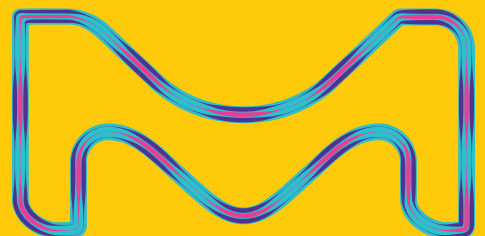


MERCK

CORPORATE RESPONSIBILITY Report

UPDATE 2015



About this report

Every two years, we publish an in-depth Corporate Responsibility Report detailing our sustainability achievements according to the G4 Guidelines of the Global Reporting Initiative (GRI), most recently in our 2014 CR Report. This update presents key indicators and highlights the progress we made in our corporate responsibility efforts in 2015.

contents

3 STRATEGY

5 COMPLIANCE

6 Our principles

7 Progress

9 PRODUCTS

10 Our principles

11 Progress

15 SUPPLIERS

16 Our principles

17 Progress

19 EMPLOYEES

20 Our principles

22 Progress

24 ENVIRONMENT

25 Our principles

26 Progress

28 COMMUNITY

29 Our principles

29 Progress

33 FACTS & FIGURES

34 Indicators

59 Goals

72 Global Compact CoP

86 Assurance Report

strategy

We take responsibility every day – and have been doing so for nearly 350 years, a commitment codified in our corporate strategy and values.

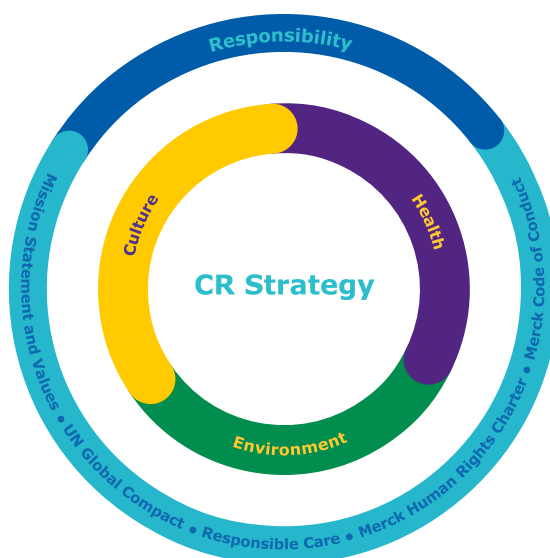
We think in terms of generations instead of quarters, and we conduct our operations in a responsible manner. This ethos is what underpins our sustainable business success. We believe it's important to take an active role in shaping the future. Our products and technologies are key to achieving this because they play a major role in helping solve global challenges.

Managing responsibility: Our CR strategy

Acting responsibly means looking, listening and doing things better. We respect the interests of our employees, customers, shareholders, and society, an approach that ensures our business success. This is an integral part of our corporate strategy, which in turn underpins our corporate responsibility (CR) strategy, the basis for the responsible governance we live each and every day.

In realizing our corporate responsibility, we focus our strengths on those areas where we can have the greatest impact. We pursue three strategic spheres of activity, namely health, environment and culture. In the process, we continuously seek to hone our competitive edge while working to sustainably secure our future.

CR strategy



Our strategic spheres of activity

Health

Many people in low- to middle-income countries lack access to high-quality health solutions. We leverage our expertise and collaborate with strong partners to develop solutions for patients in developing healthcare systems. Take for example the fight against the worm disease schistosomiasis in Africa, or the quest for an improved antimalarial.

Environment

We work non-stop to improve the sustainability footprint of our products while also helping our

customers achieve their own sustainability goals. Take for instance the development of liquid crystal technology: when used in smartphone and tablet displays, our liquid crystals reduce the power consumption of these devices.

Culture

Culture inspires people and broadens their horizons. Our research and development benefits from creativity and enthusiasm. But cultural inspiration also opens people up to new ideas - it facilitates their acceptance of science, technological progress and innovation. This is why we support cultural initiatives and educational programs across the globe.

compliance

Clear principles guide our actions. Operating profitably while living up to the highest ethical standards – that is what we mean by good business.

Compliance with laws and statutory regulations is absolutely essential to responsible business conduct. At both the national and international level, legislators are passing increasingly stringent transparency requirements and anti-corruption guidelines, while the public has increasingly higher and higher expectations for companies in terms of integrity.

Read More

- 6 principles
- 7 progress

our principles

Compliance is our number-one priority worldwide. As an international company that also operates in developing and emerging markets, we set high requirements for effective compliance management. But to us, compliance does not end with adherence to statutory regulations. Instead, we aspire to always abide by the ethical principles we've defined in our Values. We want to do good business – to operate profitably while living up to the highest ethical standards.

Founded on Group-wide guidelines

Our entrepreneurial conduct is underpinned by clear guidelines that apply across all of our facilities.

- The **Merck Code of Conduct** guides our employees in taking an ethical course of action. A copy of this code is provided to every employee; it explains the principles for interacting with business associates, general partners, co-workers, and employees, as well as the communities in which we operate.
- The **Merck Human Rights Charter** supplements the Code of Conduct with global principles, such as the core labor standards of the **International Labour Organization** (ILO).
- Since 2014, Merck has also had a uniform anti-corruption guideline that applies across the whole Group.
- In addition to this, our Pharma Code (for prescription medicines) and our Consumer Health Code (for our over-the-counter product business) define crucial fundamentals for interactions with our partners in the health industry.

progress

Compliance within the company

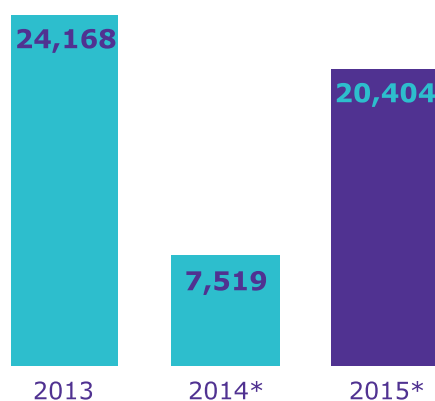
The Group Compliance Officer and other specialists from our Group function Compliance are in charge of defining Merck's compliance agenda, which we continuously adjust in response to current requirements. Local and regional compliance officers are responsible for implementing compliance measures within their respective subsidiaries. In 2015, we appointed a compliance officer for each of our business sectors (Healthcare, Performance Materials and Life Science) in an effort to better address the needs of each specific business sector. In the course of regular compliance audits, our Group

function Internal Auditing reviews the implementation of compliance procedures within our facilities.

We regularly hold workshops to inform our employees about new compliance requirements. In 2015, a total of 20,404 persons participated in anti-corruption courses. In 2014, we designed an e-course to introduce our new anti-corruption guideline, and in 2015 we had the course translated into 16 different languages. This has allowed numerous employees to complete the course in their local language. In 2015, we also developed a special e-course for our pharmaceutical business that explains the guidelines specific to this field.

Personnel training on anti-corruption guidelines

Number of persons trained



* Includes contractors and supervised workers (e.g. temps) who were trained on our anti-corruption guidelines (2,023 in 2014; 3,026 in 2015).

Stringent requirements placed on our business partners

Effective compliance management does not stop at our front door, which is why we set the highest standards for the conduct of our business partners. The selection process for business associates is

governed by our Global Business Partner Risk Management Guideline. This policy stipulates that Merck shall only do business with partners who comply with all applicable laws; who do not engage in bribery; who adhere to environmental, health and safety guidelines; and who refuse to tolerate discrimination. Furthermore, we require our partners

to demonstrate a commitment to internationally recognized human rights and labor standards, as well as to the compliance standards defined in our Code of Conduct. We also audit existing business relationships, usually when it's time to renew a contract.

If we identify red flags, we may consider rejecting potential business partners or even terminating the business relationship. However, our business associates are frequently willing to modify their structures and processes to meet our stringent compliance requirements. Since implementing this process in 2013, nearly 1,500 business partners have undergone this audit.

In 2015, we introduced compliance training in eight languages for the employees of our business associates. The training is mandatory for anyone who comes into contact with Merck or Merck's products in the course of their work. It focuses on general compliance, corruption prevention, and competition law.

Transparent business relationships in the pharmaceutical industry

In Europe effective 2016, all non-research related donations made to physicians and healthcare organizations must be disclosed, with the recipients individually named. This is a requirement stipulated by the **transparency initiative** of the European

Federation of Pharmaceutical Industries and Associations (EFPIA). In 2014, our Compliance organization had already initiated the measures necessary to satisfy this disclosure obligation. In 2015, we focused part of our efforts on informing our partners in the health industry just how important this transparency initiative is to us. We also took steps to ensure data quality and data security in all affected countries. Our goal is to disclose the required information by June 30, 2016. A valuable side benefit: Our efforts to promote transparency for our stakeholders have also improved our internal processes.

Fighting corruption hand-in-hand with the Alliance for Integrity

In October 2015, we joined the **Alliance for Integrity** (AfIn), an initiative founded in October 2015 by the German Agency for International Cooperation (GIZ), the German Global Compact Network, and the Federation of German Industry. The aim of the AfIn is to develop practical procedures to improve the framework for compliance, thereby furthering the fight against corruption. The initiative is concentrating first on local activities in India, Ghana, and Brazil. At the end of November 2015, we took part in a meeting of the AfIn Advisory Group in New Delhi, and in December 2015 we were represented for the first time at a meeting of the organization's steering committee.

products

Offering innovative solutions for a better life, our Healthcare, Life Science and Performance Materials business sectors stand for high-quality products and the utmost in standards.

Our healthcare products – whether prescription medicines or over-the-counter products – help people across the world live healthier lives. However, approximately 1.3 billion people worldwide lack access to sustainable healthcare. We are working to alleviate this situation, for instance by creating health solutions to serve developing health systems and emerging countries.

Our Life Science products make it possible to perform pioneering research; our innovative

technologies make lab work easier and more cost-efficient. At the same time, we seek to optimize our sustainability footprint while helping our customers achieve their own sustainability goals.

Our Performance Materials business sector develops products for sophisticated applications, from effect pigments for coatings and cosmetics, to high-tech materials for the electronics industry. Innovations such as our liquid crystals technology make displays more energy-efficient and thus help save power.

Read More

- 10 principles
- 11 progress

our principles

The safety of our products is the bedrock of our corporate responsibility. When used properly, they should pose no risk to patients, consumers, customers, or the environment. To ensure this across all three of our business sectors, we have implemented globally applicable policies, standards and processes.

We steer our global processes for chemical product safety via our Group-wide Product Safety Chemicals policy, which covers all relevant national and international regulations of the chemical industry. These include, among others, the **Globally Harmonised System of Classification and Labeling of Chemicals** (GHS) and its implementation in regional and national legislation, as well as the EU chemicals regulation **REACH** (Registration, Evaluation, Authorisation, and Restriction of Chemicals).

Patient and consumer safety is our number-one priority in everything we do. Throughout the entire lifecycle of our medicines and consumer health products, we provide patients, consumers and physicians with up-to-date product safety information based on risk-benefit evaluations. To this end, our experts process safety-relevant information from various sources such as clinical trials, adverse

reaction reports and scientific literature. Our Global Chief Medical Officer is the voice of the patients; he bears ultimate responsibility for the safety of our biopharmaceuticals, with support from our Medical Safety and Ethics Board (MSEB). Our Global Drug Safety unit continuously monitors and evaluates the safety and risk-benefit ratio of our biological medicines worldwide (pharmacovigilance). For our Consumer Health products, this function is performed by the Global Product Safety unit. Overall responsibility for the safety of our over-the-counter products falls under the Chief Medical Officer of our Consumer Health business, supported by the Safety & Labelling Committee (SLC). For products in our Allergopharma business, we have developed comprehensive clinical efficacy and safety profiles that are continuously updated. To guarantee the safety of our patients, we have established a global pharmacovigilance system that we continually work to optimize.

Through our compliance policies for our Biopharma and Consumer Health businesses, we set standards for responsible pharmaceutical marketing practices. These aim to ensure that patients and healthcare professionals have access to the relevant information, and that patients receive effective treatment.

Progress

Resolutely fighting product-related crime

Across the globe, the pharmaceutical and chemical industries are confronted with product-related crime. Counterfeit medicines in particular pose a major challenge because they represent a threat to public health. We strive to protect customers and patients from harm as well as safeguard our reputation. To this end, we collaborate with law enforcement, foster internal and external expert networks, and take appropriate measures to protect our products against counterfeiting.

Since October 2015, we have been consolidating our various measures Group-wide to leverage synergies between our business sectors, making our battle against product-related crime even more effective.

Our Group-wide Merck Anti-Counterfeiting Operational Network – MACON for short – is responsible for globally monitoring and implementing all anti-counterfeiting measures for our products. This network, comprised of experts from various units such as Legal/Trademarks, Product Security, Export Control, Supply Chain, and Quality Assurance, is coordinated by our Corporate Security unit. In 2015, we expanded the network to include representatives from Global Drug Safety as well as representatives from various legal entities.

In 2015, we discovered multiple underground laboratories that were counterfeiting several of our products. In order to bolster our fight against product-related crime, we launched a dedicated Anti Product Crime unit at the beginning of 2016. Furthermore, we are working on a Product Investigation Standard with product crime case studies in an effort to enhance the knowledge base and processes within our legal entities.

Laboratory animal facilities: Utmost in quality standards

As a science and technology company whose products include pharmaceuticals, we are required to conduct animal studies in order to satisfy statutory regulations, not to mention ethical and scientific principles. For us, it goes without saying that our lab animals be handled, cared for and fed in a manner appropriate to the species. Our animal facilities meet the most stringent international quality standards. But our efforts go beyond this, in the form of a Group-wide network headed by our Corporate Animal Welfare Officer and populated by experts in animal welfare and laboratory animal science. This network is in charge of our own strict standards, ensuring compliance throughout the Merck Group. We expect comparable standards from contract research organizations and industry partners as well, guaranteeing their compliance via a certification and audit program. In 2015, we furthermore initiated a similar certification and audit program to monitor suppliers and manufacturers of products of animal origin such as blood sera, hormones and antibodies.

For the animal facilities of our Biopharma business, we set out to attain accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International). In 2015, four of our five animal facilities were accredited to AAALAC standards, while the fifth one is currently undergoing the accreditation process. In addition to certifying our facilities, we also constantly review our compliance with national guidelines and legislation.

FAST FACT

We adhere to the 3R principle of animal welfare by reducing the number of animals needed (Reduction); by minimizing the potential pain, suffering, or distress for the animals before, during and after testing (Refinement); and by replacing animal testing with alternative non-animal test methods, such as in-vitro tests or computer simulations (Replacement).

Early access to life-saving medicines

Our Biopharma business develops medicines that help people suffering from serious diseases. Before these medicines are granted regulatory approval, we conduct clinical studies involving patients from across the globe. These trials always comply with all applicable laws and regulations. In addition, we adhere to the most stringent statutory, ethical and scientific standards.

However, not all patients have the opportunity to participate in a clinical trial. They must often wait for a new pharmaceutical product to be approved. Through our Early Access Program, we are, under specific circumstances, enabling patients to gain early access to potentially life-saving medicines. Patients with serious conditions can obtain medicines that have already been clinically tested but have not yet obtained marketing approval. Here as well, we meet the most stringent statutory, ethical and scientific standards, which are laid out in the [position paper](#) we published in 2015. For instance, we only consider those patients for whom all other suitable therapies have proven ineffective. In addition, we perform a thorough assessment of all available data to ensure that the potential benefits surpass the potential risks for our patients.

Liquid crystals help conserve energy

Through our products, we help customers and end users save energy. Take for example the development of innovative [liquid crystal technologies](#) for displays, a field in which we are the global leader. Our liquid crystals

utilize 15% more light from the display's backlighting, thus reducing the device's energy consumption by up to 30%.

With the July 2015 acquisition of a 100% stake in the start-up Qlight Nanotech, we have bolstered our leadership in this sector. This company, headquartered in Jerusalem, is developing a quantum material technology that will help further enhance the color spectrum and energy efficiency of displays.

Consolidating resources to fight infectious diseases

The experts of our Global Health innovation platform are partnering with leading global health institutions and organizations to develop innovative, affordable, and implementable health solutions for children in developing countries. We are focusing our efforts here on neglected diseases, in particular schistosomiasis and related helminth diseases, as well as malaria and co-infections.

Since July 2012, we have been working, within the [Pediatric Praziquantel Consortium](#), on the development of a pediatric formulation of praziquantel, the existing 'gold standard' treatment for schistosomiasis. The current treatment is only available for adults and school-age children. No suitable drug formulation is available for the high-risk group of preschool children (under the age of six), which accounts for about 10% of the estimated nearly 260 million schistosomiasis patients worldwide. In 2015 we completed the Phase I bioavailability trials with healthy subjects in South Africa, as well as a taste study with children in Tanzania. In June 2015, the Consortium was awarded a prestigious research grant from the Japanese Global Health Innovation Technology Fund, making it the second time the Consortium has received this honor.

Since February 2013, we have been partnering with the [Medicines for Malaria Ventures](#) (MMV) in the battle against malaria. Since current treatments are increasingly succumbing to drug resistance, this initiative is focusing on the development of new antimalarial compounds. In March 2015, we obtained the rights to a new, highly promising compound that we'll continue developing for both treatment and prevention of

malaria; the project is in the preclinical phase. In addition, our Healthcare and Life Science business sectors are currently developing a kit for malaria based on the MUSE cell analysis system; the device will assess the presence and type of malaria parasite and potentially measure co-infection with HIV.

FAST FACT

Our anti-malaria activities are part of "One Merck for Malaria", an integrated strategic approach that seeks to develop new treatments along with diagnostics and insect repellent. Through digital health initiatives and educational campaigns, we support governmental malaria control programs in African countries.

