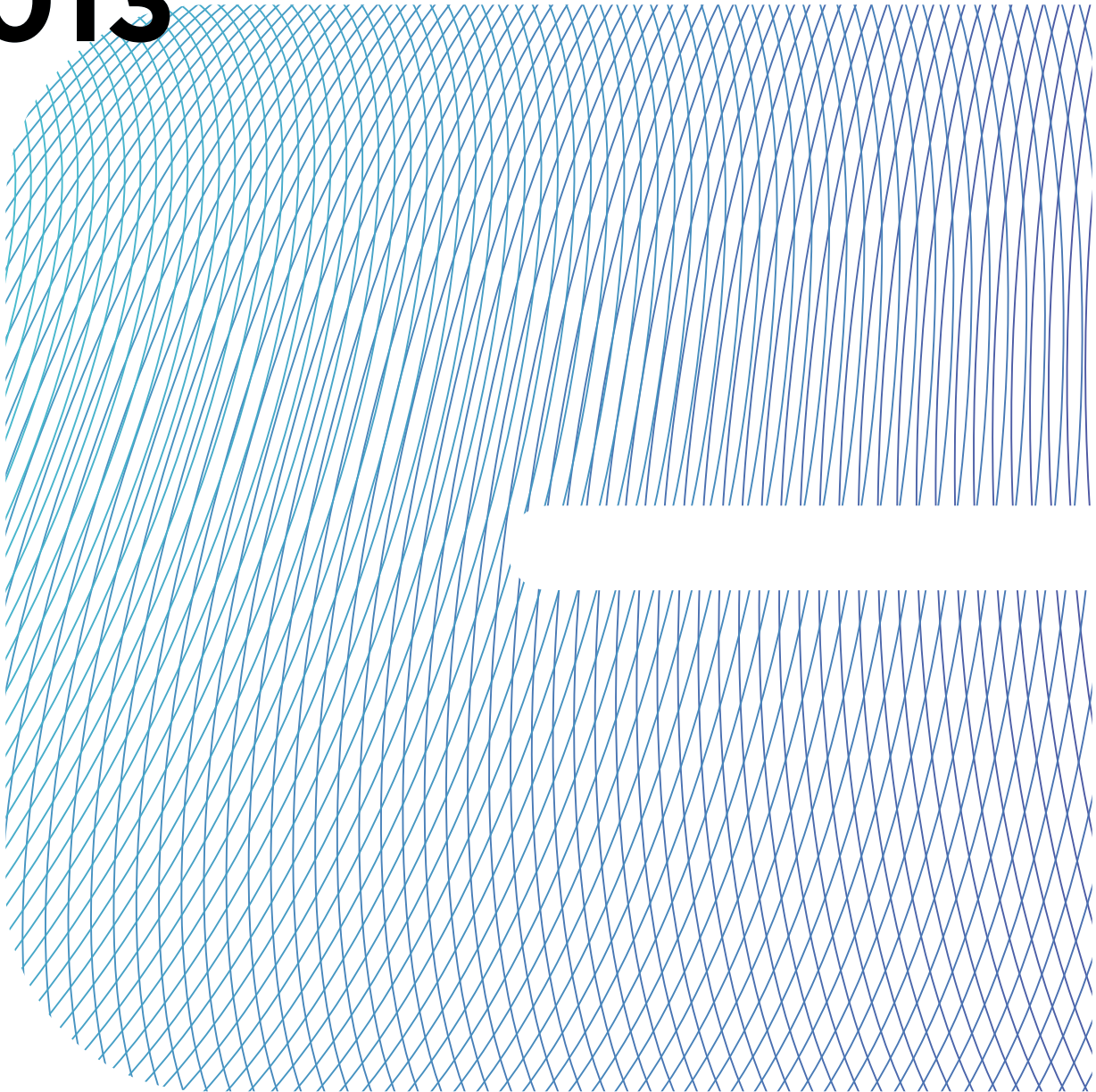


# Sustainability Report 2013



# Small Steps BIG IMPACT

## SUSTAINABLE PERFORMANCE AT CLARIANT – AN ONGOING PROCESS



## ECOTAIN® PRODUCTS LAUNCHED

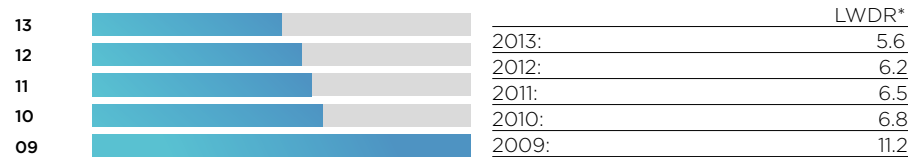
29

new products that were labeled for their sustainability performance over the whole life cycle, supporting the sustainability requirements of our customers.

## LOST WORKDAYS

# REDUCED LOST WORKDAYS

Taking precautions and employee training have resulted in a significant decrease in the Lost Workday Rate.



\* LWDR = Lost Workday Rate: the ratio of the number of days lost due to accidents at work to every 200 000 hours of work

## RENEWABLE RAW MATERIALS PURCHASED

10 %

## SITES WITH SPECIFIC SAFETY TRAININGS

79

## HOURS OF EMPLOYEE TRAINING

117 000

## YEARLY SAVINGS DUE TO EWATCH

approx.  
CHF 30 m

# To save tomorrow **WE DO OUR BIT EVERY DAY**

Using small ideas to bring across our main philosophy – that was the concept behind the new sustainability image campaign we launched in 2013. Specific product examples illustrate innovations by Clariant which enrich our day-to-day lives while

at the same time demonstrating our commitment to sustainability in terms of production, and dealing with employees and the environment.

[www.clariant.com/2013](http://www.clariant.com/2013)



## We let care Products **CARE FOR THE ENVIRONMENT, TOO**

Thanks to natural adjuvants that help to reduce the use of preservatives to a minimum.



## We even make **CLEANING CLEANER**

With detergents that already exert their full laundry power at 30° C, saving energy and water.



## We keep your most precious **NATURALLY SAFE**

Thanks to halogen-free flame retardants for electronics.  
Safer, more effective, and environmentally compatible.



## We make paints **FUTURE PROOF**

With pigments for wall paints that not only disperse more easily  
but save water, time and energy in production.



## And we protect the crops **THE FARMER, AND THE CONSUMER**

With ingredients that are based on renewable resources and that  
increase the effectiveness of agrochemicals.

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\* Global Reporting Initiative™ see page 119

# Foreword

## DEAR READERS,

we aim to become one of the globally leading companies for specialty chemicals and to stand out through above-average value creation for all of our stakeholders. To achieve this objective, we must create value; value for our customers, for our employees, and not least for our shareholders. Value alone is not enough for us, though. We must create lasting value. Only through innovative strength and strict sustainable practices can we achieve this. It is the only way to establish a leading position in our Business Areas.

The three dimensions of sustainability are already firmly embodied in our brand: The brand value »Performance« is our promise to deliver innovative and competitive solutions for our customers. The brand value »Planet« constitutes our commitment to using sustainable and market-leading technologies and products. With the brand value »People«, we signal our respect and appreciation of our employees and all other stakeholders, while at the same time assuming corporate responsibility at both regional and global level.

With this in mind, we follow the targets of sustainability. To us, sustainability in this context means finding the balance between economic performance, environmental considerations, and social issues. This is one of the reasons why we signed the UN Global Compact in mid-2013. This Compact is a voluntary United Nations initiative, under which companies commit to ensuring that their business activities and strategies are in line with recognized principles relating to human rights, labor standards, environmental protection, and the fight against corruption.

These global challenges, together with global megatrends such as climate change, demographic shifts, and dwindling resources, prompted us to launch the »Sustainability@Clariant Portfolio Value Program« at the turn of the year 2012/2013. The aim of this program is to work together with employees, customers, and other stakeholders to further systematically improve our sustainability as well as to use new, ever more efficient tools.

We have already reached a number of milestones in terms of sustainability. This is also highlighted by the fact that Clariant was included in the European Dow Jones Sustainability Index (DJSI Europe) in September 2013, an index that selects listed companies according to economic, ecological, and social criteria. Clariant's inclusion in the DJSI Europe makes us one of seven leading companies in Europe in the chemical industry in terms of sustainability. We have some way to go yet, though, and must continue to steadily improve in this area.

Clariant sees itself as an open company. The efficient flow of information on all sides is essential in terms of corporate responsibility and economic success. We therefore foster a culture of proactive and transparent communication that includes all relevant interest groups. Only through this type of information can we succeed in building trusting and reliable relationships. This is one of the reasons we decided to already apply the Global Reporting Initiative's latest G4 guidelines, which were only released a few months ago, in our reporting for 2013.

The strategic importance of sustainability is undisputed. We are a part of the global economy, society, and environment, and as such we have to always remember that our efforts to work in a sustainable manner are crucial to Clariant's success.



Hariolf Kottmann  
Chief Executive Officer

—  
**HAROLF KOTTMANN**  
Chief Executive Officer



# Strategy, MANAGEMENT AND GOALS

Clariant wants to create added value and benefits for all stakeholders – in economic, ecological and social terms.

## CLARIANT'S COMMITMENT TO SUSTAINABILITY

Sustainable production means to create long term values, that help future generations to meet their needs. This can only be achieved by the efficient use of resources, by the development of innovative solutions, and by treating people fairly and with respect. Clariant conducts itself as a responsible company and acts on common sense, with a natural appreciation for fairness and reason. This attitude towards doing business opens up opportunities and is a factor which is becoming increasingly important in setting Clariant apart from its competitors – the result is a higher level of customer acceptance and increased demand.

For listed companies in particular, adopting an active approach to the topic of sustainability makes sense for a number of reasons: sustainability improves a company's reputation amongst investors, be they shareholders or providers of debt capital. Investors appreciate the fact that their investment is designed to generate long-term value. At the same time, sustainability also means higher investments for companies initially. As such, sustainability needs to be planned and implemented carefully and has to generate higher revenues which offset or exceed its initial investments in the medium to long term.

## Clariant in the Dow Jones Sustainability Index

In September 2013, Clariant was admitted to the European version of the Dow Jones Sustainability Index (DJSI Europe). This (stock) index selects listed companies based on economic, environmental, and social criteria. The Dow Jones Sustainability Index is managed cooperatively by renowned New York publishing company Dow Jones and investment analysts RobecoSAM. With its admission to the DJSI Europe, Clariant is amongst the European chemical industry's top seven companies measured in terms of sustainability and ranks in the top 10 % in the global chemical sector.

In order to get a listing on the DJSI, Clariant was required to demonstrate outstanding economic, environmental, and social achievements. This shows that corporate sustainability, in an economic, environmental, and also a social sense, is an integral part of Clariant's strategy. Clariant strives to create added value and benefit for all stakeholders over the long term, which is why the company has set itself ambitious sustainability targets. Ultimately, the admission of Clariant to the index is the consequence of the company having dedicated resources to a range of sustainability projects stretching back over a number of years.

MEMBER OF  
**Dow Jones  
Sustainability Indices**  
In Collaboration with RobecoSAM

Clariant's investment in sustainability aims to minimize the quantity of material it uses and cut overall costs, to enhance the appeal of the company to qualified, highly-skilled employees and to investors, and to improve product quality and the company's image amongst its customers with a view to boosting sales. As such, sustainability, in its broadest sense, has become a key criterion for »good corporate governance«.



## What is sustainability?

Sustainability is not a recent invention. It can be traced back hundreds of years. The term »sustainability« (or rather »Nachhaltigkeit« in German) originated in forestry and was first coined by Hans Carl von Carlowitz, chief mining administrator for the Saxon court in Freiberg, in his book »Sylvicultura Oeconomica«, published in 1713. The publication came in response to the advancing deforestation taking place at that time. Von Carlowitz's goal was for only as much timber to be felled as could be replaced through planned reforestation using seeds and plants. At that time, a forester was considered to be engaging in sustainable forestry if, after 30 years, he was able to leave the forested area in exactly the same condition as it was found in.

During the course of the 20th century, the concept of sustainability infiltrated economic life as a whole. In the wake of numerous UN conferences, the term »sustainable development« became widely used. In 1987 the Brundtland Commission, a UN Commission on environment and development chaired by the former Norwegian prime minister Gro Harlem Brundtland, defined sustainable development in its report »Our Common Future« as »development that meets the needs of the present without compromising the ability of future generations to meet their own needs«.

Essentially, sustainability is a process of change in which the use of resources, the goal of investment, the direction of technological development, and institutional change are not only in sync with each other, but can increase current and future potential to meet people's needs and desires.

Against this backdrop, sustainability is not just an additional, separate activity which is pursued as an end in itself. Sustainability can only be effective if it is fully integrated into a company's business processes and if it is a core objective of a company's corporate activity. This is why, at Clariant, sustainability is closely aligned with factors that are decisive in determining the success of the company.

Sustainability as a tool for boosting revenues:

- Efficiency and profitability are being improved in all areas of business, a process which requires constant optimization of the value chain.
- A focus on innovation and on research and development is a prerequisite for continuing to produce world-beating products for years to come and to boost sales.
- Clariant is enhancing the competitive edge which it already enjoys in global growth markets in order to secure a share of the dynamic growth in emerging economies and to play an active role in the sustainable development of individual markets.
- The company's portfolio is continually being optimized: to increase profitability, to create value, to boost growth in the core Businesses via acquisitions, and to enhance the sustainability of the Group's product range.

In order to successfully achieve these goals, Clariant has closely aligned its production and operations with its principles for sustainability. Clariant does not just apply these principles selectively or restrict their application to isolated cases. Rather, it has developed a detailed and comprehensive sustainability strategy. Programs, initiatives, and long-term measures have been established in all key areas as a means of achieving the goals which the Group has set itself whilst also increasing the benefit for all stakeholders.

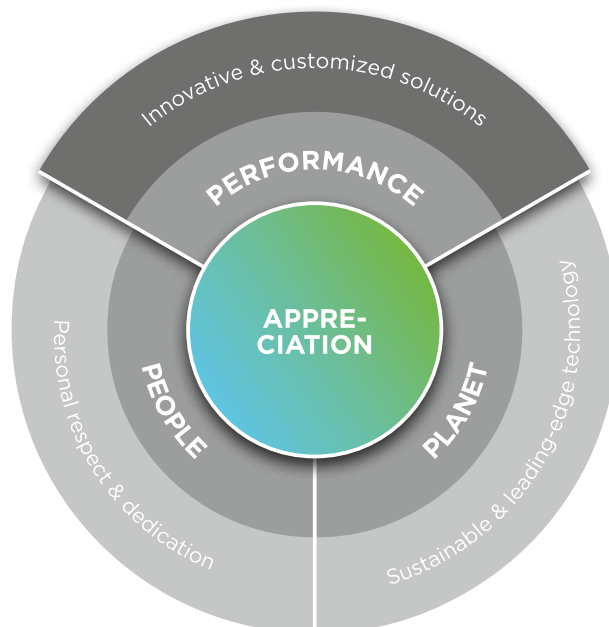
## GUIDELINES FOR SUSTAINABLE BUSINESS

A high degree of importance is placed on sustainability in Clariant's corporate strategy. As a leading specialty chemicals company, Clariant does not limit its sustainability efforts to compliance with statutory regulations, but has also committed to ethical and sustainable conduct in all of its commercial activities. All of Clariant's actions comply with the principles laid down in the Responsible Care® Global Charter, the Global Product Strategy, the UN Global Compact, and the company's internal Code of Conduct and Code of Conduct for Suppliers.

Clariant strives for a business culture of continuous improvement, sustainable competitiveness, and top performance in line with the company's ethical standards. Appreciation is at the core of the Clariant brand. Clariant attaches great importance to values, and makes them the central focus of every field in which the company operates and which it can influence through its actions and ideas: Performance, People, Planet.

In all of its activities, Clariant puts an emphasis on environmental protection and safety. The company's own regulations on the environment, health, and safety (ESH) are in line with the objectives of the Responsible Care® Global Charter. In addition, Clariant has been granted ISO 9001, ISO 14001 and OHSAS 18001 certification worldwide and is also gradually achieving ISO 50001 certification.

Clariant is not satisfied just to bask in the success of what it has already achieved, but is striving to continually improve in terms of economic, environmental and social sustainability. The company has adopted several measures in its pursuit of this target. A representative selection of these measures will be presented in this report. Clariant is also setting standards in employee support and development in order to attract talented, motivated and capable employees.



## Lasting success with strong brand values

With its brand value »Planet«, Clariant is committed to sustainability through cutting-edge technology. As a global specialty chemicals company, Clariant is part of the global economy, society and the environment. A responsible attitude towards the use of resources and towards the environment is an ethical obligation and an expression of appreciation. At the same time, environmental sustainability is a key factor in determining the success of Clariant and its customers. Clariant therefore intends to meet the highest standards and set new benchmarks through sustainable, cutting-edge technologies. This requires the strengthening of sustainable technologies, an improved carbon footprint, reduced emissions, the efficient use of resources and raw materials, and reduced energy consumption.

With its brand value »People«, Clariant shows respect for and appreciation of all stakeholders and assumes corporate responsibility at a global and regional level. Dialog forms the basis of Clariant's commercial success. This success is based, firstly, on close interaction between Clariant and its suppliers and customers, and, secondly, on the efforts of each individual and on all employees working together, from research through production to sales and marketing. An appreciation of customers, employees, and commercial partners, respect, transparency, and sincerity – these are the core values of the Clariant brand. Specifically, this means a focus on customer service, optimal working conditions, high-quality training, good career opportunities for everyone, an international focus, and intercultural expertise.



### Brand Value roadshow

For a period of five months during 2013 the Clariant Truck went on a tour of Europe in order to reiterate Clariant's corporate values and the content and principles of the Clariant brand to the company's employees. The »you are precious to us« tour, which visited seven countries, was the sequel to the »what is precious to you« campaign, launched in 2012. The Clariant Truck has now given 3 600 employees at 23 different sites the opportunity to gain a more comprehensive understanding of the company and its values. After attending the roadshow, 95 % of the visitors filled out questionnaires to provide feedback on the presentation and the exhibition.

With its brand value »Performance«, Clariant delivers innovative and customized solutions. Clariant can only be successful if its customers are successful too. For this reason, the development and realization of innovative, customized and high-quality solutions are the focus of all Group activities. This requires industry-specific expertise: speed to market; leading technologies; a competitive product line; flexibility; an emphasis on research and development. And it requires an approach that is focused on solutions rather than just products.

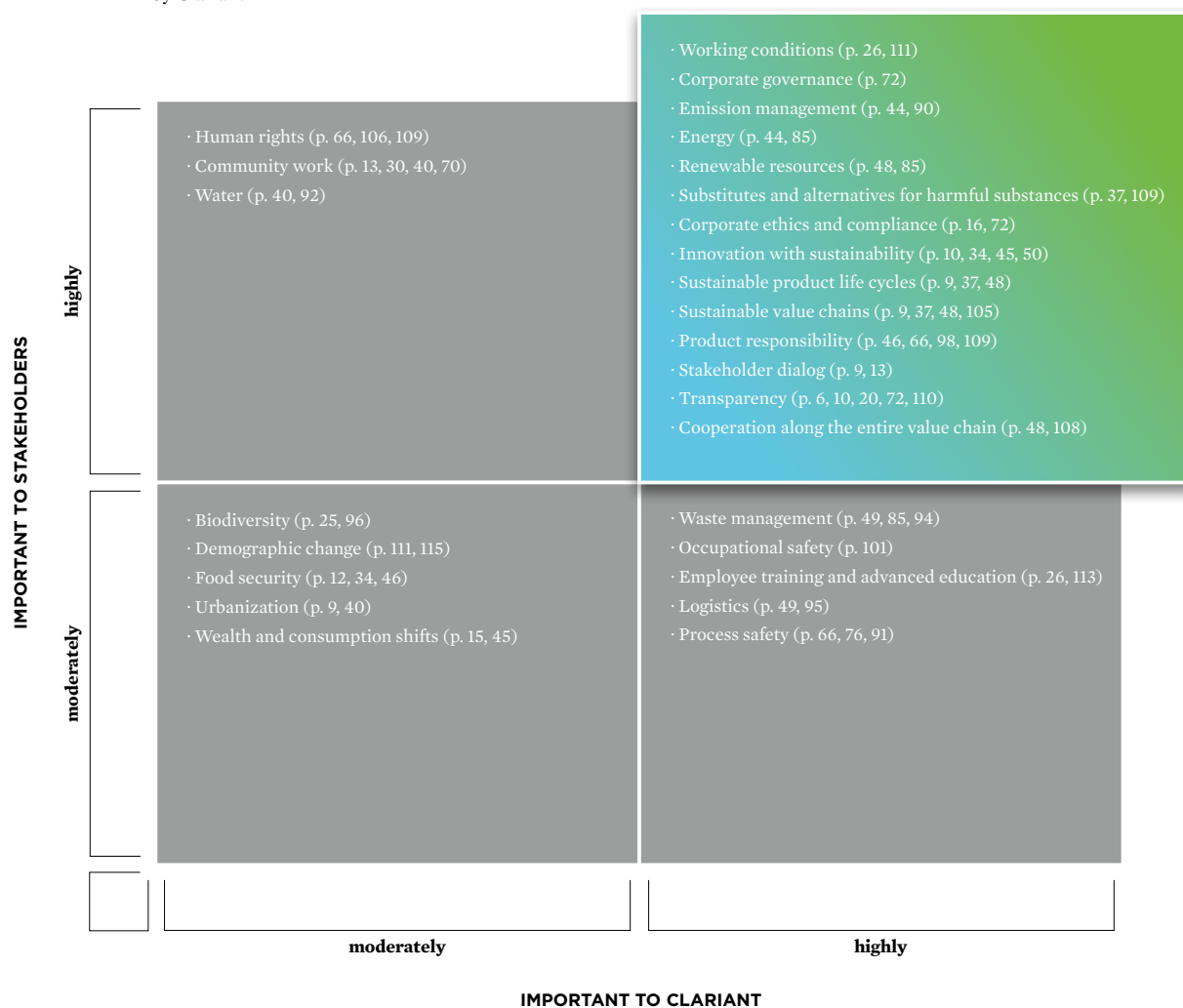
### Code of Conduct

The Code of Conduct is binding for all Clariant employees and must be applied to business conduct in order to protect the company's reputation and to minimize risk for shareholders. The Code regulates the fields of fair competition, freedom of association, the right to collective bargaining, the ban of corruption, discrimination, and child and forced labor. The Code aims to prevent:

- conflicts of interest;
- bribes;
- insider trading;
- antitrust violations;
- money laundering;
- accounting fraud;
- disclosure of confidential information;
- abuse of company resources for private interests;
- environmental hazards;
- discrimination or sexual harassment;
- child and forced labor.

Clariant bears an ethical responsibility for sustainable, economic, ecological, and fair business practices. Corporate social responsibility is an integral component of the company's philosophy. All Clariant employees are educated and trained to assume responsibility in line with their function, level of authority, and qualifications. By entering into an employment relationship with Clariant, employees agree to comply with the company's Code of Conduct.

## MATERIALITY-MATRIX by Clariant



## KEY AREAS OF SUSTAINABLE ACTIVITY

Part of Clariant's sustainability efforts focus on areas relating to the typical kind of activities in which a successful global chemicals company engages, such as plant, process, and product safety, environmental protection, innovation, employee responsibility, and corporate governance. A lot has already been achieved in these areas. The other part of Clariant's sustainability efforts focuses on areas which have been defined as important during intensive dialog with various stakeholders. These areas include employment opportunities, work in the community as part of the company's commitment to corporate responsibility, environmental targets, and resource and water management. These topics are regularly reviewed by the Sustainability Council of Clariant and are adapted where necessary.

The above materiality matrix, which lists the key areas of Clariant's sustainability policy, was published for the first time in the company's 2012 Sustainability Report. The matrix divides up the areas to show those which are highly relevant and those which are moderately relevant to Clariant's business and for the various stakeholders. The matrix is the product of extensive studies conducted for the company's Portfolio Value Program (PVP, see page 9). In order to put together the matrix, internal and external experts analyzed external (market) trends and business drivers. The findings from numerous discussions with stakeholders were also incorporated into the matrix (see page 13). The matrix and the defining role it plays in shaping Clariant's sustainability policy was adopted by the Sustainability Council. (G4-18, G4-19)

During the course of 2013, Clariant conducted further analyses and collected data to update and fine-tune the matrix. This included a survey in which customers were asked about their expectations in terms of sustainability – a continuous process. In total approximately 150 internal and external stakeholders were interviewed for the materiality matrix. This serves as a tool providing information to indicate which plans and measures need to be prioritized. Clariant addresses all of the topics listed in the matrix and also deals with some topics which the matrix does not cover. The primary focus is on the areas which are of major importance to both Clariant and its stakeholders. The process used to identify the key areas is based on the approach employed by the Global Reporting Initiative. The content and scope of this report are also derived from this matrix. (G4-18)

Compliance with laws, international standards, internal regulations, and Clariant's Code of Conduct is a basic requirement for all activities. Clariant also welcomes voluntary initiatives and provides suitable support to develop effective and efficient safety, health, and environmental standards. In its worldwide activities, one of Clariant's most important objectives is safety and the protection of people and the environment. Clariant continuously monitors that this objective is being followed and that all safety aspects related to its activities are reviewed.

### **The Sustainability@Clariant Portfolio Value Program**

How will we live in 2030 and how will we shape our lifestyle according to sustainable principles when the world's population continues to grow as projected, the global standard of living improves, and resources diminish? Which products will meet these needs? These questions inspired Clariant to launch the Sustainability@Clariant Portfolio Value Program at the end of 2012. This program will initially run for a total of 2 years and is customized for Clariant, its customers, and its employees.

Each phase contains measures which are aimed at improving the overall sustainability of the company. The program is backed by the Collaborating Center on Sustainable Consumption and Production (CSCP), based in Wuppertal, Germany. It supports existing Sustainability@Clariant activities and helps the company develop products to address global megatrends and to position the company on the market as sustainability leader.

- **Phase I:** Analysis of the status quo of the sustainability activities of Clariant and associated companies. As part of this, trends, stakeholder perspectives and expectations were analyzed, and existing product sustainability assessment tools were evaluated. These were then compared with existing Clariant initiatives. This formed the basis for developing a joint vision of sustainability at Clariant.
- **Phase II:** Focus on the revision and development of Clariant's tools for a more sustainable portfolio. This includes criteria for more sustainable products that take account of the entire life cycle and supply chain, assessment and development of the sustainability of the entire product portfolio, and indicators for measuring progress.
- **Phase III:** Introduction of the new tools into the company. This begins with pilot projects designed to optimize the system and instruments, to which end a sustainability filter is also expected to help with investment decisions. Stakeholders will continue to be involved. For this reason, a Future Sustainability Forum is planned to be set up, among other things.

## **Sustainability index in research and development**

In order to make development projects comparable and to be able to judge how beneficial they are likely to be, Clariant has introduced the Corporate Sustainability Index for research & development projects (CSI<sup>R&D</sup>). This index, which is mandatory for all major research and development projects, allows Clariant to determine the relative sustainability of new products in the R&D pipeline. The objective is to ensure that Clariant pursues the »most sustainable« ideas and strategies and that all products which are developed now will remain viable and competitive in the future, too.

The CSI<sup>R&D</sup> is used to assess the products to be developed based on the criteria of cost-effectiveness, environmental compatibility, and social responsibility. The parameters assessed include the use and origin of raw materials, the production process and energy efficiency, as well as use and sales potential. Based on these results, projects can be compared in terms of their cost-benefit ratios and sustainability. In this way the CSI<sup>R&D</sup> helps to optimize the entire development portfolio. The higher the score of a certain project, the more attractive is the project in the context of sustainability.

The CSI<sup>R&D</sup> creates competition between the different projects and provides additional transparency in the process. This motivates the R&D project managers to focus their projects on sustainability targets from the outset – from the conception of the idea right up to its market launch. Moreover, the index helps management to allocate resources optimally to projects and to increase the overall sustainability of the company's project and product portfolio.

In the summer of 2013, a visioning workshop marked the end of the first phase of the program. Around 40 experts from all regions, businesses, and functions within the company developed scenarios for Clariant's medium to long-term sustainability strategy.

The end of the first phase of the program ultimately formed the basis for the next stage, launched in the fall of 2013. Building on the findings from the internal and external analyses – trends, benchmarking, future scenarios, and stakeholder surveys –, the objective of this phase is to develop practical criteria and tools for evaluating and managing Clariant's product portfolio throughout its entire life cycle.

## **Clariant opens new innovation center in Frankfurt**

In October 2013, Clariant opened its new global center for research and development (R&D) in Frankfurt am Main. The Clariant Innovation Center (CIC), a EUR 100 million investment located at Hoechst Industrial Park, serves as Clariant's global center for chemical research and process technology. Equipped with application laboratories for several Business Units and state-of-the-art analysis technology, the CIC is also the seat of Intellectual Property Management and New Business Development departments. The CIC further serves as a central hub, coordinating Clariant's global R&D network, which includes R&D centers throughout Europe and in North America, India, and China. Clear structures and chains of responsibility, as well as internal coordination at the most important levels of decision-making, ensure that even the highest level of management and the CEO remain informed about all developments. However, it is the R&D managers who play the most important role, ensuring that all projects are implemented efficiently and that they have a clear objective.

