and employees returning to work after a long illness was utilized by around 90 percent of eligible employees.

130 Training: Group-wide continuing education and training

Our ongoing training program comprises a wide range of work-related programs that enable employees to broaden and update their knowledge and abilities or acquire new skills, for example by learning a language or acquiring leadership competencies.

Examples of continuing education offerings

Training categories	Conception and implementation level
Global Leadership Global General Management Training	Global/Groupwide
Knowledge and skills training in the areas: ■ Introduction to and knowledge of the company ■ Leadership skills ■ Communication and efficient working ■ Business administration and law ■ Marketing, sales and customer orientation ■ Languages and intercultural skills ■ Information technology & SAP ■ Research, production and technology	Local/National
Group focuses ■ Corporate compliance ■ Human rights ■ Changes in technology (Personalized Workplace Program) ■ Supplier management/Supplier Code of Conduct	Global/Group-wide
Subgroup focuses ■ Occupational safety (PEGASUS) ■ Fit in Production (FIP) at Bayer MaterialScience	Global/Subgroup-wide
Continuing education offerings for employees outside worktime	Local/National

132 Occupational safety: campaigns and ideas to improve safety

Bayer HealthCare used our first global Safety Day to focus on occupational safety at all sites around the world. Traffic safety – from the journey to work to the use of fork-lift trucks at company sites – was the main focus at Bayer HealthCare sites in Germany, Italy, Bolivia, Paraguay, Uruguay and the Philippines. In India, one campaign focused on improving road safety for cyclists. Avoiding accidents caused by tripping, slipping and falling was a major topic in Germany. In China, the motto was "Every day is Safety Day." Many sites around the world showcased the response to emergencies with practical demonstrations and ran information campaigns to raise awareness of the need for safe working practices. Bayer HealthCare's occupational safety activities in 2011 also included a special campaign under the motto "Role Model Leader on Duty," which was specifically targeted at managers. Cartoons gave managers a humorous insight into how they can influence employees in the area of occupational safety and thus encourage them to work safely. Further information on various aspects was made available via the intranet.

At the Supply Center in Berlin, the ventilation units inject 1.5 million cubic meters of air every hour. The energy-saving motors that perform this heavy-duty task weigh up to 800 kilograms – making them physically challenging for maintenance workers. At a special workshop organized as part of Bayer's Safety Day to raise awareness of the problems and develop ideas on lifting and carrying heavy loads in the field of ventilation the maintenance team worked out a solution to this problem that reduces back strain. This included developing a new type of crane to facilitate the maintenance and replacement of these heavy motors.

Examples of the activities undertaken around the world have been documented, providing impressive evidence that safety management is clearly rooted at Bayer HealthCare.

At **Bayer CropScience**, the focus in 2011 was on strengthening safety awareness, safety training, improving safety in the BioScience Business Unit and achieving a fundamental improvement in occupational safety reporting. Activities comprised:

- Extensive audits, project reviews and visits to BioScience sites around the world, combined with specialist advice and training
- A talk on quality, health, safety and environmental protection (HSEQ) at the BioScience biological safety workshop

- Setting up a working group to improve safety at Bioscience in North America
- Training in basic HSEQ requirements in Brazil, accompanied by a performance self-assessment
- In the Asia/Pacific (APAC) region, this project was supplemented by brief "toolbox talks" including a range of training documentation on aspects of safety and a special training module on safe handling of machinery.
- Training in risk evaluation in the workplace at sites in Latin America
- Introduction of the VIR (Vehicle Incident Rate) and TRIR (Total Recordable Incident Rate) performance indicators at Bayer CropScience in January 2011
- Organizing and supporting Safety Day activities at many Bayer CropScience sites

The programs to improve health and safety at work have proven very effective: the LTIR indicator (number of occupational injuries resulting in lost workdays per million hours worked) was <0.65, even bettering the target figure of <0.8.

In September 2011 Bayer CropScience ran an introductory industrial hygiene and occupational safety course for the first time in collaboration with BP (British Petroleum). Alongside basic medical and toxicological aspects, topics covered included the measurement and evaluation of substance concentrations in the workplace, hazard analyses, risk minimization and noise. The goal was to provide a basic knowledge of industrial hygiene and occupational safety.

In 2009 **Bayer MaterialScience** introduced a CEO Safety Award for exceptional safety initiatives. More than 100 nominations were received for this award in 2011. The best initiatives are selected by a Safety Committee comprising safety experts from the Bayer Group and external specialists, for example from Dow Chemicals and the British Royal Air Force. The winner was a training initiative at Bayer MaterialScience's site in Tarragona, Spain, which is targeted principally at contractors working at the site.