Knowledge sharing via the WIPO Re:Search innovation platform

We are a member of the **United Nations WIPO Re:Search initiative** (WIPO = World Intellectual Property Organization), an open innovation platform to accelerate discovery for neglected tropical diseases (NTDs). The consortium seeks to accelerate early discovery for infectious diseases, in particular neglected tropical diseases, through the sharing of intellectual property and knowledge. In 2015, we finalized our first collaboration with the University of Buea in Cameroon, which aims to repurpose compounds from Merck's library to develop a treatment for onchocerciasis, also known as river blindness. Through this collaboration, we are helping to build research capacity, knowledge and expertise in developing countries.

More efficient HIV treatment in rural regions

Of the more than 35 million people infected with HIV worldwide, 25 million live in sub-Saharan Africa alone. However, many patients in this part of the world lack access to regular medical care, particularly in rural areas. For people infected with HIV, CD4 cell counts

provide an indication of the disease's progression. Patients with a low count of these cells in their blood have an increased risk of opportunistic infections.

In October 2015 our Life Science business sector launched the Muse Auto CD4/CD4%, a system that medical professionals - even those in small rural clinics - can use to quickly check patients' CD4 cell counts. The advantages? With the Muse system, they no longer need to send blood samples to urban hospitals, and each test requires very little in terms of materials and manpower. The new system is smaller and faster than its predecessor the Guava and can even be used for children.

The Muse Auto CD4/CD4% system has been granted regulatory approval in five African countries (Angola, Ivory Coast, Cameroon, Nigeria, and Zimbabwe) as well as Myanmar, and we are currently working with customers such as the Institute for Human Virology in Nigeria to evaluate the device.

Transporting products safely - Minimizing climate impact

As an international company, we ship large quantities of chemicals everyday to our customers and facilities worldwide. Safety is our top priority. All deliveries need to reach their destinations intact, with proper labeling and the necessary documentation. In addition to safety measures, we have been working for years to systematically reduce our transport-related carbon emissions. This is why, in 2012, we started reducing our use of air shipping for chemicals, switching instead to sea freight. This move enabled us to save around € 2.2 million and more than 3,500 metric tons of CO₂ by 2015. We intend to implement further such initiatives in 2016.

Smart technology for clean water

Today's world faces numerous challenges, the greatest of which is providing burgeoning megacities with clean water, treating wastewater and managing waste in a sustainable manner. To help solve these issues, we offer intelligent, forward-looking technologies. One prime example of this is the German-Chinese research project known as Semizentral, which we officially joined in 2015.

The term “Semizentral” stands for an interurban, semi-centralized approach to supplying and treating water, wastewater and organic waste, while recovering water, energy and nutrients. This public-private partnership is led by the Technische Universität (TU) Darmstadt, which is partnering with Tongji University in Shanghai as well as the Qingdao Technological University. The research work headed by TU Darmstadt is funded by the German Federal Ministry of Education and Research.

The first resource recovery center (RRC) pilot plant is now operating in Qingdao, a metropolis in eastern China. This facility treats wastewater from homes, which can then be used as service water, mainly for toilet flushing. This approach significantly lowers the freshwater consumption of an entire city district of roughly 12,000 inhabitants. An integrated bio-gas plant utilizes sewage sludge and bio-waste to generate all the energy needed by the RRC. Our Life Science business sector is contributing its knowledge in the area of water analysis; we have provided test kits and measuring instruments, teaching university staff how to use these tools. The RRC represents a technological milestone in the development of efficient, modular water infrastructure. In May 2015, Semizentral won a GreenTec Award, Europe's biggest environmental and business prize, in the urbanization category. On top of that, in November 2015 the project placed in the top three in the research category of the 2015 German Sustainability Award.

Healthy Women, Healthy Economies

Women in the workforce can have a profound impact on a country's productivity and prosperity; they can help drive economic development. However, many emerging countries and developing healthcare systems fail to leverage this potential. For many women, this is partially attributable to their health - poor health correlates to reduced productivity and impacts women's

ability to participate in the economy. Moreover, women's health needs in the workplace, including the high burden of non-communicable diseases, are often ignored. Thyroid disorders occur 8-10 times more frequently in women than in men, for instance. A little known fact is that cardiovascular diseases are the primary cause of death among women worldwide - people tend to think of these diseases as being mainly an issue for men. Yet, according to studies conducted under the Healthy Women, Healthy Economies initiative, better health outcomes are a prerequisite for increasing women's participation in the economy.

Under this public-private partnership, Merck has joined forces with the Asia Pacific Economic Cooperation (APEC) to empower women's economic development and improve their health. With support from Merck as well as the Philippine, Mexican and U.S. governments, representatives from the public and private sectors as well as non-governmental organizations worked together to develop a policy toolkit aimed at better supporting women in the following five areas:

- Workplace health and safety
- Health access and awareness
- Work-life balance
- Sexual and reproductive health
- Gender-based violence

The toolkit was launched in the Philippines in September 2015, and the first set of projects has since been initiated. In October, the toolkit was presented in Mexico City to a conference of female legislators representing 160 countries. Furthermore, the 21 APEC member states have set the goal of incorporating toolkit components into their legislation by the end of 2019.

suppliers

We have high expectations of our suppliers and owe a special responsibility to developing and emerging countries in particular.

Our approach to supplier management focuses on more than just quality, delivery reliability and competitive pricing - for us, compliance with fundamental environmental and social standards is also a key goal. To achieve this, we have implemented strategies, processes and guidelines that we continuously monitor and work to improve. These aim to prevent violations of our standards throughout our supply chain. We have a special responsibility to developing and emerging countries, which are becoming increasingly important to us as sourcing markets.

Read More

16 principles

17 progress

our principles

Our basic expectations for suppliers and service providers include their compliance with fundamental environmental and social standards, which are derived primarily from the [International Labour Organization's](#) (ILO) Core Labor Standards and the principles of the [UN Global Compact](#).

Our Group Procurement Policy specifies these expectations and defines the methods used to monitor compliance with our standards. It reflects numerous internal guidelines, such as the [Merck Code of Conduct](#), our [Human Rights Charter](#), and our [Corporate EHS \(Environment, Health and Safety\) Policy](#). It also reflects the principles of the Code of Conduct of the German Federal Association for Materials Management, Purchasing and Logistics (BME), a code that we have endorsed. This document contains provisions for combating corruption, violations of antitrust law, and child labor,

and also features provisions on promoting human rights, environmental protection, and human health. In addition to this, we have integrated the [Merck Responsible Sourcing Principles](#) into our general terms and conditions, which apply Group-wide. These principles define what we require of our suppliers with regard to corporate responsibility (CR), obligating them to apply our corporate responsibility standards to their upstream value chain.

At the end of 2014, we joined the industry initiative known as [Together for Sustainability](#) (TfS), which has given us access to CR evaluations along with the results of CR vendor audits.

Via our central SpeakUp Line, our employees can report compliance violations as well as violations of CR standards that occur within our supply chain. In the 2015 period, we received no such reports.

progress

More supply chain transparency: Together for Sustainability

The **Together for Sustainability** (TfS) initiative, founded in 2011 by companies in the chemical industry, aims to systematically assess and improve sustainability sourcing practices across the globe, including ecological and social aspects. Suppliers are scored either on the basis of self-reported information, original documents, and publicly accessible information (CR assessments), or on information obtained during audits (CR audits). The evaluation results are utilized by TfS member companies, who abide by all restrictions stipulated within competition law. We thus have access not only to the evaluations of suppliers selected because of their risk rating, but also to assessments and audit results for other vendors who provide us goods and services.

To date, TfS has enabled us access to evaluations for more than 300 of our most important suppliers. At our prompting, around 100 of these assessments were initiated in 2015, focusing first on raw material and packaging vendors. In addition, we also conducted TfS audits on nine vendors in 2015. For 2016, we have scheduled TfS audits with more than 15 other suppliers.

For around 50 of our suppliers, the CR assessment has yielded significantly below-average results. A root cause analysis showed that most of these vendors had not provided original documents, which in turn negatively impacted the results. We will therefore contact these suppliers once more in 2016 in order to obtain a realistic assessment.

Stringently monitoring working conditions in mica mines

Among other materials, we utilize mica from northern India in the manufacture of our effect pigments. Child labor is extremely common in this region, which is

plagued by poverty and political uncertainty. We source mica exclusively from licensed mines. This formal working environment is the only way to ensure that the mines and processing plants are complying with social standards. For mica collected outside of formal working conditions, we cannot rule out the use of child labor, nor can we monitor compliance with fundamental labor standards.

Our supply chain is structured to allow us influence over our vendors, and we have furthermore implemented a series of oversight mechanisms. In doing so, we can ensure that our suppliers adhere to the principles of our **Human Rights Charter** as well as the requirements of the **Merck Responsible Sourcing Principles**.

We cultivate direct business relationships with the mica mine operators and mica processing plants. We have an office in the region, and our staff there are in close contact with our business partners, who have in turn been instructed on our values, as well as the social and environmental standards we expect of our suppliers. In addition to these measures, we have also installed a tracking system to monitor the origin of our mica.

We use a monitoring and audit system to track compliance with our social and environmental standards. The IGEP Foundation (Indo-German Environment Partnership), a local organization, arranges unannounced visits every month to check the labor conditions in the mines, including occupational safety and adherence to the ban on child labor. In addition to this, Environmental Resource Management (ERM), an international consultancy, conducts annual audits of all the mines and processing plants, investigating both working conditions as well as environment, health and safety issues. At the beginning of 2016, ERM audited six of our mica suppliers. Roughly 90% of the corrective actions specified in either these audits or the

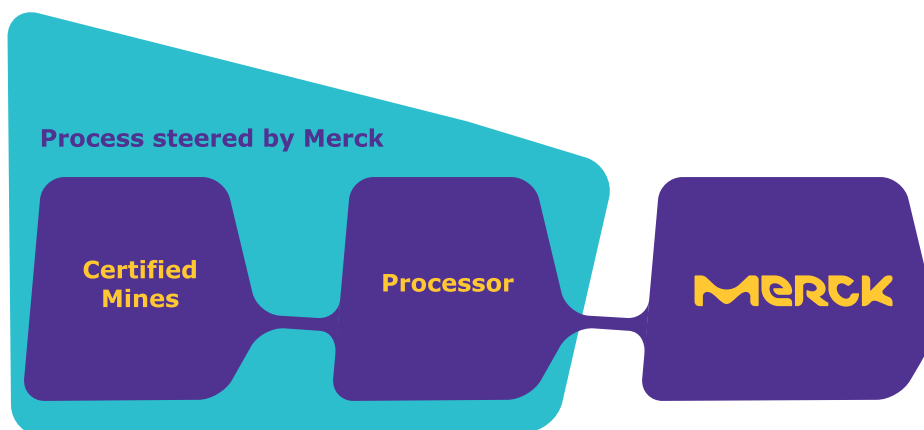
preceding ones had already been implemented or were being implemented at the time of the audit. The red flags identified primarily pertained to occupational safety measures and gaps in the implementation of management systems. Our employees in India pay regular visits to the mines and processing plants to check whether these corrective actions are still being carried out.

In partnership with IGEP, we are also working to improve the living conditions of the families in Jharkhand, a region in northeastern India where we source mica. To this end, we are financing three schools with an affiliated daycare center, as well as

two vocational training centers for tailoring and carpentry. More than 500 children and adolescents are enrolled in these institutions. At a fourth school opened by one of our mica suppliers in 2014, we also provide scholarships for 100 children.

We are improving medical care in the region through a local health center that is operated by the IGEP Foundation. This facility has a doctor and a nurse on duty every day and helps increase access to healthcare for the region's 20,000 residents. The doctor and nurses also pay visits to schools and villages in the vicinity.

Mica supply chain



Employees

Our success is founded on the abilities of our employees - on their ideas and enthusiasm for our company. We therefore seek to offer them the best-possible working conditions.

In an international business world, we align ourselves with the key values of fairness and mutual respect, equal opportunity, and inclusion of individual diversity. In various areas of the company, we are working to adopt new trends such as increasing digitalization. We wish to position ourselves on the global talent market as an attractive employer. We furthermore strive to ensure that our employees stay healthy and fit for work for a long time to come – even among the aging populations found in Germany, several other EU countries, the United States, and Japan.

Read More

20 principles

22 progress

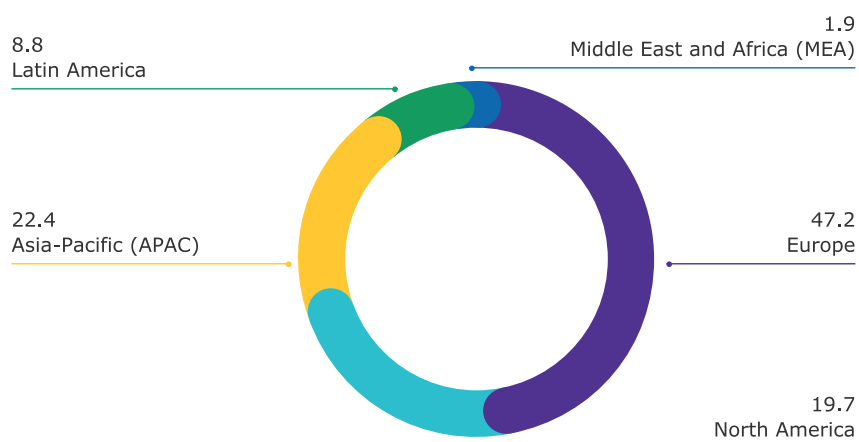
our principles

Worldwide, 49,613¹ employees work for Merck across 66¹ countries (39,639 employees as of December 31, 2014). The increase in our employee count primarily stems from the integration of the company Sigma-Aldrich. Our corporate culture of mutual respect and inclusion binds all employees together across national boundaries. Our stance makes a clear statement: In our [Human Rights Charter](#), we commit ourselves to complying with fundamental labor and social standards, as well as the International Labour Organization's (ILO) core labor standards, the [United Nations Global Compact](#), and the [Responsible Care®](#)

[program](#) of the chemical industry. In our [Code of Conduct](#) as well as our [EHS \(Environment, Health, and Safety\) Policy](#), we have set down fundamental rules for collaboration that define our understanding of a safe, healthy working environment. We have put Group-wide policies and guidelines into place to ensure that these standards are implemented at our individual sites, often going beyond the statutory requirements.

Distribution of employees by region

As of Dec. 31, 2015; Merck incl. Sigma-Aldrich, a company acquired in November 2015 (%)



One key aim of our HR work is to further bolster our performance-oriented corporate culture. This includes expanding our global talent development process as well as our management development activities. To this end, we revised our Competency Model in 2015, trained managers in growth markets, and devised

new ways to develop talent. Thanks to our investments in leadership quality, talent development, and continuing education, we strengthened employee loyalty in 2015 in countries with comparatively high fluctuation rates such as China and India.

¹ This figure pertains to Merck and Sigma-Aldrich combined. Unless otherwise stated, however, the remainder of this chapter refers to Merck only, as we are currently in the integration process (Sigma-Aldrich has been part of Merck since November 18, 2015). The Sigma-Aldrich figures that are already available can be found under [Indicators Employees \(p. 38\)](#).

As an international company, diversity represents a major success factor for us. In 2015, we signed the Equal Opportunity Charter of the German Mining, Chemical and Energy Industrial Union (IG BCE). In doing so, we have promised to exploit every possible opportunity to achieve gender equality within the company.

In 2015, as part of our OHSAS 18001-aligned EHS management process, we introduced a Group-wide guideline for the analysis of job-specific stress factors

in the workplace. This seeks to ensure the health and physical fitness of our employees across all sites.

We are likewise developing specific procedures in response to increasing digitalization and increasingly flexible working conditions (work 4.0). For instance, we are integrating forward-looking technologies such as 3D printing into our vocational training programs. An in-house working group is focusing its efforts on big data and e-commerce. Concrete objectives are currently in development.

progress

Business success through good leadership

Our Competency Model describes the conduct we expect of our employees and managers in order to drive Merck's strategy as well as its business success. Following an evaluation of our management and business model, we not only adapted roles, but also identified leadership as a key issue. In October 2015, we therefore introduced a new strategic Competency Model that defines the leadership culture needed to advance our business strategy. Our managers

motivate their teams to recognize and leverage the opportunities offered by the diverse cultures and experience of our employees. Managers are furthermore expected to act as role models by living our Values and promoting our feedback culture.

Our six strategic competencies, which guide our employees and managers in their tasks, comprise the following:



Management program for growth markets

Our extensive global Management Program series ensures that our international managers develop the skills we need to implement our company strategy and continue our success. Here, we are particularly focused on the needs of our growth markets. In 2015, for instance, we rolled out the Growth Markets Management Program for managers in India and Latin America. As of Dec. 31, 2015, 35 managers from India and Latin America had taken part in this initiative, which seeks to expand management and business knowledge. Our aim is for at least 50% of managers rated Global Grade 14 and up to participate in one of our management programs by the end of 2018.

New opportunities for our talent

Our Talent Management Process seeks to systematically develop the employees we have identified as talents, thereby building long-term loyalty to the company. In 2015, we analyzed the global roll-out of this process, identified areas for improvement, and developed the tools needed to hone it.

A new toolbox will make the internal talent and performance management processes more transparent for managers and talents, while also explaining the existing programs offered by HR. This includes initiatives such as Drive Your Development, a new event format aimed at teaching identified talents how to promote their own development. Launched in 2015, Drive Your Development will be available Group-wide as of 2016. Other tools have been available since the beginning of 2016, such as an improved information packet for talents as well as a video that provides examples and information to help managers conduct career development interviews.