Located in Clariant's largest production site worldwide, the CIC benefits from the excellent infrastructure and Clariant's industrial and academic contacts in the Rhine-Main region. The new building covers a total area of 36 000 square meters and has the capacity for around 500 employees. It offers a mixture of open-floor workspace, closed-door offices, and laboratories in order to foster the sharing of ideas between employees, visitors and partners from industry and academia. Experience has shown that innovation comes about through open communication and through continually sharing ideas. Clariant's objective is to help its customers master the global challenges they face in the field of environmental protection, globalization and urbanization, and resource and energy management. The CIC will help to step up collaboration with external partners. This is why the CIC also includes an open lab, to allow the company to work on innovation projects with its customers and its development partners under one roof.

# »Sustainability is a pillar of our corporate strategy.«

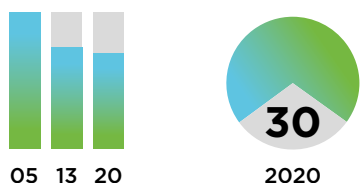
**HAROLF KOTTMANN**, Chief Executive Officer

## PRECISE

# ENVIRONMENTAL GOALS FOR 2020\*

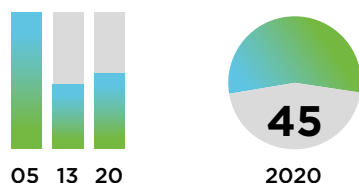
Based on reference values for 2005, Clariant has defined precise environmental goals for 2020. The potential reductions that the company is aiming to achieve, represent obligatory benchmarks for all activities within the Clariant Group.

### Reduce energy consumption by 30 %



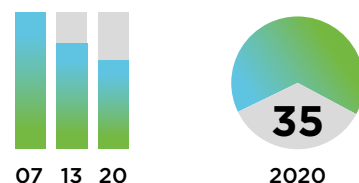
|                      |            |
|----------------------|------------|
| Start 2005:          | 1711 kWh/t |
| 2020 target:         | - 30 %     |
| Achieved until 2013: | - 26 %     |

### Reduce direct CO<sub>2</sub> emissions by 45 %



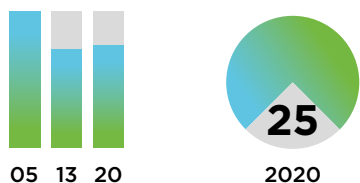
|                      |          |
|----------------------|----------|
| Start 2005:          | 236 kg/t |
| 2020 target:         | - 45 %   |
| Achieved until 2013: | - 53 %   |

### Reduce direct and indirect greenhouse gas emissions by 35 %



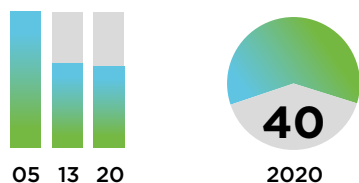
|                      |                                |
|----------------------|--------------------------------|
| Start 2007:          | 541 kg CO <sub>2</sub> -Äqu./t |
| 2020 target:         | - 35 %                         |
| Achieved until 2013: | - 23 %                         |

### Reduce water consumption by 25 %



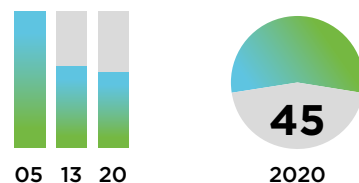
|                      |                      |
|----------------------|----------------------|
| Start 2005:          | 42 m <sup>3</sup> /t |
| 2020 target:         | - 25 %               |
| Achieved until 2013: | - 28 %               |

### Reduce waste water by 40 %



|                      |                        |
|----------------------|------------------------|
| Start 2005:          | 11,5 m <sup>3</sup> /t |
| 2020 target:         | - 40 %                 |
| Achieved until 2013: | - 38 %                 |

### Reduce waste by 45 %



|                      |          |
|----------------------|----------|
| Start 2005:          | 111 kg/t |
| 2020 target:         | - 45 %   |
| Achieved until 2013: | - 40 %   |

\* The environmental goals don't yet include effects of the former businesses of Süd-Chemie, acquired in 2011.

### **Project House – a think tank for sustainable innovation**

In November 2013, Masterbatches opened its first Project House. In future, innovative, sustainable products for Functional Packaging will be developed in Pogliano in northern Italy and then rolled out globally. To build up an effective innovation network within the Business, the Project House will not only be integrated into Masterbatches' global activities, but it will also first and foremost work closely together with the Corporate R&D departments and the new Clariant Innovation Center (CIC) in Frankfurt as well as with other Businesses.

Inside the 400 m<sup>2</sup> Project House, representing an investment of about EUR 2 million, chemists and technicians are researching pioneering concepts and solutions for new masterbatch products and processes. Together with customers, suppliers, leading institutions, and universities, Clariant seeks to bring promising ideas to the market. The first strategic area of interest is Functional Packaging, with innovations to be applied to food and beverages, personal care, and household and cleaning products. With this facility, Clariant expects to achieve competitive advantages for its customers through product differentiation and faster market launches.

The Project House enables Clariant to pool the Group's chemical and technical knowledge and know-how and to bring together employees and external specialists from around the globe. The think tank identifies strategic areas and facilitates the exchange of ideas of interdisciplinary, cross-functional groups of scientists, technologists, marketing specialists, and suppliers. Exploring emerging technologies and advanced concepts will enable Clariant to successfully place sustainable innovations on the market.

Sustainability was the guiding principle for the Project House right from the planning stage. The building, which meets the highest standards in terms of energy consumption, has received certification for sustainable construction thanks to its design, the conception, and the materials used. Clariant is planning a second Project House to be located outside Europe, focusing its innovations on a different strategic business area, beyond functional packaging.

### **Ambitious environmental targets**

Clariant has set itself ambitious targets in the field of environmental protection. These targets are designed to ensure that they can be achieved independently of the company's commercial success. They are particularly meaningful for important criteria that can be measured using exact figures, such as energy consumption, water use or the quantity of waste and emissions produced. Clariant does not only seek to reduce significantly the relevant absolute volumes, but also defines sustainability targets in relative terms. Improvement is sought independently of production volumes, i. e. in terms of savings per metric ton. In the coming years, Clariant aims to make production ever more efficient and sustainable.

Clariant sees considerable potential for savings relating to important environmental parameters from the optimization of complex processes. Clariant's objectives for 2020, which it set out in 2011, therefore include relevant indicators for which there are sufficient and detailed data from across all areas of the company extending back over a long period of time. Where this is the case, it is possible to make reliable and comprehensive forecasts and plans. Compared with the figures for 2005 – or for 2007 in the case of total greenhouse gases, since it took two years to fully establish the total volume – Clariant is seeking to achieve a percentage improvement in key indicators that measures well into double figures by the year 2020. In order to define these targets, it was necessary to develop comprehensive scenarios regarding how production would develop, what the future product portfolio might look like, which innovations would be likely, and which investments would be needed.



Each Business Unit receives individual guidelines for the given indicators. The guidelines are reflected in Clariant's long-term investment planning, since without employing the latest technologies and procedures, the desired improvements would not be possible. While it is difficult to estimate which resources will be needed for some production processes due to their complexity, and even if a greater quantity of resources is needed for innovations during the introduction and development phase, anomalies and developments will be compensated for by better than expected improvements in other areas.

These measures are not only for internal use, but are also intended to show the public that Clariant is now even more credible than before. Due to the successful integration of Südchemie, the sales of various business units and the excellent performance with regards to our current environmental targets, Clariant will start in the next year a review process of the 2020 targets to better reflect the new company structure and our general sustainability ambition.

### Global social activities

Clariant ensures that it acts as a socially responsible company. This is why it supports and engages in a range of different Corporate Citizenship Activities (CCAs) all over the globe. In order to harness these efforts and to improve their effectiveness and efficiency, Clariant now applies a fixed, uniform management and governance framework. Since the start of 2014, all Corporate Citizenship Activities – regardless of their scale – have been evaluated and approved regionally or centrally using the same set of standards. Clariant has outlined an exact definition of the relevant authorization powers.

This process also includes a regular legal compliance check. Each activity is designed to increase the positive impact on all people who are connected with Clariant (stakeholders). These activities include sponsorship, the marketing of charity events, donations for good causes, the provision of resources and services free of charge, and memberships. CCAs have become an integral part of Clariant's philosophy and its corporate social responsibility.

Clariant initiates and supports a whole range of community projects all over the world. This includes projects to help improve school education. At the company's Tangerang site in Indonesia, for example, Clariant is sponsoring a teacher training scheme. Clariant also assists schools by paying for material and equipment for lessons in the STEM subjects (science, technology, engineering, mathematics). At its offices in Houston, Texas, the company donates items such as robot parts and software to selected schools. In India on the other hand neighbourhood was supported with a donation to build a well, students were taught in environmental topics and notebooks were donated to schools. In China for example Clariant engaged in lectures at universities about »green chemistry« or a donation to build a home for the elderly (see also pages 30, 40).

### INCLUSION OF INTEREST GROUPS

Clariant is an open company and therefore fosters a culture of proactive and transparent communication that includes all of the relevant interest groups, looking to their concerns and expectations. This communication is key to forming reliable relationships based on trust. All interest groups are regularly informed of our activities, targets, and ESH and energy performance. Detailed information is provided – particularly in line with Sustainability@Clariant – in the Annual Report, the sustainability report, numerous corporate and product information documents, and our Internet presence. (G4-24)

Clariant communicates continuously and promptly with important interest groups (stakeholders) in the form that is relevant for the particular target group. In particular, Clariant's stakeholders include shareholders, employees, suppliers, customers, local residents near Clariant facilities, authorities, and associations. Depending on the respective countries, issues, and target groups, Clariant conducts a reasonable and situational exchange of views on a regular basis. Clariant maintains an open, multilateral communication culture with stakeholders. All of these groups have a strong interest in the development and decisions of Clariant. Clariant considers the efficient flow of information on all sides to be essential in terms of corporate responsibility and economic success. (G4-25)

Clariant also maintains an intensive dialog with financial market participants, investors, and analysts. During the reporting year, company presentations were held which interested stakeholders from the area of finance and media representatives were invited to attend and at which Clariant held around 50 individual discussions and some 45 group meetings with investors and analysts. It also held 13 international presentation trips (road shows) for the financial market, as part of which Clariant conducted meetings with 75 market participants. Around 50 teleconferences and 30 more meetings with investors rounded off the Investor Relations communication activities. These efforts resulted in valuable suggestions for prioritizing relevant sustainability topics.

As regards employees, Clariant believes it is important to discuss their professional and personal issues and that their professional experience is a key factor for moving the company forward. This is why Clariant has a fundamental interest in including the various

groups listed above in its communication and information exchange process. In most cases, the contact is actively initiated by Clariant on a regular basis. However, stakeholders often come to the company with a wide range of concerns, which are then seriously discussed. An example of this are the townhall meetings, which are held in all regions and are used by employees to voice any concerns and important issues.

Stakeholders near the various locations or near central company headquarters are included in the work of the company through various activities such as surveys, neighborhood forums, open-day events, industrial park discussions, cooperative arrangements between plant management and labor unions, written communications, and information on the Internet. Events are generally held on a quarterly or semiannual basis. (G4-26)

Questions, suggestions, concerns, and complaints (for example, about noise pollution from production facilities) are recorded in detail and forwarded to the responsible department in the company for processing. This department carries out an exhaustive review of the facts of the matter and gets in touch with the stakeholders or affected parties as soon as possible. A whole series of changes results from this process. Some facilities, for example, are directly adjacent to residential areas. Even within large industrial parks there are neighbors due to the large number of different operators.

However, questions and suggestions from stakeholders have not necessitated any serious changes to date. In the end, our goal is to improve the positive impact on all other persons connected with the company and to largely eliminate any negative effects. As part of dialogs conducted in 2013, interest groups did not express any extraordinary concerns or misgivings that would have had to have been highlighted in the sustainability report. (G4-27)

## KEY FACTORS FOR MORE SUSTAINABILITY

Population growth, increasing living standards, and globalization have opened up new opportunities, but have also brought new challenges. Raw materials are becoming scarcer at the same time as demand for them is increasing. This means that the current generation must manage the available resources much more efficiently and responsibly if future generations are to have the same chances.

Globalization is placing greater demands on the commitment and productivity of workers. This is linked to noticeable individual and social change. Many people are already feeling the pressure of constantly changing conditions – with the corresponding psychological and physical consequences. A modern company that enjoys lasting success is not only able to do something about this, it is obliged to do so. Clariant is already very actively engaged in this area through a number of programs.

As a global chemical company, Clariant does not simply demonstrate social responsibility to shareholders as a purely economic matter. Clariant places just as much emphasis on the careful use of resources and protecting the environment, as well as on creating a pleasant and motivational working environment built on mutual respect. Clariant is aware that the road to doing business in a sustainable way is paved with a whole host of challenges. Market demand for sustainable products is rising and will continue to rise. Clariant wants to not only meet the current market needs, but exceed expectations where possible.

It should not be forgotten, however, that sustainability requires money and resources. More complicated production processes, more expensive raw materials, cleaner and more efficient plants, and programs for employees and other interest groups require investment – some of it substantial – and often demand ongoing expenditure. In order for this desirable and worthwhile (from a social as well as an economic perspective) course of action to remain affordable for a company over the long term, the cost of pursuing sustainability needs to be compensated for by reduced costs (e.g. for energy) and additional turnover (e.g. through increased demand for sustainable products).

Clariant's business opportunities therefore lie in the development of innovative products which, for example, require increasingly smaller quantities of materials and a greater proportion of renewable raw materials, create less waste, and have an ever smaller potential impact on people and the environment when used.

The main business risk lies in the market not rewarding the high level of care and effort and choosing to switch to cheaper alternatives as a result. Clariant can prevent this, however, by convincing its customers of the advantages of its products and production processes as a way of helping the environment and securing their own economic future.

# Clariant

# SUSTAINABILITY POLICY

JANUARY 2014

## COMMITMENT & CLARIANT EXCELLENCE

Clariant commits itself to ethical and sustainable operation and Development in all business activities according to Responsible Care® and Clariant's own Code of Conduct. Clariant strives for a business culture of continuous improvement as well as for sustainable competitiveness and top performance in consideration of Clariant's ethical standards.

## RESPONSIBILITY

Clariant bears an ethical responsibility for sustainable, economic and ecological, as well as fair, business practices. Corporate Social Responsibility is therefore an integral component of our company's philosophy. All Clariant employees are educated and trained to assume responsibility in line with their function, level of authority and qualification.

## CLARIANT'S MANAGEMENT SYSTEM

Clariant's certified Management System adheres to all internal and external standards to which Clariant subscribes and forms the company's documented structural framework as the basis for objectives and programs. The system complies with ISO 9001, ISO 14001, OHSAS 18001, ISO 50001 and Responsible Care®. Achieving and maintaining a high level of quality across all aspects of our businesses, our ESH related activities, Social Responsibility and Responsible Care®, is our understanding of Corporate Sustainability.

## COMPLIANCE

Compliance with laws, international standards, internal regulations, and Clariant's Code of Conduct is a basic requirement for all our activities. Clariant appreciates voluntary initiatives and provides adequate support to develop effective and efficient safety, health and environmental and energy regulations.

## SAFETY, SECURITY AND ENVIRONMENT

Among Clariant's most important objectives are the safety and security of its worldwide activities and the protection of people and environment. We set protection goals which are valid throughout the entire group and monitor and evaluate all aspects of our activities.

## RISK AND EMERGENCY MANAGEMENT

Comprehensive assessment of risks related to our operations and products are prerequisite to our business processes. Local and global emergency organization is in place to ensure comprehensive emergency management and response.

## INNOVATION AND PRODUCT STEWARDSHIP

We are convinced that it will be essential to understand our customers' needs. Innovation and customer focus is the key to our business. We permanently develop better and new products and services to add value to our customers and to our environment. Concurrently we secure that our products can be used over their entire life cycle in a safe manner for employees, customers, the public and the environment.

## SUSTAINABLE OPERATION AND PROCESSES

We take initiatives to reduce environmental, safety and health risks in production, storage, distribution and usage of our products and the disposal of waste. This includes the efficient use of energy and resources and the continuous improvement of our processes to minimize the impact of our activities on the environment by increasing our environmental and energy performance.

## THIRD PARTY MANAGEMENT

Our aim is to establish mutually beneficial relationships with our third party suppliers and contractors in order to support our services on the basis of our internal ESHQ standards, which include Corporate Social Responsibility and Responsible Care®. We encourage our suppliers and service providers to adopt standards comparable to Clariant's policies.

## COMMUNICATION

Clariant fosters a culture of proactive and transparent communication as key to trusting and reliable relationships. All stakeholders are regularly informed about our activities, our targets and our SHQ and energy performance. We identify the concerns and expectations of our stakeholders systematically.

## MONITORING AND REVIEW

We monitor and review all business aspects and processes including Responsible Care® issues at regular intervals. Observing our quality and performance is an integral component of our business processes, our top priorities and our strategic planning.



Hariolf Kottmann  
Chief Executive Officer



**RESPONSIBLE CARE®**  
OUR COMMITMENT TO SUSTAINABILITY



Clariant International Ltd





Performance  
**SUSTAINABLE**  
**INCREASE IN**  
**PRODUCTIVITY**

WRITTEN BY HANS BORCHERT, PHOTOS BY JO RÖTTGER

No, it's not a Garden of Eden. That would be an exaggeration. But a green, nearly secluded oasis – that aptly describes the Clariant site in Santa Clara, near Mexico City. More than 50 years have passed since this site left the drawing board. A site where the plant's streets always meet at right angles under the shade of tall trees, where these streets are identified by letters and numbers and where a small cactus garden even thrives at the intersection of Calle 1 and Calle A. The exotic plants stem from Mexico's various deserts and were collected by this remarkable chemical facility's first manager. Gardening was his hobby, so they say.

Nowadays Fernando Hernández, 49, runs business for Clariant in Mexico and is just as much in love with Santa Clara as the plant's first manager. »When we talk about sustainability, to me another definition of the term is: Being fit for the future and successfully competing on the market.«

The story behind it all reads like a textbook example of the man reputed to be dead who instead lives on to a ripe old age. It takes us back to the start of the new millennium: »Back then, the production of dyes was up for negotiation,« says Fernando Hernández. The analysis compiled by Group strategists, however, was devastating and left hardly any leeway. Nevertheless, Hernández and his employees refused to accept the verdict of »too small, too expensive and not productive enough« and countered it with their uncompromising commitment to sustainable change.

One thing was obvious to everybody involved: Without pigment production, there is no Santa Clara plant. At least not in the long term. »Suddenly we were fighting to save more than a thousand jobs which raised the question of our social responsibility, too. Our answer was: The only way we can achieve job security is by increasing the flexibility and efficiency of our production processes through drastic reductions to gas and power consumption,

with an eye to becoming more environmentally compatible and cost efficient, and also by adding new, innovative components to our tried-and-tested equipment.«

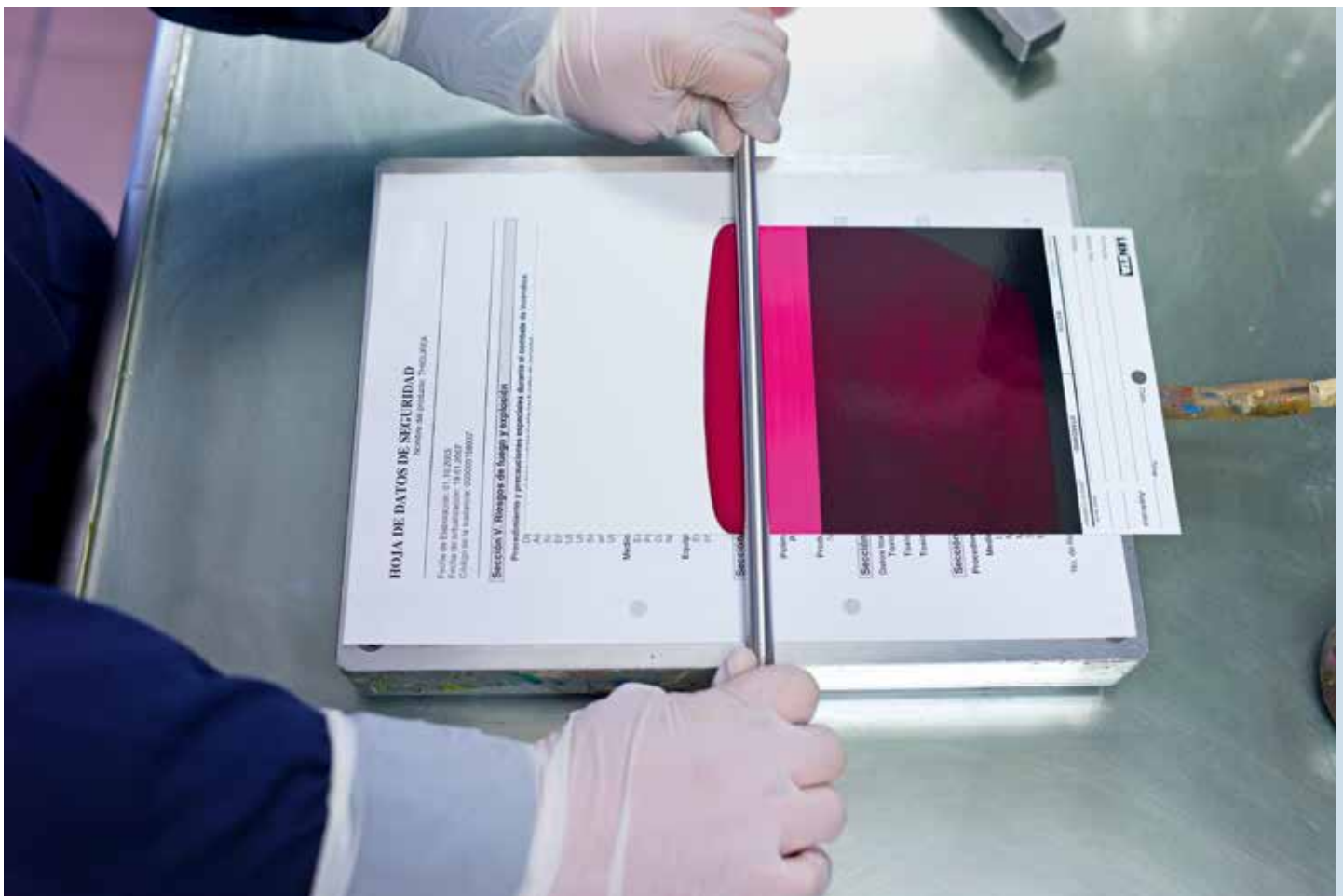
No sooner said than done. And it was done with a passion. No stone was left unturned, no screw was left untightened, no wheel was left unadjusted. Operations were still in the red at the beginning. Yet very gradually, bit by bit, the situation started looking up. Income and productivity had increased, cheaper yet more environmentally-responsible processes had been introduced and in the end, they not only proved that the plant could operate competitively but stabilized its competitive edge at a much higher level.

Hernández says with pride, »Dyestuff manufacturing is back to being our biggest revenue driver and that benefits our other two pillars, ICS (Industrial & Consumer Specialties) and Masterbatches. Plus we're global leaders in terms of quality and the location of our site is also a big point in our favor since it lets us deliver our customized products to customers in markets like the USA within just 24 hours.«

Faith moves mountains and little things can make a big difference – those are words to live by for an eternally positive thinker who learned some existential lessons from the serious illness suffered by his youngest son David, age 9. His motto is: »There's a solution for everything in life.«

As the son of a taxi driver who passed away at an early age, Fernando Hernández had to give up his plan of becoming a doctor. A scholarship allowed him to attend La Salle University. He washed cars on the side and also worked in the color laboratory of Clariant's predecessor, Hoechst, where he was given a permanent position in 1986 and became familiar with the »whole universe of chemical production and marketing«. After three years





as General Manager Central America in Guatemala, he transferred back to Santa Clara in 2001 as Head of BU Pigments. Additionally he was appointed Country Head of Clariant Mexico in 2004, and Head of OMS Mexico in 2013.

But how does that fit together: misfortune in the family accompanied by professional success? As far as Fernando Hernández is concerned, one does not rule out the other. On the contrary, »My son's illness, caused by vaccine induced encephalitis, helped me question conventional wisdom while also serving as a major source of motivation and energy. Just like we care for our son at home as a team – always tirelessly trying to put together the tiniest pieces of a puzzle in the hopes of improving his condition – at Clariant we also worked together as a team to blaze new trails, we abandoned traditions and rose up to fulfill our obligation to adopt a conscious, future-oriented approach not only toward using resources but also in how we deal with our employees and customers.«

Some things are not immediately obvious and when it comes to dyestuff manufacturing, it takes a few explanations from Gustavo Palacios, Head of Production and Site Manager, to understand which major and minor improvements have been made. As archaic as they might seem, the pigment drying process and others now produce considerably fewer CO<sub>2</sub> emissions.

»Calculated for the year as a whole, the impact of this alone brings reductions of 1282 tons,« explains Gustavo Palacios. »That's due to spin flash dryers which use an electronic oxygen sensor for making temperature adjustments as well as the fact that we reduce the pigments produced into smaller particles once they've been filter pressed.« Looking something like long spaghetti noodles, the raw material is spread out on trays and then sent to the drying ovens. That shortens the amount of time they spend in the oven, thereby not only saving gas and electricity but also cutting our costs, a useful side effect.

Chemists monitor product quality in the laboratory. They take samples of the pigments produced and put them through all kinds of tests. They test the impact of light and temperature, check the material's moisture resistance, particle size and color intensity. Applications are simulated by applying the material to card stock or the rubber skin of test balloons. »It all goes hand in hand, it's flexible yet still addresses everything from A to Z, all the way down to our biological water purification,« says Gustavo Palacios and then mentions another of his successes. »Individual employee productivity was up 30 %.«



#### — INNOVATIONS FOR IMAGE AND BRAND

In the Design Center colors for the current trends are developed in just a few weeks

#### — CLOSER TO THE CUSTOMER

In a creative atmosphere and in close collaboration with the customer innovative solutions are developed



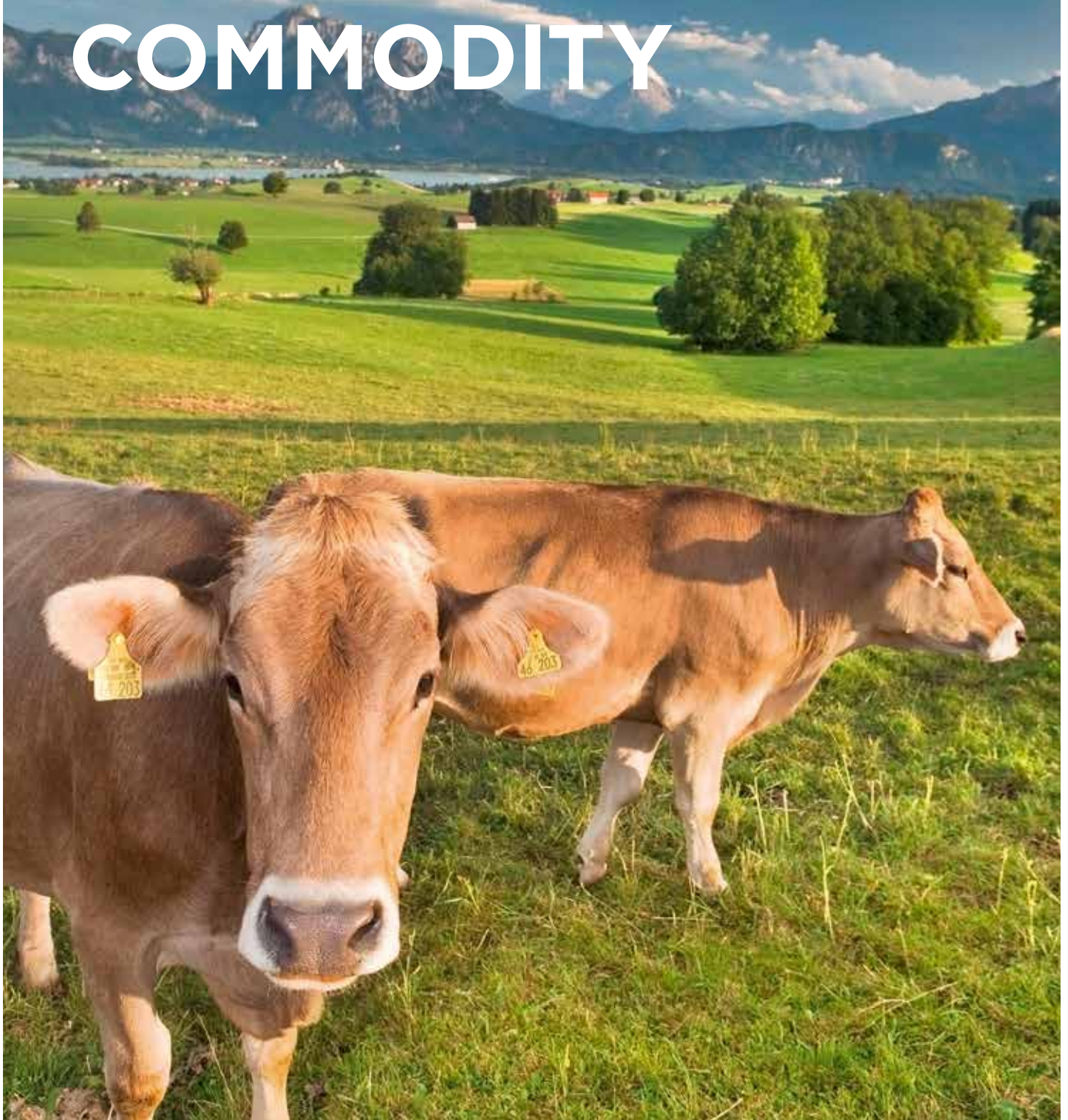
The cycle of sustainable renewability comes full circle in Santa Clara at the sight of a modern building erected just three years ago. This structure houses the BU Masterbatches which currently comprises state-of-the-art production lines and its futuristic-looking Design Center. An attractive atmosphere that inspires creativity – designed for customers and salespeople. Snow-white drawers silently slide open and suddenly the world is full of colors. Standing there, ready for inspection, are plastic containers in every conceivable shade. In eye-catching packaging, just like the leading international producers of cosmetics or personal hygiene products might sell their shampoos or body lotions, for instance. And that is precisely the point: What is trendy, what is well received, what fits the brand and image?