Tarragona is one of the largest chemical parks in southern Europe and contractors' employees make up a high proportion of Bayer MaterialScience's workforce at this site. In collaboration with other companies at the chemical park, Bayer MaterialScience therefore launched a special program to systematically improve occupational health and safety for these employees. For a long time, Bayer MaterialScience has been endeavoring to improve their knowledge of occupational safety and environmental protection. To bring all employees up to the same standard, special HSE training programs have been developed and implemented. More than 1,400 employees have completed the training courses to date, and over 160 contractors have been audited. The aim is to use this program, which was initiated by Bayer MaterialScience and 10 other chemical companies, to train a total of 7,800 employees working for contractors at all companies at the chemical park.

In China, Bayer MaterialScience employees run special training courses for customers and distributors on the correct and safe handling of our products. These are carried out directly on the customer's or distributor's premises. 3,500 people have taken the training modules, which vary according to the specific target group (managers, operatives, HSE specialists). Distributors have been included in the program because they play a key role in passing on safety information along the supply chain.

For the past three years, Bayer MaterialScience has also used the Safety Award Mascot (SAM) which supports the CEO Safety Award in its efforts to raise the safety awareness of contractors. SAM stars in 16 half-minute animated video cartoons that present Bayer's main safety requirements – across cultural and language barriers. They are available via the Bayer MaterialScience intranet and used at the Safety Days and in presentations.

Occupational health and safety is important at Bayer's service companies, too. **Currenta** continued its extensive safety campaigns in 2011. These concentrate principally on avoiding accidents caused by tripping and on increasing road safety. At a cycle campaign in the summer, around 1,500 cycle helmets were distributed free of charge to employees. In addition, a special campaign is run to encourage Bayer employees to submit innovative and feasible ideas on improving safety in the workplace and these ideas are suitably rewarded. In spring 2011 Currenta received the quality seal awarded by the German occupational safety organization "Gesellschaft für Qualitätssicherheit im Arbeitschutz" (GQA) for the provision of occupational safety specialists for all companies at the three Chempark sites in Germany.

Bayer Business Services put together an electronic information kit for its roughly 6,500 employees (plus contractors). Special attention was drawn to this kit at the global Safety Day. The central theme of the kit is "Move Safely," which is also an issue at Bayer Business Services. It considers aspects such as what is considered a risk at Bayer Business Services, the definition of risk in occupational safety and how to move safely.

133 Examples of health promotion programs

In 2011 implementing the 2010 General Works Agreement on lifetime working and demographic change was central to health management at Bayer's three subgroups – HealthCare, CropScience and MaterialScience – and its service companies. Measures set out in this agreement include voluntary health check-ups, advice on personal risk factors and encouraging employees to adopt a health-conscious lifestyle.

At **Bayer HealthCare** sites around the world, as in the other two subgroups, health management activities reflect differing regional conditions (living standards, collective agreements, statutory provisions, national health care provision, health insurance systems). For example, routine check-ups that are obligatory in Germany form part of the health management offering in some other countries. Cooperation with fitness centers (gyms) is a widespread aspect of active preventive health care. In many cases, the services provided by selected external gyms are subsidized. At some sites, activities are planned on an annual basis and published as a health care program or calendar (e.g. "Peak" in Australia and New Zealand).

In May 2011 Bayer HealthCare in Berlin took part in an alcohol awareness week run by the German Center for Addiction Issues (DHS). Bayer HealthCare contributed a poster exhibit, information materials and self-tests to establish personal addiction risk. Other issues at the Berlin site in 2011 were preventing stress and burnout.

As one result of a survey conducted in 2010 to establish levels of health training, **Bayer CropScience** established gyms at several of its sites in 2011 or arranged for employees to use local gyms. The operator of its Frankfurt site (Infraserv Höchst) has set up an on-site center for occupational health promotion with professional trainers (physiotherapists and sports scientists). Bayer CropScience bears part of the cost for its employees. A health and fitness center was also opened at Research Triangle Park (RTP) in Durham, North Carolina, United States. This is available free of charge to all Bayer CropScience employees. They are only charged for specific courses and even here Bayer CropScience pays part of the cost. Other sites offer a combination of exercise and relaxation programs. For instance, an extensive program has been set up for all employees at the site in Vapi in Gujurat, India. All employees receive a medical check-up (including laboratory tests) at an external health clinic. While waiting for their appointments, they receive information on key health issues from videos and talks. Follow-up activities to improve their personal health are derived from the check-up and their progress is monitored by the in-house medical officer. Health promotion measures include anti-stress programs offered by three India-wide providers (Brahma Kumaris, Art of Living and Patanjali Yoga).