We are also working to help identified talents proactively take advantage of the development

opportunities within the company. In 2015 we started work on an online platform that allows talents to find out about current projects and job vacancies within our company. Interested individuals can then apply with just a few clicks of the mouse. This platform will also be available Group-wide as of 2016. With the introduction of the People Development Award for managers who develop the talents on their teams in an exemplary manner, we are aiming to show more appreciation for our managers' dedication to talent development. In 2016, we will be presenting this award to recognize Merck's best talent developers during our annual Group Executive Conference.

First-time OHSAS 18001 certification

Our occupational health and safety efforts are based on the international standard known as OHSAS 18001. Since 2015, we have been undergoing an external certification process for this standard. By the end of 2016, we intend to have all Performance Materials production facilities certified to OHSAS 18001; nine of 23 sites, including two facilities of the company Sigma-Aldrich (acquired in November 2015), have already successfully completed the audit. The process is helping us hone in on weak points and areas for improvement, as well as track the impact of our corrective measures over the long term. This certification underscores how much we as a company value the occupational health and safety of our employees.

Switch to health-friendly solvents

In 2015, we achieved a major advance in the area of occupational health and safety. For most of the purification processes of our organic production plants in Darmstadt, we have replaced tetrahydrofuran (THF), a solvent suspected to be carcinogenic, with non-hazardous substances. We are thus protecting the health of our employees while also saving nearly € 700,000 per year. For other purification processes, we intend to soon replace THF with non-hazardous substances as well.

Environment

We consider it highly important to mitigate our impact on the environment. We utilize resources such as energy, water and raw materials as efficiently as possible while reducing our waste and emissions.

Climate impact mitigation and resource scarcity are key challenges facing society in the 21st century. For us, it goes without saying that we must take on responsibility and do our part. Through our certified environmental management system, we aim to reduce our emissions and waste while also ensuring that resources such as energy, water and raw materials are utilized as efficiently as possible.

Read More

25 principles

26 progress

our principles

Our environmental activities are governed by our **Corporate Environment, Health and Safety (EHS) Policy**. This framework is based on documents such as the **Responsible Care Global Charter** of the chemical industry; it also draws on ISO 14001 and OHSAS 18001, two internationally recognized standards that govern environmental management systems as well as occupational health and safety systems. Our policy is implemented through internal guidelines such as the Merck Group EHS, Security and Quality Manual.

Since 2009, we've had an ISO 14001:2004 group certificate for our environmental management system. We successfully passed the surveillance audits conducted in 2015. These audits also

examined whether we were meeting the new ISO 14001:2015 requirements released in September 2015. The analysis showed that we already have good practices in place to meet all major new requirements. We plan on expanding these efforts as well as adapting our environmental management system, EHS Policy, and our Merck Group EHS, Security and Quality Manual accordingly. In 2015, we furthermore had nine facilities **achieve OHSAS 18001 (p. 22)** certification for the first time.

We have set the goal of reducing our greenhouse gas emissions by 20% by 2020, relative to the 2006 baseline. All respective activities have been consolidated under our EDISON program, which was launched in 2009.

progress

Over 400 climate impact mitigation measures initiated

In order to attain our CO₂ reduction target, we launched the EDISON climate impact mitigation program in 2009. All our climate impact mitigation and energy efficiency efforts are consolidated under this initiative. Since 2012, we have initiated or implemented more than 400 measures, roughly 60% of the total projects planned under EDISON. Through these efforts, we are aiming to cut CO₂ emissions by about 90,000 metric tons per year in the medium term. In 2015, the following projects made a major contribution toward this goal:

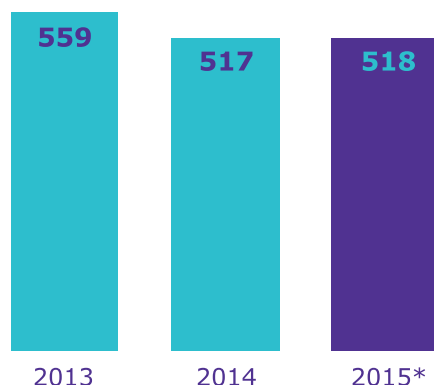
- By 2014, process optimizations had resulted in a two-thirds reduction in process-related emissions at our facility in Jaffrey, New Hampshire (USA). In 2015, we initiated a project to cut emissions even further.

- Our plant in Onahama, Japan, where we manufacture Xirallic® effect pigments for high-quality automotive coatings, is one of the five largest CO₂ producers in the Merck Group. In 2015, we instituted two measures to cut down CO₂ emissions there. First, since January 2016 we've been using natural gas to meet all the site's energy needs. Second, in the course of 2016 we plan to replace the old boilers for steam production with new ones. These two efforts combined will save roughly 3,200 metric tons of CO₂ per year. The project is viewed throughout the country as a best practice.
- In summer 2015 in Shanghai, China, we commissioned a new photovoltaic plant with an output of 400 kW, which will reduce this facility's CO₂ emissions by 280 metric tons per year.

In total, we cut our 2015 greenhouse gas emissions by approximately 8% relative to 2006, despite growth in our operating business. In 2015, the Executive Board once more earmarked funds specifically for additional energy cutting and greenhouse gas reduction initiatives.

Total greenhouse gas emissions (metric kilotons)

CO₂ equivalents



* Figures do not include Sigma-Aldrich, which was acquired in November 2015.

Award for responsible conduct in China

At all our facilities, we consistently meet our own high environmental standards as well as the respective local statutory regulations. In 2015, the [Association of International Chemical Manufacturers](#) (AICM) presented Merck Chemicals China with the Responsible Care Chairman Award. This prize recognizes the example Merck has set for responsible conduct, as well as its efforts to promote sustainable growth in the chemical industry. The award was given specifically for the recycling system at our Merck Electronic Materials site in Suzhou, which employs vacuum distillation to treat hazardous waste, thereby significantly reducing the amount of solvent wasted. We are thus adhering strictly to both our own internal hazmat regulations as well as to local statutes.

Employees develop recycling process for acetone

At the organic production plant at our Darmstadt site, we utilize large quantities of the solvent acetone to clean multi-purpose devices. Until recently, the used solvent was disposed of as waste. In response to this situation, Production employees worked together with Process Development staff to co-develop a new

procedure that allows up to 90% of the used acetone to be treated. We successfully implemented the procedure within our Darmstadt site in 2014, which enabled us to recycle 270 metric tons of acetone in 2015, thus saving roughly € 210,000.

Working hard to reduce water use

In many parts of the world, water is becoming ever scarcer, which is why we're working to utilize water at our sites in a responsible manner. In our production operations, we employ water primarily for cooling and as process water. In 2015, we used internal consumption data along with tools such as the [Water Risk Filter](#) and [Aqueduct Water Risk Atlas](#) to systematically analyze our sites. The aim was to identify the ones that consume large quantities of water as well as those located in areas of high water stress (i.e. regions where water is a particularly precious resource). At the beginning of 2016, we set the goal of implementing a sustainable water management system at facilities with high consumption levels, to be accomplished by 2020. At sites with relevant water use located in areas of high water stress, we are aiming to cut our water consumption by 10% by 2020 (2014 baseline).

community

For us, responsibility for our community is an integral part of who we are. We focus our activities on those areas where we can leverage our expertise to help solve problems.

We see ourselves as part of the community - not only regionally at our individual locations, but also globally as well. As both a major economic player and employer, we help contribute to the prosperity of many countries. For us, corporate responsibility is an integral part of our culture. Our community involvement activities are primarily focused on health initiatives where we can leverage our business-specific expertise to help solve problems. We also work to promote specific aspects of culture and education. On top of this, we provide disaster relief in emergency situations, especially to those regions in which we operate.

Read More

29 principles

29 progress

our principles

To make our efforts more effective and efficient, we focus our resources on the following activities:

- We are partnering with various organizations to globally eliminate schistosomiasis, an insidious worm disease.
- The **Global Pharma Health Fund**, a charitable initiative funded by Merck, works to fight counterfeit medicines in developing health care systems and emerging countries.
- The Deutsche Philharmonie Merck is the musical ambassador of our company.

The Group function Public Affairs & Corporate Responsibility coordinates and implements the above-mentioned projects, regularly reporting their

progress to the Executive Board. **Our subsidiaries are also involved** locally. Guided by criteria defined at the corporate level, our individual legal entities are given the leeway to choose aid projects that reflect our corporate responsibility ethos.

We conduct annual Group-wide surveys to ascertain the regional scope of our community involvement efforts, to identify our objectives and focus, and to track our progress. In 2015, Merck invested a total of € 100 million in social responsibility activities, compared to € 50.8 million in 2014.

These figures do not include activities that primarily serve to market our products.

progress

Fighting to eliminate schistosomiasis

More than 235 million people in Africa suffer from the tropical worm disease **schistosomiasis**. Every year, more than 200,000 die as a result of this parasitic infection.

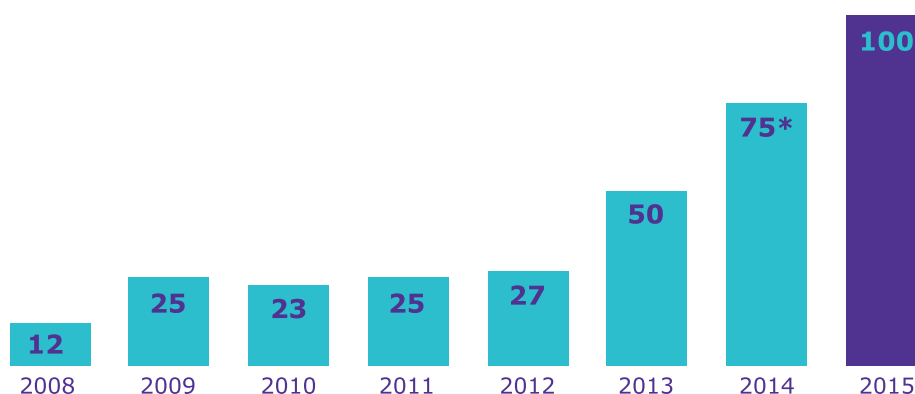
In the 1970s, we participated in a research partnership to develop the active pharmaceutical ingredient known as praziquantel, which is the only API that can be used to treat all forms of schistosomiasis. Since 2007, we've been making an annual praziquantel donation to the World Health Organization (WHO). In 2015, we donated over 100 million tablets. To achieve our goal of eliminating schistosomiasis in Africa, we intend to donate up to 250 million tablets per year to WHO. Because no

suitable formulation is currently available to treat children under the age of six, we are furthermore working **to develop a new formulation of praziquantel (p. 11)** that will enable this age group to receive treatment as well.

At the end of 2014, we furthermore launched the **Global Schistosomiasis Alliance** (GSA) in an effort to address any remaining gaps to meeting the elimination target. Founding members include the Bill & Melinda Gates Foundation, the Schistosomiasis Control Initiative, the United States Agency for International Development, and World Vision International. In 2015, the alliance launched **Something in the Water**, a digital campaign that aims to increase awareness of the condition.

Number of praziquantel tablets donated to WHO

millions



* In 2014, Merck produced around 75 million tablets, 72.2 million of which were supplied to 20 African countries by the year's end, a collaborative effort with the World Health Organization.

Help for colorectal cancer patients

Since its reform in 2009, the healthcare system in China has undergone visible improvement. Despite this, many people remain unable to afford innovative medicines such as Erbitux®, which we offer as a treatment for colorectal cancer. China's health insurance system does not yet cover this drug. Our Biopharma business in China has joined forces with the China Charity Federation (CCF) to help remedy this situation through the Erbitux® China Patient Assistance Program (ECPAP). For patients with a good prognosis, ECPAP will cover roughly 90% of the costs for Erbitux treatment. In addition to helping with costs, we also offer free services such as providing patients with information on the disease, or ensuring that the medicine remains properly refrigerated until reaching them. Since 2012, 5,160 people have benefited from the program. In recognition of these efforts, we were honored with a prize at the fifth Capital Philanthropy Awards in Beijing.

Rapid detection of counterfeit medicines

Interpol estimates that up to 30% of all medicines in developing nations are either illegal, counterfeit or substandard - which can have deadly consequences.

The Global Pharma Health Fund (GPHF), a non-profit initiative funded by Merck, is dedicated to fighting counterfeit medicines. The organization has developed the GPHF-Minilab™, a compact, portable lab that fits into one tropics-resistant case. Thanks to this kit, counterfeit medicines can be detected quickly, easily and cheaply. The tests screen pharmaceuticals for physical appearance, identity and API concentration. The GPHF developed five new test methods in 2015, ranging from antimalarials and antibiotics, to analgesics and antipyretics, which brings the total number of testable APIs to 80.

The GPHF generally provides its Minilabs at cost, but in 2015 they donated seven kits to various African countries. In 2015, Merck also donated seven Minilabs to nations in Africa. In collaboration with international organizations, the GPHF also trains local healthcare professionals how to use the test kit. The GPHF is furthermore involved in efforts to combat counterfeit medicines. Take for instance the DeveloPPP.de program that Merck and the GPHF are supporting in partnership with the German Agency for International Cooperation (GIZ). This project seeks to build capacity by improving the quality of pharmaceutical vocational training in Tanzania. Four of the Minilabs donated by the GPHF in 2015 went to this initiative. In addition, we integrated instruction

on Minilab use into the vocational training program for pharmacy assistants in Tanzania.

Connecting people through music

We have a long tradition of cultural engagement. Take for instance the **Deutsche Philharmonie Merck**. Initially founded 50 years ago as a company orchestra, this professional ensemble has become an integral part of cultural life in the vicinity of our headquarters in Darmstadt, Germany. With concerts and international guest performances attended by more than 26,000 music enthusiasts per year, our philharmonic plays a key role in communicating our Values. In 2015, the Deutsche Philharmonie Merck gave guest performances in Latin America (Mexico City, Rio de Janeiro and São Paulo), the United Kingdom (Cambridge), and Israel (Tel Aviv). In organizing the tour in Latin America, we partnered with three local social aid organizations to whom we donated the ticket proceeds: the Association Against Cancer (Mexico), Together Against Cancer (Brazil), and the School of Music and Citizenship in Rio. Thanks to our support of the music school, around 400 socially disadvantaged children and adolescents have learned to play a musical instrument.

In 2015 - as in previous years - the Deutsche Philharmonie Merck once more invited 50 children and adolescents to participate in its annual orchestra workshop in Darmstadt, Germany. Students rehearsed with members of Merck's philharmonic and then performed together in a joint concert, which gave the young musicians experience playing in a professional ensemble.

The activities of the Deutsche Philharmonie Merck also include annual benefit concerts. The proceeds from the January 2016 concert went to the "Echo hilft!" campaign, which is raising funds for the "Menschenskinder - Werkstatt für Familienkultur e.V." club in Darmstadt.

Actively helping refugees

In December 2015, we donated € 50,000 to the German Red Cross toward the operation of

emergency medical aid stations in Lebanese refugee camps. The majority of the people fleeing Syria are staying in this region, which means that humanitarian aid is desperately needed there. Lebanon alone has taken on more than one million people, roughly 25% of the country's total population. Through our donations, we are seeking to fight the reasons for flight and to help people close to their homeland.

In addition to this effort, we are also taking action in the vicinity of our global headquarters in Darmstadt through various measures to help support refugees. Our apprentices are also doing their part. For instance, in November 2015, 88 Merck apprentices renovated a building that will be used to house refugees. Additionally, we have offered the use of our own gymnasium for the activities of clubs and schools that have made their gymnasiums available to accommodate refugees.

On top of this, we are planning to enroll ten refugees in one of the 10-12 month courses that we call "Start in die Ausbildung", which help prepare participants to start a vocational training program. Before doing so, however, the candidates must first acquire the necessary language skills, which they can do through the job academies of the city of Darmstadt, as well as through special classes on offer by external training agencies. After successfully completing the language program, the ten refugees will be accepted into our "Start in die Ausbildung" course.

In autumn 2015, our legal entity in Austria donated around € 19,000 towards medical care for three Austrian refugee camps.

Merck in Thailand honored for its dedication to corporate responsibility

In 2015, Merck in Thailand received the Asia Corporate Excellence and Sustainability (ACES) Award in the sustainability category in honor of its transparent, measurable corporate responsibility (CR) objectives. Merck in Thailand has also set the example when it comes to integrating CR into its leadership development processes, which is why the

subsidiary received the Top Multinational Company in Southeast Asia Award in 2014.

Many years of partnership have forged a bond between Merck in Thailand and the Raks Thai Foundation, a local branch of the global humanitarian organization known as Care International. The Raks Thai Foundation deploys sustainable development programs in the most impoverished regions of northern and southern Thailand. Their goal is to help local inhabitants earn a stable, long-term income as well as safeguard their natural resources. Merck in

Thailand funds various Raks Thai Foundation projects, such as an initiative to teach sustainable rice farming methods.

Furthermore, Merck in Thailand regularly initiates volunteer campaigns, calling on employees to participate. In 2015, for instance, 300 employees worked to plant roughly 10,000 trees, part of the Together We Grow reforestation project. In the course of a fundraising campaign, staff raised 100,000 Baht (around € 2,560), which was distributed to three charities.

Facts & Figures

We use indicators to facilitate comparison of our ecological, economic and social performance. This chapter illustrates the development of our indicators over the last several years. It furthermore presents our corporate responsibility objectives and describes our progress towards achieving these goals. Capping off the chapter, the Communication on Progress describes our efforts to implement the ten principles of the United Nations Global Compact.

Read More

- 34** indicators
- 59** goals
- 72** global compact top
- 86** assurance report

Indicators

We use indicators to measure and assess our corporate responsibility performance. The following key figures have undergone a limited assurance by KPMG AG Wirtschaftsprüfungsgesellschaft. Sigma-Aldrich became part of the Merck Group in November 18, 2015. Because of the integration process currently underway, we have specified under each of the following tables whether the figures presented include or exclude Sigma-Aldrich.