»The goal is to work together with our customers to develop innovations for the market,« says Omar Angeles, 41, in his capacity as Key Account Manager of the BU Masterbatches. »Create a new color concept? No problem. We can do that quite fast to accelerate launching time of customers' new projects.« Production facilities make up most of the rest of the building; visitors can even watch work being done on the factory floor through tall panoramic windows. That is where color pigments and raw polymers are melted in an extruder to form colored granules and they are sent on their way to plastic-processing companies.

Almost sustainable: Santa Clara has never been more vibrant. »But no – we aren't anywhere near our final goal,« says Fernando Hernández. »We still have a whole host of projects in the pipeline and want to make additional investments. Sustainable in the sense of environmentally-compatible production and products, such as easily dispersible pigments, but also in terms of our social obligation.«

Incidentally, there are also evenings when Fernando Hernández simply strolls leisurely along the plant's streets, leaving his workday behind him. He enjoys the magnificent bloom of the mighty trees, might stop by the former cafeteria where employees meet for yoga or tae kwon do lessons and always has a chat with the »Dear Lady of Guadalupe«. There are several such small altars on site featuring the famous image of this revered mother. They bear witness to Mexicans' deep religiousness and always remind Hernández »that we should treat what we were given with responsibility and humility: nature, our environment, anybody entrusted to our care, those near and dear to us and our own lives. That's what I call sustainability.«

# Beneath the green fields of Bavaria **LIES AN IMPORTANT COMMODITY**



**A**t first glance, the material does not appear to be anything special. But the truth is that it has become an indispensable part of our day-to-day lives. That material is bentonite. It is used in the foundry industry, in construction, in the drilling industry, and in a whole range of other industrial sectors. Bentonite also serves as a food additive, as a clarifying agent in the drinks industry, and as a basic ingredient in the cosmetics industry, for example. Bentonite is used to clean garden ponds and is also used in gardens as a soil conditioner. And it can even be found in some pharmacies, where it is sold as medicinal clay for detoxification.

Bentonite is made from a mixture of various natural clay minerals, the most dominant of which is montmorillonite. It also contains quartz, mica, feldspar, pyrite, and sometimes calcite. This allows bentonite to absorb (comparable to a sponge) and retain large quantities of water. Bentonite is usually formed from the weathering of volcanic ash and is therefore usually found close to former volcanic areas. The term »bentonite« was coined by a US geologist, who discovered clay deposits of this kind at Fort Benton, Montana, around the year 1890.

Clariant currently extracts around 1.7 million metric tons of bentonite every year at almost 50 different locations around the world. Approximately one quarter of this bentonite is extracted in Germany and around half of it in Europe. In Europe, Clariant has major open-cast mining operations in southern Bavaria, Sardinia, Spain, and Turkey. The extraction and processing of bentonite is a new business area for Clariant and began with the company's acquisition of Süd-Chemie in 2011. The clay is usually processed at the site where it is extracted in order to reduce transport distances and minimize logistics costs.

In Europe, there are substantial bentonite reserves all over the Mediterranean: Sardinia, Spain, France, the Greek islands, Turkey, and Morocco. In Bavaria there are still several million metric tons of proven, recoverable bentonite deposits, the majority of which Clariant has secured access to under private contracts.

## EXTENSIVE MEASURES TO PROTECT THE NATURAL ENVIRONMENT

In Europe there are strict standards in place governing bentonite extraction. Following the conclusion of mining operations, the land is often returned to state or private ownership for agricultural use or for forestry, and must be reclaimed before it is returned. In Asia there is generally no legislation governing the extraction process, but Clariant applies its own high standards nonetheless. This is also the case when local statutory standards are less stringent than those applied by Clariant, like in Latin America, for example. This allows Clariant to secure long-term relationships with landowners, a factor which is crucial for the success of bentonite extraction operations.

In Germany, companies looking to extract bentonite require a mining license, which, in Clariant's case, was issued by the Southern Bavarian Mining Authority (Bergamt Südbayern). The license is granted based on exact data regarding location, the size of the mining field, the quantity of clay to be extracted, waste material, and the rehabilitation of the site. To be granted a license, a company is required to conduct a detailed analysis of the geography, geology, hydrology, natural environment, and landscape of the area, and has to outline the impact of a potential mining operation. This includes the structure of the landscape, the soil, water, flora, fauna, and land use. The impact of the operation and measures to mitigate this impact must be outlined, as well as the measures which will be taken to restore and rehabilitate the land once the operation is over.

The extraction of bentonite is not comparable with gravel or clay pit operations. The volume of bentonite which is extracted is much lower than that of these other two types of rock. Moreover, the unusable layers of material under which the bentonite is located are often ten times as thick as the bentonite layer itself. During the course of the refilling and reclamation process, these surface layers must be returned to their original position. Unlike in gravel and clay mining, the entire area of land used for bentonite extraction is returned to the owner to be used for agriculture or forestry once the reclamation measures have been completed.



»We strive to minimize the impact we have on the landscape. This is why we take the utmost care during the reclamation process and why we try to not only adhere to the official standards imposed by the authorities, but also to give consideration to the wishes of the landowner.«

**GEORG SAINER**, Site manager

The land under which the bentonite is located is usually privately owned. A private mining contract has to be signed with each landowner. This contract stipulates that the land must be reclaimed following completion of the mining operation. This is because any landowner whose land is not returned in a fully useable state will refuse to consent to the mining operation. Clariant's »green rule« for bentonite extraction is to ensure that it leaves no scars behind on the natural environment.

## THE USE OF BENTONITE

Bentonite is an important material for the construction industry, where, amongst other things, it is used for waterproofing. This is due to its high water absorption and retention capacity. However, the clay also possesses purification properties: When added to water in powder form, it can bind heavy metals, toxic substances, and other contaminants until they are removed. When used as an additive in ceramics, the material enhances moldability and makes ceramics less brittle.

In the food industry, bentonite is used as a clarifying agent in drinks (to remove turbidity from wine or fruit juice, for example) or to improve the visual appearance of high-fat products. It has also been approved as food color additive E 558 in the European Union. Because of its water absorption and retention properties, bentonite is also used as a basic ingredient in a number of different cosmetic products, as a drying agent in packaging, and as an additive in the oil industry.

Bentonite is also an ideal adsorption agent because it is a porous material which is insoluble in water and which has a large surface, meaning it can bind itself to water or other molecules. This is why bentonite can be used in the filters of breathing apparatus, just like activated carbon, aluminum oxide, or silica gel.

This is why, once the reclamation process is complete, Clariant usually spends another one to two years cultivating the land extensively in order to accelerate the activity of the microorganisms in the topsoil. It does so, for example, by planting deep-rooted leguminous crops, which collect nitrogen and thus ensure that these parts of the soil receive plenty of air. Woodlands are fenced off and reforested. It is important that the vegetation is diverse, which is why mixed forests are planted where there had previously been a spruce forest, for example. This enhances the ecological quality of the area. Because the thickness of the bentonite layer is a mere 1.5 meters on average, the mining operation does not leave behind any visible subsidence in the topography of the land.

## NEW HABITATS FOR FLORA AND FAUNA

Clariant uses the technique of open-cast mining for the extraction of bentonite and applies the principle of mobile work sites. Once the first area of the site has been mined, it is refilled using the earth which is removed from the next sub-layer. However, some of the pits which are created as a result of the extraction operations have very steep slopes and can very quickly become a habitat for flora and fauna. In some instances, within a very short period of time, colonies of Sand Martins have laid their tunnel nests in the walls of the excavation. During the rearing period, the clay extraction process is brought to a halt in and around the areas affected.

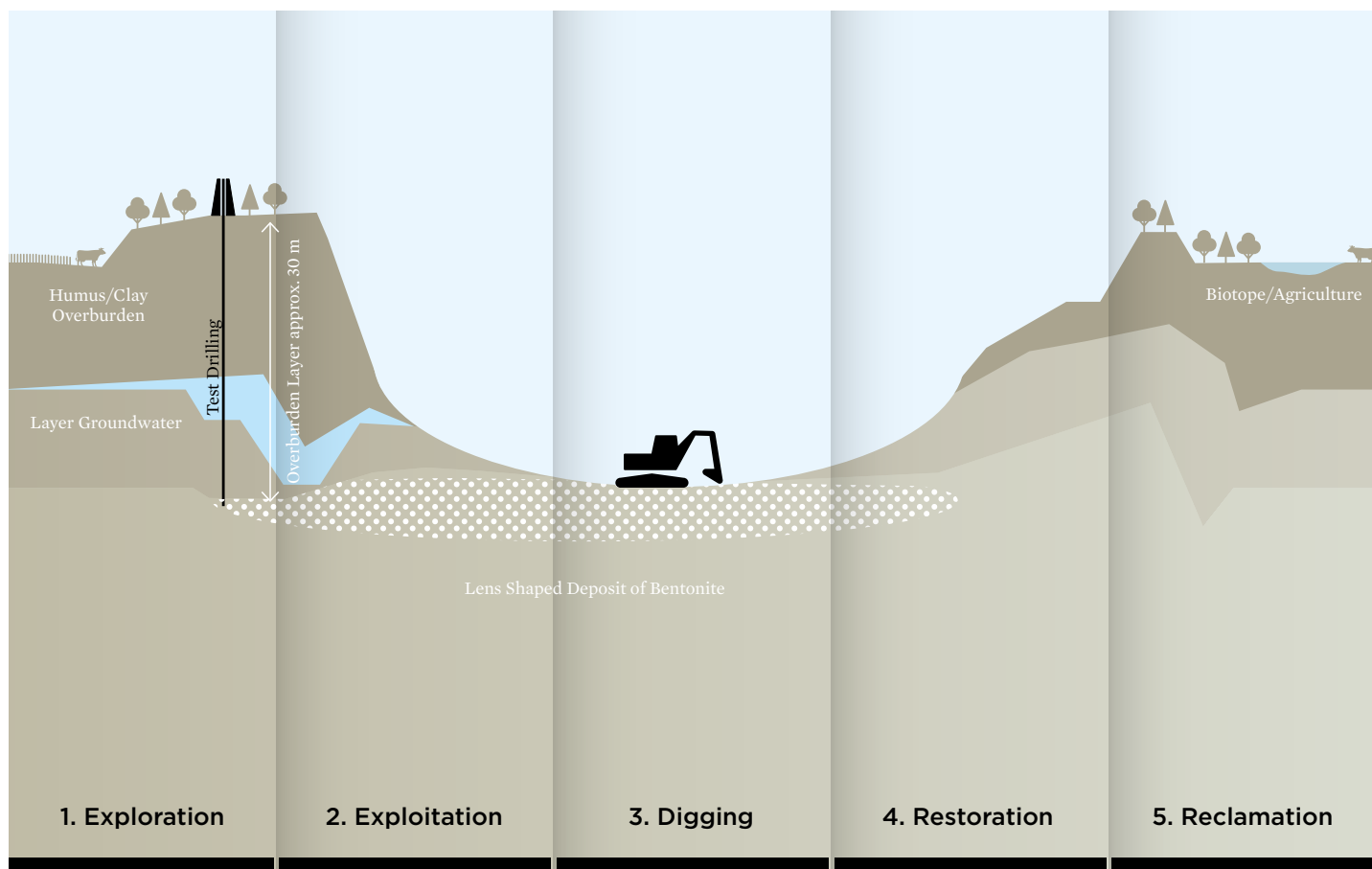
Natterjack, green, and yellow-bellied toads settle in the gravel and sand surfaces which appear in the pits. These toad species, which prefer a dry, warm habitat with little vegetation and small puddles, are on the Red List of Threatened Species. If areas of the mining site are inhabited in this manner, they are classified as temporary biotopes and left untouched. However, because the extraction and subsequent refilling process is usually very quick, this happens very rarely.

The principle of sustainability is rigorously applied to bentonite extraction, including in the reclamation process and when returning the land to the owner in a suitable condition for use in agriculture and forestry. Clariant goes to great lengths to make optimal use of the available resources and to keep the length of the mining operation as short as possible.

Environmental protection and conservation are key priorities throughout the process. Where possible and practical, new ecosystems such as wetlands for amphibians, dragonflies, butterflies and a number of other insects are created. In Spain, for example, new waterholes were created in areas where there had previously been no notable biodiversity to speak of. Tendrils and hedges were planted and have enhanced the area's biodiversity as well as attracted rare species.

Because bentonite is classified as a landowner's mineral (Eigentümermineral) under the German Federal Mining Act, which means that the decision on whether or not to sell this mineral lies solely with the landowner, it is important to present landowners with results from the post-operation use of land from prior mining projects as early as the contract negotiation phase in order to persuade them to consent to the extraction of the material. This is why it is crucial to ensure that the company is in a position to present the best possible results from land reclamation and restoration.

## Extraction of bentonite and renaturation



# Clariant Academy **CORNERSTONE FOR FUTURE SUCCESS**



**W**ell-educated and motivated employees are key to the success of any company. This is why Clariant supports its workers via the transfer of knowledge and values, and offers young people the opportunity to receive thorough training. Moreover, Clariant offers its employees training and qualification programs which address specialized topics relevant to the chemical industry. The company fosters the ability and ambition of each individual employee, as well as his or her commitment to delivering a high standard of work.

This was what Clariant had in mind when it established the Clariant Academy to add to its existing training programs at the start of 2013. The academy comprises all training programs that address Clariant's values, mission and strategic goals. To realize its vision of becoming one of the world's leading specialty chemicals companies, the Group relies on well-trained and highly motivated employees. The programs offered by the academy place a particular emphasis on developing the knowledge and skills of employees who assist in the implementation of the company's strategy and in the achievement of the goals which this strategy entails. They aim to equip employees with the skills they require to perform to the best of their ability and to create value for customers (through competitive and innovative solutions), for themselves (through personal development), for stockholders (through above-average returns), and for the environment (through sustainable production).

The Clariant Academy teaches effective and success-oriented corporate governance and operational techniques which are also in sync with Clariant's sustainable corporate values. The goals of the programs offered by the academy are:

- to teach leadership skills and techniques;
- to enhance organizational and business management skills in an international and strategic context;
- to optimize core business processes;
- to teach employees how to deal with change constructively.

The academy has also responded to the increasing demand for topics relating to human resources management within the company. The most unique such example are the Leadership Training programs, which were introduced back in 2011 and which employ a special approach to conveying Clariant's corporate values. The course aims to teach participants how to reflect on the impact which the company's corporate values have on leadership roles and how these values can be incorporated into day-to-day operations: How can we promote the pursuit of excellence in our day-to-day management duties? How can we consistently boost the potential of our team to perform with the objective of creating sustainable value, and how can we express recognition and appreciation to our employees as part of a constructive dialog? The Leadership Training programs set the standard for all employees in management positions and promote the development of a consistent management culture which is in sync with Clariant's values.

### **ADVANCED EDUCATION PROGRAMS AT THE CLARIANT ACADEMY**

**Leadership (»The way to lead«):** Training in leadership skills and management techniques is designed to take the implementation of Clariant's values to the next level and to focus the Group on delivering first-class achievements.

**General Management (»The way to manage«):** Training in business and organizational skills in an international environment is designed to deliver more consistent sustainable growth for the company (starting in 2014).

**Functional Excellence (»The way to work«):** Training in core business processes in innovation, sales, the value chain and production is designed to boost Clariant's performance and further enhance its competitive edge at the global level.

**Change Management (»The way to change«):** This training program is designed to encourage employees to view changes as opportunities rather than as risks, and to improve their understanding of how they should deal with change.





The functionally-oriented Excellence programs, developed by the Clariant Excellence Initiative, have also been integrated into the Clariant Academy structure. These programs focus on excellence in core processes relating to innovation, sales, the supply chain, and production. Starting off by looking at defined process standards, the participants develop a common understanding of processes and enhance their skills in their respective fields of operation. The Excellence programs offered by the academy also include a procurement training course. This course consists of three modules which address new strategies in and optimal approaches to purchasing, supplier management, and contract negotiations.



### **CLARIANT JAPAN MANAGEMENT SCHOOL – AN EXAMPLE FROM ASIA**

The Japan Management School is a two-year development program which was designed to create the next generation of leaders. Talented young people are equipped with the basic knowledge and skills required for management positions. Self-reflection and leadership skills training also form an important part of the program. It provides participants with the opportunity to discuss corporate strategy in depth as well as to gain a clear idea of their own career ambitions and to start building a strong network.



Business development and continuous optimization inevitably go hand in hand with change. However, human beings generally have a natural preference for stability and continuity. This is why Clariant strives to dispel any reservations which employees may have about changes, to emphasize the positive side of these changes, and to show employees how they can find practicable, motivating ways of achieving the intended goal of the changes. Using the principles of change management, the academy teaches participants the basic knowledge and operational techniques involved in the process. This program is aimed primarily at managers, as a means of helping them to foster the acceptance for change within their departments and to get their employees to cooperate in the change process. Moreover, the program on Applied Change Management is designed for employees who are directly involved in change management projects. In this program, participants share their individual experiences relating to change and learn how to apply certain strategies and tools to their own specific scenario. The seminar is followed by follow-up sessions in which participants can discuss with their colleagues any successes or difficulties they have encountered when implementing the solutions they came up with during the first part of the course with a view to optimizing the implementation process.

By setting up this academy, Clariant has created the ideal environment for continuous learning. It aims to give employees the chance to develop as individuals and to unlock their full potential whilst at the same time generating strategic growth for the company. In order to guarantee a close and consistent link between the academy and the company's strategy and corporate culture, the different programs are taught in the same format, with the same content and the same methods all over the world.

The programs offered by the academy add to the extensive range of other training and advanced education programs already available at Clariant. Line managers and employees can check the online regional and local training catalogues to find information on a whole range of training programs covering topics such as presentation and communication techniques, language learning, time management, project management, and events for newly recruited employees. There are also local events tailored to specific needs, such as production manager training courses in Germany or the Management School in Japan (see box).

## **PRODUCTION MANAGER CURRICULUM – A LOCAL PROGRAM OFFERED IN GERMANY**

In Germany, Clariant offers a series of seminars for (prospective) production managers, the objective of which is to provide participants with the ideal preparation required for the role and the responsibilities which come with it.

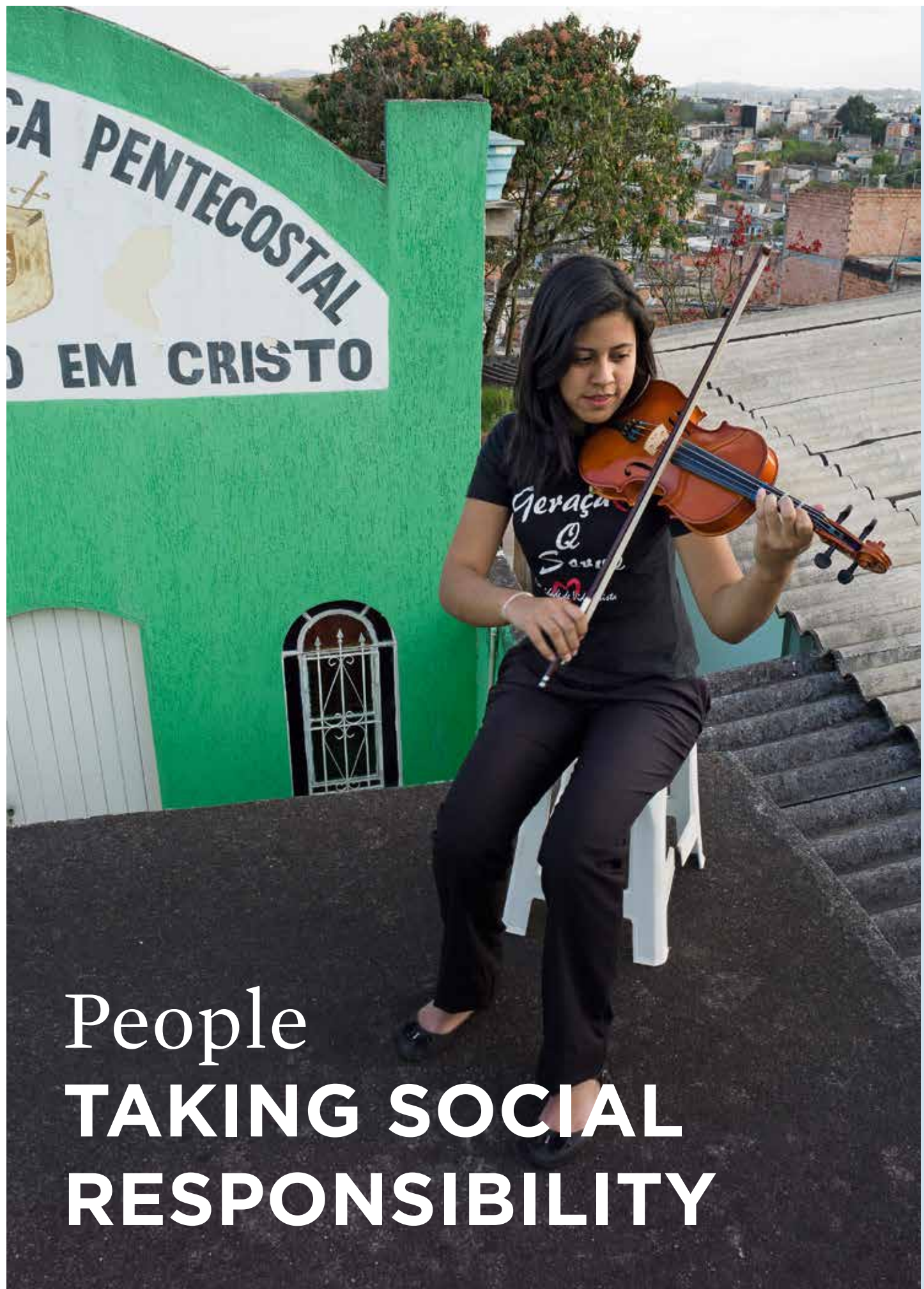
In addition to the legal aspects of the job, the program's »ESHA« module also addresses the responsibilities of a production manager in the fields of health, safety, and environmental protection.

The »Cost Accounting« module covers the basics as well as the terminology and tools used by Clariant to ensure that production managers have the confidence and ability to make informed business administration decisions within their respective production units.

Familiarizing operational managers with their duties under statutory employment law is the objective of the »Labor and Works Constitution Act« module, while the »Personnel Development« module looks at how individual support can be provided to employees, and outlines the internal processes which Clariant has in place for this purpose.

As part of the company's annual performance management, line managers and employees discuss where there is a need or desire for training based on the goals the company is currently pursuing and, if necessary, they agree to participate in one of the local training programs or in one of the advanced education programs offered by the Clariant Academy.

In 2013, more than 10 000 employees took part in one of Clariant's training programs and a total of 117 000 hours of training were provided. The Clariant Academy accounted for almost one third of this volume, with the main focus in 2013 being on the Leadership Training programs, for which there were 26 000 hours of training and more than 780 participants. More than 80 000 hours of training were provided in the form of local advanced education programs, where the main focus was language courses, communication and presentation skills, performance management, and business administration. Training courses on occupational, process and product safety as well as environmental protection are also offered, but the participation numbers for these programs are not yet available.



People  
**TAKING SOCIAL  
RESPONSIBILITY**



—  
**CHANGE IN SMALL STEPS**

On the way to music lessons at Professora  
Domschke School in Suzano



WRITTEN BY HANS BORCHERT, PHOTOS BY JO RÖTTGER

Sometimes – not always, but sometimes – little miracles do happen. Like in Suzano. A school stands there, a bright, beaming testament to sustainable change. This school once had a dubious reputation, it was more of a grubby shelter than an impeccable educational establishment: dilapidated and neglected, left to the capriciousness of its students and a horror for every one of its teachers. »A total nightmare,« remembers its current principal José Jair. »Inconceivable, but true.«

All of that has changed now. Whitewashed masonry, halls and classrooms swept clear of debris. Photos and paintings adorn the walls and the facility used to feed the students can finally be called a kitchen, once again. That is a first impression, unexpectedly accompanied by a cantata by Johann Sebastian Bach. The school's orchestra is practicing, bows gliding across strings, everything blending to set a new, positive tone at this school. Music is its joy and good cheer, its vitality and – more than anything else – its soul.

»Herz und Mund und Tat und Leben,« the Brazilian students can be heard singing Bach's cantata »Heart and Mouth and Deed and Life« in their very best German. They sing with ardor and are accompanied by 35 violins, three violas and six cellos. Anderson Lacerda, music teacher and violinist, keeps time. He directs the little orchestra and later calls to mind a quote from Friedrich Nietzsche who once said, »Without music, life would be a mistake.«

How very true. At least the metamorphosis this school has undergone would have been inconceivable without music. And also without Clariant. This project arose through the Company's collaboration with Brazilian conductor João Carlos Martins' foundation 'Fundação Bachiana' within the scope of our diverse 'Responsible Care' corporate initiative. In the eyes of the Maestro, music can help change an entire life and today, not quite four years later, Professora Domschke School is living proof of the truth in those words.

Just ask the students. Whether short or tall, in the choir or in the orchestra. These are the faces of bright, astute children who are devoted to rhythm and sound. Up front, in the concert master's seat, sits Thamires de Freitas Pereira, 17. She is just about to graduate and the opportunity to play the violin has been a great gift. »I've found my calling,« says the young girl with a twinkle in her dark eyes. One day she will be on stage as a soloist, which is why, in addition to the four orchestra rehearsals per week she practices alone another five hours every day.

For Maestro Martins, a world-renowned pianist and Bach interpreter, Thamires de Freitas Pereira already falls into the category of highly gifted. »It's as if we found a diamond in the rough and it is now in our care,« he says. That is not actually the crux of the matter, however. There is another, much more important aspect: Music helps us integrate underprivileged children and families into society. It gives these people entirely new, unforgettable experiences.«

It should be mentioned that music lessons are by no means a standard part of Brazil's public school curriculum and that if music is even offered, then only in theory. »This culture didn't even exist,« explains Principal José Jair and goes on to summarize the wide range of achievements that this project has made possible.

»It changed the entire social climate at my school. The students developed team spirit; they don't just make music together, now they listen to one another. Their learning behavior has also improved enormously. They're more concentrated in what they do, more attentive and structured, they inspire each other and this gives them a huge influence on the behavior of all their classmates who neither sing in the choir nor play in the orchestra. It's crazy, but when we started, a lot of them had a hard time just reading. Now they're sight-reading.«

Take Lucas, 13, and his sister Paloma, 11, for example. They live on Rua Santa Rosa, not far from their school, where the two children carrying violin and cello cases seem exotic amidst stray dogs and surrounded by small houses with bars securing both windows and doors. Who would expect to hear the sounds of Mozart here, of all places? But just listen. »When my children practice together,« says their mother Christina, »the neighbors stop by to listen. They invite them over. They say come and play for us, it's such beautiful music.«

The instruments are on loan from the »Fundação Bachiana« (financed by Clariant in this project) and to the great joy of Eduardo de Camargo, the educational project coordinator, students »care for and guard them like precious treasure.« Camargo works behind the scenes to handle all of the organizational matters. He looks for music teachers, plans orchestra concerts, keeps Maestro Martins up to date and also has to do a lot of persuading because not all of the students have their parents' support. »There's also resistance,« says the school's coordinator, Maura Andréia Prado Bolla. »It's often the fathers who object. They want their children to start working small jobs to earn money as soon as they turn 14.«

That was what happened to Lindsay Melissa Rodríguez Lima, 16, and her friend Mayara Rocha de Jesus, 16. Both come from meager circumstances and they literally had to fight to be able to pursue their love of music. »My father actually gave me a categorical no,« says Lindsay, »but my willpower was stronger. The violin simply helps me express my feelings and I listen to whatever classical music I can find.«

Mayara's motivation is similar. She lives with her family in a fairly modest house where she shares her bedroom with a brother, her grandmother and her parents. Occasionally she climbs up to the roof of their dwelling to practice while »dreaming of a better future.« It takes her ninety minutes just to get to school every day. »But,« she says, »that doesn't bother me at all because music and the orchestra mean the world to me.«

Despite its somewhat musical name, Suzano is a key industrial center, easily accessible by car and just a one-hour drive from São Paulo. Clariant first opened this site in 1958. It boasts a long history and employs some 1000 people, making it the Group's third-largest production facility around the globe.