Bayer also offers health promotion programs for all employees in India. These are coordinated centrally by a newly employed physician. In 2011 focal areas included women's health, typhoid, diarrhea, heat exposure and how to avoid it, and infectious diseases. In Germany participation in the Bayer-wide health promotion program introduced in January 2011 is particularly high at the Bayer CropScience site in Monheim. In 2011 the "Follow Me" program was launched at this site. Initially this program focuses on back problems. All employees received a Thera resistance band with instructions for exercises as part of a 10-week campaign to encourage them to take exercise in their lunch break.

At **Bayer MaterialScience** the Safety Award also makes a contribution to occupational health management. The suggestions implemented through this initiative include preventive back and muscular training and the Pittsburgh Ergonomics Program in the United States. Bayer MaterialScience's "Health at Work" initiative in Germany is designed to raise awareness of an active and healthy lifestyle. A consultation combined with a health check-up combines a specialist medical examination with individual advice on diet and health issues.

In 2011 **Bayer Business Services** ran a series of lectures on health issues for managers, including mindful management/employee health, healthy eating for managers, and the impact of leadership style on the health and performance of employees. The company also launched an initiative to help employees remain healthy.

Currenta continued to drive forward its systematic occupational health management program for Chempark customers in 2011. At its heart is support for implementation of occupational health management and health surveys, leading to activities geared to specific target groups. Rollout of the internal occupational health management program at Currenta itself also continued. Alongside a health survey, central features were health working groups, activities to improve working practices and health days to launch specific exercise drives. Psychological and social advice, assistance in dealing with addiction, and advice on handling conflict situations, including facilitation offerings, were extended and aligned to customers' needs.

In 2011 Currenta presented a special program for the service companies focusing on demographic change entitled "Individuals. Work. Future." In collaboration with the Works Council and Managerial Employees' Committee, experts from the Human Resources, Health Promotion, Training, Communication and Corporate Development departments identified six areas of action and developed initial lighthouse projects. The main objective is to minimize the negative implications of an aging workforce, counter the expected skills shortage and place the company on a sound demographic basis. Health promotion and occupational safety is one of the six areas of action. The newly established Preventive and Integrative Medicine Department serves all Bayer's subgroups and service companies and customers at the Chempark sites.

Ecology

140 Bayer's reporting on the CEO Water Mandate of the UN Global Compact

As part of its activities with the UN Global Compact, Bayer supports the CEO Water Mandate signed at the end of 2008. The company has been represented on the Steering Committee since 2011. In cooperation with our stakeholders, we develop sustainable strategies for the use of water, implement appropriate solutions and report on the progress made.

Detailed information – since 2011 in the form of a progress report in line with the requirements of the CEO Water Mandate – is available in our reporting for the CDP Water Disclosure Project (weblink 139 in the Sustainable Development Report 2011).

Commitment and transparency

- In December 2011 Bayer adopted a Water Position that reflects our willingness to protect water and use it responsibly.
- Once again in 2011 Bayer took part in the Water Disclosure Project, a transparency initiative of the Carbon Disclosure Project that was carried out for the second time. This involved the publication of detailed information on opportunities and risks relating to water and the company's water footprint.
- We provide detailed information on our water-related activities in the Ecology chapter of the annual Sustainable Development Report and in the public answer to the inquiry of the Water Disclosure Project (weblink 139).
- Bayer CropScience is a member of the Water Programme Leadership Group of the World Business Council for Sustainable Development (WBCSD) and thus supports the implementation of the "Water Programme" initiated by this association.
- The Resource Efficiency Check, a lighthouse project of the Bayer Sustainability Program, has been trialed since 2010. This method analyzes all resources relevant to production, including water (weblink 134).

Water and wastewater projects in the production process

- As part of the Group's new Water Position, Bayer is committed to improving the efficiency of its own water usage, developing and marketing innovative water-related products and technologies, and supporting local non-profit water projects.