Indicators: Economics

Net sales, operating result (EBIT) and research and development costs, by business sector (€ million)¹

	Healthcare	Life Science	Performance Materials	Group ²
2014				
Net sales ³	6,620.5	2,682.5	2,059.8	11,362.8
Operating result (EBIT)	1,106.4	289.2	611.5	1,762.0
R&D costs	1,366.0	162.6	170.6	1,703.7
2015 ⁴				
Net sales ³	6,933.8	3,355.3	2,555.6	12,844.7
Operating result (EBIT)	1,096.7	300.8	878.0	1,843.2
R&D costs	1,310.1	197.5	197.0	1,709.2

1 On January 1, 2015, the Merck Group changed its segment reporting structure to report on the three segments Healthcare, Life Science and Performance Materials.

2 As a non-operating segment, Corporate and Other is not shown here (see Annual Report 2015, Segment Reporting).

3 The composition of net sales has been changed, see "Changes to accounting and measurement principles and disclosure changes" in the Notes to the Group Accounts.

4 Merck including Sigma-Aldrich.

Indicators: Compliance

Internal audits on corruption and Human Rights Charter

	2012	2013	2014	2015 ¹
Number of audits relating to corruption	40	30	36	49
% of audits relating to corruption	not recorded	64	68	64
Number of audits relating to the workplace section of the Merck Human Rights Charter	40	27	32	41

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

Compliance violations reported via the SpeakUp Line

	2012	2013	2014	2015 ¹
Number of reported compliance incidents	20	22	26	33
Number of confirmed cases	5	9	11	8

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

Compliance training

	2012	2013	2014 ¹	2015 ²
Total number of persons trained on anti-corruption guidelines	22,890	24,168	7,519³	20,404³
% of employees trained on anti-corruption	59	63	14	43
Number of employees Global Grade 10 or higher trained on anti-corruption	10,164	12,390	3,071	12,747
% of employees Global Grade 10 or higher trained on anti-corruption	60	69	17	64
% of employees Global Grade 9 or lower trained on anti-corruption	58	51	12	22

1 In Q1 – Q3 2014, Group Compliance performed a thorough analysis and review of its Compliance Training Program. No courses were scheduled for these quarters.

2 The figures exclude Sigma-Aldrich since the integration process is still underway.

3 Includes contractors, external supervised workers (e.g. temps) and contract partners working on-site who were trained on anti-corruption guidelines (2014: 2,023, 2015: 3,026).

In order to address the special responsibility held by management personnel, as well as by staff with HR responsibility, these employees are increasingly receiving training on anti-corruption guidelines. This applies to all employees rated Global Grade (GG) 10 or higher.

To date, we have not differentiated between regions when recording compliance training; we are planning to do so in the future. Our compliance and anti-corruption principles are communicated to all our business partners, who undergo a Business Partner Risk Management (BPRM) process.

Legal actions

	2012	2013	2014	2015 ¹
Total number² of legal actions pending or completed (for anti-competitive behavior, violations of anti-trust or violations of monopoly legislation)	3	3	2	2
pending	2	2	2	2
completed	1	1	0	0

1 Merck including Sigma-Aldrich.

2 As published in the annual reports, the herein listed total number of legal actions refers to the significant legal risks as per the company's definition. The significance of legal risks is based on potential negative effects on projected financial objectives as well as on the probability of occurrence.

For further information please see our annual reports:

- [Annual Report 2012](#), page 88 and pages 168-169, no. 50
- [Annual Report 2013](#), pages 132-134 and pages 226-227, no. 48
- [Annual Report 2014](#), pages 130-131 and pages 213-215, no. 48
- [Annual Report 2015](#), pages 128-129 and pages 212-213, no. 27

Indicators: products

Customer privacy

	2012	2013	2014	2015 ¹
Total number of substantiated complaints received from outside parties	not recorded	0	0	0
Total number of complaints from regulatory bodies	not recorded	0	1	0
Total number of identified leaks, thefts, or losses of customer data	not recorded	0	0	0

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

A corporate directive regulates data protection within the Merck Group. We have received no significant complaints from customers, regulatory bodies or outside parties.

Indicators: Employees

Total number of employees

As of Dec. 31	2013	2014	2015 (Merck excl. Sigma-Aldrich)	2015 (Merck incl. Sigma-Aldrich)
Total number of employees	38,154	39,639	40,718	49,613
Men	22,253	23,273	23,891	28,997
Women	15,901	16,366	16,827	20,616

Number of employees by hierarchical level

As of Dec. 31	2013	2014 ¹	2015 (Merck excl. Sigma-Aldrich)	2015 (Merck incl. Sigma-Aldrich)
Total employees	38,154	39,639	40,718	49,613
Senior management (Global Grade above 17)	63	63	75	– ²
Low and middle management (Global Grade 14–17)	1,949	2,108	2,333	– ²
Other employees (Global Grade below 14)	36,142	37,468	38,310	– ²
% of women (total)	42	41	41	42
thereof in senior management (Global Grade above 17)	10	10	12	– ²
thereof in low and middle management (Global Grade 14–17)	498	562	633	– ²
thereof other employees (Global Grade below 14)	15,393	15,794	16,182	– ²
% of men (total)	58	59	59	58
thereof in senior management (Global Grade above 17)	53	53	63	– ²
thereof in low and middle management (Global Grade 14–17)	1,451	1,546	1,700	– ²
thereof other employees (Global Grade below 14)	20,748	21,673	22,128	– ²
by age group				
Up to 29 years old (%)	15	15	15	15
thereof in senior management (Global Grade above 17)	0	0	0	– ²
thereof in low and middle management (Global Grade 14–17)	5	6	5	– ²
thereof other employees (Global Grade below 14)	5,901	5,884	5,848	– ²
30 to 49 years old (%)	64	64	64	63
thereof in senior management (Global Grade above 17)	27	24	29	– ²
thereof in low and middle management (Global Grade 14–17)	1,233	1,340	1,469	– ²
thereof other employees (Global Grade below 14)	23,302	24,082	24,680	– ²
50 years or older (%)	20	21	21	22
thereof in senior management (Global Grade above 17)	36	39	46	– ²
thereof in low and middle management (Global Grade 14–17)	711	762	859	– ²
thereof other employees (Global Grade below 14)	6,939	7,502	7,782	– ²

1 Figures do not include the employees of AZ Electronic Materials, a company acquired in July 2014, because our Global Grading System had not yet been implemented for them as of December 31, 2014. These employees are included under "thereof other employees (Global Grade below 14)".

2 The Global Grading System has not yet been implemented for employees of Sigma-Aldrich, a company acquired in November 2015. It is not possible to provide figures for them.

Average number of employees by functional area

Average number of employees	2013 ¹	2014 ¹	2015 (Merck excl. Sigma- Aldrich) ²	2015 (Merck incl. Sigma- Aldrich) ²
Group	38,282	38,930	40,147	41,511
Thereof women	not recorded	16,110	16,600	17,180
Production	9,985	10,176	11,122	11,563
Thereof women	not recorded	3,202	3,494	3,642
Logistics	1,779	2,207	2,345	2,581
Thereof women	not recorded	774	829	913
Marketing and Sales	12,214	12,113	12,553	12,871
Thereof women	not recorded	4,814	5,022	5,204
Administration	5,106	6,342	6,550	6,763
Thereof women	not recorded	3,557	3,664	3,757
Research and Development	4,433	4,738	4,954	5,097
Thereof women	not recorded	2,534	2,605	2,674
Infrastructure and Other	4,765	3,354	2,623	2,636
Thereof women	not recorded	1,230	986	990

1 Average Head Count (HC) 2014 and 2013 is calculated based on the End HC of the last 5 quarters divided by 5.

2 The average employee headcount for 2015 is calculated by adding up all employees at the end of each of the last 13 months (Dec. 31, 2014-Dec. 31, 2015), and dividing this total by 13. Employees of Sigma-Aldrich, a company acquired in November 2015, are only included in the employee headcount calculations as of November 2015.

Number of employees by region¹

As of Dec. 31	2013	2014	2015 (Merck excl. Sigma-Aldrich)	2015 (Merck incl. Sigma-Aldrich)
Total	38,154	39,639	40,718	49,613
Employees in Europe	20,013	20,537	20,950	23,429
thereof women	8,755	8,893	9,114	10,316
Employees in North America	4,911	5,092	5,172	9,794
thereof women	2,246	2,272	2,290	4,183
Employees in Asia-Pacific (APAC)	8,862	9,488	9,839	11,096
thereof women	2,947	3,176	3,282	3,706
Employees in Latin America	3,798	3,883	4,032	4,352
thereof women	1,699	1,745	1,824	1,986
Employees in the Middle East and Africa (MEA)	570	639	725	942
thereof women	254	280	317	425

1 As regards segment reporting by country and region, the composition of regions was adjusted and the corresponding comparative year-earlier figures are presented. The regional reporting structure now comprises five regions: Europe, North America, Asia-Pacific, Latin America as well as Middle East and Africa.

Contractors such as temps are currently not logged in our employee data system. We are investigating possibilities for recording this information.

Employees by business sector¹

As of Dec. 31	2013	2014	2015 (Merck excl. Sigma-Aldrich)	2015 (Merck incl. Sigma-Aldrich)
Healthcare employees	17,278	17,757	18,566	18,566
Thereof women	7,909	8,130	8,522	8,522
Thereof women (%)	46	46	46	46
Life Science employees	9,837	9,796	9,716	18,611
Thereof women	4,124	4,134	4,094	7,883
Thereof women (%)	42	42	42	42
Performance Materials employees	4,709	5,995	6,228	6,228
Thereof women	1,210	1,498	1,531	1,531
Thereof women (%)	26	25	25	25

¹ On January 1, 2015, the Merck Group changed its segment reporting structure to report on the three segments Healthcare, Life Science and Performance Materials. The corresponding figures from the preceeding years have been retroactively adjusted.

Employees by contract type

As of Dec. 31	2013	2014	2015 (Merck excl. Sigma-Aldrich)	2015 (Merck incl. Sigma-Aldrich)
Total employees	38,154	39,639	40,718	49,613
Number of employees with permanent contracts	36,908	38,410	37,690	46,454
Number of employees with temporary contracts	1,246	1,219	3,028	3,159
% of employees with permanent contracts	97	97	93	94
% of employees with temporary contracts	3	3	7	6
full-time employees	34,911	37,573	38,627	47,292
% full-time	95	98	95	95
thereof women	13,524	14,497	14,963	18,557
thereof women (%)	39	39	39	39
part-time employees	1,994	2,066	2,091	2,321
% part-time	6	5	5	5
thereof women	1,839	1,869	1,864	2,059
thereof women (%)	92	90	89	89

New employees

	2013	2014	2015 ¹
Total number of new employee hires	5,007	6,212	5,710
by age group			
Up to 29 years old	2,358	2,305	2,088
30 to 49 years old	2,397	3,361	3,252
50 or older	252	546	370
by gender			
Women	2,051	2,513	2,450
Men	2,945	3,689	3,260
by region			
Europe	1,757	2,312	2,119
North America	526	826	730
Asia-Pacific (APAC)	2,060	2,298	1,913
Latin America	548	619	780
Middle East and Africa (MEA)	116	157	168
Rate of new employee hires² (%)	13	16	14
by age group³			
Up to 29 years old	47	37	37
30 to 49 years old	48	54	57
50 or older	5	9	6
by gender³			
Women	41	41	43
Men	59	59	57
by region³			
Europe	35	37	37
North America	11	13	13
Asia-Pacific (APAC)	41	37	33
Latin America	11	10	14
Middle East and Africa (MEA)	2	3	3

1 These figures exclude the 8,975 Sigma-Aldrich employees, who are not classified as new hires because they joined Merck as part of the Sigma-Aldrich acquisition.

2 Formula for calculating the rate of new employee hires: Total number of new employee hires divided by Number of employees at the end of the fiscal year.

3 Formula for calculating the rate of new employee hires by age/gender/region: New employee hires of the focus group divided by the total number of new employee hires. In consequence of the modified calculation method and the new composition of our regions effective January 1, 2015 corresponding figures for the preceeding years have been retroactively adjusted.

Staff turnover¹

	2013 ²	2014 ²	2015 ³
Total turnover rate	14.61	11.01	10.38
Turnover rate by gender			
Men	13.98	10.75	10.13
Women	15.00	11.38	10.73
Turnover rate by age group			
Up to 29 years old	21.55	18.71	17.49
30 to 49 years old	13.44	9.72	9.69
50 or older	13.01	9.49	8.08
Turnover rate by region			
Europe	14.61	7.05	6.22
North America	10.51	12.45	12.72
Asia-Pacific (APAC) ⁴	not recorded	17.55	15.95
Latin America ⁴	not recorded	13.67	15.29
Middle East and Africa (MEA) ⁴	not recorded	13.62	12.00
Total number of leavers	5,573	4,364	4,168
by gender			
Men	3,110	2,502	2,386
Women	2,385	1,862	1,782
by age group			
Up to 29 years old	1,273	1,102	943
30 to 49 years old	3,300	2,474	2,505
50 or older	1,000	788	720
by region			
Europe	2,367	1,447	1,290
North America	516	634	638
Asia-Pacific (APAC) ⁴	not recorded	1,665	1,540
Latin America ⁴	not recorded	531	618
Middle East and Africa (MEA) ⁴	not recorded	87	82

- 1 The table contains unadjusted turnover rates. The rate excludes employees who depart due to parental leave or a long-term illness, as well as employees who are transitioning to the non-working phase of partial retirement.
- 2 Employee turnover for fiscal 2013 and 2014 is calculated as follows: Total number of leavers of the past 12 months multiplied by 100 divided by the employee headcount as of December 31.
- 3 Employee headcount for fiscal 2015 is calculated as follows: Total number of leavers from the past 12 months divided by the average employee headcount of the past 12 months multiplied by 100. These figures exclude Sigma-Aldrich since it is still undergoing the integration process. In consequence of the modified calculation method for turnover rate, it is only possible to make a limited statement concerning interannual trends.
- 4 We have no 2013 data for the Asia-Pacific (APAC), Latin America, and Middle East and Africa (MEA) regions, which were realigned in 2015.

Core labor standards of the International Labour Organization (ILO)

As of Dec. 31	2013	2014	2015 ¹
% of full-time employees (standard contract, excluding exempts) with contractually stipulated working hours of maximally 48 hours/week ²	99	99	100
% of full-time employees (standard contract) with at least 15 vacation days/year ³	98	95	97
% of female employees with access to maternity leave programs ⁴	100	100	100
% of employees with the right to collective bargaining ⁵	97	97	98
% of employees working at companies where collective agreements apply	68	66	71
% of sites that rule out complicity in child labor as described in ILO Convention 138	100	100	100
Age of youngest employees, excluding apprentices	16	17	17

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 ILO: Hours of Work (Commerce and Offices) Convention, 1930 (No. 30).

3 ILO: Holidays with Pay Convention (Revised), 1970 (No. 132).

4 ILO: Maternity Protection Convention (Revised), 1952 (No. 103).

5 ILO: Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87).

Local minimum wage

As of Dec. 31	2013	2014	2015 ¹
% of sites that guarantee a salary above the local minimum wage ²	100	100	100

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

2 Minimum wage as stipulated by law, or derived from other provisions such as collective agreements.

The Global Rewards Policy applies across all Merck subsidiaries worldwide and guarantees a systematic compensation structure. Base pay is oriented to the median base pay, and short-term variable compensation is based on the third quartile of the relevant reference market. The overall compensation package thus exceeds the market median.

Work-related accidents¹

	2013	2014	2015 ²
Lost Time Injury Rate (LTIR=workplace accidents resulting in missed days of work per one million man-hours)	2.2	1.8	1.5
by region			
Europe	3.7	2.9	2.7
North America	0.9	1.0	0.8
Asia-Pacific (APAC)	0.3	0.5	0.2
Latin America	2.1	1.3	0.5
Middle East and Africa (MEA)	1.8	0.9	0.0
Number of deaths	0	2	2
by region			
Europe	0	0	1
North America	0	0	1
Asia-Pacific (APAC)	0	1	0
Latin America	0	1	0
Middle East and Africa (MEA)	0	0	0
by gender			
Women	0	1	1
Men	0	1	1

1 Including contractors.

2 The figures exclude Sigma-Aldrich since the integration process is still underway.

Despite our efforts at accident prevention, we've had four fatal workplace accidents over the last two years. In 2015, one employee died in a car accident in the USA, and in Germany one employee suffered a fatal accident involving a fork lift. In 2014, an employee died in Venezuela in a traffic accident, and in Pakistan an employee suffered a fatal incident doing maintenance work on a scissor lift.

Both Merck employees as well as contractors have been included in the calculation of these indicators.

Through the LTIR, we record work-related accidents that involve at least one day of missed work. A work-related accident is an injury that results from the type of work, in the course of doing said work, and that has no internal cause (cumulative trauma). Work-related accidents are considered relevant if they occur on the premises, on business trips, during goods transport, as a result of external influences (e.g. natural disasters), or due to criminal acts involving personal injury. Commuting accidents and accidents during company sporting activities are not included. First-aid incidents are generally not included in the LTIR since these usually do not result in more than one day of missed work.

By 2020, we intend to sustainably lower the LTIR to 1.5. The aim is to permanently stabilize or outperform this challenging number, which we achieved for the first time in 2015.

For the Merck KGaA sites in Darmstadt and Gernsheim (about 19% of the employees of the Merck Group) we only report work-related illnesses if these have been diagnosed and verified by a physician. In the reporting period, no cases of work-induced illness were recorded.