In the eyes of the site manager, Werner Striecke, this gives rise to an obligation that extends far beyond the Group's commitment to music education at Professora Domschke School. »We have maintained an ongoing dialogue with each one of the city's political and social forces including numerous measures that aim to improve the social situation, and not just in our immediate vicinity. We look at issues like health, education and training, culture and transparency, too.«



#### — WITH ONE VOICE

The students show great dedication in the choir rehearsal

The list of initiatives is long. It ranges from the popular »Open House« to free health information and medical checks (»SESI Cidadania«) and even joint emergency and accident rescue exercises. The factory's doors open up for group tours by school children (»Conhecendo a indústria«) and a »Career Week« (»Semana das Profissões«) is held every year at the local school Professora Domschke. During that week, Clariant employees visit classrooms where they give a lively account of their educational background, their work and their day-to-day activities.

If you ask Werner Stripecke, whose father once emigrated from Bad Hersfeld to Brazil, this is not some kind of image cultivation work, rather active decision-making assistance. »These young people need guides and role models. That's vital, particularly in their social environment. Time and time again I not only get a sense of just how curious and interested they are, but also what limited horizons they have.«

Right now he's standing in front of a class at Professora Domschke School talking about career opportunities in the chemical industry. »Look up at the mountain but don't expect to reach the peak right away,« he advises. »Take it one step at a time, start small, but don't lose sight of your goal.«

A nice metaphor, for music, too. To which Maestro João Carlos Martins says: »Our project in Suzano is all about the emotions of young people. It started in the school and took the children onto the stage of the famous Sala São Paulo concert hall. There I conducted them as they played a piece by Vivaldi. And that night was just as unforgettable for me as it was for them and their families. Thanks to Clariant, our joint efforts are bearing fruit and they're now even serving as a model for a few other similar corporate efforts throughout Brazil.«

Indeed: A Música Venceu – The music won!



**A**t the close of the 18<sup>th</sup> century, English economist Thomas Robert Malthus suggested that mankind would soon face serious food shortages. The fact that the population was (and still is) growing exponentially while food production is only increasing on a linear basis, would, in his view, lead to a widening gap between the supply and demand for food. Malthus, however did not guess, the speed at which advances would be made in technology; advances which have drastically increased productivity in agriculture.

Nevertheless, the achievements to date must not be a cause for complacency. Instead, the technology, auxiliaries, and working methods used in agriculture must continue to undergo constant development, as not only is the world's population growing rapidly, but more than 10 000 different diseases and pests are also threatening the Earth's crops. If these diseases and pests were to be left unchecked, the amount of crops lost around the world would be colossal – this represents an essential risk to the food supply for the world's population. Three-thirds of the world's annual potato crop would be lost, as would half of the wheat crop. Today, some 6 000 tailor-made pesticide systems are available to combat such diseases and pests.

## Considerable potential in **AGRICULTURE**



## EFFECTIVE SUPPORT FOR PESTICIDES

To ensure that a pesticide can work, the active agent or combination of active agents in the pesticide must be combined with other additives so it can be added to the liquid used for delivery (usually water) as well as be applied to the right areas in and on the plants. Many of these auxiliaries can be hazardous to health or have poor biological degradability and do not conform to the requirements of modern and sustainable agriculture. In Synergen® OS, Clariant has developed an effective additive that is manufactured from renewable resources, is biodegradable and has no health concerns attached to it, as well as being exempt from labeling.

Synergen® OS helps pesticides to reach their intended destination in sufficient quantities, i.e. on and in plants, where the active agent in the pesticide can realize its full biological potential. The auxiliaries consist of renewable raw materials, most commonly a methyl oleate derived from vegetable oils (rapeseed, sunflower, or soya) combined with a polyglycerol ester made from coconut oil. Synergen® OS reduces losses during the spraying process, increases the efficiency of the active agents, and helps them to make their way inside the leaves faster.

Thanks to Synergen® OS, the amount of each active agent and water that need to be used in the pesticides can be significantly reduced. Optimizing the application of pesticides results in a significant increase in crop yields and at the same time reduces the amount of work required. Reduced drift means that the pesticide can be applied much more accurately and efficiently on the target area. Depending on the approval regulations, the distance that must be observed between the target area and neighboring fields or bodies of water can also be significantly reduced. This allows for the size of the useable

croplands to be increased. The additive is compatible with all widely used active agents and is available as a mixing compound as well as a modifiable or finished product, which is to be added to a tank mix.

Synergen® OS is not harmful to human health, nor is it in any way an irritant. The environmental profile of Synergen is completely positive, as considerably less water is needed for application, and the additive is biodegradable (42 % in 28 days and without leaving behind any harmful residues). Synergen® OS has been awarded important safety and quality certification as per ISO and OHSAS. Synergen® OS is one of the first products to have received the EcoTain® certificate. (see box on p. 37)

## EFFICIENTLY FIGHTING HUNGER

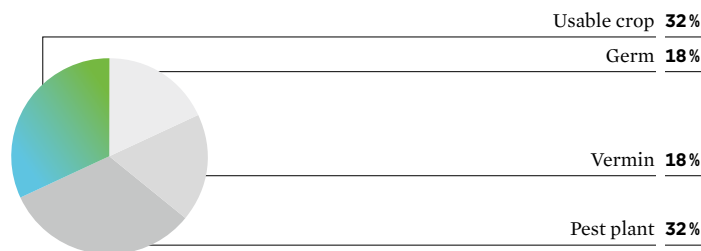
In order to satisfy the food demand of an ever-growing population, the yield per unit area must be improved. This can only be achieved by using efficient fertilizers, the main component of which is ammonia, which has thus become an extremely important compound. Production of ammonia, however, requires large amounts of energy. Over 170 million tons of ammonia is produced around the world every year, of which 80 % is used in fertilizers.

Clariant has revolutionized the production of ammonia, a process that had remained the same for almost a century. Fertilizers can now be manufactured considerably more efficiently thanks to the use of highly effective catalysts in the ammonia synthesis process. ReforMax® and the innovative AmoMax®-10 significantly reduce pressure in the reactor during the ammonia synthesis process – which is extremely energy-intensive, particularly in the final stage – and at the same time shorten the catalyst's reaction time.

### CROP LOSS BY GERM, VERMIN, AND PEST PLANT globally

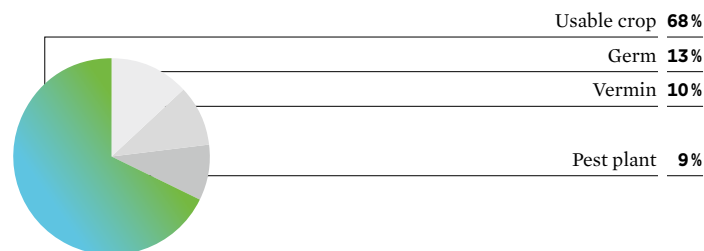
#### Without crop protection

possibly up to 61 % crop loss



#### Current crop protection

reduces potential crop loss by approx. 53 %



Source: Acc. to Oerke, E.-C.: Safeguarding production – Losses in major crops and the role of crop protection, Crop Protection 23 (2004), 275 – 285

»Thanks to Synergen® OS, crop protectants can be applied more efficiently, and maximum harvest yields and highest qualities can be achieved with the smallest possible rational amounts of active agents.«

**PROF. DR. PETER BAUR**, Head of the Crop Solutions Competence Center at Clariant and developer of the product

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Lowering the pressure and temperature reduces the amount of energy needed to manufacture ammonia by around 40 %. Each of the 70 active plants that use these Clariant products achieve annual energy savings of around 1000 gigawatt hours, which corresponds to the energy demand of 50 000 households.

### **OXYGEN ABSORBERS ENSURE FOOD KEEPS FRESH FOR LONGER**

In industrialized countries, around 20 % of food is thrown away. Bacteria, mold, and other fungi are partly to blame for this – even in packaged food. The innovative Oxy-Guard™ prevents these unwanted organisms from reproducing and multiplying within food packaging. The product, which is a mixture of salt and iron powder, is included in sealed food packaging and ensures that the oxygen content inside the packaging does not exceed 0.01 %. The non-toxic iron contained in Oxy-Guard™ begins to oxidize inside the packaging, consuming a good amount of the oxygen still present after the packaging has been sealed. The salt in Oxy-Guard™ lowers the moisture content. Oxy-Guard™ thus eliminates the substances bacteria and fungi need to survive, i.e. oxygen and water, from inside the packaging. It can be used for a wide range of foodstuffs, e.g. bakery products, noodles, pasta, meat, coffee, tea, chocolate, and even frozen foods. Thereby shelf life is increased, which helps to reduce the mountains of food wasted.

### **PROTECTING CEREALS AND GRAINS DURING TRANSPORT**

Effectively protecting cereals and grains against mold and other harmful micro-organisms during long-distance transit – particularly by sea – enables losses to be minimized. An effective product in this respect is Container Dri® II, a drying agent that can be used to protect cereals and grains from moisture. It represents a cost-effective alternative to propanoic acid, which is otherwise commonly used for this purpose. Container Dri® II is added to the wheat in pouches, absorbs up to three times its own weight in water, and stores this water in a special, harmless gel. This results in a significantly less damp environment, in which foodstuffs keep fresh for

longer; at the same time costs and waste are reduced. This Clariant product is already being used in US food aid shipments sent to developing countries and drastically reduces the amount of grains and cereals spoilt upon arrival at the destination.

### **STRONGER GROWTH UNDER FILM**

Using (greenhouse) films or ground-covering tarpaulin on open fields significantly increases crop yields, as the ambient temperature of the plants under the covers rises markedly. This encourages growth – even in the colder temperatures at the beginning of the year. At the same time, the ground covering results in less water evaporating, which, on the one hand, provides plants with greater humidity and, on the other, reduces the need for them to be watered. Clariant can count itself among the market leaders in the development of polymer additives for agricultural film. The AddWorks® AGC product range comprises light and heat stabilizers, infra-red and UV absorbers, as well as an AddWorks® LXR® 920 flame retardant.

What is important when using the film is a good light management system, as the blackening of plants and discoloration of the leaves by UV light, e.g. in roses, are common problems. In addition, some harmful species of fungi thrive in particular when exposed to UV light. Clariant high-performance UV blockers protect flowers from blackening and limit the damage caused by Botrytis fungi.

In order to remain fully functional, this film has to be able to withstand a great deal, with fertilizers and pesticides having a detrimental effect on the film, likewise UV rays from the sun. For reasons of nature conservation, new standards in pest control precipitated the development of a new generation of agrochemicals, which negatively affect the service life of agricultural films. Alternative chemicals, such as sulfur, reduce the service life and efficacy of conventional films by up to 25 %. Clariant, however, has developed a material that boasts an innovative structure and composition allowing these new films to be used in extreme conditions for prolonged periods of time without a reduction in efficacy.



## SUSTAINABLE COATING AGENTS FOR FERTILIZERS

Transportation and shipping of fertilizers can cause damage to the product like caking or bridging of the fertilizer granules. Fertilizer additives help to protect against common problems as well as protecting against moisture and improving handling, by increasing flowability. Additionally, FERTALA® 7258 reduces dust formation during handling, which lowers transportation costs and increases

safety. Unlike many traditional fertilizer coatings which are based on fossil fuels, FERTALA® 7258 is based on renewable resources and is more environmentally compatible.

Based on excellent product performance, coating agents help to reduce costs and increase effectiveness of fertilizers, which contributes to global food security.

### ECOTAIN®

The EcoTain® label was developed in line with Clariant's objective to continually improve the sustainability of its products. EcoTain® represents a holistic approach to sustainability and is used to evaluate products based on a four-phase life cycle; this provides a means of assessing and understanding the ecological, economic, and social impact of Clariant's products and business activities over the entire value chain. From the initial chemical design, production, and use of a product all the way to its recycling and disposal, EcoTain® supports the development of sustainable solutions and safer chemical products. Clariant presented EcoTain® to the public at the start of 2013. It uses the label to identify those products that satisfy high standards in terms of sustainability.

Sustainable thinking starts in the development stage of a product. The aim is to develop efficient products based on safe materials, while optimizing the use of renewable raw materials.

The next stage is the implementation of a product idea using a responsible production process. This means environmentally compatible and safe processes that conserve resources and cut emissions and waste. During this phase, Clariant optimizes the efficiency of chemical reactions and processes.

The third phase of the EcoTain® life cycle focuses on the safe and efficient use of the products themselves. Products should not only fulfill their intended functions, but also significantly improve end-product performance and be safe in all defined applications.

The final stage of the EcoTain® lifecycle addresses the issue of eco-integration, in other words product disposal and the impact this has on the environment. Our ultimate goal is always to minimize and recycle waste. Any remaining waste should have as limited an environmental impact as possible.

A number of additives and auxiliary materials from the Crop Solutions (eight products), Industrial Lubricants (15 products), and Paints & Coatings (six products) business segments already bear the EcoTain® label. In spring 2014, Clariant will present more than 25 EcoTain® products from the Personal Care segment, which use, for example, sustainable emulsifiers, mild surfactants, and natural emollients in creams and cosmetics. Clariant will present EcoTain® products from the Cleaning Products segment in fall 2014.

The market's initial reaction to this new development approach has been very positive. For example, the internationally renowned US consultancy Frost & Sullivan (active in the fields of market research, market analysis, and strategy consulting) is presenting Clariant's Crop Solutions business segment the New Product Innovation Leadership Award in recognition of the innovative approach of EcoTain®.





# Using catalysts to reduce **GREENHOUSE GASES**

**I**ncluding raw materials, the chemical industry accounts for 10 % of total and 30 % of industrial energy consumption globally. Emissions from production of the chemical industry accounts for 5.5 % of global carbon dioxide (CO<sub>2</sub>) emissions and 7 % of all greenhouse gas emissions. On the other hand, the use of a range of chemical products reduces greenhouse gas emissions – for example, insulation materials, more efficient lighting technologies, and lightweight materials in automotive manufacturing and energy generation.

Regulatory requirements and increasing energy prices are drivers for decreasing energy demand. In Europe energy intensity decreased by more than a half. However, there is still considerable savings potential, which could achieve a further total reduction of up to 40 % by 2050. The increased use and optimization of catalysts for chemical reactions could make a significant contribution in this regard. Catalysts – i.e. substances that speed up reactions without being consumed themselves – are already used in around 90 % of all chemical processes, thereby increasing efficiency in production and reducing energy consumption, and in turn lowering greenhouse gas emissions.

Of the thousands of chemicals produced each year, just 20 substances are responsible for around 80 % of the chemical industry's energy needs and 75 % of its greenhouse gas emissions. Although the chemical industry has already made huge efficiency improvements as regards this small group of chemicals, new technologies need to be developed and implemented in order to make further significant advances.

## **CLARIANT DEVELOPS NEW CATALYSTS IN BRAZIL**

With this in mind, Clariant has opened a research and development laboratory for catalysts for use in the oil and gas industries in Suzano, Brazil. The aim is to develop a new generation of catalysts and to provide technical support to customers in the region. Clariant expects Brazil's productive gas reserves to increase. In addition, domestic production will triple from its current level of 65 million to around 180 million cubic meters per day by 2020. A large part will be produced off-shore. Brazil's production of deep-sea oil accounted for around 25 % of global production in 2011. According to the country's National Petroleum Industry Organization (ONIP), demand for goods and services from the oil and gas industries will reach a magnitude of at least USD 400 billion by 2020. In addition, tightening of low-sulphur fuel specifications in South America and the increasing difficulty in processing raw materials is further stimulating demand for hydrogen catalysts. Clariant's Business Unit Catalysts is one of the market leaders in this field. Optimization of high-performance catalysts can contribute significantly to improving hydrogen supply in refineries.



**A**ccording to the World Health Organization, almost one million people die annually from malaria - an illness inducing fever, shivering, gastrointestinal inflammations, cramps and organ failure. Approximately one half of victims are children under the age of five. Despite the fact that the number of cases is decreasing, still every day 1300 children under 5 lose their lives due to malaria. The disease is most common in tropical and sub-tropical areas, and 90 % of the estimated 500 million people suffering from malaria worldwide live in Africa.

Malaria is generally transmitted by mosquitoes, and most people are bitten at night. The best protection is afforded by a mosquito-free sleeping environment, ideally through the use of reliable mosquito nets. There are less than one dozen manufacturers worldwide that

make nets in the quality deemed suitable by the World Health Organization (WHO) to offer effective protection against mosquitoes. Clariant has developed a specific masterbatch technology that is used by one of the WHO listed Long Lasting Net (LLIN) producers. This masterbatch technology brings bio efficacies to the LLIN which are assessed by the market to be one of the best. One criterion for a WHO listing is that the nets can be washed at least 20 times without impairing their efficiency.

The net produced with Clariant Masterbatches takes an innovative approach. In addition to its mechanical protective function, an insecticide that is non-toxic to humans but kills mosquitoes on contact is embedded into its fibers. The net thus offers double the protection. The special feature of this net fiber is its function as a repository for the insecticide. What is more, the net is guaranteed to work for five years. Clariant is a trailblazer in quality and innovation for mosquito nets on the global market.





Planet  
**WORKING FOR  
NATURE**

WRITTEN BY HANS BORCHERT, PHOTOS BY JO RÖTTGER

Once there was water. Fresh and crystal clear. It rose up from the depths of the nearly impenetrable forest of the holy mountain of Cerro de Manjui. Olivia knew that small rivulet near the spring, the creek it formed. Her childhood was accompanied by the music of cheerfully burbling water and Olivia never could have imagined that it might gradually fall silent. But that is what happened: slowly and silently, hardly noticeable. First the cool, flowing water disappeared, then the well dried up and that which had appeared to be eternal, was no more.

Now 67 years old, when Olivia thinks about the creeping change that altered her surroundings, a Colombian proverb comes to mind. It goes: »He who knows nothing is no different than he who sees nothing.«

She found it difficult to read the signs correctly all those years. Workers moved in. Their saws cleared woodland along the edge of the forest, made space for pastures and fields. And then it continued, up the increasingly steep slopes. The thicket was cleared and the rainforest's natural vegetation disappeared. In their place, cultivated pines and eucalyptus trees took root. Fast-growing wood that was easy to sell; it was also the source of livelihood for Olivia's family.

None of it was good for the soil. Over-exploitation brought erosion and when it rained, water no longer seeped away, it flowed down to the valley in torrents instead, taking along with it everything in its path – leaves, insects, earth. There was nothing to stay for, not even for the animals. Once there had been pumas, jaguars, myriad different feathered species including birds of prey, parrots and hummingbirds. They, too, disappeared and left just rabbits and opossums behind.

The drama of just one generation, told in fast motion. The story ended with a raging fire, a kind of grand finale. In 2007 it ate its way up the slopes of the Cerro de Manjui, annihilating flora and fauna across more than 129 hectares.

The employees of Clariant Colombia had just moved: From Bogotá to the newly-designated industrial park at the edge of the small community right outside the gates of Colombia's capital city. Surrounded by lusciously green meadows, things are still pretty rural there and the buildings' unusually modern architecture, featuring broad glass facades and a filigree, sometimes seemingly weightless concrete structure, harmonizes quite naturally with the facility's surroundings.

»Improving productivity while simultaneously ensuring the sustainability of every process as well as compliance with the very highest environmental and safety standards – all those were priorities while planning the new Cota site,« says site services coordinator Jairo Acosta Rodríguez. »This was our contribution toward relieving the industrial burden of our capital's densely populated urban areas which 6.8 million people call home. And it was also the starting point of our local, environmentally-motivated initiative.«

Jairo Acosta Rodríguez, 47, is a city boy. Born and raised in Bogotá. As a lover of literature, Jairo admires Colombia's Nobel laureate Gabriel García Márquez. Yet there is one sentence penned by his famous compatriot and author that he disagrees with. He says, »When Márquez writes that 'the only thing you can change in this world is where you put your pillow,' he's wrong. And the Cerro de Manjui is my best example of that.«

Welcome to Bioparque La Reserva at the foot of the holy mountain. It is a place where consciousness is not only awakened, but also changed. That is what it means to thousands upon thousands of visitors every year, including school children and students from Bogotá. And particularly to Clariant employees who,





with their own two hands, breathed new life into the mountain's brutalized slopes. There, in an area overgrown by a kind of uncontrollable scrub which had been choking out other life on the barren ground left behind by the big fire, more than 7 000 new plants can now be found growing in a nearly two-hectare space which is slowly starting to look more and more like the Colombian rainforest it once was. In the eyes of Olivia, who spends a large portion of her day on the veranda of her little grocery and tobacco store, this is akin to »a miracle.« On his weekly visits, Jairo Acosta always ascends the mountain first to watch it grow and evolve while listening to a multitude of different birdcalls. They are back: Not all of them, but 47 different species have been counted and logged. He says that this project »changed how I look at nature and I'm glad we decided to participate in this private-public effort.«

Clariant partners involved in the »Pilot Project SuizAgua Colombia« are Ivan Lozano Ortega, founder and director of the Bioparque La Reserva foundation, as well as the Swiss Agency for Development and Cooperation (SDC) in Colombia, represented by Diana Rojas Orjuela. An energetic young woman, she has dedicated her life not only to human rights efforts but also the SDC initiative to conserve global water resources, the »Global Water Program«.

»Even in a country where water is as abundant as Colombia, we're losing a small river every single day,« she says. »We set up this project in an effort to counteract this trend. Apart from Clariant we were also able to bring other Swiss organizations on board for project implementation.«

Backed by the Colombian government, the concept is primarily based on calculating the »water footprint« of each and every company and its production facilities. This term not only refers to direct, individual water use but also »virtual water« consumption or, in other words, the amount of water used, evaporated or polluted to manufacture products. »The data collected helped us identify savings potential,« reports Diana Rojas Orjuela, »and these changes were implemented with the goal of achieving sustainable water use.«

So much for the abstract, technical side. Change, however, begins with individuals, in their day-to-day behavior, in their communities, in their personal surroundings. »Existence determines consciousness and it's easier to destroy something than to build it up again,« reasons Ivan Lozano Ortega, the founder of Bioparque. »That's why the project's second phase focuses on companies' and employees' intuitive perception of environmental and social responsibility in the communities where their production facilities are located.«





#### — AT THE BIOPARQUE LA RESERVA

Employees, pupils, and students help to breathe fresh life into the scenery

#### — DRIVING FORCES

Ivan Ortega and Diana Rojas Orjuela appraise the progress made at the reserve

Jairo Acosta Rodríguez calls that »learning a life lesson« and thinks back to the days when they were doing hands-on work. »First they had to prepare the ground and dig out entire tree stumps, including the roots, before they could even start doing the precisely-planned planting work. That was hard, physical labor, especially on the steeply sloped hillsides. Nevertheless and despite all the sore muscles, every one of the workers really enjoyed it in the end and in the eyes of those who regularly went out to dig between October 2011 and February 2012, the Cerro de Manjui and the entire project are now a part of Clariant.«


What there is to see and what nobody wants to do without. 45 Clariant employees are currently on site and ascending the mountain. This is the last of three groups from the plant that Ivan Ortega and Diana Orjuela invited for a visit to bring them up to date on the project's current status and what will happen next. Not only that, but this time everybody has been asked to fill out a detailed questionnaire to calculate their own personal water footprint.

This questionnaire takes a general look at how people use water in their own bathrooms and kitchens as well as their »virtual water footprint« which is based on the water consumption hidden in everyday products such as textiles, paper, office supplies, electronics equipment and any energy used. After answering the

questions and evaluating their questionnaires, many of them are surprised to discover that »there's room for improvement in lots of areas of my life plus every product, even a simple t-shirt, stands for water consumption. We just weren't aware of that.«

Participants learned responsible, sustainable behavior in a nearly effortless way and, at the end of the day, nobody was likely to go home and leave the water running while they brushed their teeth. Jairo Acosta Rodríguez is pleased: »Of course it's the trees and shrubs that are so important here on the mountain. At the same time, though, this project that we're sponsoring and helping to finance is also establishing an entirely new consciousness in people's minds.«

To Olivia, who has always lived at the foot of the Cerro de Manjui, that spells new hope. Paradoxically, she currently gets her water from Bogotá. Diana Rojas Orjuela promises, however, that the day will come »when the water flows again, when the small stream returns. A start has been made and we're certain that this project, involving Clariant and our other three corporate partners, will catch on throughout all of Colombia.« Jairo Acosta Rodríguez adds: »So that means you can change more in this world than just where you put your pillow.«



# Lower energy consumption WITH EWATCH

**I**n 2013, the eWATCH program was expanded to also include the new Business Area Functional Materials, which was created one year earlier as part of the takeover of Süd-Chemie within the Clariant Group. The analysis focused on the Business Area's largest and most energy-intensive site in Moosburg. The process for the drying of bentonite products, where moisture had previously been extracted by means of convection drying, offered the greatest potential for savings. Possible areas of improvement as regards energy conservation were subsequently developed.

A significant amount of energy can be saved if the moisture in the raw product can be reduced prior to the actual drying process, something which is not easy, however. Nevertheless, a suitable dryer was found and, following the cost-efficient change of an upstream process step, the moisture in the raw product can now be reduced to such an extent that the natural gas consumption of the dryer itself can be reduced by around 15 %. Reducing the hot air discharged by the dryer offers a further area of potential for improving energy efficiency. Here, energy is literally pumped out of the chimney and lost. The internal recirculation of part of this discharged air can reduce the amount of air discharged overall and thus significantly cut energy consumption. In the case of certain dryer models, the recirculation of discharged air can lead to a saving of around 20 % in the amount of natural gas used. This measure has already

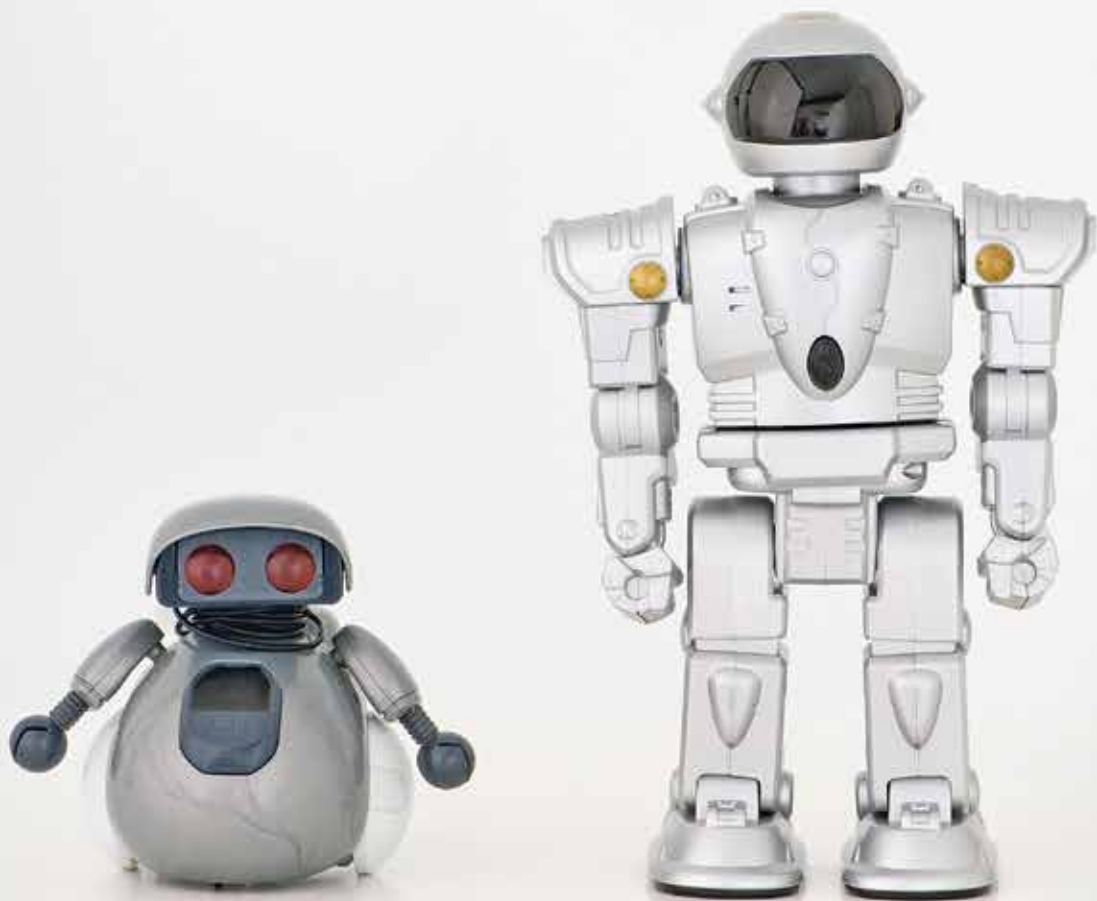
been implemented and has been in operation since December 2013. During the first half of 2014, the process will be monitored closely and analyzed. A comparison of the current and old consumption figures will show the optimal level of efficiency and the actual energy savings. Finally, the abovementioned dryers can also be integrated with combined heat and power (CHP) technology. Here, gas turbines, which primarily produce electricity, are used during the generation of hot air. The hot air discharged by the turbines can be fed to the dryers and used for the product-drying process. In the case of conventional energy-generating power stations, the waste heat usually remains unused and is released into the environment via cooling towers. Independently of the eWATCH program, gas turbines of this kind are to be installed in the boiler house in Moosburg, as an old gas-fired boiler used for steam generation has to be replaced. In this context, a burner with upstream gas turbines, i.e. a CHP system, will be installed. This system will become operational in the second quarter of 2014. The gas turbines will then generate the required steam at the Moosburg site as well as up to 1.9 megawatt of electricity.