Management objectives

Bayer has defined Group-wide management objectives to ensure the regular collection of statistics on water consumption and wastewater emissions and to continually improve our activities relating to the responsible and efficient use of water. These include:

- Annual analysis and recording of water consumption using the Bayer Site Information System (BaySIS) tool
- Annual risk analysis as part of the Water Disclosure Project
- Regular, global assessment of water usage, quality and discharge in all subgroups
- Quantitative reduction targets in regions with poor water resources or those with high water consumption
- Assessment of how all new investments worth over €10 million impact on water as part of the Bayer Group's Ecological Assessment of New Investments Guideline

143 Our commitment to biodiversity

With a steadily growing world population, the demand for high-quality food in adequate quantities and at reasonable prices is increasing. The growing importance of renewable raw materials poses an additional challenge for modern agriculture. Boosting cultivation on existing agricultural areas is essential to achieve the required increase in productivity. The protection of biodiversity is an essential factor in this regard, because fully functional agricultural ecosystems play a crucial role in safeguarding food supplies.

Great importance is also attached to biodiversity as part of the E.U.'s reform of its Common Agricultural Policy (CAP) in line with the Convention on Biological Diversity (CBD). Building on measures launched as part of the International Year of Biodiversity in 2010, Bayer CropScience started a raft of new projects in 2011.

Projects in Germany include the "Blühendes Monheim" (Flowering Monheim) initiative, which involved planting several flower beds in front of the Bayer CropScience site in Monheim to protect and encourage pollinating insects. In the years ahead, this project will be continued along streets and paths throughout Germany under the name "Blühende Wege" (Flowering paths) to create a widespread network of flowering areas.

Bayer CropScience and Stiftung Rheinische Kulturlandschaft (Foundation for the Cultural Landscape in the Rhineland) entered into a cooperation agreement back in 2010. Bayer CropScience provides financial support and expertise for the project, which is designed to protect rare wild herbs in the Rhine region with the goal of improving the ecology of selected fields. A system of representative and diverse habitats, created and managed by farmers, is designed to increase the biodiversity of fields and protect the local flora and fauna. At a research farm owned by the company, particularly rare and endangered species are bred and their seeds made available for sowing in suitable areas at a later stage. At eight test sites owned by Bayer CropScience in Germany, location-specific strips of flowers up to 200 square meters in size are being laid out. These initiatives are intended to show that the productive use of agricultural areas can go hand in hand with the maintenance of biodiversity.

At an information event in August 2011, an initial assessment of the "Ökologische Aufwertung in Ackerfluren in der Oberrheinebene" (Ecological enhancement of fields in the Upper Rhine area) project was presented to the public. With support from Bayer CropScience, the Institute of Landscape Ecology and Nature Conservation (ILN) in Bühl and the Institute for Agro-ecology and Biodiversity (IFAB) in Mannheim have spent the last two years examining the effects of strips of flowers, beetle banks and other measures in otherwise intensively cultivated agricultural areas on insects and their pollinating activities.

A "Forward Farms" project earmarked for launch throughout Europe started in 2011 initially in Germany and Belgium to test and demonstrate that it is possible to strike a successful balance between productive agriculture on the one hand and the maintenance and promotion of biodiversity on farmland on the other.

At our site in Norwich, United Kingdom, we have been working with the Norfolk Wildlife Trust (NWT) since 2002 on a project designed to protect local species and support them by sowing specific wild plants. The NWT publishes a progress report every year.

A similar project run by Bayer in the United States was awarded recertification for a further three years in 2010. The site in Pittsburgh was certified once again by the Wildlife Habitat Council (WHC) for its "Wildlife at Work Program." The focus of the assessment is on the protection and expansion of habitats on private and public land. The woods, grassland and wetland habitats surrounding the site have been maintained with this in mind since 1999.

Bayer continues to support the U.S. nature conservation organization Ducks Unlimited. With the development of new varieties of seeds for a special winter wheat, better breeding conditions are to be created for rare waterfowl as part of a five-year initiative. Bayer CropScience and Ducks Unlimited have been working together since 2009. They have successfully launched a joint initiative designed to support modern agriculture by expanding the usable space for winter wheat in the Prairie Pothole Region in the United States to create better breeding conditions for rare North American waterfowl. The Prairie Pothole Region covers an area of almost 300,000 square miles of wetlands and is home to more than half of all ducks on the North American continent.

Bayer also campaigns for biodiversity in Morocco. Bayer Morocco has supported the project of the "Fondation du Sud" with five million new trees in southern Morocco. These are planted to halt the spread of desertification and thus improve the living conditions of the local population. Bayer's donations have been used in particular to identify species on a 16-hectare piece of land and plant seedlings that are best suited to dry conditions.