We have defined the LTIR as a key indicator for the Merck Group. Therefore, we do not publish any other indicators such as workplace accidents, lost days or days of absence. The LTIR is not broken down by gender as this differentiation is not relevant to our strategic planning.

Spending on advanced training for employees (€)

	2013	2014	2015 ¹
Average continuing education spending per employee	679	718	775

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

We record and report the costs of vocational training and continuing education for our employees. We are not currently tracking the average number of continuing education hours consolidated at Group level, but we are working on a technical solution to track all training hours globally.

Employees who regularly receive a performance and development evaluation

	2013 ¹	2014 ²	2015 ³
% of employees who receive a performance and development evaluation	72	79	88
by gender			
Women	75	84	90
Men	71	77	87
by employee category			
Senior management (Global Grade above 17)	100	97 ⁴	100
Low and middle management (Global Grade 14–17)	100	96 ⁴	100
Other employees (Global Grade below 14)	72	78 ⁴	88

1 The 2013 data is based on a reporting date of March 12, 2014.

2 The 2014 data is based on a reporting date of March 2, 2015.

3 The 2015 data is based on a reporting date of February 29, 2016. The figures exclude Sigma-Aldrich since the integration process is still underway.

4 The fluctuations in participant numbers by employee category can be explained by the process of the Merck's acquisition of AZ Electronic Materials.

Regular feedback and employee performance evaluations are essential to a systematic development process. Our globally uniform Performance and Talent Management Process requires annual feedback meetings and performance assessments for all employees rated Global Grade 10 and up in our position grading system. Apart from evaluating employee performance, this helps us to identify individual development opportunities. The Performance and Talent Management Process is coordinated via the HR Suite IT system.

When it comes to applying this process, our individual subsidiaries can decide for themselves whether to include employees rated below Global Grade 10. In Germany, all permanent employees have been participating in the Performance and Talent Management Process since 2013. In 2015, around 36,017 employees worldwide were involved in the process.

Apprentices

As of Dec. 31	2013	2014 ¹	2015 ²
Number of apprentices	516	498	506
% of apprentices	5.6	5.4	5.3

1 Only pertains to Merck KGaA sites in Darmstadt, Gernsheim and Grafing, Germany (which accounted for roughly 24% of the Merck Group's employees in 2014).

2 Only pertains to Merck KGaA (roughly 19% of the Merck Group's total employee headcount in 2015)

Internationality of employees

As of Dec. 31	2013	2014 ¹	2015 ²
Number of nationalities	114	122	122
Number of nationalities in management positions (Global Grade 14 or above)	64	67	64
% of non-Germans in management positions (Global Grade 14 or above)	60	60	61

1 These figures do not include the employees of AZ Electronic Materials, a company that was acquired in July 2014. As of December 31, 2014, the Global Grading System had not yet been implemented there.

2 The figures do not include data from Sigma-Aldrich since the integration process is still underway.

Employee age by region

As of Dec. 31

Number of employees	Worldwide	North America	Europe (including Germany)	Germany	Asia-Pacific (APAC)	Latin America	Middle East and Africa (MEA)
2014							
Up to 29 years old	5,890	512	2,427	1,513	2,256	538	157
thereof women	2,458	221	1,105	579	778	295	59
30 to 49 years old	25,446	2,804	12,979	6,359	6,444	2,818	401
thereof women	10,854	1,302	5,862	2,486	2,224	1,283	183
50 or older	8,303	1,776	5,131	3,319	788	527	81
thereof women	3,054	749	1,926	1,133	174	167	38
Average age	40.6	44.5	42.0	42.7	36.1	39.2	37.2
Total employees	39,639	5,092	20,537	11,191	9,488	3,883	639

2015 (Merck excluding Sigma-Aldrich)

Up to 29 years old	5,853	529	2,497	1,544	2,121	539	167
thereof women	2,479	224	1,147	602	749	297	62
30 to 49 years old	26,178	2,790	13,149	6,421	6,841	2,929	469
thereof women	11,150	1,287	5,963	2,501	2,338	1,349	213
50 or older	8,687	1,853	5,304	3,357	877	564	89
thereof women	3,198	779	2,004	1,159	195	178	42
Average age	41.1	45.2	42.4	42.9	36.9	39.8	37.8
Total employees	40,718	5,172	20,950	11,322	9,839	4,032	725

2015 (Merck including Sigma-Aldrich)

Up to 29 years old	7,565	1,314	2,912	1,624	2,496	666	177
thereof women	3,233	522	1,378	649	898	367	68
30 to 49 years old	31,047	5,117	14,589	6,775	7,651	3,092	598
thereof women	13,242	2,285	6,673	2,674	2,576	1,434	274
50 or older	11,001	3,363	5,928	3,539	949	594	167
thereof women	4,141	1,376	2,265	1,241	232	185	83
Average age	41.2	44.2	42.4	43.0	36.7	39.5	39.5
Total employees	49,613	9,794	23,429	11,938	11,096	4,352	942

Insurance and pension systems for employees

In addition to having statutory accident insurance, more than 95% of our employees are covered by locally arranged company accident insurance.

We offer a company pension in numerous countries along with various programs for supplemental company pensions and survivor's benefits. Around two-thirds of our employees are enrolled in such a program.

In addition to this, in numerous countries we also offer supplementary health insurance for employees and family members, an option utilized by roughly two-thirds of our employees.

Long-term pension obligations and post-employment benefits

€ million	2013	2014	2015 ¹
Present value of all pension obligations as of Dec. 31	2,737	3,813	4,153
Pension expenses	147	157	210

1 Merck including Sigma-Aldrich.

Depending on the legal, economic and fiscal circumstances prevailing in each country, different retirement benefit systems are provided for the employees of the Merck Group. Generally these systems are based on the years of service and salaries of the employees. Pension obligations of the Merck Group include both defined benefit and defined contribution plans and comprise both obligations from current pensions and accrued benefits for pensions payable in the future. In the Merck Group, defined benefit plans are funded and unfunded. Provisions also contain other post-employment benefits, such as accrued future health care costs for retirees in the United States (see our Annual Report 2015, Note on Provisions for pensions and other post-employment benefits).

Flexible working hours

As of Dec. 31	2013	2014	2015 ¹
% of employees with the option of working flexible hours	75	74	80

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

Indicators: Environment

Spending on environmental protection, safety and health (€ million)

	2012	2013	2014	2015 ¹
Spending	146	142	145 ²	148

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

2 Figure retroactively adjusted.

These figures include both investments in as well as internal and external spending on waste and wastewater management, water, occupational safety, fire protection, noise reduction, air pollution prevention, decontamination, preservation of nature and the landscape, climate impact mitigation, and energy efficiency.

Total greenhouse gas emissions (metric kilotons) (Scope 1 and 2 of the GHG Protocol)¹

	2006 ²	2012	2013	2014	2015 ³
Total CO₂eq⁴ emissions	561	543	559	517	518
Thereof					
direct CO ₂ eq emissions	316	318	348	321	327
indirect CO ₂ eq emissions	245	225	211	196	191
Biogenic CO₂ emissions	6	5	6	11	54

1 In line with the Greenhouse Gas Protocol, for all previous years (up to the 2006 baseline) the greenhouse gas emissions have been calculated based on the current corporate structure of the reporting year and retroactively adjusted for acquisitions (e.g. AZ Group in 2014) or divestments of (parts of) companies, or for changes in emission factors (portfolio-adjusted).

2 Baseline for our emission targets is 2006.

3 This figure does not include data from Sigma-Aldrich since the integration process is still underway. The direct and indirect CO₂eq emissions (Scope 1 and 2) of the former Sigma-Aldrich sites add up to approximately 215 metric kilotons in 2015.

4 eq = equivalent

The increase in biogenic carbon emissions was caused by the biomass powerplants that were commissioned in Goa, India, and Jaffrey, New Hampshire (USA) at the end of 2014.

Our response to the Carbon Disclosure Project contains a detailed description of our calculation methods. We have included the following gases in our calculation of direct and indirect CO₂eq emissions:

- Direct CO₂ emissions: CO₂, HFCs, PFCs; CH₄/N₂O negligible; SF₆/NF₃ not available.
- Indirect CO₂ emissions: CO₂.

In 2015, we emitted 0.040 kg of CO₂eq per euro of net sales.

Other relevant indirect greenhouse gas emissions (Scope 3 of the GHG Protocol)

	2012	2013	2014	2015 ²
Total gross other indirect emissions (metric kilotons CO₂eq¹)	49	64	319	349
Fuel- and energy-related emissions, not included in Scope 1 or 2 (category 3)	not recorded	not recorded	97	95
Waste generated in operations (category 5)	not recorded	not recorded	96	123
Business travel - air travel (category 6)	48	63	74	79
Business travel - rail travel (category 6)	0.1	0.05	0.02	0.02
Business travel - rental car travel (category 6)	0.8	1.3	1.2	1.1
Employee commuting (category 7)	not recorded	not recorded	51	51
Upstream leased assets (category 8)	not recorded	not recorded	0 ³	0 ³
Processing of sold products (category 10)	not recorded	not recorded	0 ⁴	0 ⁴
Downstream leased assets (category 13)	not recorded	not recorded	0	0
Franchises (category 14)	not recorded	not recorded	0	0

1 eq = equivalent

2 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

3 Already covered under Scope 1/2 emissions.

4 Merck produces a huge variety of intermediate products for various purposes. Due to their many applications and our customer structure, the associated GHG emissions cannot be tracked in a reasonable fashion.

No data is available for Scope 3 categories not listed above. Their relevance to Merck is assessed in the [Scope 3 document](#).

Biogenic emissions (Scope 3), if present, are not being recorded.

Emissions of ozone-depleting substances (metric tons)

	2012	2013	2014	2015 ¹
Total emissions of ozone-depleting substances	1.9	1.5	0.9	1.4
CFC-11eq ²	0.10	0.08	0.05	0.08

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 CFC-11eq is a unit of measure used to compare the potential of various substances to deplete the ozone. Reference figure 1 indicates the potential of CFC-11 to cause the depletion of the ozone layer.

Substances included: R-12, R-22, R-141b, R-402a, R-409a, R-401a.

Source for the emission factors: Montreal Protocol.

Other air emissions (metric kilotons)

	2012	2013	2014	2015 ¹
Volatile organic compounds (VOC)	0.2	0.2	0.3	0.3
Nitrogen oxide	0.2	0.2	0.2	0.2
Sulfur dioxide	0.02	0.02	0.02	0.05
Dust	0.03	0.01	0.02	0.06

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

The increase in dust and sulfur dioxide emissions was caused by the biomass power plant that was commissioned in Goa, India at the end of 2014.

The VOC, nitrogen oxide, sulfur dioxide, and dust emissions reported here are attributable to production activities as well as energy generation. These figures do not include emissions from vehicles. Emissions are determined partially based on measurements and partially based on calculations or estimates. Only some sites are required to measure individual parameters.

Transport of finished goods, by means of transportation¹

	2012	2013	2014	2015
% Truck	58	56	56	53
% Boat	36	37	38	41
% Airplane	6	7	6	6

1 Pertains to goods shipped by our Darmstadt, Gernsheim and Hohenbrunn sites in Germany (excluding Sigma-Aldrich). These figures pertain to the total weight of the transported products. Indicated here is the primary means of transport.

In shipping finished goods from our production sites to the local warehouses of our subsidiaries, we have been working to reduce the use of air shipping in favor of sea freight. This change aims to both reduce costs as well as lower transport-related CO₂ emissions.

Energy consumption¹

in GWh	2012	2013	2014	2015 ²
Total energy consumption	1,528	1,549	1,602	1,720
Direct energy consumption	924	991	1,056	1,171
Natural gas	813	871	919	933
Liquid fossil fuels ³	98	105	110	103
Biomass and self-generated renewable energy	13	15	27	135
Indirect energy consumption	604	558	546	549
Electricity	491	493	460	466
Steam, heat, cold	113	65	86	83
Total energy sold	0.5	0.4	0.6	0.5
Electricity	0.5	0.4	0.6	0.5
Steam, heat, cold	0	0	0	0

in TJ	2012	2013	2014	2015
Total energy consumption	5,501	5,577	5,767	6,193
Direct energy consumption	3,327	3,568	3,801	4,216
Natural gas	2,927	3,136	3,308	3,359
Liquid fossil fuels ³	353	378	396	371
Biomass and self-generated renewable energy	47	54	97	486
Indirect energy consumption	2,174	2,009	1,966	1,977
Electricity	1,768	1,775	1,656	1,678
Steam, heat, cold	407	234	310	299
Total energy sold	2	1	2	2
Electricity	2	1	2	2
Steam, heat, cold	0	0	0	0

1 In line with the Greenhouse Gas Protocol, for all previous years (up to the 2006 baseline) the energy consumption has been calculated based on the current corporate structure of the reporting year and retroactively adjusted for acquisitions or divestments of (parts of) companies, or for changes in emission factors (portfolio-adjusted).

2 The figures exclude Sigma-Aldrich since the integration process is still underway.

3 Light and heavy fuel oil, liquified petroleum gas (LPG), diesel and gasoline.

At our sites in Billerica, Massachusetts (USA), Bedford, Massachusetts (USA), Molsheim (France), Tel Aviv (Israel), Rome (Italy), Ciudad de Guatemala (Guatemala), and Shanghai (China), we use photovoltaics to produce power. The increase in biomass and self-generated renewable energy consumption is attributable to the biomass power plants that were commissioned in Goa, India, and Jaffrey, New Hampshire (USA) in 2014.

Merck currently only records purchased secondary energy – this is primarily electricity and, to a lesser extent, heat/steam/cold. Details on the local energy mix, including the respective percentage of primary energy, renewable energy, etc. are not available. Data on local energy efficiency in electricity or heat generation are not available either. Our production sites are located in countries with a widely varying energy mix.

Our Darmstadt and Gernsheim sites in Germany consume the most energy, representing 37% of our Group-wide total. At these sites, fossil energy (coal, gas, etc.) accounts for approx. 55%, nuclear energy approx. 17% and renewable energies approx. 28% of the energy mix.

Renewable energies account for a higher share of electricity generation at production sites in Switzerland, with nuclear energy taking the lead in France. Based on an estimated global energy efficiency of 37% for the conversion and distribution of generated electricity, this results in a primary energy consumption of 1,260 GWh for 2015. Based on an estimated global energy efficiency of 85% for heat/steam/cold, this results in a primary energy consumption of 98 GWh for 2015. This yields a total primary energy consumption of 1,358 GWh for 2015. The calculation is based on factors stated in the "Handbuch für betriebliches Energiemanagement - Systematisch Energiekosten senken" ("Manual for energy management in practice - Systematically reducing energy costs") published by DENA, 12/2012.

In 2015, Merck's energy intensity relative to net sales totaled 0.134 kWh/€.

Water consumption (millions of m³)

	2012	2013	2014	2015 ¹
Total water consumption	16.3	9.6	11.1	11.6
Surface water (rivers, lakes)	7.0	0.0	0.3	0.3
Groundwater	5.3	5.4	6.3	6.7
Drinking water (from local suppliers)	4.0	4.2	4.5	4.6
Rain water and other sources	0.01	0.01	0.03	0.03

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

These figures do not include the ground water that we use for safety measures at the Gernsheim site in Germany. Here, the water is fed back directly into natural circulation.

Water reused (millions of m³)

	2012	2013	2014	2015 ¹
Water reused	17.8	16.6	16.0	23.0

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

The increase in reused water in 2015 is attributable to the recirculating cooling system that went on line at our facility in Darmstadt, Germany. This system provides recirculating cooling water to both our new co-generation unit as well as our new cold and compressed air generator.

Wastewater volume and quality

	2012	2013	2014	2015 ¹
Total wastewater volume (millions of m³)	8.5	8.6	10.1²	10.0
Chemical oxygen demand (metric tons of O ₂)	929	756	1,319 ²	1,384
Phosphorous (metric tons)	7	7	11	11
Nitrogen (metric tons)	76	77	81	108
Zinc (kg)	267	293	288	280
Chromium (kg)	21	23	36 ²	41
Copper (kg)	37	36	34	62
Nickel (kg)	101	110	128	126
Lead (kg)	35	42	55	53
Cadmium (kg)	10	10	10	13
Mercury (kg)	1	1	1	1
Arsenic (kg)	3	4	4	4

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 Figures retroactively adjusted.

The wastewater volume includes indirect discharge into both public and Merck-owned wastewater treatment plants, as well as direct discharge (such as rainwater and cooling water).

The wastewater treatment plant at our Gernsheim, Germany site also treats wastewater from the neighboring municipality of Biebesheim. The communal wastewater from Biebesheim is included in the wastewater volume as well as in the emissions stated in the table.

Emissions are determined partially based on measurements and partially based on calculations or estimates. Only some sites are required to measure individual parameters.

Hazardous and non-hazardous waste (metric kilotons)

	2012	2013	2014	2015 ¹
Total waste	189	161	228²	295
Hazardous waste disposed ³	62	37	53	55
Non-hazardous waste disposed ³	36	31	55	31
Hazardous waste recycled	48	50	49 ²	59
Non-hazardous waste recycled	43	43	71	150

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 Figures retroactively adjusted.

3 Disposed = incineration and landfill.

The amount of "non-hazardous waste disposed" decreased in 2015 because there was less landfill needing disposal.

The increase in "non-hazardous waste recycled" can be attributed to the sharp rise in landfill, construction waste, and demolition waste. Landfill, construction waste, and demolition waste accounted for 47% of total waste in 2014, and 53% of total waste in 2015.

Exported/Imported hazardous waste (metric kilotons)

	2012	2013	2014	2015 ¹
Exported ²	not recorded	7.1	9.6 ³	4.3
Imported ⁴	not recorded	0.01	0.003	0.01

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 Disposal within the EU.