The knowledge gained here will be transferred to the business area's other sites. In September 2013, a site in Mexico was reviewed accordingly. There is also similar potential in Mexico for individual dryers where discharged air is recirculated. However, greater potential was offered by a reduction in the level of moisture in the raw products, an area which will require comprehensive conversion measures. Upstream gas turbines could also be installed for the dryers in Mexico. The costs for the required conversion measures within the framework of these projects are currently being determined. The results will then be relevant in equal measure for other business areas; at the Frankfurt-Höchst site, for example, the possible installation of upstream gas turbines for a dryer for color pigments is being examined.

#### INNOVATIVE PRODUCTS THAT ADDRESS GLOBAL MEGATRENDS

| Product           | Product name      | Use  |
|-------------------|-------------------|--|
| Frother           | Hydrocerol®       | Plastics used for certain applications such as car dashboards must be foamed in order to give them the required volume and stability. Thanks to an effective foaming agent from Clariant, significantly less plastic can now be used to achieve the same result. The means 20 % lighter plastic components.  |
| Cleaning polymer  | Texcare®          | Superior laundry can now be achieved without high temperatures. Fabrics no longer need to be treated at 60° Celsius to eliminate dirt, bacteria and germs, and thanks to a cutting-edge laundry detergent additive can now be washed at lower temperatures. Lowering the temperature of the laundry water from 60° to 30° reduces energy costs by 40 %.  |
| Methanol catalyst | FCM 100           | Substitute natural gas (SNG) can be produced in an environmentally compatible manner from hydrogen and CO <sub>2</sub> generated using renewable energies. A catalyst from Clariant is used for this purpose. 2 800 t of CO <sub>2</sub> are bound by producing 1.4 m <sup>3</sup> of SNG in this way.   |
| Drying agent      | Container Dri® II | Large quantities of humanitarian food supplies sent by ship regularly spoil en route due to moisture in the ambient air. An optimized drying agent from Clariant extracts water from the air so that rice or grains no longer decay or mold.   |
| Bioethanol        | sunliquid®        | Clariant has developed a procedure that can be used to produce a high-quality engine fuel from plant residues such as straw (i.e. non-foods). When burned, this fuel discharges 95 % less CO <sub>2</sub> than conventional fossil energy sources.   |
| Textile dye       | Spin Dyeing       | Plastic fibers such as polyethylene are dyed in color baths as required after they are produced. This calls for energy and, above all, large amounts of water, and results in high volumes of wastewater that subsequently needs to be purified. Clariant offers a product whereby the color is not added to the fiber at a later stage, but rather is embedded in the plastic when the fiber is produced. This saves energy (minus 98 %) and water (minus 99.9 %) and reduces production times. |

# Safer solutions **IN THE PLASTICS INDUSTRY**





**C**lariant supports its customers in the plastics industry in complying with the strictest requirements in terms of product characteristics and, in particular, product safety, with regard to regulatory requirements and additional industrial standards worldwide. In order to respond to these market needs, Clariant has developed pigments and polymer soluble dyes fulfilling legal regulations as well as industry-specific standards. One particular focus here is the reduction in halogen content in plastics applications, such as electronic devices, consumer goods, and toys. To this end, Clariant has developed a unique range of dyes, called the LHC (low halogen controlled) range.

The 13 organic pigments and two polymer soluble dyes in the range make it easier for customers to comply with the highest International Electrotechnical Commission (IEC) standards with regard to halogen-free products. The halogen content in these pigments is certified to be lower 500 ppm for bromine and chlorine (parts per million, here: 0.05 %) and is documented by Clariant in a certificate of analysis. Clariant's LHC dyes are also suitable for use in consumer goods and food packaging. The 15 products in the new range are marketed under the brand names PV Fast®, Graphtol®, Polysynthren® and Solvaperm® with the »LHC« suffix indicating their low, controlled halogen content. With the launch of these LHC dyes, Clariant is supporting efforts to reduce halogen content in plastic goods and thus meet the strictest requirements. This innovation is part of Clariant's strategy to satisfy social demands for the utmost product safety and recyclability.

Lead chromate pigments are a further example. These are another issue for the plastics industry to focus on due to their known impact on health and the environment. Under REACH regulations, the sale of lead chromate pigments will no longer be permitted in the European Union without approval by the authorities from May 2015. Clariant offers a well-established range of over 20 organic pigments covering the yellow and orange color space that are suitable for replacing lead chromate pigments in a safe and cost-effective way.

Clariant pigments, pigment preparations, and masterbatches are generally the first choice for companies for whom sustainability is a high priority due to their quality, purity, and high production standards. In food packaging or toys, for example, purity, reliability, and traceability of raw materials play a key role. Clariant has the necessary organization, and the knowledge to reliably deliver on its commitment to sustainability in companies and in its products.

This ultimately relates not only to pigments, but to all Clariant products for the plastics industry. Plastics play an important role in modern society, not least in resolving future challenges and problems.



# Sustainable relationships **COMMON VALUES SHAPE THE COLLABORATION**

**F**or a long time, procuring materials and services was largely »transaction-driven.« The main factors in the supplier selection process were price, commodity fluctuation, and labor cost. More recently, however, this approach has been changing. Nowadays, procurement's selection process incorporates not only supplier's financial creditworthiness, but non-financial factors as well and it is more based on a cooperative approach with suppliers – for example in research and development. Total cost of ownership and collaboration have grown much stronger to the benefit of both parties.

Further, these days procurement includes in its approach qualitative, innovation, and sustainable criteria such as emissions, water, waste and safety, health and regulations, and ethics. In other words, there has been a shift from cost to value.

In order to take this into account and optimize the value of its long-term procurement, Clariant has actively integrated all these criteria in its supplier selection process. These include, for example, not only the quality of the purchased materials and the safety of their transportation, but also the recyclability of their packaging materials and the availability of what is known as its carbon footprint. Particular focus is given to sourcing raw materials from renewable sources that already account for about 10 % of Clariant's total raw material purchases.

Clariant is pursuing this strategy through different initiatives with focus on fewer but better-performing suppliers. By jointly deploying sustainability programs with its suppliers, Clariant is not only acting responsibly, but also securing long-term cost competitiveness of its supplies while protecting the environment and its business alike. This is particularly the case in growth regions such as Asia.

Through the programs and efforts outlined above, Clariant has undertaken a »shift« in prioritization as far as its supplier selection process is concerned. In fact, while criteria such as price, service, and logistics remain most relevant, sustainability aspects such as frequency of complaints, safety standards, a certified management system, the existence of supplier's sustainability program and publication of information on sustainability, get greater significance. In the end, this progress enables Clariant itself to produce goods and services more sustainably.

As part of Clariant's Sustainability program, the company places increasing value on risk and waste avoidance, cost reduction, resource efficiency, and growth through innovation. In order to build long-lasting sustainability programs, Clariant is putting higher emphasis on suppliers that are and expected to remain long-term partners. Clariant is heavily engaging with its suppliers to review mutual commitments and expectations in sustainability. As time goes by, suppliers are becoming more and more eager to be integral part of the process and support Clariant's objectives and aspirations. To support this deployment, Clariant employees are trained in country-specific and sustainability issues through ad-hoc programs.

## Less packaging through new ideas **ECOPACK**

**C**osts relating to the packaging, interim storage and transport of goods to be delivered constitute a significant item at Clariant. At the Frankfurt-Höchst site alone, packaging costs in 2012 amounted to a total of around CHF 3m. These led to activities to optimize expenditures, and to contribute to sustainability.

The fruits of these efforts can be seen, for example, in »ECOPACKs«, used to ship pigments wherever possible. Prior to this, pigments were filled into paper bags, which in turn were packed separately or in pairs in cardboard boxes. This method involved a lot of work, considerable packaging materials, significant costs for waste and inappropriate working situations for the customer, e.g. as each box had to be cut, emptied, and discarded separately. ECOPACK, by contrast, places a stable cardboard tub on wooden pallets onto which the pigment bags can then be stacked. Another stable cardboard tub is then used to cover the stack. Finally the product is then shrink-wrapped to secure it

in place and protect it from moisture and damage. ECOPACK in addition optimizes space for transportation and storage, because the compact ECOPACKs have smaller volumes than single packages. This allows more products to be transported per ship or truck, reducing the number of journeys. Since ECOPACKs are also used in our internal packaging, both Clariant and our customers benefit from this sustainable solution.

Replacing the cardboard boxes has reduced the packaging material and resulting waste generated by 45 %. ECOPACK also makes better use of transport and storage capacities. The resulting increase in efficiency lowers direct and indirect emissions of greenhouse gasses per transported ton by 25 %. Finally, these measures also help reducing costs. After a successful pilot phase and implementation at a site in Frankfurt, Germany, ECOPACK is now being introduced globally for all products and production lines of Business Unit Pigments.





## sunliquid® MOBILITY FROM PLANT RESIDUES

**B**iofuels not only help to conserve valuable fossil fuels, they also improve the greenhouse gas balance thanks to their much lower CO<sub>2</sub> potential. Clariant has now developed an efficient and innovative procedure that does not use edible parts of plants, but the leftovers from grain production. sunliquid® uses modern biotechnology to convert straw, for example, into an equally valuable, sustainable and climate-friendly product: high-quality ethanol. The cellulosic ethanol produced by this process is a second-generation biofuel distinguished by an outstanding climate balance, without competing against land use and nutrition.

Together with Mercedes-Benz, one of the world's biggest car manufacturers, and Haltermann, a leading producer of high-performance hydrocarbons, Clariant is launching a twelve-month sunliquid® field test in January 2014. Clariant's sunliquid® process will be used to turn wheat straw into cellulosic ethanol. Haltermann will then mix the sunliquid®20 cellulosic ethanol with conventional gasoline components to create a new fuel. The production of cellulosic ethanol is virtually CO<sub>2</sub> neutral, producing 95% less CO<sub>2</sub> emissions than gasoline.

sunliquid®20 is 20 % cellulosic ethanol, showing reductions in greenhouse gas emissions of around 20 % with consistent engine power. A high octane number (RON) of over 100 guarantees optimal efficiency. The fleet test is intended to demonstrate the fuel is ready for market and technically compatible in series vehicles. It will show that second-generation biofuels based on agricultural residues are now technologically ready and available, not only in production but in application as well.

The cellulosic ethanol comes from Clariant's sunliquid® demonstration plant at Straubing, where approximately 4 500 metric tons of agricultural residues such as grain straw or corn stover are converted into cellulosic ethanol each year. At the Haltermann plant, the bioethanol is mixed with selected components to form the innovative fuel, the specifications of which reflect potential European E20 fuel quality. The test fleet vehicles are then filled with the new fuel at a specially equipped gas station on the Mercedes-Benz site in Stuttgart-Untertürkheim.

# In my real **LIFE**

6 employees – 6 views

Photography Jo Röttger, Text Hans Borchert





**VICTOR GARCÍA, 56**  
**PROJECT MANAGEMENT BLACK BELT,**  
**SANTA CLARA SITE, MEXICO**

Your career can also be your calling. Just like it is for Victor García. Not only does this chemical engineer have decades of experience, he also wears the »Black Belt« of Clariant's Excellence initiative and joins French politician André Malraux in saying: »Whoever wishes to read the future has to leaf through the past.«

Victor García is a »Black Belt« in project management according to the Six Sigma concept, a methodical approach that is aimed at optimizing economic and environmental processes.

»The Santa Clara site, that's my world,« says García. After nearly twenty five years at the site, he knows the plant inside out and considers himself, more than ever, duty bound to »the environment and future generations.« His creed reflects that conviction: »If we don't do the right thing and take responsibility for our actions, then it's all over for us and our planet.«

Victor García was born in Oaxaca and has the blood of the Zapotec, Mixtec and Aztec tribes flowing through his veins. His facial features, dark skin and black hair leave no doubt as to the fact that he is the progeny of a culture dating back to 1500 B.C.; that might also be one of the reasons why he is repeatedly drawn back to the significant showplaces of his own ethnic history. »I'm especially fascinated by the pyramids of Teotihuacan,« says this father of two sons. »When I'm there, I always ask myself: What will bear witness to our presence here someday?«

Apart from his professional qualifications, he has two qualities that help him shape a better, more sustainable future. Those are his willpower, which he acquired through karate training (brown belt), and the endurance of a passionate marathon runner. He knows many stretches of asphalt, including New York City's, and long-distance running teaches him over and over to »think positive and, above all, keep on going – until the finish line.«





**RUBÉN JUÁREZ, 41**  
**HEAD OF BU INDUSTRIAL & CONSUMER SPECIALTIES, MEXICO**

Time to rethink things. In Mexico, too. Rubén Juárez is fascinated by the »ecological awakening« his society is undergoing, the transformation in how people are thinking, the new behaviors they are adopting in day-to-day life. For him, riding a public city bike through his home quarter of Colonia Roma is only natural and his wife knows each and every one of the many new organic stores. »But,« says Ruben, »we still have a long way to go in the Mexico City metro area, home to 23 million people.«

His work at Clariant is the best yardstick for how quickly fundamental changes can be brought about. There he is in charge of ICS and that is where he experiences paradigm shifts on a daily basis. He knows all about the needs of large, multinational customers who place great importance on safe, resource-friendly manufacturing methods for the special chemicals they require. For them, he implements production processes in accordance with their own corporate sustainability specifications while also making the Good Manufacturing Practice (GMP) guidelines of Clariant's own sites compulsory for all suppliers. »Nowadays the determining factor isn't just price alone,« says Rubén Juárez, »it's all about quality and overall performance.« Represented not only by Santa Clara, but the Coatzacoalcos site, in particular, which was expanded between 2010 and 2012. This port in the Mexican state of Veracruz is a key ICS production site, »exemplary in every respect – from safety to cost effectiveness to its state-of-the-art equipment and efficient energy management.«

Its biggest environmental asset might be the two-kilometer stretch of railway tracks. They lead directly to the site's supplier of raw materials. This new arrangement has dispensed with the need for hazardous materials transports to Mexico City, along 600 kilometers of track and in part through densely populated regions, which used to be the norm. And one more thing makes »Coatza« stand out. Construction left flora and fauna largely untouched. The beneficiary of that approach is currently an alligator that lives in a biotope on the site. »Extremely symbolic« for Rubén in the sense of striking a balance between man and nature.





**PAULO ITAPURA DE MIRANDA, 54**  
**HEAD OF SUSTAINABILITY & REGULATORY AFFAIRS, CLARIANT LATAM**

Willpower alone is not enough: Sustainability efforts also call for a financial commitment. »It's not a self-seller,« stresses Paulo Itapura de Miranda, »and it most definitely isn't a simple matter of expenses. In fact, it's a sensible investment in the future.«

Building on that premise, this former company doctor works continuously to advocate sustainability and luckily knows that he's not alone. On the contrary, his support comes from the very top because »Clariant's Group management holds the work we do for the environment, health and safety in high esteem. They support us in every conceivable way.«

Nevertheless, the task is an ambitious one. Particularly in Latin America which is, as Paulo Itapura says, »a huge, very heterogeneous region.« Whether the differences are social, economic, cultural or linguistic in nature – they need »binding ESHA standards at a high level for all of our sites.« And this needs to start with a direct line of communication to municipal committees (keyword: transparency) and extend all the way to coordinated emergency management procedures.

Itapura and his team (80 employees throughout all of Latin America) drew up a road map that helps minimize environmental risks, makes it possible to protect not just individuals but the general public, as well, and also »makes it clear that we're not alone, rather that each and every one of us has a responsibility. Responsibility not only for their own wellbeing but also that of the company and its stakeholders.«



**MICHELE GARCÍA, 30**  
**HUMAN RESOURCE ANALYST, SUZANO SITE, BRAZIL**

With people, for people, among people – it all boils down to people: If you ask Michele García, nothing is more exciting than being human. And for this psychologist with a master's degree in Human Resources Administration, she, is the very best example of how vibrant life can be. Just recently she slipped into a new role and is now mother to a little girl. According to her, »that's a whole new kind of experience. Just as much an obligation as it is fulfillment.«

The same holds true for her career, as well. Her desk stands in the HR offices of Clariant's Suzano site. There she spends her days managing job postings and applications, conducting interviews and trying to find out whether candidates meet all the requirements. It goes without saying that she not only looks at a person's qualifications and ability to work in a team, but also factors in issues such as, personal integrity, and respect for other people.

»Clariant's core values lay the foundation for my work. When recruiting new employees as well as at training sessions,« Michele García emphasizes and adds: »My message is also our vision: Clariant is a company that welcomes you. It values your work and your contribution and if you want to do your very best, you can do it here. We, as a company, are also at your side at all times.«

That last sentence is underpinned by her own experience; when Michele's mother fell seriously ill, the company assisted her in every conceivable way. A sense of tact and a charming personality help Michele García build bridges in conflict situations and reach a common accord. You have to address things objectively and resolve issues jointly – that is her pragmatic approach. »I have a good feel for people.«

Is the company like family? »Yes, precisely. In Suzano we share a great sense of solidarity. That's a feeling I get quite frequently on the weekend. Sometimes I'm in town, shopping or something, and happen to bump into a colleague – we spontaneously decide to sit down to a cup of coffee. That amazes my husband Mauricio because it just wouldn't happen where he works in São Paulo.«





## **CENIA DEL PILAR MACIAS LOZADA, 47 BU PIGMENTS**

First a word about home. »I love my Colombia,« says Cenia del Pilar Lozada. »Hardly any other country in the world has more exotic plants, animals and landscapes than we do. That's why I promote striking a balance between economic growth and environmental protection. We need this balance and have to think about future generations. After all, we're not alone on this planet.«

That's just how she is: clear, committed, feisty. A woman who cuts her own path and proves herself in a field supposedly dominated by men. Mathematics, chemistry, physics – those were Cenia's favorite subjects at school in Barrancabermeja where she and her five siblings grew up. She was the only one to leave the city where they were born, completed her studies as a chemical engineer, launched her professional laboratory career, made her mark as a broker of chemical products and, in doing so, discovered her passion for sales because »sales is about people.«

Colors are her subject matter. And have been for 19 years. That is how long she has been at Clariant where, in the BU Pigments, she is now in charge of not just Central America but Venezuela and Ecuador, as well. Some of her favorite products include the new easily dispersible pigments. Particularly since this innovation ushered in numerous sustainable effects: lower energy consumption, less use of machines, shorter production times, greater flexibility, considerable cost savings while also providing »an excellent product.«

Salespeople love stories like these. They are about progress, about ingenuity. Cenia composes the accompanying text on her many business trips throughout the region and on her mountain bike. She is a role model to her two daughters, Sofia, 13, and Juliana, 11: athletic, competent and perfectly organized. »The latter, in particular,« she says, and gives her long, black hair a shake. »That's where women have an advantage over men. Children, household, family, work – we manage to keep it all under control pretty well. And we do so without having to sacrifice our femininity.« Anybody who sees her is sure to say: »How true.«





## **ANTONIO ESCOBAR, 47** **HEAD OF LBL, MASTERBATCHES COLOMBIA**

Life is full of colors. At least Antonio Escobar's life is. This chemical engineer with an MBA in business administration works with tiny color granules - he is Clariant's »Mister Masterbatches« in Colombia. His private life is also full of color: the »entirely organic« peaches and plums he cultivates during his free time are not only a true treat for the eyes but a delicacy, too.

Antonio Escobar studied at the University of America in Bogotá, at the foot of the famous Monserrate mountain (3 152 m), and has been working for Clariant since 1998. After getting his start in Colombia, he transferred to Mexico for six years where he gained sales management experience in the BU Masterbatches for Mexico and Central American countries. »It was a fantastic opportunity that only a multinational company could offer, and if there's one thing that holds true for Clariant – regardless of country or market – it's that we enjoy great trust and renown the whole world over.«

If you ask Antonio Escobar, Clariant's position as a »global masterbatch leader« not only bears witness to »our products' quality and our innovative strength« but also to the Clariant Production System (CPS program) which is geared toward sustainability. The key words of this best practice method are: »How and where can we improve? What can be optimized, how can we boost our savings potential in terms of water or power consumption?«

Antonio Escobar's desk stands in Cota, near Bogotá. Clariant's Colombia site is Latin America's second-largest masterbatches production facility and supplies Bolivia, Ecuador, Peru and the Caribbean countries in addition to its own domestic market. Another focus of Antonio's is Brazil, yet for entirely personal reasons. His daughter Camilla, 13, is a gifted swimmer and is currently preparing to take a stab at meeting the Colombian qualifying standards for the 2016 Summer Olympics in Rio de Janeiro. »She's already on the extended national team,« Antonio boasts with fatherly pride. As you can see, his life will stay exciting. And colorful.



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# Report on sustainable MANAGEMENT IN 2013

## I. SOCIAL RESPONSIBILITY

Clariant assumes ethical responsibility for sustainable, economic, ecological and fair business practices. This responsibility forms an integral part of the company's philosophy. All Clariant employees are educated and trained to assume responsibility in line with their function, level of authority and qualifications. The certified management system takes account of all the relevant internal and external standards and provides Clariant with a documented structural framework on which to build its objectives and programs.

Principle 15 of the Rio Declaration requires that countries take a precautionary approach, according to their capabilities, in order to protect the environment. Thus measures to prevent environmental degradation must not be postponed where there are threats of (serious or irreversible) environmental damage. Nevertheless, such measures should not pose an excessive financial burden. After all, Principle 15 of the declaration combines environmental protection with a cost-benefit analysis. Clariant has applied this principle to the company. In order to protect the environment, the precautionary approach is applied accordingly.

In view of the threat of considerable or irreversible damage, the lack of complete scientific certainty should not be a reason to postpone cost-effective measures for preventing damage to the environment. The European REACH regulation on the testing and approval of chemicals is based on this precautionary principle. Furthermore, the Clariant Group continuously and systematically assesses every optimization opportunity for reducing environmental impact at more than 200 plants worldwide. These opportunities are then analyzed and prioritized according to their urgency, evidence and relevance, and subsequently implemented to the extent possible.

Clariant has signed the Responsible Care® Global Charter, which was developed by the International Council of Chemical Associations (ICAA). Compliance with this charter is monitored. The Charter is a voluntary commitment by the chemical industry worldwide to pursue continual improvement in the fields of environment, health and safety. By the end of 2011, 159 companies had signed this Charter. The key components of the Responsible Care® Global Charter for companies are:

- Adoption of the international Responsible Care® principles;
- Implementation of the key points of the national Responsible Care® programs;
- Commitment to promoting sustainable development;
- Continual improvement of the company's performance in this regard and relevant reporting;
- Improvement of chemical products worldwide with regard to product responsibility;
- Commitment to increasing acceptance of the Charter within the chemical industry;
- Active support of national and local Responsible Care® monitoring processes;
- Identification of interest groups' expectations of the chemical industry; and
- Allocation of sufficient resources to effectively implement Responsible Care®.

Clariant had signed the UN Global Compact by mid-2013. The United Nations Global Compact is a strategic initiative for companies that voluntarily commit to ensuring that their business activities and strategies are in line with ten universally recognized principles relating to human rights, labor standards, environmental protection and the fight against corruption. In this way the economy, as an important driving force in globalization, can help ensure that all economic regions and societies benefit from the development of markets and trading relations, technology and finance.

By becoming a signatory, Clariant has underscored its comprehensive commitment to sustainable development and responsible corporate governance. Clariant pledges that, within its sphere of influence, it will vouchsafe human rights, create working conditions that at the very least meet the legal requirements, protect the environment and combat corruption. The company recognizes and confirms that these principles will form the framework with which it will in the future align its strategy, corporate culture and daily work. Clariant views joining the UN Global Compact as the logical extension of its sustainability activities and reporting. Membership also enables it to exchange information and ideas with other stakeholders on how to continue expanding its own sustainability efforts.

Finally, Clariant expressly supports the United Nations' Universal Declaration of Human Rights (UDHR), also known as the UN Human Rights Charter. This declaration defines the general principles of human rights as the joint goal of all peoples and nations so that every individual and all authorities constantly strive to teach and nurture respect for these rights and freedoms, and take progressive national and international steps to ensure they are recognized and upheld not only generally but also in practice.



### Far-reaching voluntary commitment

Clariant sets itself extremely high standards in order to satisfy its customers' demands in a profitable manner and meet its stakeholders' expectations as far as possible. At the same time, its employees are always looking for ways to improve their performance. In order to be as effective in this as possible, Clariant has adopted a set of overriding corporate values and defined a Code of Conduct.

- Disciplined performance management provides clear direction and challenging yet attainable objectives. As part of this, all employees are required to provide open feedback on the relevant progress made.
- In order to be able to keep its promises, Clariant places its faith in independent employees who take full advantage of their skills. As a result, care must be taken not to promise too much nor, most importantly, to achieve too little.
- A bold and decisive management team supports the employees' willingness to take risks and accepts wrong decisions. However, we must learn from our mistakes. Clariant therefore chooses the best people for the right jobs.
- Clariant wants to live by its values. That means strengths are recognized and possible improvements are discussed. Superior and outstanding contributions are rewarded accordingly.
- Clariant ensures the well-being of all interest groups, protects the environment and respects the social framework within which it operates. Security procedures are never curtailed and the Code of Conduct is put into practice.

Since 2007 the Clariant Code of Conduct has defined a set of rules and principles that are binding for all employees to protect the company's reputation and keep the risks to shareholders to an absolute minimum. The Code of Conduct prohibits employees from engaging in any activity that could cause a conflict of interest. It also forbids bribery and corruption, insider trading, antitrust behavior and money-laundering. Embezzlement, the disclosure of confidential information, and the misappropriation of company property are likewise strictly prohibited. Last but not least, employees may not damage the environment through their behavior, discriminate against, bother or harass colleagues in any other way.

All employees receive the Code of Conduct when they are hired, and must agree to it when signing their contract of employment. Existing Clariant employees are obliged to attend e-learning sessions. Participation in these training courses, which address various issues within the Code of Conduct, is logged and employees who fail to attend are reprimanded. The Code is available in all three Swiss national languages. Non-attendance is punished.

### **International efforts**

Clariant is involved in numerous interest groups and associations, most notably the International Council of Chemical Associations (ICCA), the European Chemical Industry Council (Cefic) and the European Technology Platform for Sustainable Chemistry (SusChem). The objective of SusChem is to promote and facilitate increased sustainability in the areas of research, development and innovation in European chemicals and biotechnology companies. SusChem is a joint initiative of Cefic, the Society for Chemical

Engineering and Biotechnology (Dechema), the European Association for Bioindustries (EuropaBio), the German Chemical Society (GDCh), the Royal Society of Chemistry (RSC) and the EFB Section on Applied Biocatalysts (ESAB) of the European Federation of Biotechnology. In addition, Clariant or its national companies are represented in various national interest groups, e.g. the Business Association Chemistry Pharma Biotech (scienceindustries) in Switzerland, the Association of International Chemical Manufacturers in China (AICM), the German Chemical Industry Association (VCI) or the American Chemical Council (ACC) in the USA. It is also worth noting Clariant's efforts on behalf of sustainability within the scope of the International Chamber of Commerce or in topic-related committees such as ECETOC (European Center for Ecotoxicology and Toxicology of Chemicals).

### **Dealing with the consequences of climate change**

To date, Clariant has been unable to detect any noteworthy effect climate change may have had on its business, whether of a physical, regulatory, or financial nature. Nevertheless, Clariant is painfully aware of this issue and has set itself priorities by making sustainability an integral part of its corporate strategy, regardless of economic or seasonal fluctuations and exceptionals. Significantly reducing air emissions is an integral part of Clariant's planning and investment strategy. Clariant's defined environmental targets for 2020 expressly include clear cuts in emissions of CO<sub>2</sub> and other greenhouse gases.

### Reacting rapidly to climate change

Climate change results in challenges as well as opportunities that affect every company. Emissions of greenhouse gases are a key factor in determining climate change. Emissions must be reduced significantly to limit rising temperatures and the consequent inestimable impact on Man and the environment. Clariant offers solutions for meeting the challenges presented by climate change by improving efficiency and through product innovations. For instance, Clariant is facilitating the increased use of renewable energy thanks to a novel development in the sustainable production of cellulose ethanol from agricultural waste. But Clariant's climate strategy also takes account of other business targets. These include not only product innovation and product differentiation but also portfolio management, technological innovation, responsibility toward suppliers and customers, reducing (relative) greenhouse gas emissions in accordance with Scope 1 (direct emissions) and Scope 2 (indirect emissions) as well as performance tracking and the logging and reporting of greenhouse gas emissions.

Sustainability-oriented management considerably enhances productivity and international competitiveness. At the same time, sustainable management reduces the impact on people, the environment and resources. The value that it generates over the medium to long term also benefits Clariant's shareholders and satisfies the needs and demands of the capital markets.

Climate change brings opportunities and risks in equal measure. Clariant takes account of both current and future conditions and is constantly making appropriate changes and investments to reduce climate-critical emissions, for instance. Business opportunities for Clariant lie in the development of innovative products which, for example, require fewer and fewer materials and a greater proportion of renewable materials and are produced by processes that consume less and less energy.