145 Incidents observed by stakeholders

The following incidents are not classed as environmental incidents or transport accidents according to our criteria, but came to the attention of our stakeholders in reporting.

	Location of the incident	Description	Description
1	Bayer HealthCare, Cali, Colombia	January 31, 2011 Earthquake in the region of our site	There was an earthquake 69 km from our site. No damage was caused and there was no need to implement a contingency plan.
2	Bayer HealthCare, Auckland, New Zealand	February 22, 2011 Earthquake in the region of our site	An earthquake in Christchurch caused substantial damage to the public infrastructure but not to the Bayer warehouse in Auckland; no Bayer employees were injured.
3	Bayer CropScience, Toopran, India	March 9, 2011 Mugging	On a business trip, a Bayer CropScience employee was mugged and injured. The incident was recorded as an LTI (lost time incident).
4	Bayer AG, Petaling Jaya, Malaysia	March 23, 2011 Bomb scare	Bomb scare with the immediate evacuation of the office building. The police search found nothing. A suspicious package containing promotional gifts proved harmless.
5	Bayer CropScience, Mexico	March 27, 2011 Carjacking	A Bayer CropScience employee was the victim of carjacking and later forced to leave his vehicle. The employee was not injured.
6	Bayer MaterialScience, Map Ta Phut, Thailand	March 30, 2011 Smell of phenol	As a result of a leak, material containing phenol entered the steam condensate circuit of a production area. No material leaked into the environment from the contaminated water/steam circuit. The material was isolated and disposed of.
7	Currenta, Leverkusen, Germany	May 26, 2011 Emission of sand dust	Sand-like white residues containing silicon dioxide were emitted from the catalytic stage of the flue gas cleaning process of an incinerator. The residues were deposited in Leverkusen-Rheindorf. The deposits were not toxic. At no time did the emission pose a risk.
8	Bayer MaterialScience as site operator, Bayer Brunsbüttel Industrial Park, Germany	September 13, 2011 A small amount of vegetable oil escaped from a company's premises at the Brunsbüttel Industrial Park.	At a company in the Brunsbüttel Industrial Park, a leak in production caused around 30-50 liters of easily biodegradable vegetable oil to enter a nearby stream via a receiving water of the site. The material safety datasheets were used to establish that the material is not hazardous to water and is easily biodegradable (> 99%). No damage was detected on the flora and fauna in the stream. The authorities were informed and confirmed all the site operator's findings.

Social Commitment

147 Expenditure for social commitment

Social commitment in 2011: overview of expenditure*			
	€ million	Share of total in %	Share of category in %*
Education and research	**7.5**	**13.8**	
Science education at schools (e.g. Baylabs school support program, scientific competitions, "Making Science Make Sense" initiative)	2.9		38.7
Science and research support (e.g. awards, endowed chairs)	1.3		17.3
Scholarships for students	1.2		15.9
Scientific symposia	1		13.5
Medical research	0.7		9.1
General school education	0.4		5.6
Health and social needs	**24.2**	**44.6**	
Public health care programs (e.g. access to contraceptives)	15.9		65.5
Health education and patient organizations	3.2		13.2
Disaster aid	2.8		11.6
Social community projects	1.9		7.8
Social volunteering projects	0.5		2.0
Environment and nature	**2.5**	**4.6**	
Environmental education with a focus on young people	2.1		83.8
Nature conservation, biodiversity, sustainable agriculture	0.4		14.2
Other (e.g. membership fees)	0**		1.9
Sports and culture	**20.1**	**37.1**	
Bayer sports clubs	15		74.3
Bayer Arts & Culture and clubs	4.5		22.6
Social sports projects	0.4		1.8
Other sports and cultural sponsorship	0.2		1.1
Total	**54.3**		

* Discrepancies in the addition are due to rounding differences
** €48,000

Type of expenditure	€ million
CSR projects from all four focus areas (e.g. ATO - Sexual orientation to teenagers/Attention and Guidance to Sexual and Reproductive Health, "Making Science make Sense," biodiversity projects, UNEP programs, CSIRO carbon kids and many more)	5.5
CSR memberships	0.1
Donations of drugs/chemicals/equipment	9.7
Financial donations (e.g. for Bayer clubs, culture, endowed chairs, disaster aid, support programs for schools, BayLabs, Bayer Cares volunteering programs, scholarship programs and many more)	39.0
Total	54.3