3 Figure retroactively adjusted.

4 As part of the return system for our cell tests, these kits are brought to our Gernsheim site in Germany for proper disposal.

Waste by disposal method

	2012	2013	2014	2015 ¹
Total waste (metric kilotons)	189	161	228²	295
Disposed waste (metric kilotons)	98	67	108	86
Landfilled waste (metric kilotons)	19	13	37	12
Incinerated waste (metric kilotons)	79	54	71	74
Recycled waste (metric kilotons)	91	94	120²	209
Material recycling (metric kilotons)	67	69	93 ²	181
Waste-to-energy (metric kilotons)	24	25	27	28
Recycling rate (%)	48	58	53	71

1 The figures exclude Sigma-Aldrich since the integration process is still underway.

2 Figures retroactively adjusted.

The waste output of the Merck Group rose to 295 metric kilotons in 2015 (228 metric kt in 2014). Waste from construction and renovation projects accounted for the majority of the waste (2014: 47%; 2015: 53%), stemming in particular from the remodeling of our Global headquarters in Darmstadt. In 2014, roughly 50 metric kilotons of this waste was recycled, with approximately 124 metric kilotons recycled in 2015.

Significant spills

	2012	2013	2014	2015 ¹
Total number of significant spills	0	0	0	0

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

Indicators: Community

Spending on community involvement (€ million)

	2012	2013	2014	2015 ¹
Total spending	11.8	46.2	50.8	100.0

1 The figure does not include data from Sigma-Aldrich since the integration process is still underway.

We calculate the value of pharmaceutical product donations according to the WHO Guidelines for Medicine Donations; for other product donations, we apply their fair value.

The increase in our community involvement spending is attributable to the expansion of the Merck Praziquantel Donation Program (MPDP) as well as the expansion of the Erbitux® China Patient Assistance Program. In the Merck Praziquantel Donation Program, we are partnering with the World Health Organization to combat the worm disease schistosomiasis in African school children. Through the Erbitux® China Patient Assistance Program, roughly 90% of the costs for Erbitux® treatment can be covered for colorectal cancer patients with a good prognosis.

Spending on community involvement, by region (%)¹

	2012	2013	2014	2015 ²
Europe	20	36	37	8
North America	13	1	< 2	1
Asia-Pacific (APAC)	59	61	60	91
Latin America	8	< 1	< 2	< 1
Middle East and Africa (MEA)	< 1	< 1	< 1	< 1

1 Excluding spending for the Global Pharma Health Fund, the Merck Praziquantel Donation Program and the Deutsche Philharmonie Merck. As regards segment reporting by country and region, the composition of regions was adjusted and the corresponding comparative year-earlier figures are presented. The regional reporting structure now comprises five regions: Europe, North America, Asia-Pacific, Latin America as well as Middle East and Africa.

2 The figures exclude Sigma-Aldrich since the integration process is still underway.

In 2015, the significant increase in spending on the Erbitux® China Patient Assistance Program led to a relative rise in spending in our Asia-Pacific (APAC) region, and a relative decrease in spending in other regions.

Focus of local community involvement (%)¹

	2012	2013	2014	2015 ²
Disaster relief	3	6	4	6
Education	16	23	23	25
Environment	9	10	10	7
Health	30	23	33	33
Support for culture and sports activities near our sites	28	19	15	8
Other	14	19	15	21

1 Based on number of projects, excluding the Global Pharma Health Fund, Merck Praziquantel Donation Program and Deutsche Philharmonie Merck.

2 The figures exclude data from Sigma-Aldrich since the integration process is still underway.

Motivations for our community involvement (%)¹

	2012	2013	2014	2015 ²
Charitable activities	32	20	9	3
Community investment	52	59	59	92
Commercial initiatives in the community	16	21	32	5

1 Based on total spending, excluding spending for the Global Pharma Health Fund, the Merck Praziquantel Donation Program and the Deutsche Philharmonie Merck.

2 The figures exclude Sigma-Aldrich since the integration process is still underway.

In 2015, the significant increase in spending on the Erbitux® China Patient Assistance Program, which falls under "Community investment", led to a relative decrease in spending in other areas.

We categorize the motivations for our activities based on the London Benchmarking Group model as well as the guidelines of the Bertelsmann Foundation for corporate social responsibility. Projects that primarily aim to make improvements within the community are classified as "community investment".

Initiatives that are predominantly aimed at company-relevant factors such as image or personnel recruitment are classified as "commercial initiatives in the community". "Charitable activities" covers any other projects that benefit a charitable organization, but cannot be listed under either of the other two motivation categories due to missing data or their narrow scope.

Goals

Our corporate responsibility goals set the course to be followed for the next several years. This section presents these objectives and reports on the progress we've made towards achieving them.

Products

Product safety

Goal: Establish a globally uniform hazard and risk communication standard for all relevant Merck chemical products in the supply chain based on the precautionary principle

Measure(s): Implementation of REACH: Register substances produced in quantities of 1-100 metric tons per year (phase 3 of REACH implementation) and register non-phase-in substances

By when: Mid-2018

Status description for 2015: We registered another 30 phase-3 substances in 2015.

Status:  In progress

Measure(s): Implementation of the Global Product Strategy (GPS): Issue Product Safety Summaries for all hazardous substances registered under REACH

By when: End of 2020

Status description for 2015: Another three Product Safety Summaries were issued in 2015.

Status:  In progress

Measure(s): Projects for hazard communication: Update safety data sheets for non-hazardous chemical products

By when: End of 2020

Status description for 2015: We have safety data sheets for around 20% of all non-hazardous substances and continually review them. Around 40% of the non-hazardous substances have replacement letters.

Status:  In progress

Measure(s): Increase the number of safety data sheets in alignment with a globally uniform standard

By when: End of 2020

Status description for 2015: Software-based EHS (Environment, Health, and Safety) management system roll-outs in China, Japan, South Korea, and Taiwan paved the way to globally uniform standards in hazard communication.

Status:  In progress

Measure(s): Implementation of US GHS/HazCom 2012: Classify pure substances, mixtures and sets in the United States according to HazCom 2012 criteria

By when: Mid-2015

Status description for 2015: All pure substances, mixtures and sets were classified and labeled in alignment with HazCom 2012 by the deadline.

Status:  Goal achieved

Product-related crime

Goal: Protect customers and patients from harm by product-related crime

Measure(s): Continue to develop Group-wide product security guidelines for all relevant products

By when: End of 2016

Status description for 2015: The following internal guidelines were created in 2015 and adopted in January 2016:

- MACON Team Charter: Expands and professionalizes the Merck Anti-Counterfeiting Operational Network (MACON) by involving local experts in securing evidence, performing analyses, etc.
- Product security standard for Merck's Healthcare business sector

A product investigation standard is being created to expand knowledge and optimize processes at our subsidiaries with regard to handling product crime.

Since October 2015, we have been consolidating our Group-wide measures in order to harness synergies between our business sectors, making our battle against product-related crime even more effective.

Status:  In progress

Measure(s): Monitor the numbers for unreported cases of counterfeit medicines in select countries

By when: End of 2016

Status description for 2015: In one of our markets, we have initiated a project to gather intelligence on cases of counterfeit medicines that are not officially reported. Based on the results, we are developing a method of monitoring these dark figures and applying it to other countries.

The Dark Web is constantly under surveillance for signs of Merck products.

Status:  In progress

Measure(s): Support regional efforts against product-related crime

By when: End of 2016

Status description for 2015: In 2015, we supported investigations in India, China, the United States, and Mexico.

Status:  In progress

Measure(s): Pilot a project to improve product safety in high-risk regions of Africa using software-based solutions

By when: End of 2016

Status description for 2015: We have developed an app called Check-My-Meds™, which was piloted in the United States in 2015. It is scheduled for launch in Africa in 2016.

Status:  In progress

Measure(s): Conduct a risk assessment in our Healthcare business sector to identify strategically and commercially relevant data that have a greater need of protection

By when: End of 2016

Status:  New goal

Measure(s): Increase internet searches to hunt down trademark infringement and counterfeit products

By when: End of 2016

Status:  New goal

Goal: Increase internal awareness of strategic relevance of counterfeit pharmaceuticals

Measure(s): Expand scope of employee training and increase internal reporting

By when: End of 2015

Status description for 2015: We conducted three workshops at critical sites. Furthermore, during a meeting of the Global Security Network in Darmstadt, Germany, product crime officers gathered together to share their experience and best practices.

The reporting system for product-related crime was enhanced in order to improve the reporting process and raise awareness of the importance of reporting.

Status:  Goal achieved

Measure(s): Host a conference of the Pharmaceutical Security Institute (PSI) with industry representatives

By when: End of 2015

Status description for 2015: Merck hosted a conference of the Pharmaceutical Security Institute (PSI).

Status:  Goal achieved

Measure(s): Expand MACON network to include representatives from major sites

By when: End of 2016

Status:  New goal

Measure(s): Conduct awareness workshops for employees

By when: End of 2016

Status:  New goal

Access to health

Goal: Monitor and assess the progress and efficacy of our Access to Health programs.

Measure(s): Develop quantitative and qualitative performance indicators for the 4 A's: Availability, Accessibility, Affordability, and Awareness

By when: End of 2016

Status description for 2015: In 2015, we began defining performance indicators that are used to monitor and assess the progress as well as efficacy of our Access to Health programs.

Status:  In progress

Goal: Availability: Address unmet needs through the research, development and refinement of health solutions

Measure(s): Expand our R&D portfolio for infectious diseases within the scope of the Global Health Innovation Platform. We have created a three-year business plan for implementing this new entity within Global Health R&D, with focal areas being the development of a pediatric formulation to treat schistosomiasis in preschool-aged children, as well as the development of a new anti-malarial drug.

By when: End of 2017

Status description for 2015: Schistosomiasis: Successful completion of a Phase I trial with healthy subjects in South Africa, as well as a taste study with children in Tanzania. We are also working to identify new active ingredients.

Malaria: In March 2015, we obtained the rights to a promising new antimalarial compound that is in the preclinical phase and that we will continue to develop. In addition, our Healthcare and Life Science business sectors are currently developing a kit for malaria based on the Muse[®] Auto CD4/CD4% analysis system; the device will assess the presence and type of malaria parasite and potentially measure co-infection with HIV.

Status:  In progress

Goal: Affordability: Address inability to pay

Measure(s): Through our WIPO Re:Search membership, engage in a partnership to share our intellectual property and knowledge to catalyze the development of medical products against infectious diseases

By when: End of 2016

Status description for 2015: In 2015 we finalized a collaboration agreement with the University of Buea in Cameroon that aims to repurpose compounds from our library to develop a treatment for onchocerciasis, also known as river blindness.

Status:  Goal achieved

Goal: Awareness: Empower health workers, communities and patients

Measure(s): Develop an integrated initiative of our Healthcare and Life Science business sectors to raise awareness and empower people to make informed decisions

By when: End of 2016

Status description for 2015: In 2015, we were in the initial stages of developing a proposal that aims to take a holistic approach to tackling access to health challenges.

Status:  In progress

Goal: Accessibility: Strengthen supply chains and provide localized solutions

Measure(s): Develop an initiative to reach patients, regardless of their geographic location, and ensure they have access to health solutions.

By when: End of 2016

Status description for 2015: In 2015, we started engaging a diverse array of stakeholders, including pharmaceutical companies, international organizations, governments, academics, and NGOs, among other private and public stakeholders, to address supply chain and delivery issues in developing countries.

Status:  In progress

Animal research

Goal: Harmonize animal welfare Group-wide

Measure(s): Develop a Group-wide audit concept for the facilities of contract animal research organizations

By when: End of 2015

Status description for 2015: Merck's audit concept is described in our Animal Safety & Welfare Manual. The processes specified were implemented in 2015.

Status:  Goal achieved

Goal: Harmonize the high quality of animal facilities used by our Biopharma business

Measure(s): Obtain AAALAC International accreditation for all Biopharma laboratory animal facilities

By when: End of 2015

Status description for 2015: In 2015, four of our five Biopharma animal facilities were (re-)accredited to AAALAC standards, while the fifth one has applied for accreditation.

Status:  Goal not Achieved

Goal: Launch a Merck 3R award

Measure(s): Participate in the 3Rs IQ/AAALAC Award Program

By when: End of 2015

Status description for 2015: Instead of initiating our own internal award, we decided to support the world-renowned 3Rs IQ/AAALAC Award.

The first award was presented in 2015.

Status:  Goal achieved

Transport and warehouse safety

Goal: Further improve warehouse and transport safety

Measure(s): Expand scope of transport safety audits to include contracted service providers

By when: End of 2016

Status description for 2015: The warehouses of all contracted service providers have been integrated into our audit process. We are currently working on a method of integrating transport companies into our audit process as well.

Status:  In progress

Measure(s): Implement improvement programs in countries and regions selected on risks specific to the products being handled

By when: End of 2016

Status description for 2015: In 2015, we piloted a project in India to increase transport and warehouse safety. The first set of improvements have already been implemented. In 2016, we plan to examine the documentation and risk assessment of participating suppliers to find areas for improvement.

Status:  In progress

Measure(s): Implement a process to further improve our management approach to transport and warehouse safety

By when: End of 2016

Status description for 2015: In the course of the assessment process, we utilized safety-relevant customer complaints to identify areas for improvement and then implemented measures such as the following:

- Improving the packaging concept for certain chemicals
- Warehouse audits of third-party companies

Status:  In progress

Suppliers

Supplier management

Goal: Ensure our suppliers adhere to ethical, social, environmental, and compliance standards (part of our risk mitigation strategic procurement objective)

Measure(s): Systematically collect supplier assessments using the Together for Sustainability (TfS) methodology

By when: End of 2015

Status description for 2015: The TfS process has been implemented. TfS has given us access to evaluations for over 300 of our most important suppliers; roughly 100 of these were initiated in 2015 at our prompting. In addition, we also conducted TfS audits on nine vendors in 2015.

Status:  Goal achieved

Measure(s): Establish a CR standard operating procedure

By when: End of 2015

Status description for 2015: A CR SOP was drafted in 2015; it will be adopted and implemented Group-wide in early 2016.

Status:  In progress

Employees

Diversity and inclusion

Goal: Increase the percentage of management positions (Global Grade 14+) held by women to at least 25%-30%

Measure(s): Increase the percentage of management positions held by women through numerous initiatives that move women into those positions

By when: End of 2016

Status description for 2015: We are utilizing targeted communication activities to raise awareness of diversity within the company. Our HR processes, such as talent management, help ensure that women are included as well as empowered.

The percentage of management positions (Global Grade 14+) held by women is currently 27% Group-wide. Certain Group functions such as IT have a lower percentage of women in management positions. However, the figures are continuously increasing across the Group as a whole. We have reached our strategic goal of raising the percentage of management positions held by women to 25%-30% and intend to further increase this figure by the end of 2016.

Status:  In progress

Attracting and retaining talent

Goal: Talent & Succession Management: Fill at least 2/3 of positions ranked Global Grade 16+ with internal candidates

Measure(s): Use the Talent Management Process to identify suitable employees with management potential and define a process to systematically develop them

By when: Ongoing

Status description for 2015: In 2013, we introduced the Talent & Succession Management Process in order to systematically foster and develop talent. In 2015, 70% of our vacant management positions were filled internally.

Status:  Goal achieved

Goal: Have at least 50% of managers rated Global Grade 14+ take part in a management program

Measure(s): Expand the geographical range of the programs to reach a broader target group. Have senior management act as the official program sponsors.

By when: End of 2018

Status description for 2015: In 2015, we rolled out the Growth Markets Management Program for local managers in India and Latin America. This initiative covers both business administration as well as Merck-specific subject matter. To date, 35 managers from India and Latin America have taken part in the program, which is being offered in China and Turkey as well. Participants come from various countries and regions such as Africa, the Middle East, Japan, and Russia. In total, 98 managers Group-wide took advantage of this initiative in 2015.

On top of this, we expanded the scope of our Advanced Management Program and offered workshops in China and Thailand. The initiative aims to empower our managers to make decisions and unleash their innovative strength.

We also rolled out "Critical Conversations" and "Leader as a Coach" workshops.

Status:  In progress

Goal: Build a talent pool that reflects the demographic structure of Merck

Measure(s): Identify talent, keep managers informed about Merck's demographic profile (e.g. age, nationality, gender)

By when: Ongoing

Status description for 2015: In 2015, we incorporated demographic information into our talent pool. Managers are now familiar with the demographic structure of the pool, and we can thus steer its development accordingly.

Status:  In progress

Goal: Competency-based interviews with 20% of the talent with potential for a GG18+ position

Measure(s): Nominate suitable talent within the scope of the Talent & Succession Management program

By when: Ongoing

Status description for 2015: Annually, interviews are conducted with around 20% of the talent with potential for a GG18+ position.

Status:  Goal achieved

Goal: Have 80% of all employees using the HR Suite IT system for their annual Performance Management Process assessment

Measure(s): Expand the HR Suite user group to new target groups

By when: Ongoing

Status description for 2015: In 2015, around 85% of our employees used the HR Suite IT system.

Status:  Goal achieved

Goal: Position Merck as an attractive employer for university graduates

Measure(s): Participate in university fairs and organize events at Merck for graduates; position Merck as an attractive employer using employer branding channels (e.g. career websites, social media, image advertising)

By when: Ongoing

Status:  New goal

Occupational health and safety

Goal: Reduce occupational accidents throughout the entire Merck Group (lost time injury rate = 2.5)

Measure(s): Implement the BeSafe! program; hold EHS forums on safety behavior change

By when: End of 2015

Status description for 2015: With a lost time injury rate of 1.5, we achieved the goal we set for 2015. The BeSafe! program was rolled out across all operational sites of the Merck Group (including warehouses) and contributed significantly to achieving our goal.