After all, the issue of climate change, which has been the focus of discussion in recent years, has led to greater environmental awareness and an increase in the demand for sustainable products, even in the area of specialty chemicals. As long as the market is willing to pay a higher price for these products, which is often the case, Clariant sees definite growth potential in this area in the coming years.

Beyond this Clariant does not seek to increase its revenues by exceeding the legally stipulated reductions in CO<sub>2</sub> emissions. Although Clariant has established an internal organization for trading emissions in accordance with the official regulations on the European trade in emission certificates, Clariant has neither bought nor sold any certificates thus far. Any surpluses - in other words, lower-than-permitted emissions - have simply been »put on ice« rather than being sold.

### Relentless support for human rights

Clariant places great emphasis on upholding human rights within its sphere of influence. A number of internal regulations as well as Clariant's voluntary commitments in accordance with international charters are designed to safeguard these rights.

Once again, Clariant is not aware of any activity, work-related incidents or business transactions in the company in this reporting year which are the focus of investigations concerning the violation of human rights. This is why Clariant has not yet provided any such training in the field of human rights. No claims of discrimination were reported to Clariant in the reporting period. Of the three cases reported in the previous year two could be resolved in the course of the year, one is still open. Clariant is not aware of any cases involving the violation of the rights of indigenous peoples.



Clariant currently has no Group-wide notification and reporting system for legal action or complaints with respect to human-rights violations. Nevertheless, the planning for such a global system commenced in 2011, and in 2012 Clariant began introducing a formal system for recording claims of human-rights violations. A central point of contact was set up to receive complaints from employees so that relevant reports could be accepted anonymously. In 2013, Clariant received no internal complaints of breaches of human-rights issues.

Similarly, as part of freedom of association Clariant respects the right of entitled employees to join unions and to be represented by representatives of these unions internally and externally in accordance with the prevailing national or local laws and practices. Clariant knows of no cases in which freedom of association or the right to collective bargaining have been seriously jeopardized or even breached – not even by suppliers.

### **Social responsibility**

At Clariant, sustainability does not focus on individual showcase projects; the company is actively committed to the common good in each and every location in which the Group operates, acting with corporate responsibility in all its activities. Clariant is involved in numerous projects in the vicinity of the various production sites, in particular in emerging markets. Systematic logging of all Clariant's global relief work will be initiated from 2013 onward (also see the section entitled »Global social activities« on page 13 of this report as well as the relevant information on the Clariant website at [www.clariant.com](http://www.clariant.com)).

Clariant's activities as an employer, as a consumer of local products and services, as well as a payer of taxes and fees in the respective regions or countries support local economic development, especially in emerging economies. Clariant thus raises the living standards of the population in each area, both directly and indirectly, by creating added value. Clariant is not aware of any significant negative effects on local communities as a result of its activities.

In the 2013 reporting period, Clariant for the first time began systematically keeping a central log of all donations and expenditure related to its corporate citizenship activities. According to our initial findings, expenditure was in the single-digit millions, about half of which was used for sponsorship, and a quarter each for donations to charity and local infrastructure (also see the article »Planet – working for nature« page 40 – 43 of this report).

### **Avoiding corruption**

Corruption risks are investigated as part of the ongoing internal auditing of Clariant. As a result of these investigations, some contracts with business partners have, in the past, been terminated, not extended, or amended accordingly as a precaution. In the future, we intend to conduct a systematic corruption risk analysis within the company with outside assistance. The pilot project for this, originally scheduled to take place in 2012, was postponed for organizational reasons.

Clariant continued conducting training throughout the entire organization in the year under review – specifically also in relation to possible cases of corruption. The fight against corruption is being addressed in e-learning sessions and in-person meetings, with all Clariant employees belonging to the target group of one of the two training types. More than 95 % of employees who have an e-mail address have completed an e-learning course addressing the Code of Conduct, including the fight against corruption; slightly more than 92 % of employees with an e-mail address have completed an e-learning course focusing on conflicts of interest.

**THE REGIONAL DISTRIBUTION OF THE PARTICIPANTS IN E-LEARNING SESSIONS in %**

|                    | Code of Conduct<br>e-learning course | Conflict of Interest<br>e-learning course |
|--------------------|--------------------------------------|---|
| Greater China      | 100                                  | 96  |
| Japan              | 98                                   | 96  |
| India              | 96                                   | 95  |
| Asia/Pacific       | 95                                   | 91  |
| Europe             | 97                                   | 92  |
| Middle East/Africa | 96                                   | 91  |
| North America      | 94                                   | 90  |
| Latin America      | 96                                   | 92  |

Participation of employees with e-mail address in general compliance e-learning courses

Regular circulars from management and offers of compliance-related training on the intranet always point to the serious consequences of corruption and bribery and repeatedly remind employees about the relevant guidelines and structures at Clariant. New employees are required to take part in two e-learning courses on compliance (provided they have Internet access at the workplace).

Within a month of their employment they are sent an invitation to take part in the first e-learning course (on the Code of Conduct). Then, within a month of completing the first training course they are invited to take part in the second course (on conflicts of interest).

Compliance with worldwide anti-corruption legislation is an essential part of Clariant's understanding of sustainability. For this reason, Clariant has set up a Group Compliance Committee and Regional Compliance Committees. These bodies monitor compliance with the Code of Conduct and pursue and punish all identified cases of non-compliance. Compliance officers in the regions are available to the relevant workforce to answer all questions on this issue.

If corruption is suspected, Compliance and the Internal Audit Department will carry out an investigation, with the help of specialist third parties, if necessary. The Group Compliance Committee (in the case of non-compliance relating to the Group) or the Regional Compliance Committees assess the findings of the investigation and order disciplinary or other measures against culpable employees, which may also lead to the termination of employment.

If the corruption was caused by or with the involvement of third parties such as agents, distributors, advisers or suppliers, etc. the business relationship with the culpable third party will be terminated immediately and not taken up again. Further organizational adjustments will be ordered by the relevant compliance committee if required in order to prevent similar cases in future.

### **Breaches of the Code of Conduct**

Of the 32 reported breaches of the Code of Conduct in 2013, there was a suspicion of corruption in six cases. Two of these six claims are still being investigated, while the investigations of the other four cases have been completed. As a result of these, two Clariant employees were dismissed and one supplier was issued with a warning. There were no legal proceedings against Clariant or its employees for alleged corruption.

None of the national companies made donations to parties, politicians or associated institutions. The Anti-Bribery and Corruption (ABC) and Corporate Citizenship Activities (CCA) policies developed in the reporting period and agreed in the following year explicitly prohibit donations to political parties. The CCA procedure promotes Group-wide transparency with regard to donations (contributions, sponsorship or other kinds) to charitable causes. It is therefore not necessary to record donations to political parties.

Clariant was not aware of any cases in the year under review in which Clariant was accused of not having acted essentially in compliance with laws, regulations and voluntary codes of practice. Consequently, no corresponding fines or non-monetary penalties for failure to comply with legal regulations are known either. Clariant attaches particular importance to fair interaction with competitors, suppliers and customers. In the year under review there were no legal cases of anti-competitive conduct, the forming of cartels or monopolies nor legal action or complaints concerning compliance with legal provisions on unfair competition. In 2013, Clariant did not have to pay significant fines or suffer non-monetary penalties for failure to comply with legal regulations on the environment.

In the year in question, Clariant was not aware of any complaints by interest groups or institutions at the relevant locations regarding issues of public or social concern. For this reason there is no formal procedure in place for dealing with such complaints. Nevertheless, interest groups may contact the managers of the relevant Clariant location at any time. Bodies also exist to deal with specific issues, e.g. works councils in Germany, which address workforce concerns.

In the year in review Clariant began setting up an online whistleblower hotline to enable various stakeholders (employees, suppliers or other interested parties) to issue complaints – even anonymously.

## **II. GOVERNANCE**

Clariant's corporate governance principles define the managerial structure, organization and processes of the Clariant Group in order to provide transparency and guarantee sustainable long-term success. The Group is committed to Swiss and international standards of corporate governance and follows the rules set out in the Swiss Code of Best Practice for Corporate Governance and by SIX Swiss Exchange. Clariant conducts its business in compliance with the applicable laws and rules of free competition and rejects corruption in any form. Clariant avoids conflicts of interest and ensures that corporate assets are not misused. Clariant strives for sustainability in all areas and at every process level. The Articles of Association, the Organizational Group Regulations of the Board of Directors and the Clariant Code of Conduct can be viewed online at [www.governance.clariant.com](http://www.governance.clariant.com). Extensive information can also be found in the 2013 Clariant Annual Report.

### Balanced management structure

The Board of Directors of Clariant Ltd is the highest managerial body, and consists of a minimum of six and a maximum of twelve members that will have to be re-elected on a yearly basis after adoption of the Ordinance Against Excessive Compensation in Listed Stock Companies (»VegüV«) from 1st January 2014 (until 2013 the term of office was three years). Re-election is possible. The Board of Directors consists of the Chairman, one or more Vice Chairmen and the other members. The Board of Directors selects from within its ranks the members of the Chairman's Committee, Compensation Committee, Audit Committee and Technology & Innovation Committee. With introduction of the above mentioned ordinance the compensation committee is also elected by the general assembly from 1st January 2014.

Until the end of the reporting year the Board of Directors appointed the Chairman, Vice Chairman and the members of the committees. From 1st January 2014 the VegüV prescribes that the President of the Board and the Members of the Compensation Committee have to be elected by the General Assembly. The Board of Directors meets at least once a quarter. The CEO, CFO and other members of the Executive Committee and/or other employees or third parties regularly attend the meetings of the Board of Directors at the invitation of the Chairman for the purpose of reporting or imparting information. Each committee has a written charter outlining its duties and responsibilities. The committees report on their activities and results to the Board of Directors. They also prepare the business of the Board of Directors in their assigned areas.

The Chairman of the Board of Directors is independent. His only relationship to Clariant, aside from the fact that he is also a shareholder of Clariant Ltd, is his role as Chairman of the Board of Directors. Neither he nor any person related to him is employed by Clariant or a company that does business with Clariant or is affiliated through a consultancy or similar agreement.

The Chairman's Committee comprises the Chairman, the Vice Chairman and two other members of the Board of Directors. The Chairman's Committee prepares the meetings of the Board of Directors and meets as needed. It makes decisions on financial and other matters delegated by the Board of Directors in accordance with the bylaws of the Board of Directors. It also makes decisions on matters that would normally be handled by the Board of Directors but cannot be postponed. The Chairman's Committee draws up principles for the selection of candidates for election or re-election to the Board of Directors and for the office of CEO, and prepares the corresponding recommendations. Further, the Chairman's Committee considers and submits to the Board of Directors the CEO's proposals concerning candidates for Executive Committee positions.

The Board of Directors has delegated the executive management of the Clariant Group to the CEO and the other members of the Executive Committee. The Executive Committee is mainly responsible for implementing and monitoring group strategy, for the financial and operational management of the Group, and for the efficiency of the Group's structure and organization. The members of the Executive Committee are appointed by the Board of Directors on the recommendation of the Chairman's Committee.



The Executive Committee consists of the CEO, the CFO and two other members, and meets at regular intervals. It uses external meetings to discuss business performance with the management of the local companies in person. Only one member of the Executive Committee, the CEO, may also be a member of the Board of Directors. All the members of the Board of Directors and the Executive Committee are male.

### **Management personnel**

In 2013, the Board of Directors of Clariant consisted of three Swiss citizens, three German citizens, one British, one Austrian and one US/Swiss citizen. The members of the committees were members of the Board of Directors. The Executive Committee consisted of four German citizens. The members of the Board of Directors were all at least 44 years old and the members of the Executive Committee were all at least 49 years old. Clariant has not introduced any specific quotas for women, specific nationalities, ethnic minorities or special age groups for the Board of Directors and Executive Committee.

The members of Clariant's Board of Directors and Executive Committee have been selected solely on the basis of their ability and performance. However, all the candidates were evaluated and selected on the basis of the same list of criteria. This also applies to sustainability issues. See also pages 96 to 113 of the 2013 Clariant Annual Report. Clariant employs the Swiss Code of Best Practice for Corporate Governance, which also deals with avoiding conflicts of interest. This means that all the members of the Board of Directors and the Executive Committee must organize their personal and professional relationships so as to avoid a conflict of interest with the company. In the event of a conflict of interest, a procedure has been defined for disclosing and resolving it. Clariant implements the relevant guidelines and recommendations in full within the by-laws of the Board of Directors. The Code of Conduct also contains a separate chapter on how to deal with conflicts of interest. See also pages 96 to 113 of the 2013 Clariant Annual Report.

### **The Sustainability Council**

Clariant is committed to acting ethically and sustainably in all of its business activities. This includes a wide range of tasks. In order to be able to evaluate and guide all sustainability efforts centrally and as efficiently and effectively as possible at every level of the organization, Clariant has delegated key structural and control issues related to sustainability to a Sustainability Council. This Council involves all Business Units in order to promote the sustainable development of business activities in line with the holistic approach of Clariant's sustainability policy.

The Council evaluates global challenges and megatrends, sets the company's medium and long-term objectives and initiates sustainability projects and activities accordingly. The Council appoints ad hoc and permanent working groups for special projects that form part of Clariant's sustainability activities. Additional tasks of the Council include approving project strategies developed by various working groups, monitoring the progress of the projects initiated and evaluating and reviewing the Group-wide guidelines and standards related to the sustainability strategy.

The Council, which is responsible for all decisions relating to economic, environmental and social sustainability issues, is chaired by the Chief Executive Officer (CEO). This is designed to ensure that all relevant strategic sustainability initiatives and activities are agreed with Clariant's corporate governance bodies. In addition to the head of Clariant's Corporate Sustainability & Regulatory Affairs organization (CSRA), the Council also includes the heads of business areas and the following key functions: Catalysis & Energy, Industrial & Consumer Specialties, Corporate Planning and Strategy, Corporate Human Resources, Corporate Legal, Group Communications & Investor Relations, Group Logistics, Group Procurement and Group Technology & Innovation. In the course of the reporting year Clariant started to devolve the structure of the Sustainability Council into the regions in order to further improve cascading and alignment.

The status quo, potential dangers and risks relating to sustainability are identified, quantified and evaluated by the relevant managers. Environment, Safety, Health, Authorities (ESHA) employees at the production site, country and Group level also support this, as do the business areas' risk management staff. Systematic use of uniform, recognized information-logging and risk-analysis tools within each unit is important to ensure that risk reports are both complete and of high quality. The logging process includes all the activities of the area in question. Potential dangers or risks that are identified by checks by external bodies, for instance authorities, insurance companies or consultants, are integrated in the risk management where relevant to the ESH quality-risk portfolio.

### **Management's role in shaping sustainability policy**

The Executive Committee provides the guidelines for sustainable operation and effective control thereof, and has the power to define guidelines. The relevant frameworks for this are provided by the specialist divisions. The frameworks and measures are monitored by Clariant's Enterprise Risk Management, a system initiated by the Executive Committee to identify, evaluate and manage (relevant) risks to the company's operations. In the long run it is hoped this will ensure that possible risks are identified and avoided or limited.

Clariant's corporate risk management is designed to:

- Coordinate and develop the entire organization's risk management activities and integrate risk management into the business process. A differentiation is made between strategy, operational business, finance, tax, law and other corporate areas;
- Unambiguously stake out risk management responsibilities within the Group;
- Inform, train and motivate employees to effectively implement the risk management system in a uniform manner throughout the Group;
- Identify and analyze risks reliably, carefully draw up meaningful reports, and avoid risks;
- Ensure that all significant risks and avoidance/counteractive measures are indeed reported to the Executive Committee via the relevant managerial levels, and serious risks are presented to the Board of Directors via the CEO for appraisal.

The Board of Directors has delegated to the Executive Committee the responsibility for ensuring that the Enterprise Risk Management (ERM) system is operational and working. The Executive Committee therefore has managerial responsibility for the implementation and performance of the ERM system. These responsibilities are as follows:

- Group-wide operational introduction of all risk-management processes;
- Introduction of a »risk culture« for all employees that makes recognizing and avoiding risks a part of their daily work;
- Development of a suitable organizational framework within which to ensure unambiguous risk-related responsibilities, risk identification, measurement and reporting;
- Periodic reviews of whether the desired risk profile still applies;
- Provision of sufficient human and technical resources to control risks.

### **Monitoring sustainability efforts**

Clariant has developed guidelines specifically for guaranteeing product and production safety in order to limit the impact of its business activities on the environment, safety and health (ESH) as far as possible. The most important corporate goal within the framework of our activities is to ensure human safety and protect the environment. The Clariant Group has therefore developed an extensive set of rules and measures as part of ESH management and has introduced a Group-wide risk measurement system. Employee training sessions are held regularly in this connection, and processes, procedures and measures are continually monitored, both in-house and by external audits.

All of Clariant's production plants are scrutinized for potential risks and optimization opportunities. The results of these studies are included in the Group-wide risk control system, analyzed for urgency and relevance, and then implemented, if possible. ESH criteria are also a part of Clariant's business relationships. Suppliers, contractors and service providers undergo random checks for compliance with these criteria. The careful selection procedure that is part of procurement management takes into account not only economic aspects but also purchasing and production processes as well as delivery routes and systems, all of which are evaluated on the basis of sustainability. Clariant works with customers to improve the entire process chain.

Clariant has developed the ESH management system with these criteria in mind. It is a component of process and strategy planning throughout the Clariant Group and includes an ongoing compliance audit of the corresponding rules and regulations. All employees are responsible for the efficiency of the ESH management system as it relates to their particular job, position, and qualifications.

Clariant observes and analyzes all areas that could affect the environment and the efficient use of resources. These include:

- Consuming raw materials in relation to each product being manufactured;
- Handling dangerous materials;
- Energy and water consumption;
- Wastewater management;
- Air emissions;
- Waste removal;
- Noise pollution;
- Accidents, incidents and complaints from nearby residents;
- The potential environmental aspects of activities being planned;
- Residual pollution.

Many Clariant sites have a long and often ever-changing chemical history. The way chemicals were handled and transported at some locations in the past led to soil and groundwater pollution. Clariant is investigating these damaged sites and drawing up plans to clean them up and make them safe. These plans are discussed and implemented in conjunction with the local authorities in the respective countries. The Group's ESH organization together with renowned experts ensure that the experience gained to date becomes part of an efficient strategy for the future and that Clariant complies with international standards. Contractual agreements govern any obligations arising from contamination related to acquisitions or disposals.

The significance of security measures has risen substantially in view of the increase in terrorist attacks around the world in recent years. Clariant is reacting to this by enhancing the measures it takes to protect its property. Accordingly, none of the sites can be accessed except through specifically designated entry points. Entry is itself – as was frequently the case in the past – only possible after stringent controls. Independently of these controls, there is a standardized concept to protect all Clariant sites that is agreed with those responsible for operating them. This ensures that similar effective measures are applied at all sites and that only those authorized to gain access to a site and to Clariant's operations are allowed in.

### Reporting to management

Because the CEO chairs the Sustainability Council, Clariant's management receives extensive information about the potential dangers and opportunities with regard to security, health and the environment. To this end the Council uses the ESH Risk Portfolio to record, analyze and present all relevant key risks in a communicative manner. This tool gives management an overview of the important potential ESH dangers and risks, and evaluates risks so that risk-control and reduction priorities can be set.

This is then used to develop an overview of required and feasible corrective measures. This helps ensure an optimal allocation of ESH resources. The ESH Risk Portfolio documents and communicates changes in Clariant's risk structure. It can also be used to better develop scenarios and structures for the ongoing improvement of the emergency organization. Last but not least this tool ensures Clariant objectives are achieved and risks are minimized. The relevant reports are drawn up routinely twice a year or as necessary.

The ESH Risk Portfolio includes only those risks related to the environment, security or health. All other risks are reported separately via Clariant Group risk management. The monitoring of sustainability targets is outlined in Clariant's Sustainability Policy. There are currently 28 guidelines that form part of the audit system for achieving the sustainability targets. A formalized process for checking whether these guidelines are being followed and to analyze possible weak spots was established in 2013 on the basis of an extensive database.

According to the Bylaws of the Audit Committee and the Compliance Management Policy, the Audit Committee reviews major issues regarding the status of Clariant's compliance with laws and regulations and the Code of Conduct. The Group Compliance Committee reports annually to the Audit Committee with regard to the status of the compliance organization, but also with regard to the Code of Conduct violations that occurred in the course of the year, how they were investigated and, if necessary, how violators were disciplined and organizational measures were implemented to avoid similar violations in the future. In the year 2013, the Group Compliance Committee reported 32 cases of Code of Conduct cases that were investigated.

## Evaluation and development of corporate performance

The Compensation Committee of the Board of Directors evaluates on an annual basis the degree to which the objectives of the company as a whole and those of the Executive Committee have been met. It then orders the allocation of funds in accordance with Clariant's strategic business plan for the prior year, and the allocation is then approved by the Board of Directors. This procedure ensures that bonus payments to employees, including executives, are also in line with the Group's overall performance and objectives.

The members of the Board of Directors and especially the Executive Committee have extensive expertise in economic, environmental and social issues. To ensure they keep abreast of current trends and developments in the aforementioned areas, Clariant regularly organizes meetings in which up to 100 Clariant managers gather to exchange their experiences, at this occasion also sustainability issues are addressed.

## Management pay

Compensation for the Board of Directors and the members of the Executive Committee is verifiable and described in detail in the Notes to the financial statements and in the Clariant Ltd Compensation Report (see 2013 Clariant Annual Report 2013 pages 114 to 127) The company's compensation policy for executives is based on three main principles:

- The level of compensation should be competitive and in line with market conditions and enable Clariant to recruit experienced executives and experts from anywhere in the world and ensure their long-term commitment to the Group.
- The structure of total remuneration should be highly performance and profit-oriented in order to ensure that shareholder and management interests are aligned.

- The compensation components should be straightforward, transparent and goal-oriented so as to guarantee maximum clarity and goal orientation for all participants (shareholders, members of the Board of Directors, CEO and members of the Executive Committee).

To take account of the principles of transparency in particular, the information provided in the Compensation Report has been expanded considerably and the Articles of Association given a fundamental overhaul.

The Compensation Committee analyzes and discusses market developments and their possible impact on Clariant on the basis of the aforementioned three principles. As part of this, we regularly carry out compensation benchmarking with different international compensation consultancy companies. The most recent study was carried out in 2013 by a globally active corporate consultancy firm using a predetermined control group. In addition to assessing compensation for directors and executives, the market situation of the top 1 000 managers (managerial levels one to five) is constantly compared to the relevant local markets. For this we use market data from the global framework agreements of renowned corporate consultancies, and the determined market values are continually used as the basis for changes to compensation.

Our decision-making processes are very open and also involve key stakeholders. For example, we have been holding close and trusting corporate governance dialogs for a number of years now involving both the Executive Committee and the CEO as well as investors, consultants and important opinion-makers. As a result of this, constructive criticism is taken on board and changes made to the way

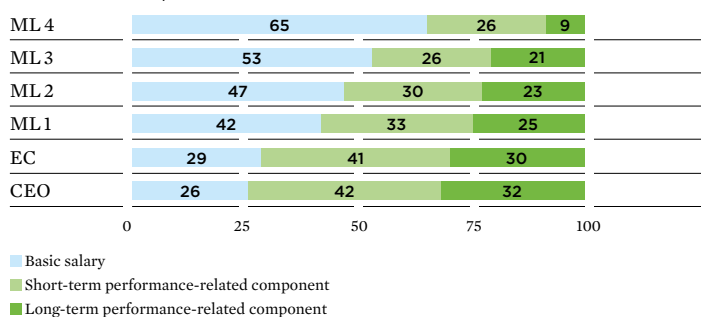


we operate. Clariant is a pioneer in the implementation of the Ordinance Against Excessive Compensation in Listed Stock Companies («VegüV»). Extensive measures have already been taken to pave the way for a vote on the overall compensation framework for the Executive Committee and the members of the Board of Directors at the 2014 shareholders' meeting. There will also be a consultative vote on last year's Compensation Report.

Clariant is eager to have a global, clear and uniform compensation structure for its managers. The higher a manager is within the hierarchy (management level, ML), the higher the proportion of performance-related pay.

#### MANAGERIAL PAY STRUCTURE

in % of total compensation



In principle, the wider the range of responsibilities, the higher the variable components. The maximum bonus that is paid out in case all of the antecedent defined and unchangeable targets are reached is 100 %. However, the absolute amount of compensation is determined by the market conditions in the relevant country, and revised annually. Salary changes are negotiated in accordance with a fixed and unambiguous system and implemented through mutual agreement between the line manager and the HR department. In principle, our consistent philosophy concerning salary reviews ensures that necessary adjustments are made within the context of the local markets and individual performance.

The spread of compensation between Clariant employees varies from one country to another. This depends heavily on the relevant local managerial and employment structure, and is frequently culturally influenced. For this reason, local compensation structures cannot be used to address compensation issues. Globally, the ratio between the median and the highest basic salary is 1:9. The spread is broader (1:17) with regard to target overall compensation because senior employees in particular obtain a higher proportion of variable pay. The ratio tends to be higher in growth regions than, say, in Europe; however, this underlines the fact that differences are based on regional situations. The figures are based on the pay of all local full-time employees excluding the members of the Executive Committee and the Board of Directors.

Methodical consideration of annual pay rounds on the basis of individual performance, the situation in the relevant salary band, and the relevant country's budget prevents lower-earning employees from being disadvantaged. Globally, basic salaries were raised by 3.9 % and overall compensation by 4.5 %. For competitive reasons, the relevant country averages are not published.

#### Financial assistance received from the government

Sustainable production also means the foregoing of subsidies and other individual public funding. In 2013, Clariant did not receive any direct or indirect transfer payments, with the exception of the instances listed below. Tax relief was granted in some countries, e.g. to promote exports, to all exporting companies based there and did not amount to a significant figure.

In the context of Germany's largest pilot plant for the production of climate-friendly cellulose ethanol from agricultural waste in Straubing, Bavaria, Clariant received funds from the German Ministry of Education and Research (BMBF) and the Bavarian government. The funds are for related research and development programs; however, no investments or assets in kind for the pilot plant were funded. These research and development measures may include research into various raw materials or the optimization of microorganisms used on an industrial scale. The CIC opened in the reporting year received a reduced-rate loan for investments from Kreditanstalt für Wiederaufbau (KfW) for the construction of an especially energy efficient laboratory and office facility in Frankfurt Höchst (see page 10).

In 2013, Clariant approved an improved Group-wide process for the recording, investigating and reporting of breaches of ethical conduct requirements. The process will be introduced in 2014 and shall cover aspects such as the acceptance and offering of excessive gifts or hospitality, the unauthorized use of data and IT systems, sexual harassment, bullying and embezzlement, including in minor cases. Primary responsibility in this regard will be assumed by the HR departments (local, regional and central), while the compliance officers and ESHA area will also be involved depending on the severity and nature of the breach.

### **Use of existing expertise**

In addition to the Group headquarters, the compliance officers at both regional and local level are available to provide support in connection with issues relating to the ethically correct and legally compliant conduct of employees. In this regard, regular checks and inquiries are carried out by the Group Compliance Officer depend-

ing on the number of queries received in relation to compliance topics, as well as particular issues and measures. A corresponding online hotline and helpline is currently being developed. In addition to the reporting of breaches of the Code of Conduct, this will provide employees with the opportunity to ask questions anonymously via an intranet portal. These questions will then be answered by the Compliance Officer responsible for the country in question within a reasonable period of time. The service is scheduled to be set up during the course of 2014.

### **Shareholder and employee recommendations**

Each registered share entitles the holder to one vote at the Annual General Meeting. Shareholders have the basic right to payment of dividends and also have other rights under the Swiss Code of Obligations. However, only shareholders entered in the Clariant share register may exercise their voting rights. The rights and options of shareholders are governed by Swiss company law, the new Ordinance Against Excessive Compensation in Listed Stock Companies and the charter of Clariant AG.

All employees may submit requests or recommendations at any time to the company, its management, or the appropriate bodies through their supervisors or managers or in conjunction with the company suggestion system (which may differ from country to country). The Board of Directors has delegated the collection of recommendations to the Executive Committee. There are also various country-specific regulations.

## **III. COMPANY & ORGANIZATION PROFILE**

Clariant is a leading worldwide specialty chemicals company offering innovative and sustainable solutions to customers in a wide variety of markets. Meanwhile, Clariant's research and development is directed toward the key trends of our time. Among these are energy efficiency, renewable raw materials, efficient mobility and the maintenance of resources. The business activities of Clariant are divided into four areas.

The **Business Area Care Chemicals** unites Industrial & Consumer Specialties (ICS) with the operations of New Business Developments (primarily food additives) and the future-oriented Biotechnologies business. The increasing level of prosperity in developing countries will support demand for personal care products and cleaning agents. Population growth combined with the simultaneous reduction in arable farm land necessitates a higher level of productivity, which in turn will increase the demand for highly efficient and environmentally friendly pesticides. And finally, the change from oil-based chemistry to so-called »green chemistry« requires the establishment of new processes which allow chemicals to be produced from renewable resources.

Care Chemicals offers the same technology platforms for a number of possible applications. Sufractants, which are used in washing agents, body cleansers and for metal cleaning (prior to coating), are all produced using the same alkoxylation or esterification process. The technology for the development of different enzymes for various applications (detergents, food, feedstuff) works using the same methods as applied in the area of genetic modification. This allows for customized microorganisms to be obtained which produce the desired enzymes.