Status:  Goal achieved

Goal: Reduce occupational accidents throughout the entire Merck Group (lost time injury rate = 1.5)

Measure(s): Implement the OHSAS 18001 occupational health and safety management system within all Performance Materials production sites

By when: End of 2016

Status description for 2015: Within the framework of a group certificate, nine of our 24 Performance Materials production sites achieved OHSAS 18001 certification in 2015.

Status:  New goal

Measure(s): Roll out the BeSafe! program at all newly acquired sites and monitor the program via appropriate indicators

By when: End of 2020

Status:  New goal

Environment

Environmental impact mitigation

Goal: Audit and implement environmental management systems at acquired sites

Measure(s): Certify environmental management systems at acquired sites

By when: Ongoing

Status description for 2015: Eight out of nine production sites of AZ Electronic Materials, which was acquired in 2014, have been incorporated into our group certificate. The ninth facility is still undergoing the process.

Next year we plan to transition the Sigma-Aldrich production sites with existing ISO 14001 certifications to the Merck Group certificate (ISO 14001).

A gap analysis is planned for the remaining Sigma-Aldrich production sites.

Status:  In progress

Climate impact mitigation

Goal: Reduce the Merck Group's direct and indirect greenhouse gas emissions (Scope 1 and 2) by 20% relative to the 2006 baseline

Measure(s): Systematically examine the energy consumption at Merck's individual production sites

By when: End of 2020

Status description for 2015: We continued to systematically investigate ways to save energy at our production sites. We conducted energy audits based on the EU Energy Efficiency Directive at several facilities, including our sites in Eppenheim and Berlin (Germany), as well as Calais and Meyzeiu (France).

Status:  In progress

Measure(s): Identify and implement ways to save energy

By when: End of 2020

Status description for 2015: In 2015, we lowered our greenhouse gas emissions by around 8% relative to the 2006 baseline, despite growth in our operating business. Around two-thirds of the EDISON projects planned Group-wide have already been or are being rolled out. In 2016, we intend to initiate 57 new projects.

Status:  In progress

Measure(s): Reduce process-related emissions

By when: End of 2020

Status description for 2015: Our Life Science business sector plays an important role in helping reduce process-related emissions. In 2014 at our site in Jaffrey, New Hampshire (USA), we optimized processes and thereby achieved a two-thirds reduction in our process-related emissions per production unit. In 2015, we initiated a project to realize additional savings.

Status:  In progress

Measure(s): Reduce greenhouse gas emissions of our Life Science business sector (includes only former Merck Millipore business - excludes Sigma-Aldrich, which was acquired in November 2015) by 10% by 2015 (2006 baseline)

By when: End of 2015

Status description for 2015: In 2015, our Life Science business sector (only includes former Merck Millipore business - excludes Sigma-Aldrich, which was acquired in November 2015) reduced greenhouse gas emissions by approx. 11% relative to the 2006 baseline.

Status:  Goal achieved

Waste management

Goal: Improve waste and recycling management processes

Measure(s): Perform waste audits to identify ways to reduce waste or increase recycling efficiency

By when: End of 2015

Status description for 2015: Waste reduction and recycling activities continued through 2015. We have begun to investigate options to recycle production scrap that requires custom recycling techniques.

Status:  Goal achieved

Water

Goal: 10% reduction (2006 baseline) in the water use of our Life Science business sector (only includes former Merck Millipore business - excludes Sigma-Aldrich, which was acquired in November 2015)

Measure(s): Implement water reuse and reduction initiatives

By when: End of 2015

Status description for 2015: Despite significant increases in production volume, our Life Science business sector (only includes former Merck Millipore business - excludes Sigma-Aldrich, which was acquired in November 2015) reduced water consumption by approx. 5% between 2006 and 2015.

Status:  Goal not Achieved

Goal: 10% reduction (2014 baseline) in water use at sites with relevant levels of water consumption in water-scarce regions (i.e. areas of high water stress)

Measure(s): Implement sustainable water management processes at production facilities with high levels of water consumption, as well as those sites located in water-scarce regions.

By when: End of 2020

Status:  New goal

Community

Merck Praziquantel Donation Program

Goal: Eliminate schistosomiasis in African school children

Measure(s): Provide praziquantel tablets free of charge to treat school children in Africa

By when: Ongoing

Status description for 2015: In 2015, we provided WHO with more than 100 million praziquantel tablets.

Status:  In progress

Measure(s): Incrementally increase annual tablet donation by a factor of ten, from 25 million in 2012 to up to 250 million

By when: End of 2016

Status description for 2015: We increased the number of tablets donated annually to WHO to more than 100 million.

Status:  In progress

Measure(s): Optimize the praziquantel formulation

By when: End of 2019

Status description for 2015: We have finished developing the formulation, which we plan to submit to regulatory authorities in 2017.

Status:  In progress

Measure(s): Research a new praziquantel formulation for children under the age of six

By when: End of 2019

Status description for 2015: In 2015, we completed the Phase I bioavailability trials with healthy subjects in South Africa, as well as the taste study with children in Tanzania.

For 2016, we are planning to conduct a Phase 2 trial with children under six in the Ivory Coast.

Status:  In progress

Combating counterfeit medicines

Goal: Fight counterfeit medicines by providing and optimizing the GPHF Minilab™

Measure(s): Develop new test methods for five active ingredients and expand manuals to describe the new testing methods

By when: End of 2015

Status description for 2015: In 2015, five new test methods were developed, which means that 80 test methods total are now available. Instruction manuals have been updated accordingly.

Status:  Goal achieved

Measure(s): Conduct three seminars on how to use the GPHF Minilab™; sell 25-30 Minilabs™

By when: End of 2015

Status description for 2015: In 2015, we held two seminars to teach people how to use the GPHF Minilab™; one workshop was postponed to the beginning of 2016. On top of this, we sold 45 Minilabs™.

Status:  Goal achieved

Measure(s): Develop new test methods for five active ingredients and expand manuals to describe the new testing methods

By when: End of 2016

Status:  New goal

Measure(s): Conduct two seminars on how to use the GPHF Minilab™; sell 40 Minilabs™

By when: End of 2016

Status:  New goal

global compact



WE SUPPORT

Implementation of the ten principles of the UN Global Compact

Period: January 2015 to December 2015

The **Global Compact** (GC) is a UN initiative founded in 2000. Signatories of the initiative commit themselves to ten principles based on key UN conventions regarding human rights, labor standards, environmental protection, and anti-corruption. At the same time, the compact obliges the signatories to actively engage themselves in propagating the principles within their own sphere of influence.

Merck has been a Global Compact participant since 2005. The following Communication on Progress (COP) presents the key measures that we took in 2015 to implement the principles of the Global Compact.

CEO'S declaration



Ladies and Gentlemen,
Dear Friends of Merck,

As a global science and technology company, we at Merck spend every day searching for answers to the question: What kind of world do we want to live in? And we're seeking solutions that improve the lives of people across the globe.

We have thus been supporting the United Nations Global Compact and its principles since 2005, which cover human rights, labor standards, environmental protection, and anti-corruption. We live these principles in our day-to-day work and intend to keep doing so in the future as well.

Taking responsibility is the bedrock of our business. Through our ideas and technologies, we are helping solve global issues in numerous areas. As a company about to celebrate its 350th anniversary, we know that business success can only be sustained if achieved responsibly.

In this report, you will find a selection of our CR activities from 2015. They are just as diverse and international as our company. Our efforts show that much can be achieved through good ideas and the courage to take responsibility.

To best leverage our corporate responsibility activities, we have defined three strategic spheres of activity: environment, health and culture. In each of these areas, Merck can contribute special expertise and skills.

In the chapter on culture, for instance, we describe the literary prizes we present to recognize writers and translators. Why does literature fit so well to a science and technology company such as Merck? As an innovative, research-driven company, we bring people together who ask questions and never stop pondering the answers. We depend on creative ideas – and on a society that is receptive to innovation. Literature can open doors because it not only builds bridges between cultures, but also inspires people, expands their minds and makes them more receptive to new ideas.

The chapter on our environmental activities spotlights our UB-FFS technology. This development for liquid crystal displays enables brilliant colors while consuming up to 30% less energy than conventional display technologies, which significantly boosts the battery life of smartphones and other portable devices. In recognition of this achievement, Merck has been honored with the German Innovation Award. We are the global market and technology leader in liquid crystals and are constantly working on new ideas such as UB-FFS. After all, innovation not only improves products, but also helps find answers to global issues such as energy conservation.

In the chapter on health, you can see how we're working to improve access to health for people around the world. In rural areas especially, millions of people lack adequate access to health information, medical care, and medicines. But we want to remedy this situation. We examine local needs and organize awareness campaigns, provide physicians with advanced training and manage mobile clinics. After all, we believe that everyone should have access to health, no matter where they live.

Our report shows how, again and again, Merck exercises its corporate responsibility every day, how we're seeking answers to the question: what kind of world do we want to live in? Merck is working towards a world that's open to new concepts, in which ideas both improve our lives and reduce our impact on the environment – a world in which everyone has access to health. After all, Merck is taking responsibility, now and in the future.

Yours,
Karl-Ludwig Kley

HUMAN RIGHTS

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Commitment, principles & goals

- **Code of Conduct:** The **Merck Code of Conduct** is a compulsory set of rules for all employees. It explains the principles for dealings with business associates, general partners, co-workers, and employees, as well as the communities in which we operate. The Code thus guides our employees in taking an ethical course of action – not only in their interactions with one another, but also outside the company.
- **Human Rights Charter:** Our **Human Rights Charter** supports our commitment to respecting and protecting human rights. This document consolidates and complements existing human rights regulations and guidelines, such as our Code of Conduct, our Environment, Health and Safety Policy, and our Charter on Access to Health in Developing Countries. Our Human Rights Charter has three goals: first, to define our expectations; second, to increase awareness of human rights within the company; and third, to more accurately assess Group-specific risks as well as align our business operations with our Values.
- **Procurement Policy:** Through our Group Procurement Policy, we ensure that our procurement processes embody corporate responsibility standards. This includes the selection, assessment and management of suppliers. This policy reflects numerous internal and external guidelines, such as our Code of Conduct, our Human Rights Charter, and our EHS policy.
- **Merck Responsible Sourcing Principles:** To complement our Procurement Policy, we have developed the **Merck Responsible Sourcing Principles** and integrated them Group-wide into our general terms and conditions. These principles define what we require of our suppliers with regard to responsible conduct, highlighting the responsibility of our suppliers to apply our corporate responsibility standards to their upstream value chain.

As a member company of the German Federal Association for Materials Management, Purchasing and Logistics (BME), we support the BME Compliance Initiative in the fight against corruption, cartels and child labor.

- **Access to Health Charter:** Access to health (A2H) is of great strategic importance to us. Our A2H strategy aims to help overcome access obstacles faced by underserved populations and communities in developing health care systems. There is no one-size-fits-all solution for this complex and multifaceted challenge, which is why we've tailored our programs and initiatives to suit global, regional and local needs. Our holistic, needs-driven approach consists of four strategic components: Availability, Affordability, Awareness, and Accessibility. To achieve sustainable results, we focus especially on partnerships, collaboration and ongoing dialogue with all stakeholders. We have consolidated our principles into our Access to Health in Developing Countries Charter, which addresses the topics of pricing, intellectual property, research and development for neglected tropical diseases (NTDs), and anti-counterfeiting measures, as well as medicine donations and philanthropic activities.

We support the United Nations Sustainable Development Goals (SDGs) and are partnering with various other organizations to achieve them. Access to health is an integral component of these efforts. In low- to middle-income countries, we work with global stakeholders in helping strengthen health systems.

Taking action and gauging the results

- **Compliance management:** The Group function Compliance, headed by the Group Compliance Officer (GCO) and supported by further specialists, is responsible for maintaining and driving our compliance program.
- At our subsidiaries, local compliance officers are responsible for implementing our compliance measures. Group Compliance provides these officers with guidance as well as training documents, along with other support. At this time, local compliance officers report to the GCO at regular intervals. In 2015, we appointed a compliance officer for each of our business sectors (Healthcare, Performance Materials and Life Science) in order to better address the needs of each specific business sector.
- The GCO reports at least once a month to the Merck Executive Board, updating them on compliance activities, compliance risks, and serious compliance violations. At least once a year, the Executive Board updates Merck's supervisory bodies on key compliance issues. Our compliance management procedures are continuously adapted to meet current requirements.
- **Compliance training:** We provide our employees with regular training on compliance issues via classroom courses and online classes. In 2015, a total of 20,404 persons completed anti-corruption courses. In 2014, we designed an e-course to introduce our new anti-corruption guidelines, and in 2015 we translated the course into 16 different languages, which has allowed numerous employees worldwide to complete the course in their local language. In 2015, we also developed a special e-course for our pharmaceutical business that explains the guidelines specific to this field. In addition, we regularly review our compliance training plan, adapting classes and workshops in response to new developments and local needs.
- **Compliance audits:** The Group function Internal Auditing conducts audits Group-wide. Our audit program covers the topic of anti-corruption as well as the requirements of our Human Rights Charter, all of which are reviewed during the general audits conducted on our facilities. In the course of the compliance audits, Internal Auditing verifies whether compliance guidelines, processes and structures are in place and assesses the quality thereof. We furthermore check whether individual facilities are violating our Code of Conduct or the social standards stipulated in our Human Rights Charter. A total of 49 anti-corruption audits were conducted in 2015. Across 31 countries, we also performed 41 audits relating to the workplace clause of our Human Rights Charter. The audits found no violations.

- **Central SpeakUp Line for compliance violations:** All employees are called upon to report compliance violations to their supervisor, Legal, HR, or other relevant departments. Employees can report violations via the SpeakUp Line, a central reporting system, doing so in their respective national language. Available as a telephone hotline or a web-based application, they can report such incidents free of charge and, if they wish, anonymously.

The reports received are reviewed by the Group Compliance Officer (GCO) and submitted to the Compliance Committee, which then coordinates the necessary investigation into the matter. The Compliance Committee consists of senior representatives from Internal Auditing, Compliance, Group Security, Data Security, and Human Resources. They monitor the handling of reported cases and initiate appropriate corrective measures, as needed. Disciplinary actions are also taken, where necessary, against the employee who has committed a compliance violation. These actions may range from a simple warning up to dismissal of the employee, depending on the severity of the violation.

In 2015, 33 compliance reports were received via the SpeakUp Line, eight of which were confirmed as being violations of our Code of Conduct. These incidents were investigated and reported to the Compliance Committee; corrective actions were taken and monitored by the Group Compliance Officer. We take such misconduct very seriously and will not hesitate to take appropriate action, including dismissal in accordance with applicable laws. The majority of these compliance violations were attributed to the misconduct of individual employees; they represented minor, isolated incidents which mostly entailed improper distribution and marketing methods to boost sales, or inappropriate interactions with medical professionals. In all cases, disciplinary action was taken against the employees responsible for the infractions.

- **Supplier management:** Supplier management is one of Group Procurement's key tasks; it comprises the entire process of assessing, rating, developing, and terminating vendor relationships. Underpinned by a transparent, globally standardized approach, our supplier management efforts aim to optimize the performance of our entire supply chain in order to create added value for Merck. We expect our suppliers to obey fundamental rules, such as bans on corruption and child labor, and we set minimum requirements regarding work standards.

In the course of 2015, we largely replaced the supplier CR assessments and CR audits used previously with the equivalent tools set forth in the **Together for Sustainability** (TfS) standards. The audit results can be utilized by all TfS member companies. We thus have access not only to the evaluations of suppliers selected because of their risk rating, but also to assessments and audit results for other vendors who provide us goods and services.

More detailed information can be found under **Suppliers (p. 17)**.

- **Merck Praziquantel Donation Program:** Our efforts to combat schistosomiasis represent a key element in our access to health activities. We've been supporting the World Health Organization (WHO) since 2007 in the fight against this global tropical worm disease in Africa. Since launching the program, we have donated more than 340 million praziquantel tablets. In total, over 74 million patients have been treated, primarily school age children. Our goal is to continue the fight until the disease has been eliminated in Africa. To this end, we are increasing the number of tablets donated and intend to provide WHO with up to 250 million tablets per year.

More detailed information on our product donations can be found under [Community \(p. 29\)](#).

- **Global Schistosomiasis Alliance:** To combat schistosomiasis over the long term, in May 2014 we called on various stakeholders engaged in the fight against neglected tropical diseases (NTDs) to form the [Global Schistosomiasis Alliance](#) (GSA). The GSA's founding members include, among others, Merck, World Vision, the United States Agency for International Development, and the Bill & Melinda Gates Foundation. The alliance seeks to pool resources and overcome the obstacles to eliminating schistosomiasis worldwide. Three working groups kicked off at the end of 2014. The first working group helps monitor, manage and track the distribution of praziquantel tablets. The second one is working to boost awareness of schistosomiasis in order to raise additional funds and resources. The third group is dedicated to research and development.
- **Capacity Advancement Program (CAP):** Through our Capacity Advancement Program (CAP), we are striving to improve the quality of and access to healthcare in Africa and Asia. The program also seeks to increase awareness and prevention of non-communicable diseases such as diabetes and cancer, as well as to educate the public about fertility treatment. Our goals are to raise awareness of these conditions by educating healthcare providers, as well as to support healthcare systems with measures to prevent, diagnose and treat them effectively.

In 2015, we provided 7,000 students at African and Asian universities with training to teach them how to manage chronic diseases. By the end of 2018, we intend to provide more than 25,000 students in Africa, Asia, Latin America, and the Middle East with advanced training on managing and preventing non-infectious diseases.

To fight infertility, we launched the More than a Mother campaign in Kenya in 2015, an initiative that provides med students and general practitioners with crucial medical knowledge on infertility. Additionally, we intend to help the Kenyan government develop concepts that facilitate access to safer, more effective infertility treatment. In Africa, women affected by infertility are often severely stigmatized, which is why the campaign also seeks to challenge the perception of the roles and worth of these women in society.

On top of this, in May 2015 we also launched the Cancer Control Program in partnership with the Africa Oxford Cancer Foundation and the Universities of Nairobi (Kenya), Makerere (Uganda) and Muhimbili (Tanzania). Through this program, we are seeking to raise the early detection rates of cancer as well as improve the prevention of cancer in Kenya, Uganda and Tanzania. To this end, we are providing training to students and healthcare professionals, as well as educating communities through awareness campaigns.

Labor standards

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labor;

Principle 5: the effective abolition of child labor; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Commitment, principles & goals

Our entrepreneurial approach as a conscientious, responsible company includes ethical conduct as well as a commitment to human rights and core international labor standards.

The Human Rights Charter listed under Principles 1 and 2 is the primary policy document on compliance with core labor standards within the Merck Group.

At Merck, it goes without saying that we treat all employees with respect, handling them fairly and in compliance with local statutes and regulations. We abide by the core labor standards of the **International Labour Organization** (ILO), especially with respect to the following issues: freedom of association; child labor; forced labor; discrimination; equal opportunity; compensation; working hours; occupational health and safety; and prevention of abuse and harassment. We furthermore regularly audit our facilities to ensure that these requirements are being met.

Occupational health and safety is governed by our Group-wide **EHS Policy** (Environment, Healthy and Safety). This policy is the basis for internal, Group-wide EHS standards, as well as for site-specific guidelines and directives on compliant behavior. Our guidelines are aligned to the **Responsible Care Global Charter**, which was instituted by the international chemicals industry. One of our primary goals is to reduce the number of workplace accidents. In 2010, we set the goal of reducing the Lost Time Injury Rate (LTIR - the number of workplace accidents resulting in missed work per one million man-hours) to 2.5 by 2015. After having once more exceeded this goal by the end of 2014 with an LTIR of 1.8, we set a new, more ambitious target: to reduce the LTIR to 1.5 by 2020.

We believe that workforce diversity nurtures innovation and better team performance. A good balance between different cultures, nationalities, and age groups as well as between male and female employees is conducive to our business success. We are therefore aiming to further workforce diversity and include all employees in company operations in the best possible way (inclusion). Increasing the proportion of women in management positions is important to us. We have thus set the goal of increasing the percentage of management positions (Global Grade 14+ as per the **Towers Watson** Global Grading System) held by women to 25%-30% by the end of 2016. In 2015, we endorsed the Equal Opportunity Charter of the German Mining, Chemical and Energy Industrial Union (IG BCE), which underscores our commitment to fairness and tolerance in the workplace.

Taking action and gauging the results

In order to monitor and assess adherence to our Human Rights Charter both within the Merck Group as well as among our suppliers, we conduct the audits mentioned under Principles 1 and 2; we furthermore have a SpeakUp Line that allows employees to report compliance violations. In addition to this, we collate key indicators every year and publish them in our [Corporate Responsibility Report \(p. 34\)](#).

- **Occupational health and safety:** Occupational health and safety in the Merck Group is an integral part of our Environmental, Health & Safety (EHS) management system. Kai Beckmann, Member of the Merck Executive Board, bears ultimate responsibility for environmental, health, and safety matters. The Group function Environment Health Safety Security Quality (EQ) is responsible Group-wide for our strategic alignment along with oversight of these issues, while the operational units at our sites are in charge of implementing procedures. In 2015, we started to implement an OHSAS 18001 group certificate for the production facilities of our Performance Materials business sector. By the end of 2015 this certificate covered nine out of 23 sites, including two sites from Sigma-Aldrich, a company that was acquired in November 2015. On top of that, we already have individual OHSAS 18001 certificates, or equivalent, for four other Merck Group facilities. For 2016, we are aiming to achieve OHSAS 18001 certification for additional sites.

We provide regular training to educate employees and supervisors on potential accident risks and hazards. In addition to this, we bolster our safety culture by rewarding good performance at individual sites (e.g. our Safety Excellence Award for zero workplace accidents), and through best practice sharing at regional EHS forums. To continuously improve our EHS performance, we not only offer training and certification programs, but also conduct EHS audits throughout the Merck Group. Corrective actions as well as accidents and other incidents are reported across all production facilities. We use specific indicators to take monthly stock of our EHS performance.

We also implement preventive occupational health and safety measures to protect our employees, efforts that are managed and carried out primarily at the local level. These include fitness activities, information on healthy nutrition, and early detection screening for diabetes or cancer.

Data on occupational health and safety are collated and evaluated on a monthly basis and published in-house. In 2015, our lost time injury rate (LTIR - the number of workplace accidents resulting in missed work per one million man-hours) was 1.5. Despite our efforts to prevent incidents, there were unfortunately two workplace accidents resulting in fatalities in 2015. In the United States, one employee died in a car accident, while in Germany, one unfortunate employee had a fatal mishap involving a forklift.

Our internal Safety Excellence Award, which recognizes production sites with no workplace accidents, was presented to 41 out of 61 production sites Group-wide.

- **Diversity management:** The Chief Diversity Officer (CDO) is responsible for promoting workplace diversity. In addition to this, we have a Diversity Council consisting of representatives from all our business sectors. This committee works to enhance and hone our diversity strategy, driving its implementation and monitoring progress. In order to foster diversity and inclusion within the company, we engage in numerous activities both Group-wide and at a local level. These include communications programs and special advanced training on topics such as leadership skills and self-marketing. Diversity and inclusion at Merck is also furthered by internal networks initiated by Merck employees, such as the International Community, the Rainbow Network for LGBT employees, and Women at Merck.

In 2013, 25% of the global management positions (Global Grade 14+) at Merck were held by women, with 26% in 2014, thereby reaching our strategic goal of boosting this percentage to 25%-30%. We intend to increase this figure even further by the end of 2016. As of December 31, 2015, 27% of management positions (GG 14+) were held by women. People from 122 different nations work at Merck. Only 26% of our employees are German citizens, and 72% work outside of Germany.

- **Monitoring the mica supply chain:** We utilize mica sourced from the Indian state of Jharkhand as the primary raw material for the manufacture of effect pigments. Jharkhand is a region where child labor is very common. As a signatory to the UN Global Compact, we are actively fighting to end this practice. We require our suppliers to do the same and contractually prohibit them from utilizing child labor. In line with our general supply chain strategy, we have taken all measures needed to ensure that all suppliers comply with our requirements for mica procurement. We also support health and education projects in order to improve the social situation and living conditions of families in mica mining regions.

More detailed information can be found under [Suppliers. \(p. 17\)](#)

Environmental protection

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Commitment, principles & goals

Merck is committed to conserving natural resources as well as mitigating our impact on the environment. Our responsibility to the environment is an extension of our Values and our Group strategy. Adherence to Merck's Values is a key component of the [Merck Code of Conduct](#), which is described under Principles 1 and 2.

The policy document underlying environmental impact mitigation is the [EHS Policy](#) described under Principles 3, 4, 5, and 6.

We aim to continually improve our performance by utilizing energy, water and materials economically and efficiently. In addition to this, we seek to boost our energy efficiency in order to reduce CO₂ emissions, thus mitigating our impact on the global climate. We have set ourselves the goal of reducing our total direct and indirect greenhouse gas emissions (Scope 1 and 2) by 20% by 2020, relative to the 2006 baseline. For 2016, as in the four preceding years, the Executive Board has once more earmarked funds specifically for measures to conserve energy and reduce greenhouse gas emissions.

We strive to continually enhance the sustainability footprint of our products, developing suitable product and process innovations in order to do so. At the same time, we seek for our products to minimize not only our own environmental impacts, but those of our customers as well. In doing so, the safety and ethical conformity of our products is always our top priority.

Taking action and gauging the results

Measures to mitigate our impact on the environment have been implemented in our production processes in the form of the EHS management system described under Principles 3, 4, 5, and 6.

- **EDISON program for climate impact mitigation and energy efficiency:** We have consolidated our climate impact mitigation and energy efficiency activities into the EDISON program. Under this program, energy audits are conducted at various sites and energy saving processes implemented. Since 2012, we have initiated more than 400 EDISON projects Group-wide, around 60% of which have already been or are being rolled out.

Through these efforts, we are aiming to cut CO₂ emissions by about 90,000 metric tons per year in the medium term. In 2015, we lowered our greenhouse gas emissions by approximately 8% relative to the 2006 baseline, despite growth in our operating business.

- **EHS audits:** The aforementioned internal EHS audits serve to scrutinize the Merck Group's compliance with those regulatory requirements, standards, and business requirements specifically relating to environmental impact mitigation activities.

In 2015, our annual external audit once more confirmed our group certificate for our ISO 14001 environmental management system.

In addition to this, we conduct supplier audits (described under Principles 1 and 2) to ensure that our vendors are adhering to environmental standards.

- **EHS data management:** Our Group-wide EHS data management system is used to regularly collect environmentally relevant data at our individual sites and relay it to the EQ Group function. In 2015, Merck emitted a total of 518,000 metric tons of CO₂, which represents an 8% reduction from 2006 levels.
- **Product safety management:** Through our Group-wide Product Safety Chemicals policy, we have established global processes for defining, steering and implementing product safety, and have also established the corresponding management structures to do so. This policy incorporates all relevant national and international chemical regulations, such as the **Globally Harmonised System of Classification and Labeling of Chemicals** (GHS) and its implementation in regional legislation (such as the CLP regulation in the EU and HazCom in the United States), the EU chemicals regulation **REACH**, the U.S. Toxic Substances Control Act (TSCA), and the German federal law on protection from hazardous substances (ChemG). The policy also incorporates legal standards that relate to the transport of hazardous substances, biocides, cosmetics, chemicals used in food and animal feed, etc.

The Group Product Safety Committee (GPSC) initiates and steers the measures needed to respond to regulatory requirement changes worldwide; the Merck Executive Board Member responsible for chemical product safety is a member of this committee. Corporate Regulatory Affairs, a department within the Group function Environment Health Safety Security Quality (EQ), is responsible for compliance with the relevant regulatory requirements for product safety, a responsibility that it shares with local units as well.

- **Product development:** In line with the Green³ concept, our Performance Materials business sector offers our customers products that improve the sustainability of their own products - for instance our innovative materials for energy-efficient displays. We furthermore help our customers develop more environmentally sustainable production processes. To meet the requirements of the WEEE Directive (EU Waste Electrical and Electronic Equipment Directive), we have developed recycling methods for used LC (Liquid Crystal) displays. We have also expanded the Green³ concept to include cosmetic products in our Performance Materials business sector. Here, we are working to sustainably source and manufacture cosmetic actives, as well as to optimize the associated production processes.

Through our Green Product Policy, we have committed ourselves to complying with all international and country-specific laws and regulations (REACH, RoHS EU Directive) for products from our Performance Materials business sector. This policy also includes voluntary substance bans and self-imposed restrictions, such as our Halogen-free Policy. Our voluntary safety policy furthermore forbids the use of acutely toxic, mutagenic, or otherwise hazardous substances that remain present in the end product.

As part of the Design for Sustainability program, our Life Science business sector has developed a process to drive sustainability across the product development process. This program is also aimed at reducing our customers' own environmental impacts, including their carbon footprint and water use. An analysis in 2015 showed that around 12% of our Life Science products (only includes former Merck Millipore business - excludes Sigma-Aldrich, which was acquired in November 2015) exhibit one or more of the sustainability aspects that we've defined.

Anti-corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Commitment, principles & goals

Merck does not tolerate bribery, extortion or corruption. We are expressly committed to fighting these crimes across the globe. The primary policy document governing these issues is the Code of Conduct mentioned under Principles 1 and 2, as well as Merck's Group-wide anti-corruption guideline.

Taking action and gauging the results

Our Code of Conduct and anti-corruption guidelines are applied within Merck through our compliance management process, as well as the internal compliance training and workshops mentioned under Principles 1 and 2.

- **Global Business Partner Risk Management Policy:** We adopted our Global Business Partner Risk Management Policy in 2012. It constitutes a fundamental component of the selection process for business partners, along with their overall assessment. This policy aims to ensure that business partners are selected diligently in order to minimize the danger of legal and financial risks, or damage to our reputation. This process is especially concerned with fighting corrupt practices.
- **Guidelines on interactions with the health industry:** Our Compliance Policies for our Biopharma and Consumer Health businesses guide our employees' interactions with medical professionals and other representatives of the health industry. These guidelines aim to ensure that all payments are made for a legally valid reason and never in exchange for prescribing our products. The policies are backed by a modern electronic compliance management system in which interactions with medical professionals and other representatives of the health industry are recommended, approved, documented, monitored, and, as relevant, disclosed. Our suppliers are subject to the supplier management process that is likewise described in these guidelines.

In Europe effective 2016, companies must disclose all donations not connected to research that are made to physicians and healthcare organizations, with the recipients individually named. This is a requirement stipulated by the transparency initiative of the European Federation of Pharmaceutical Industries and Associations (EFPIA). Our Compliance organization started initiating the measures necessary to satisfy this disclosure obligation in 2014. Our goal is to disclose the required information by June 30, 2016.

- **Code of Conduct audits:** In order to monitor and assess adherence to our Code of Conduct within the Merck Group as well as among our suppliers, we conduct the audits described under Principles 1 and 2. We furthermore have a SpeakUp Line that allows employees to report compliance violations. In 2015, 49 audits were conducted with respect to corruption.

Assurance report

Independent Assurance Report¹

To the Executive Board of Merck KGaA, Darmstadt

We have performed an independent limited assurance engagement on the information published in the chapter "facts & figures – indicators" in the online "Merck Corporate Responsibility Report Update 2015" (further "The Report") including the accompanying explanatory notes, for the business year 2015 of Merck KGaA, Darmstadt (further "Merck"), published at <http://reports.merckgroup.com/2015/cr-report>.

Management's Responsibility for the Report

The legal representatives of Merck are responsible for the accurate preparation of the Report in accordance with the Reporting Criteria. Merck applies the principles and standard disclosures of the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative, the Corporate Accounting and Reporting Standard (Scope 1 und 2), and the Corporate Value Chain (Scope 3) Standard of World Resources Institute/World Business Council for Sustainable Development, as described in the section of the Report "about this report", as reporting criteria.

This responsibility of the legal representatives includes the selection and application of appropriate methods to prepare the Report and the use of assumptions and estimates for individual qualitative and quantitative sustainability disclosures which are reasonable in the circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

Independence and quality assurance on the part of the auditing firm

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA-Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The quality assurance system of the KPMG AG Wirtschaftsprüfungsgesellschaft is based on the International Standard on Quality Control 1 "Quality Control for Audit, Assurance and Related Service Practices" (ISQC 1) and, in addition on national statutory requirements and professional standards, especially the Professional Code for Certified Accountants as well as the joint statement of WPK (Chamber of Public Accountants) and IDW (Institute of Public Auditors in Germany): Requirements for quality assurance in the auditing practice (VO 1/2006).

Practitioner's Responsibility

Our responsibility is to express a conclusion based on our work performed and the evidences obtained on the information disclosed in the abovementioned chapter.

Nature and extent of the assurance engagement

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and the International Standard on Assurance Engagements (ISAE) 3410: "Assurance Engagements on Greenhouse Gas Statements" of the International Auditing and Assurance Standards Board (IAASB). These standards require 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 above mentioned qualitative and quantitative sustainability disclosures are not prepared, in all material respects, in accordance with the aforementioned Reporting 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. The choice of audit procedures is subject to the auditor's own judgement. This includes the assessment of the risk of material misstatement in the Report under consideration of the Reporting Criteria.

Within the scope of our engagement, we performed amongst others the following procedures when conducting the limited assurance:

- Evaluation of the design and implementation of the systems and processes for the collection, processing and control of the indicators, including the consolidation of the data, at corporate and site level
- Interviews with relevant staff on corporate level responsible for providing and consolidating the data, as well as carrying out internal control procedures on the data including the explanatory notes
- Visits to the sites Darmstadt (Germany) and Gernsheim (Germany) as well as Cork (Ireland) and Mollet de Vallès (Spain) to assess local data collection, validation and reporting processes and the reliability of the reported data
- An analytical review of the data and trend explanations submitted by all sites for consolidation at group level
- Use of the insights and relevant work performed for the group and statutory audit of the (consolidated) financial statements for the year ended December 31, 2015 of Merck KGaA with regard to audit procedures on those information and indicators that were derived from those consolidated financial statements
- An evaluation of the overall presentation of the information, including the explanatory notes, within the scope of our engagement

Conclusion

Based on the procedures performed and evidences received to obtain limited assurance, nothing has come to our attention that causes us to believe that the information published in the chapter “facts & figures – indicators” in the online “Merck Corporate Responsibility Report Update 2015” including the accompanying explanatory notes, for the business year 2015 is in all material respects, not prepared in accordance with the Reporting Criteria.

This assurance report is issued based on an assurance engagement agreed upon with Merck. The assurance engagement to obtain limited assurance is issued on purpose of Merck and the assurance report is solely for information purposes of Merck on the results of the assurance engagement. This assurance report must not be used as basis for (financial) decision-making by third parties of any kind. We have responsibility only towards Merck. We do not assume any responsibility for third parties.

Frankfurt am Main, April 11, 2016

KPMG AG

Wirtschaftsprüfungsgesellschaft

Fischer

Wirtschaftsprüferin
[German Public Auditor]

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¹ Our engagement applies to the German version of the Merck Corporate Responsibility Report Update 2015. This is a translation of the independent assurance report, which is authoritative in German language.

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