The **Business Area Catalysis & Energy** is the only area of Clariant which specializes in inorganic chemistry. One aspect of these operations is the production of catalysts for chemical and fuel processes, including those which enable the use of alternative raw materials such as natural gas, coal and biomass. Another aspect is the development and sale of innovative materials for energy storage. The development of this business area has a low level of cyclicity.

Important products include catalysts for the production of ammonia, methanol, hydrogen and synthetic natural gas, and for use in various alternative fuels production processes including gas-to-liquid (GTL) coal-to-liquid (CTL) and biomass-to-liquid (BTL). Key factors in the performance of this area include energy efficiency, the requirement to reduce the consumption of raw materials, greater output in major chemical processes and the necessity for large energy storage systems for use in the production of energy (solar, wind, wave) and in electric cars. The catalysis business is primarily driven by growth in the production of chemicals, in particular in the emerging markets. Energy storage activities are aimed at markets without their own hydrocarbon resources and in which there is great interest in battery materials for electric cars and energy storage devices – in particular in China.

The **Business Area Natural Resources** comprises of Oil & Mining Services and Functional Minerals. This business area offers products and services for the oil, refinery and mining industry and functional minerals for use in processes such as water treatment. Developments here are largely determined by the increasing global consumption of oil, steel/metals, food and water.

Although they are used in different areas, all Clariant oilfield and mining products are based on the same basic surfactant technology that is used to treat oil, gas and metal ores and to separate these from unwanted parts such as water, sand and impurities. As these resources are becoming increasingly exhausted, the need for technologies allowing their efficient exploitation and use is growing. The products of Business Area Natural Resources are also very well suited for the cleansing of natural plant oils (palm oil, soy bean oil, etc.) or water.

The **Business Area Plastics & Coatings** comprises the Business Units Additives, Pigments and Masterbatches. Plastics products are designed for clients in a wide range of areas including packaging and mobile communications, consumer goods, medicine, textiles, transport, and major agricultural groups.

Clariant develops environmentally compatible plastics for customized use in the areas of telecommunications, automobile manufacture and real estate. Emerging markets such as China and India are set to post a significant increase in demand for plastic resin in the immediate future (e.g. polyethylene, propylene, PET).

Active portfolio management plays a key role in our company's path to sustainable profitability. In this context, strategic improvements were also made in 2013. The most significant change here is the sale of Business Units Textile Chemicals, Paper Specialties and Emulsions as was announced in last year's report. For additional detailed information as regards the business areas, products and services, please consult the 2013 Clariant Annual Report on pages 50 to 75.

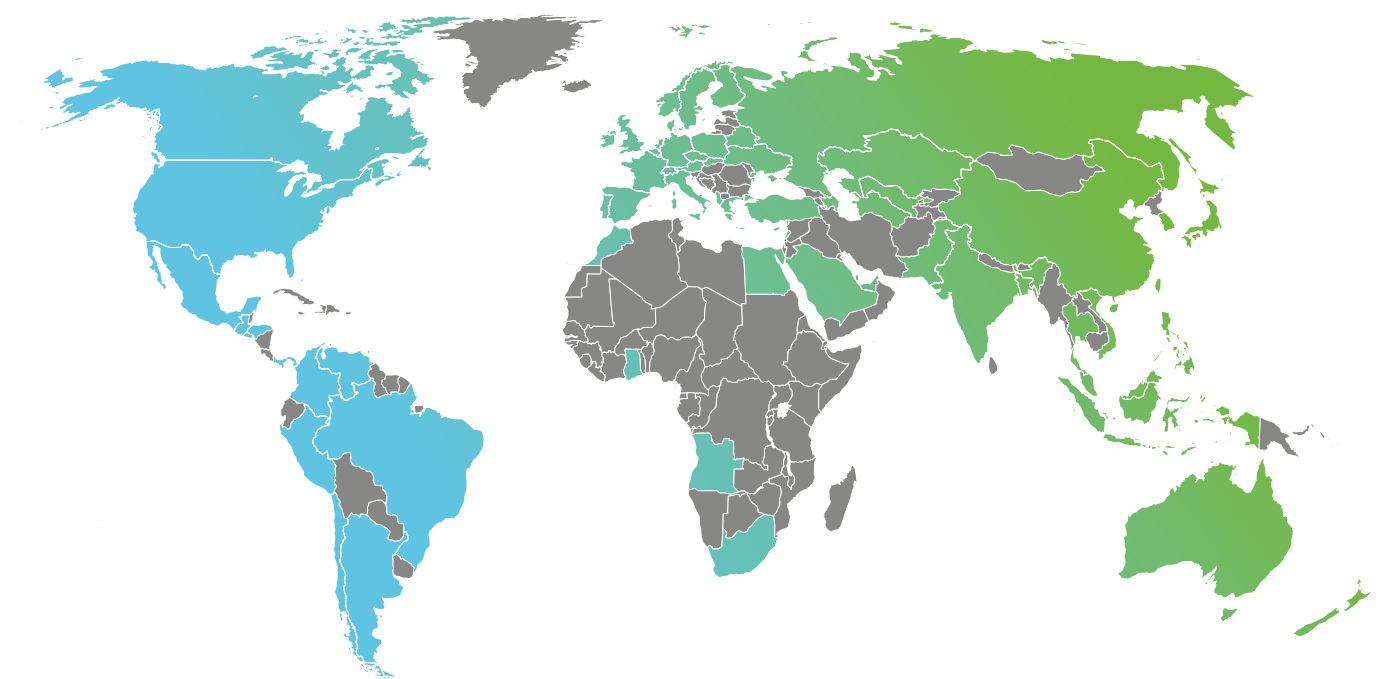
#### KEY FIGURES in CHF m

|  | 2013   | 2012 <sup>1</sup> |
|--|--------|-------------------|
| Sales <sup>2</sup>                                 | 6 076  | 6 038             |
| EBITDA before exceptionals <sup>2</sup>            | 858    | 817               |
| EBITDA margin before exceptionals (%) <sup>2</sup> | 14,1   | 13,5              |
| EBIT before exceptionals <sup>2</sup>              | 574    | 546               |
| Net income <sup>2</sup>                            | 323    | 203               |
| Basic earnings per share <sup>2</sup>              | 0,98   | 0,68              |
| Operating cash flow                                | 301    | 468               |
| Investment in property, plant and equipment        | 292    | 311               |
| Research and Development costs <sup>2</sup>        | 199    | 175               |
| Total assets                                       | 8 174  | 9 467             |
| Equity   | 2 780  | 2 666             |
| Equity ratio (%)                                   | 34,0   | 28,2              |
| Net financial debt                                 | 1 500  | 1 789             |
| Gearing ratio (%)                                  | 54     | 67                |
| Employees  | 18 099 | 21 202            |

<sup>1</sup> Restated (see 1.03 in Financial Report of Annual Report 2013)

<sup>2</sup> Continuing operations

**CLARIANT** worldwide



For an overview of the countries in which the company is active with (primary) operating facilities, see Annual Report pages 188 to 191



In 2013 as a whole, the Group generated sales of CHF 6 076 m and an operating income (EBIT) before exceptional items of CHF 574 m on the basis of continued activities. Given this overall picture, Clariant can report positive results on almost all levels following the restructuring process carried out in the past years. The savings obtained through the Clariant Excellence initiative, for example, totaled CHF 400 m from its introduction to the end of 2013. Clariant expects to pay a distribution of CHF 0.36 per share for 2013. Clariant spent an amount in the low single-digit millions on donations to the needy and payments in kind to charitable causes worldwide. Detailed information can be found on pages 128 to 206 of the 2013 Clariant Annual Report.

The headquarters of Clariant Ltd are located at Rothausstrasse 61 in 4132 Muttenz, Switzerland. The company's business operations are conducted through Clariant Group companies. Clariant Ltd, a holding company and directly or indirectly owns all Clariant Group companies worldwide. Clariant is a joint-stock company under Swiss law and is headquartered in Switzerland with a very diverse shareholder structure. Details on the ownership and shareholding structure of Clariant can be found on pages 158 ff. and 188 ff. of the 2013 Clariant Annual Report, respectively. (G4-17)

#### **IV. NATURE AND THE ENVIRONMENT**

The protection of nature and the environment is a top priority for Clariant. Intensive raw materials management should ensure that resources are handled as sparingly as possible. Efficient savings programs should also ensure a continuous improvement in water and energy efficiency and lead to ever lower levels of (pollutant) emissions and waste. Permanent optimization programs such as eWATCH provide decisive help in this regard. Renewable sources and bio-based chemicals are also allowing for the establishment of a widely sustainable value chain.










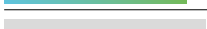








Against this backdrop, Clariant is improving its processes and production procedures on an ongoing basis. As a result, not only the absolute volumes of resources, waste, waste water and air emissions are being steadily reduced, but also the relative volumes, i.e. in relation to the scale of production. This work has generated great success in recent years.

In 2013, Clariant introduced a binding and comprehensive control directive for the Environment, Safety and Health (ESH) area. This directive should ensure that there are no breaches of internal and external regulations. As a result of these efforts and stringent voluntary commitments, Clariant was not aware of any cases in the year under review in which it has been accused of not having acted essentially in compliance with laws, regulations and voluntary codes of practice in connection with nature and environmental protection. As such, Clariant did not have to pay any substantial fines or non-monetary penalties for non-compliance with environmental laws and regulations in 2013. Two events classified under the two highest levels of the internal incident monitoring framework involved discharges in Höchst (Germany) and Tianjin (China); neither, however, had implications for people or the environment.

## Lower resource requirements

In recent years, the quantity of material used by Clariant has fallen in both absolute and relative terms thanks to improved efficiency. It should be noted that in the following table the total product amount can be higher than the amount of raw materials used because Clariant also manufactures products and mixtures that contain water, and this water is accounted for and disclosed separately. The inclusion of the former Süd-Chemie business activities in the presentation, in particular the extraction and processing of bentonite, means the raw material base has shifted significantly towards natural raw materials since 2012.

### MATERIAL USE AND PRODUCTION in m t

|       |                       |   |             |
|-------|-----------------------|---|-------------|
| 2013* | <b>Materials used</b> |  | <b>4.48</b> |
|       | Production            |  | 4.36        |
| 2013  | <b>Materials used</b> |  | <b>1.85</b> |
|       | Production            |  | 2.13        |
| 2012* | <b>Materials used</b> |  | <b>4.52</b> |
|       | Production            |  | 4.42        |
| 2012  | <b>Materials used</b> |  | <b>1.97</b> |
|       | Production            |  | 2.19        |
| 2011  | <b>Materials used</b> |  | <b>2.02</b> |
|       | Production            |  | 2.23        |
| 2010  | <b>Materials used</b> |  | <b>2.16</b> |
|       | Production            |  | 2.37        |
| 2009  | <b>Materials used</b> |  | <b>1.94</b> |
|       | Production            |  | 2.13        |
| 2008  | <b>Materials used</b> |  | <b>2.18</b> |
|       | Production            |  | 2.37        |
| 2007  | <b>Materials used</b> |  | <b>2.32</b> |
|       | Production            |  | 2.50        |

\* incl. Süd-Chemie

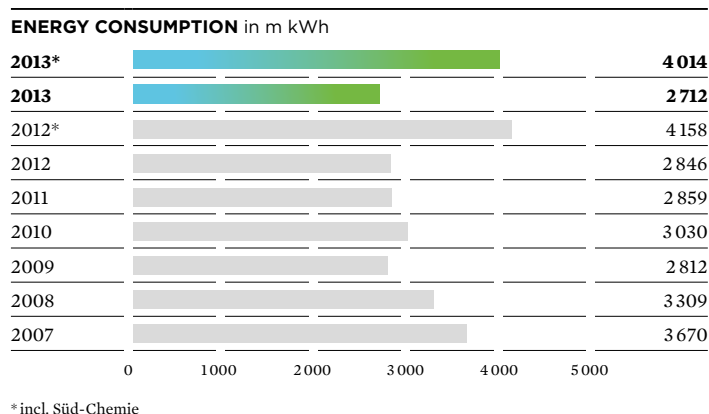
Clariant tries, wherever possible, to use recycled materials in production. However, the percentage is low due to the nature of the production process, as recycled raw materials very often cannot be used on account of the cleanliness requirements. Their use is also not possible in specialty chemicals such as those produced by Clariant due to safety reasons. Clariant uses almost only fresh raw materials for direct precursors for the reasons mentioned above. However, there is an internal cycle that is an integral part of the production process for auxiliaries and for product purification and separation. The material in such recycle streams is used several times (see example of packaging reduction on page 49) in order to deliver the desired energy and resource savings. However, meaningful detection of the corresponding amounts is not possible with justifiable effort as these cycles are an integral part of the overall process.

## Energy and energy consumption falling

Clariant's plants primarily need energy in the form of steam, electricity and natural gas. Electric power is mainly used for drives, such as electric motors in mixers, pumps and other process-engineering equipment. The measurement and control technology and the lighting, too, require electricity. Clariant uses natural gas for heating dryers, firing crack furnaces and generating electricity and steam in its own power plants. It uses steam to heat reactors and separators such as distillation columns. The resulting condensate is, whenever possible, used for heating purposes.

What is recorded is total energy consumption, independently of whether it has been internally produced or externally procured. Thus, indirect emissions such as CO<sub>2</sub> from electricity-generating coal-fired power plants are also accounted for. They are not disclosed separately in this report, however. Due to difficult delineation and the unclear ratio of costs to benefits, indirect emissions of greenhouse gases other than those reported are not recorded. Random checks have shown that the indirect greenhouse gas emissions caused by Clariant are insignificant in the overall context and are therefore not reported as material. For example, CO<sub>2</sub> emissions caused by the travelling of Clariant employees are insignificant in relation to overall emissions. Moreover, with more than 18 000 staff, the cost of determining the CO<sub>2</sub> emissions generated by employees traveling to the company would not be appropriate given the level of insight this would provide. Initial calculations for preliminary products as part of the Carbon Disclosure project also point in this direction. As such, an investigation of this kind will not be conducted.

Direct energy consumption, i.e. the use of primary energy sources, takes place at Clariant's sites and primarily for process heat and steam generation purposes. The main primary energy source is natural gas; coal is only used as an energy source at individual locations in China and Indonesia. Indirect consumption at Clariant mainly results from the purchase of electricity and steam from external sources in place of own production. Clariant procures a mix of energy from various sources, with this mix varying greatly from country to country. Clariant endeavours, however, to increase the share of energy obtained from renewable sources on an ongoing basis.



For Clariant, energy is an important production and cost factor. With this in mind, Clariant has already been initiating programs and projects aimed at reducing energy consumption for a number of years. The aim is to secure permanent resource and cost savings and reduce greenhouse gas emissions. One of the secondary conditions for these programs and projects is that the necessary investments are amortized within five years. These measures have borne fruit. Between 2005 and 2013, Clariant's production has become significantly more energy-efficient. Over the period as a whole, energy consumption per metric ton of product fell by 25 % to 1 270 kilowatt hours (kWh) or 922 kWh/t incl. Süd-Chemie. When compared to the slightly lower production volume in 2005, Clariant's global energy use has declined significantly, from about 4 660 m kWh in 2005 by almost 42 % to around 2 700 m kWh in 2013 or around 4 000 m kWh including Süd-Chemie.

For each of its locations, Clariant records all primary energy sources, such as natural gas, heating oil, and coal, that are used to generate energy (mostly steam) at its own plants. As part of this, it also logs non-fossil fuels such as wood and bagasse. One location reutilizes waste for energy production, which is also included in the figures. In addition, the operator of each location records all secondary energy sourced from third parties, such as electricity from local utilities and, in the case of larger chemical plants, steam or cooling energy. This data is recorded in the relevant conventional unit, for instance m<sup>3</sup> in the case of natural gas and kWh for electricity. These units are then converted into the consolidation unit, gigajoules (GJ), to obtain the mean energy content. This is then used as a standard measure for representing energy consumption. If other companies are situated at a Clariant site and integrated into the location's infrastructure, the volumes of energy supplied to these companies are deducted so that the figures reflect only the energy actually used by Clariant. The energy consumption and energy sources in this report have been determined from the data provided by more than 150 Clariant (production) sites. They therefore provide a consolidated and comprehensive picture of Clariant's energy usage.

### **Very successful energy saving measures**

The eWATCH energy saving program, in particular, has contributed in recent years to the steady improvement in Clariant's energy efficiency. The origin of these savings was the Energy 2010 program launched in 2006, which had systematically recorded energy consumption throughout the Group and identified potential for savings. Its success led to the initiation of a more extensive successor program, eWATCH: a monitoring system intended to further optimize operations at energy-consuming plants. eWATCH is an energy management concept coordinated throughout the entire Group and continuously records all energy consumption data, identifying areas that reveal potential for reducing consumption. It also enables staff to continuously optimize machine utilization factors.

For example, machines, systems and plants should be integrated into production planning and processes so that they run only at or near their highest efficiency. Corresponding displays mounted in measuring stations provide real-time visualization of these conditions for operating personnel. The objective of eWATCH is therefore to achieve greater energy savings through improved coordination of all parameters, while enabling keener assessment of the cost-benefit ratio of investments to energy savings. Lastly, intensified training aims to sharpen employees' awareness of energy consumption and broaden knowledge of cost-saving opportunities.

### **Listening for leaks**

Pressurized air is essential for determining physical volumes in cybernetics. It is used for instrumentation and control (I&C) purposes, for instance for pneumatic drive systems. This pressurized air is known as I&C air. I&C air is considered one of the basic energies alongside electricity and steam. It is generated by the company itself using compressors and often consuming a lot of electricity. These compressors are frequently inefficient, no longer employ the latest technology, and require a lot of maintenance. Added to this, the networks for I&C air are often old, and the screwed and flanged joints are not always completely airtight. A lot of air can escape through leaks, which is why even air costs money; the more it is compressed and the greater the leak, the higher the price.

Under normal circumstances such losses are not noticed, especially since they are drowned out by regular operating noise. That is why companies have only looked for leaks in serious cases up to now. The losses caused by halting production make this far too expensive. What is more, ducting mostly runs through hard-to-reach places. A Clariant company in Frankfurt has now had the idea to use special microphones to track down leaks, partly because it could no longer ignore the discrepancy between the amount of I&C air manufactured and the volume of pressurized air available for use.

Leaks in the ducting were detected using directional microphones which can identify ultrasound waves up to seven meters away. Because of the narrow frequency range of the escaping air, the microphones can also reliably distinguish this from other sounds. As a result, within a comparatively short time, the company was able to pinpoint more than 80 leaks from which I&C air was escaping. Once these ducts and connections were repaired and old, surplus air distribution sections were removed, I&C air consumption fell by about 35 % – as did the amount of energy used by the compressors producing it.

### **Clariant continues ISO 50001 certification process**

Clariant was certified to ISO 50001, the standard for energy management systems, for the first time in 2012 at one of its German production units. Further Clariant sites will be successively certified by 2020. In 2013, four German sites (Gersthofen, Heufeld, Höchst und Lahnstein) were certified. The locations all passed the external audit without major or minor non-conformities. The auditors highlighted, in particular, the employee's high level of identification with the environmental objective of saving energy in a sustainable manner. The high priority accorded to the issue of energy alone, which includes the additional visualization of the topic and corresponding awareness training, led to a 6 % reduction in energy consumption per metric ton of manufactured product at the Frankfurt-Höchst site, for example. Presumably nine additional Clariant sites will be certified in 2014.

### **Airborne emissions**

Greenhouse gas emissions into the atmosphere cannot be completely avoided, despite all environmental protection efforts. They are simply side effects of production processes like waste or the consumption of resources and raw materials. Emissions are subject to limits that are laid down in the official operating licenses for the plants. Clariant monitors compliance with these limits at each individual site by taking its own measurements and additionally using measurements taken by independent institutes in accordance with regulatory requirements.



Clariant determines the total emissions at each individual site at regular intervals. The volume of CO<sub>2</sub> directly emitted by Clariant between 2005 and 2013 has been declining. The amount of CO<sub>2</sub> emitted in total has thus decreased (including as a result of unique savings, particularly in 2010 and 2011) from around 640 000 t to approximately 236 000 t (516 000 t incl. Süd-Chemie). Emissions per metric ton of product fell from 236 kg/t to 111 kg/t (119 kg/t incl. Süd-Chemie).

The direct carbon dioxide (CO<sub>2</sub>) emissions of the combustion processes operated by Clariant are directly proportional to the amount of carbon in the employed fuels. To be able to make a comparable global statement, Clariant uses mean emission factors. Emissions of other greenhouse gases like methane and nitrous oxide (N<sub>2</sub>O) are measured locally and integrated into the consolidated calculation of greenhouse gas emissions. Aside from the CO<sub>2</sub> inevitably produced by combustion, N<sub>2</sub>O is particularly significant because of its extremely high global-warming potential. Optimization of catalytic exhaust air treatment enabled emissions from a special production process to be cut by almost 40 % year-on-year, leading to a reduction in greenhouse gas emissions of about 100 000 t of CO<sub>2</sub>-equivalent in 2013.

The volume of all greenhouse gases (expressed in CO<sub>2</sub> equivalents), i.e. direct and indirect emissions, decreased between 2007 and 2013 from 1.4 m to 0.9 m t (1.3 m t incl. Süd-Chemie). Emissions per metric ton of product fell from 540 kg/t to approximately 417 kg/t or to 300 kg/t incl. Süd-Chemie. Indirect greenhouse gas emissions are predominantly generated by external energy procurement, usually in the form of electricity and steam. Their emergence correlates very much with the amount produced and can be less influenced than direct emissions. To calculate the amounts, country-specific conversion factors are used, which are determined on the basis of the existing infrastructure in the country in question. The indirect emissions have only been recorded since 2007.

Clariant reduces carbon dioxide emissions by continuously optimizing production processes to make them more environmentally friendly. Clariant is reducing air emissions by using innovative technologies. Often the successes are small but in total lead to significantly lower emissions of pollutants. In collaboration with the European Business School International University in Wiesbaden, Clariant initiated a program in 2012 aimed at studying all activities in terms of their CO<sub>2</sub> reduction potential. The entire Group is examined by questioning relevant employees on the technology used. Based on the results, general guidelines for reducing greenhouse gas emissions will then be drawn up. This program is designed as a medium to long-term program and should induce a continuous improvement process.

**GHG-EMISSIONS** in m t CO<sub>2</sub>-equivalents

|                 | 2013*       | 2013        | 2012* | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
|-----------------|-------------|-------------|-------|------|------|------|------|------|------|
| Direct          | <b>0.68</b> | <b>0.40</b> | 0.81  | 0.54 | 0.60 | 0.62 | 0.64 | 0.65 | 0.71 |
| kg/t production | <b>156</b>  | <b>186</b>  | 184   | 245  | 269  | 260  | 300  | 275  | 283  |
| Indirect        | <b>0.63</b> | <b>0.49</b> | 0.64  | 0.51 | 0.53 | 0.55 | 0.51 | 0.58 | 0.65 |
| kg/t production | <b>145</b>  | <b>231</b>  | 145   | 231  | 235  | 232  | 238  | 246  | 259  |
| Total           | <b>1.31</b> | <b>0.89</b> | 1.45  | 1.05 | 1.13 | 1.17 | 1.15 | 1.23 | 1.36 |
| kg/t production | <b>300</b>  | <b>417</b>  | 329   | 476  | 504  | 492  | 538  | 521  | 542  |

\*incl. Süd-Chemie

Indirect CO<sub>2</sub> emissions from the purchase of electricity are calculated using country-specific emission factors that reflect the relevant country's existing energy infrastructure. Countries with a high proportion of electricity generated from coal therefore have higher CO<sub>2</sub> emissions per energy unit than countries that generate most of their electricity from renewable energy sources like water, wind, or nuclear power. These factors are then taken into account when converting to CO<sub>2</sub> equivalent. Special (lower) emission factors were used for electricity and steam purchased by major chemical plants because they use high-efficiency cogenerated power.

Substances with ozone-depleting potential are exclusively used in closed systems, mostly cooling systems. Clariant records both the respective charges and any losses. Generally speaking, the cooling agents used have no or significantly lower ozone-depleting potential than the substances R11 or R22. This has allowed the total loss-induced resulting effect on the ozone layer since 2005 to be reduced by around 75 % and – converted to R11 equivalents – is now only slightly more than 100 kg. When cooling units are replaced or serviced, only coolants such as ammonia are used that have no ozone-depleting effect and where possible no greenhouse-gas potential either. Since 2005, significant emissions of other inorganic pollutants such as SO<sub>2</sub> and NO<sub>x</sub> have been reduced overall – compared with the reporting year – by almost 50 %, and organic emissions (VOC) by almost 60 % (without Süd-Chemie).

**EMISSION OF GASES** in t

|                                   | 2013*        | 2013       | 2012*        | 2012       | 2011       | 2010       | 2009       | 2008       | 2007         |
|-----------------------------------|--------------|------------|--------------|------------|------------|------------|------------|------------|--------------|
| Sulphur Dioxide SO <sub>2</sub>   | 770          | 505        | 899          | 371        | 421        | 397        | 353        | 422        | 538          |
| Nitrogen Oxides NO <sub>x</sub>   | 877          | 309        | 847          | 308        | 292        | 309        | 331        | 428        | 424          |
| Hydrogen Chloride HCl             | 39           | 6          | 41           | 7          | 8          | 15         | 16         | 20         | 30           |
| Ammonia NH <sub>3</sub>           | 30           | 16         | 17           | 7          | 37         | 39         | 35         | 48         | 37           |
| Dinitrogen Oxide N <sub>2</sub> O | 517          | 517        | 845          | 845        | 1 085      | 803        | 784        | 586        | 644          |
| <b>Total anorganic emissions</b>  | <b>1 716</b> | <b>836</b> | <b>1 804</b> | <b>693</b> | <b>758</b> | <b>760</b> | <b>735</b> | <b>919</b> | <b>1 028</b> |
| Volatile Organic Compounds VOC    | 350          | 344        | 277          | 271        | 352        | 461        | 454        | 577        | 601          |
| Methane CH <sub>4</sub>           | 0            | 0          | 63           | 63         | 141        | 81         | 63         | 166        | 95           |
| <b>Total organic emissions</b>    | <b>350</b>   | <b>344</b> | <b>340</b>   | <b>334</b> | <b>493</b> | <b>542</b> | <b>517</b> | <b>743</b> | <b>696</b>   |

\*incl. Süd-Chemie

**PARTICULATE EMISSION**

|   | 2013* | 2013 | 2012* | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|-------|------|-------|------|------|------|------|------|------|
| in relation to production volume in g/t | 73    | 33   | 76    | 26   | 24   | 28   | 30   | 32   | 32   |
| in t                                    | 319   | 71   | 335   | 57   | 54   | 66   | 65   | 77   | 80   |

\*incl. Süd-Chemie

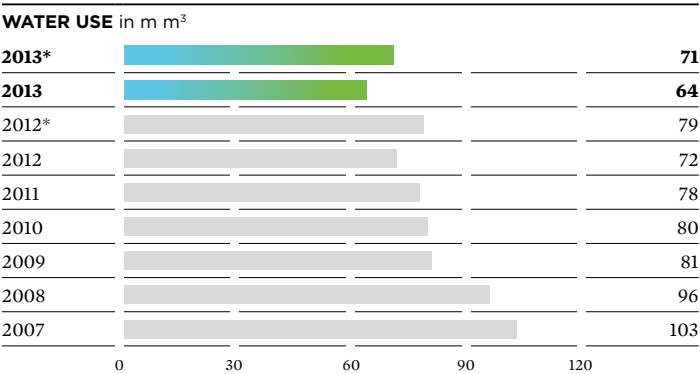
Particle emissions in the air fell between 2005 and 2013 by 30 % to 71 t (incl. Süd-Chemie 319 t), and per metric ton of manufactured product by around 12 % to approximately 33 g/t (incl. Süd-Chemie: 73 g/t).

The safety of people and the environment is the highest priority for chemical companies. One indispensable factor is an effective safety management system that can also identify, assess and control risks in the production process using appropriate measures, so as to reduce or even entirely avoid these risks. For this reason, Clariant, in close cooperation with the European Process Safety Centre (EPSC), has actively supported the development of a simple and representative measurement system, also with the aim of establishing an industry-wide standard. Here, smaller substance and energy releases will be systematically recorded and assessed in order to avoid major incidents.

These incidents, or PSIs (process safety incidents), are categorized according to criteria stipulated by the European Chemical Association (Conseil Européen des Fédérations de l'Industrie Chimique, CEFIC). They are a key component of the ongoing process of improvement as regards the process safety of the production systems. In 2013, the process safety event rate at Clariant fell significantly from 0.40 to 0.25. This rate denotes the number of incidents per 200 000 working hours. In the fourth quarter of 2013, the recording of incidents (work accidents, substance and energy emissions) was switched to an Internet-based database. This transparent disclosure is a further component of the ongoing improvement process.

Water and water use

One of the main auxiliaries for the chemical industry is water. Clariant mainly needs it for cooling purposes and as process water in production. Of the water volume used in 2013, Clariant companies used around 70 % for cooling in production plants, and around 20 % in production processes, with the remaining amount needed as a product component or for sanitary purposes. The water requirements, especially of the large production sites, are met for the most part by river water. Before it flows into the piping system of each site, the river water is cleaned according to its intended purpose using various filter systems. Remaining amounts are obtained from the respective local water grid, but not in volumes that would significantly impair the water system.



\*incl. Süd-Chemie

At some sites, recooling water is also used as a coolant, which is continuously circulated and after use recooled at large recooling plants. This environmentally friendly cooling method is used where technically possible, and in 2013 saved almost 200 m m³ of water, which would otherwise have had to have been additionally procured. Total water consumption between 2005 and 2013 decreased significantly, from 114 m to 64 m m³ or 71 m m³ incl. Süd-Chemie. Consumption per metric ton of manufactured product fell by around 27 % from 42 to 30 m³ (16 m³ /t incl. Süd-Chemie).

Water as a scarce resource

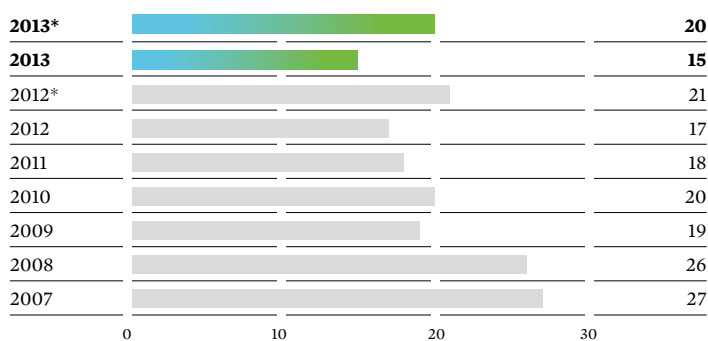
The future of society and the economy depends on the availability of fresh water resources. Some regions of the world are teetering on the brink of a water crisis, which will have an impact on the business of companies in these regions. Water shortages are becoming a growing business risk. It follows that the chemical industry is also exposed to these kinds of water risks. Clariant has already begun implementing a wide range of water management activities and water saving initiatives. However, these are now being stepped up in view of expected developments such as global warming and growth in Asia.

## Wastewater

Clariant uses water for a variety of purposes in the production of chemical products, and the water is partly polluted as a result. At each site, therefore, production wastewater is first subject to multi-stage chemical-physical precleaning before being routed to largely biological wastewater treatment plants, where it is microbiologically cleaned. In contrast, cooling water along with rain water can be fed into rivers without cleaning as it does not come into contact with chemicals. To prevent contamination of the intake water through undetected leaks in the cooling system, the cooling water and rainwater are constantly analyzed at the individual sites as an additional safety measure. If contamination is discovered, discharge into the rivers can be prevented by various containment systems.

In the 2013 reporting period, the absolute total volume of wastewater from Clariant companies decreased once again in spite of largely constant production levels by around 10 % to 15 m<sup>3</sup> (incl. Süd-Chemie: 15 m<sup>3</sup>). A further improvement per manufactured metric ton from 7.7 – 7.1 m<sup>3</sup> (incl. Süd-Chemie: 4.6 m<sup>3</sup>/t) per metric ton of production output was also achieved. Between 2005 and 2013, Clariant reduced the chemical oxygen demand (COD) in the wastewater of its companies after wastewater treatment by almost 50 % to 4 000 t. Going forward, the specific COD entry is to be reduced further, for example by recycling and recovering »mother liquors« and by reducing product quantities in wastewater. This will also lower production costs.

### WASTE WATER in m<sup>3</sup>



\* incl. Süd-Chemie

Only small amounts of heavy metals are contained in the wastewater of Clariant's individual sites. The extrapolated values are partly based on concentrations that are at or below the detection limit. The amount of introduced heavy metals is also very strongly dependent on the elimination rate of the upstream water treatment plant, the chemical composition of the wastewater, the effectiveness of the precipitation prior to entry into the biological purification stage and the adhesiveness of the heavy metals or heavy metal complexes to sludge. Between 2005 and 2013, heavy-metal input decreased by 30 %. The wastewater discharged by Clariant is largely cleaned and therefore does not burden the environment excessively. Thus, Clariant has already achieved a very high level in terms of wastewater and water treatment.



## Generated waste

At Clariant, the prevention of waste takes priority over recovery or disposal. Therefore, every effort is made during the development and manufacture of products to ensure that as little waste is generated as possible. Unavoidable production waste is recycled or disposed of properly. Each type of waste is recorded and precisely analyzed and described. Proper disposal must be proven and documented in internal records, including where the waste originated, which amounts have arisen during what period, the properties of the waste, whether the waste can be classified as hazardous, and how it can be recycled or disposed of.

Waste data at each individual site is assigned to the respective producers and disposers and evaluated. Disposers are chosen responsibly and according to strict quality controls and checks. The checks are recorded and information exchanged between Clariant's different sites. The sum of these measures ensures continuous monitoring and control of all waste flows at the sites.

The total amount of waste produced by Clariant has been significantly reduced in recent years. After standing at around 303 000 t in 2005, in 2013 the total had declined to around 142 000 t (incl. Süd-Chemie: 225 000 t); the decrease was continuous, also due in part because of the fall in production. The relative trend, i.e., the amount of waste in relation to production volume, was also to the downside. Thus, the amount of waste per metric ton of manufactured product fell in the aforementioned period by about 40 % from 111 kg/t to 66 kg/t (incl. Süd-Chemie: 52 kg/t).

The waste amounts are recorded separately according to type and disposal method. The vast majority (50 – 60 %) is recycled or treated, and only unsuitable waste is disposed of in landfills. Only officially certified companies that specialize in the disposal of the waste type concerned are commissioned to dispose of the waste. No longer treatable materials such as fly ash from internal waste incineration and other manufacturing processes are disposed of in special landfills. The quantity of these substances is constantly falling thanks to improvements in the manufacturing process, thereby continually reducing the amount of waste.

Clariant uses the term »waste« to refer to hazardous waste, packaging waste, household waste and excavated soil from construction sites. As definitions vary quite widely around the world, the corresponding quantities are summarized under »Total waste« to prevent distortions. Data relating to logistics – that is, type and route – are not recorded explicitly for waste transport. Cross-border waste transport (»waste movement«) takes place only in exceptional cases and according to strict international regulations. No waste is shipped. The development of the various waste categories depends on one hand of the product portfolio, on the other hand of the classification of legislators in the various countries.

**WASTE** in t

|                        | 2013 <sup>1</sup> | 2013           | 2012 <sup>1</sup> | 2012    | 2011    | 2010    | 2009    | 2008    | 2007    |
|------------------------|-------------------|----------------|-------------------|---------|---------|---------|---------|---------|---------|
| Hazardous waste        | <b>95 813</b>     | <b>88 252</b>  | 82 843            | 72 297  | 81 282  | 84 911  | 81 443  | 119 971 | 111 313 |
| Recycling <sup>2</sup> | <b>29 104</b>     | <b>26 206</b>  | 20 624            | 18 117  | 26 150  | 22 987  | 18 531  | 34 298  | 37 230  |
| Treatment <sup>2</sup> | <b>51 286</b>     | <b>48 218</b>  | 40 554            | 39 399  | 39 894  | 42 707  | 49 881  | 66 259  | 61 600  |
| Landfill <sup>2</sup>  | <b>27 061</b>     | <b>25 574</b>  | 34 832            | 27 836  | 28 079  | 29 012  | 24 869  | 31 927  | 23 822  |
| Non-hazardous waste    | <b>128 828</b>    | <b>53 359</b>  | 149 750           | 72 954  | 75 486  | 86 362  | 95 235  | 119 461 | 123 020 |
| Recycling <sup>2</sup> | <b>25 008</b>     | <b>20 819</b>  | 82 341            | 27 812  | 22 798  | 24 475  | 31 771  | 37 343  | 33 577  |
| Treatment <sup>2</sup> | <b>13 006</b>     | <b>8 679</b>   | 29 215            | 25 770  | 52 220  | 71 663  | 73 428  | 101 877 | 102 509 |
| Landfill <sup>2</sup>  | <b>92 770</b>     | <b>28 030</b>  | 133 422           | 38 368  | 30 127  | 27 064  | 24 451  | 32 129  | 41 872  |
| Total waste            | <b>224 641</b>    | <b>141 601</b> | 232 593           | 145 251 | 156 769 | 171 273 | 176 678 | 239 431 | 234 333 |

<sup>1</sup> incl. Süd-Chemie<sup>2</sup> these figures include waste from third-party companies**Transport and packaging material**

In order to prevent any environmental impact through the transportation of products and other goods and materials as far as possible, Clariant has laid down strict rules to ensure transport safety – with the corresponding financial outlays. In accordance with statutory requirements, Clariant stores key information such as electronic ordering and delivery system classification and labeling data for each product in a database. All the parties in the transport chain are then informed automatically and the transport documents are issued with the hazardous-goods information prescribed by law. The selection and definition of suitable packaging for hazardous materials are also integrated into this IT solution.

Only experienced and reliable companies are used to store, pick, schedule and transport the goods. This ensures that staff, organization and equipment all comply with legal requirements. One tool used for this is Clariant's Forwarder Requirements Profile, which defines the requirements for reliable partnerships with forwarders. In Europe the SQAS standard, a system to review safety and quality with transportation, is mandatory.

The security of dangerous goods transport is critically dependent on the skill and care of the people involved. Regular task-related and ongoing training of Clariant employees contributes to overall security. Work-safety officers conduct regular inspections of filling plants and dispatch areas. In addition, road vehicles and tankers carrying hazardous goods are checked at random before they leave the plant premises. When receiving deliveries, vehicles with safety defects or with insufficiently secured loads may not drive into the plant premises. When creating and implementing product-specific logistics solutions, transport safety is a key factor, for example, when bundling traffic flows and selecting the means of transportation.

To minimize the environmental impact of the packaging in which products are delivered to customers, reusable packaging is used wherever possible. Once the product has been emptied at the customer's premises, the packaging is then sent back for refilling. Other used packaging materials are returned in part and systematically recycled.

Clariant generally does not supply end customers, only processors. Thus, many products (bulk products) can be shipped in tank trucks and cars or silo trucks (for bentonite). Moreover, cleanable and reusable packaging is used where possible and acceptable to the customer. In a number of cases, however, customer requirements or other factors mean that packaging has to be used that is not immediately reusable. To the extent possible, packaging is recycled for material purposes or, especially in the case of hazardous materials, used to generate energy.

Clariant supports reuse and recycling by means of established and soon-to-be established recycling systems. The packaging used by Clariant meets the requirements of customers and legal requirements and ensures product quality. Clariant participates in programs for the return of packaging for safe incineration or disposal. All new packaging products are analyzed for their degree of risk. In 2013, Clariant made approximately 711 000 deliveries to customers. In 0.03 % of these deliveries, the packaging proved inadequate or became wet, in 0.09 % it was damaged and in 0.01 % it leaked.

### **Impact of activities on nature**

Clariant is a chemical company with a longstanding history and production sites some of which are more than a hundred years old. On account of the required infrastructure already being in place prior to construction, almost all of Clariant's newer plants and office buildings are located in industrial parks or trading estates. Clariant does not operate any sites in biological reserves or in areas with a high biodiversity value. In addition, areas recultivated by Clariant following bentonite extraction (Southern Bavaria) have seen the repopulation of animal species that are on the Red List of Threatened Species.

Clariant extracts bentonite at various sites worldwide. Before extraction can start, a license has to be obtained from the authorities that prohibits undue intrusions into the natural environment. Following extraction, Clariant recultivates the affected land, setting standards that at many locations exceed the legal minimum. One of the major bentonite extraction sites is Bavaria (Germany). The extensive recultivation and renaturation work that is done once extraction activities are complete often means that the previously monotonous cultural landscape is transformed into a diverse natural environment. Consequently, several species of animals threatened with extinction and countless forms of plant life that had previously not been found at these sites have sprung up there (see also article »Beneath the green fields of Bavaria« on page 22 – 25 of this report).

Clariant mostly operates plants in integrated industrial sites without sensitive adjacent areas. However, where its plants are located next to rivers or unprotected forest areas, influence on the local fauna and flora could be noted in case of uncontrolled release of pollutants. For this reason, Clariant is taking all measures necessary to prevent contaminated wastewater and other pollutants from getting into the environment. Nonetheless, animal and plant species included on the Red List of the IUCN (International Union for Conservation of Nature and Natural Resources) and on national protection lists, i.e., those in danger of extinction, are not visibly affected by Clariant's business activities.

With regard to plants located next to rivers, Clariant has laid down strict environmental regulations so that its activities only have a registrable impact on the surrounding flora and fauna in the case of uncontrolled and accident-induced releases. The wastewater produced by Clariant in the year under review had no measurable impact on biodiversity. Clariant mostly operates plants in integrated industrial sites without sensitive adjacent areas. If forests, which are generally unprotected areas, are located in the immediate vicinity, Clariant ensures that the nature of the plant and the activity carried out there does not have an appreciable adverse effect on the flora and fauna there. All necessary measures are taken to ensure that no contaminated wastewater escapes inadvertently.

Since 2010, Clariant has been a partner in a project in Colombia that facilitates the use of water in the country and improves (drinking) water quality. The project is supported by several Swiss companies, with the project managers working in close coordination with the Colombian authorities. As part of this project, Clariant has since 2012 been driving forward the afforestation of the Cerro de Manjui mountains, which are located in a conservation area.

This area, which is several hundred hectares large, has for many years been suffering from heavy deforestation and forest fires, as well as pine and eucalyptus plantations that are atypical for the local fauna. Clariant is now helping to identify the most affected areas and implement rapid reforestation. Besides careful coordination of this work, Clariant also teaches children and young people in schools in the surrounding communities both about the efficient and sensible use of water and environmental science (see also article »Beneath the green fields of Bavaria« on page 22 – 25 and »Planet – working for nature« page 40 – 43 of this report).

### **Environmental impact of products and services**

For product responsibility reasons and as required by the European Union regulation REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), Clariant is looking for potential improvements in the life cycle phases of its products. The properties of chemical substances are identified and user material and product safety tests simulated.

REACH entered into force on June 1, 2007. The purpose of the regulation is to ensure a high level of protection for human health and the environment, to improve communication when handling chemical products, and to maintain and improve the competitiveness of the chemical industry in the European Union. EU-wide uniform and binding rules for the registration, evaluation, authorization and restriction of chemicals will mean that the chemical laws of the individual states will be harmonized and simplified.

The regulation only permits chemical substances that have previously been registered and examined for possible risks to be introduced onto the market. Clariant meets the requirements of REACH in full. Clariant has been intensively involved in the development of the REACH regulation through association activities and discussions with authorities, and has carefully prepared itself to meet the new requirements.

REACH contributes significantly to further improving health, environmental and consumer protection. Clariant through REACH offers its customers more value and support through increased communication and customer-oriented detailed information on the use of its products. The regulation is also an additional catalyst for the development of new and better products.

Registration of existing substances in the EU, that are produced or imported in an amount of a ton or more per year, is done by ECHA step by step and depending on the amount. Thus, during registration phase I for substances with a volume of more than 1 000t per year, plus substances of very high concern, were registered with a time limit until 30 November 2010. In May 2013, Registration Phase II was completed on schedule and in full for products produced or imported by Clariant in Europe with annual volumes of 100 – 1 000 t. In the coming two registration phases, products with a volume of 10 – 100 t per year or 1 – 10 t per year must be registered by 2018.



### **Rise in expenditure on and investments in environmental protection**

Investment in and spending on environment, safety, and health (ESH) measures are recorded separately, mostly because of health and industrial safety requirements as well as external environmental requirements such as stricter emission and wastewater limits. In addition, new production or product changes often require new construction or changes to existing facilities. These are recorded as the ESH component of overall investment. Although it goes without saying that ESH investment is made as cost-effectively as possible, it is an integral part of general investment planning and subject neither to a cost-benefit analysis nor a specific return-on-investment period.

ESH-related investment totaled about CHF 40 m in 2013, of which 45 % was spent on process and plant safety, approximately 15 % each on health/safety and fire protection, and about 25 % on environmental protection, focused on wastewater and air emissions. Total expenditure on operational ESH measures was similar to that of the year before, at more than CHF 190 m.

### **V. HEALTH AND SAFETY**

Process and occupational safety are a top priority for Clariant. The protection goals for the entire group as well as all safety aspects are monitored and reviewed on an ongoing basis. A comprehensive risk assessment of operations and products is a prerequisite for all business processes. Clariant is committed to preserving its employees' health by avoiding accidents as much as possible. Such measures include building up a comprehensive and long-standing safety culture featuring programs like AvoidingAccidents@Clariant, or avoiding disruptions to operations through detailed reporting of process and plant safety. Local and global emergency organizational structures are in place to ensure comprehensive emergency management. In addition, a system has been established that carefully tracks complaints received from stakeholders (employees, residents and other affected parties) and triggers their prompt resolution in justified cases.

### **Test more intelligently, act ethically**

Manufacturing, processing and using chemical substances or coming into contact with such substances can pose risks for people and the environment. For this reason, since 2007 the European Union (EU) has required all chemical substances produced and traded within the EU to be tested to determine their impact and the extent of this impact on people and environment. Far in excess of 50 000 substances are affected by this requirement. Several individual tests need to be conducted per substance in order to be able to draw reliable conclusions. These tests analyze whether a substance causes a local reaction (for example, inflammation of the skin), a toxic reaction (for example, poisoning or organ damage) or a sensitizing reaction (for example, a bodily reaction only after repeated contact with this substance). Animal testing is also required in almost all cases in order to determine the active profile of a particular substance.

The EU authority ECHA (European Chemicals Agency) in Helsinki coordinates the recording, assessment and continued approval of all chemical substances on the basis of the presented test results. To do this, it requests verifiable and authoritative statements from the chemical industry. It must be possible to fully comprehend the testing methods. The effects and interactions for a whole series of substances are already known from recent decades, in particular if they have already been produced in large quantities and thus already the subject of multiple tests. In such cases, further tests are not necessary. In addition, existing findings for a specific substance can often be transferred to other comparable substances, meaning that no new tests are re-

quired. With this in mind, chemical companies should exchange the results of their work wherever possible. The ECHA favors this approach to avoid animal testing as far as possible.

Act ethically, research innovatively. Clariant takes this one step further and has already begun searching for new ways of avoiding tests on animals as far as possible. One example of how it does this is with its inhouse developed Intelligent Testing Strategy (ITS). Ethical reasons are the primary driver of this complex procedure. Secondly, animal testing is more time-consuming and cost-intensive in the long run. And lastly, the tests only deliver the finding that something happens, but not why it happens. That is why, when it comes to research and development, Clariant does not satisfy itself simply with better and more innovative products, but instead uses ITS to conduct in-depth investigations into the underlying reasons.

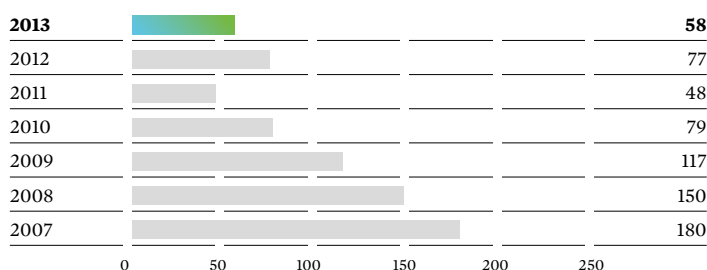
Not only does ITS allow the effects of chemical substances to be understood and documented in a way that can be reviewed and substantiated; it also produces suggestions for possible product improvements or for specific desirable product formulations. In the short term, however, as is frequently the case with high-performance methods, ITS leads to higher costs, some significantly so, with the result that it is not economically feasible to do away with traditional tests completely. Clariant will nonetheless continue to step up its efforts in this area, since over time the usability of the findings from ITS research will generate greater cost-effectiveness. For more information, see the Clariant Sustainability Report 2011, page 55 ff.

### Intensive efforts to ensure occupational safety

Efforts to prevent accidents at work are an essential part of Clariant's production activities and require continuous motivation of employees by line managers. The Clariant Employment Policy launched in 2012 governs such rules at a global level. Clariant launched the AvoidingAccidents@Clariant program, which aims to reduce the number of accidents and the consequences thereof, as far back as 2007. The result of this program and related efforts is reflected in the significantly declining number of accidents. In line with this trend, in 2013 Clariant saw a total of 58 work accidents involving 54 men and four women (down from 77 a year before) resulting in lost time of more than a day.

#### OCCUPATIONAL ACCIDENTS WITH AT LEAST ONE DAY'S WORK LOST

number of accidents

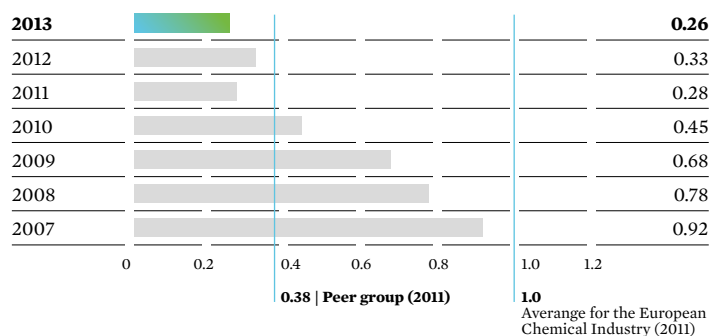


#### OCCUPATIONAL ACCIDENTS WITH AT LEAST ONE DAY'S WORK LOST

by region

|                    | Men | Women | Total |
|--------------------|-----|-------|-------|
| Worldwide          | 54  | 4     | 58    |
| Europe             | 36  | 0     | 36    |
| Greater China      | 7   | 1     | 8     |
| India              | 1   | 0     | 1     |
| Japan              | 0   | 0     | 0     |
| Latin America      | 5   | 0     | 5     |
| Middle East/Africa | 1   | 0     | 1     |
| North America      | 2   | 3     | 5     |
| Asia/Pacific       | 2   | 0     | 2     |

#### OCCUPATIONAL ACCIDENTS IN RELATION TO OUTPUT LTAR\*



\* LTAR = Lost Time Accident Rate (the ratio of the number of occupational accidents where at least one day's work was lost to every 200 000 hours of work)

| <b>DAYS OF WORK LOST DUE TO ACCIDENTS</b> in days |                         |       |       |       |       |       |       |
|---|-------------------------|-------|-------|-------|-------|-------|-------|
|   | <b>2013</b>             | 2012  | 2011  | 2010  | 2009  | 2008  | 2007  |
| Days  | <b>1152<sup>2</sup></b> | 1 431 | 1 115 | 1 188 | 1 931 | 2 182 | 3 128 |
| LWDR <sup>1</sup>                                 | <b>5.6<sup>2</sup></b>  | 6.2   | 6.5   | 6.8   | 11.2  | 11.3  | 15.9  |

<sup>1</sup> LWDR = Lost Workday Rate (the ratio of the number of days of work lost due to occupational accidents to every 200 000 hours of work)

<sup>2</sup> Excluding sites that were divested in the course of 2013.

| <b>NUMBER OF RECOGNIZED OCCUPATIONAL DISEASES AND DEATHS</b> |                      |      |      |      |      |      |      |
|--|----------------------|------|------|------|------|------|------|
|  | <b>2013</b>          | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
| Occupational diseases  | <b>2<sup>2</sup></b> | 1    | 5    | 7    | 9    | 9    | 9    |
| Fatal accidents <sup>1</sup>                                 | <b>0</b>             | 0    | 0    | 1    | 0    | 2    | 0    |

<sup>1</sup> Including accidents unrelated to work with chemicals, such as road accidents

<sup>2</sup> Occupational diseases in relation to 200 000 hours of work = 0.009

AvoidingAccidents@Clariant once again resulted in an appreciable decline in accident-induced downtime in the year under review. The groups's Lost Time Accident Rate (LTAR) fell to an all-time low, from 0.33 in 2012 to 0.26 in 2013. Before AvoidingAccidents@Clariant was introduced, this rate was above one. LTAR refers to the number of accidents with lost work time of at least one working day per 200 000 operational working hours.

Parallel to the developments outlined above, the number of days lost per year through accidents at work fell from 1 431 in 2012 to 1 152 in the period under review (coupled with a simultaneous reduction in FTE), bringing it well below the figure of 4,038 recorded in 2006. Simultaneously, the Lost Workday Rate (LWDR, i.e., the number of days of work lost due to occupational accidents at work per 200 000 working hours) fell from 6.2 to 5.6. No deaths for operational reasons were recorded in 2013. Two male employees suffered a newly registered occupational disease in the period under review.

In 2013, Clariant recorded for the first time the number of accidents befalling temporary workers employed by the company. Within this group of employees, there were 22 accidents (all affecting men), corresponding to an LTAR of 0.75. No occupational diseases were reported.

**OCCUPATIONAL ACCIDENTS AFFECTING TEMPORARY WORKERS WITH AT LEAST ONE DAY'S WORK LOST** by region

|                         | Men | Women | Total |
|-------------------------|-----|-------|-------|
| Worldwide               | 22  | 0     | 22    |
| Europe                  | 8   | 0     | 8     |
| Middle East/Africa      | 0   | 0     | 0     |
| South-East Asia/Pacific | 0   | 0     | 0     |
| Greater China           | 0   | 0     | 0     |
| India                   | 1   | 0     | 1     |
| Japan                   | 0   | 0     | 0     |
| North America           | 1   | 0     | 1     |
| Latin America           | 12  | 0     | 12    |

**OCCUPATIONAL ACCIDENTS AFFECTING TEMPORARY WORKERS IN RELATION TO OUTPUT** LTAR\*

|                        | Men  | Women |
|------------------------|------|-------|
| Worldwide              | 0.75 | 0.00  |
| Europe                 | 1.71 | 0.00  |
| Middle East/Africa     | 0.00 | 0.00  |
| Southeast Asia/Pacific | 0.00 | 0.00  |
| Greater China          | 0.00 | 0.00  |
| India                  | 0.42 | 0.00  |
| Japan                  | 0.00 | 0.00  |
| North America          | 1.08 | 0.00  |
| Latin America          | 0.71 | 0.00  |

\* LTAR = Lost Time Accident Rate (the ratio of the number of occupational accidents where at least one day's work was lost to every 200,000 hours of work)

**Continued success of AvoidingAccidents@Clariant**

The improvements in accident numbers obtained with AvoidingAccidents@Clariant and the overall extremely low accident rate demonstrate the success of the extensive and continuous activities carried out to prevent accidents and limit potential effects. Nevertheless, in the future the efforts made to ensure that employees pay attention to safety at the workplace will need to be continued and further reinforced so that the safety level that has been achieved is maintained permanently.

The basis for the accident prevention program is a comprehensive analysis of the causes of accidents at Clariant. This study confirmed previously known facts: only 5 % of all accidents can be attributed to technical problems. The main cause of accidents, at 75 %, is conscious and unconscious misconduct, both on the part of employees and line managers. Clariant has decided to act first in relation to conscious misconduct, and the provision of ongoing training and information has raised awareness within the workforce in this respect.

Moreover, the study revealed the little-known fact that in around 20 % of cases, missing or inadequate organizational preventative measures or a lack of exemplary behavior by line managers were the cause of the accident. This being the case, AvoidingAccidents@Clariant first and foremost imposes duties and obligations on executives and managers.

In addition, the health of Clariant employees is regularly examined. Depending on the workplace, sometimes extensive health checks are carried out in order to detect signs of illness as early as possible. For some activities, special health certificates and vaccinations are required, and special attention is paid to ensure that these are obtained and given. These programs combined mean that Clariant already goes far beyond legal requirements, and therefore no formal commitment to third parties is required.

The prevention of occupational diseases was updated once again in January 2013 in the Clariant directive »Protection against risks to health.« This directive covers all potential risks at Clariant, both in its chemicals business as well as in other areas. The aim of the directive is to protect the safety and health of all employees and visitors. For this purpose, chemical, physical, biological, ergonomic and psychosocial risks are recorded that can be associated with work, working environment or emergency situations.

Workplaces carrying a risk of exposure to occupational diseases have been identified and appropriate protective measures defined. These are primarily workplaces with a high level of noise exceeding 85 dB (A) as well as those that handle substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR substances) and dust. The directive stipulates strict regulations and minimum requirements for these types of risks. In addition, regular technical controls and measurements are carried out at the workplace and regular health checks conducted for employees.

### **Health takes top priority**

The health of employees is a primary concern for Clariant. For this reason, Clariant offers discounted health programs at various sites, and attaches great importance to protecting employees from workplace accidents. In 2012, Clariant launched the Clariant Employment Policy, which governs such rules at the global level. Managers make a decisive contribution to safety at the workplace. They are responsible for training employees in safety, and determine through their own behavior the extent to which employees identify with such training.

As of end-2013, the program had been implemented or initiated at 79 production sites worldwide. More sites will be included in the coming years, depending on their size and the accident rate. The results are discussed with the responsible managers at the site and concrete implementation plans agreed. At the same time, the site managers undertake the implementation of the goals of Avoiding-Accidents@Clariant. Appropriate training in the form of Awareness Workshops then prepares managers for the necessary changes. Clariant employs 30 occupational safety trainers worldwide for this purpose, and a program designed specifically for office staff was introduced for the first time in 2014.

The implementation of training of this type is also a clear signal by the local management that it wishes to improve workplace safety. Not only do employees learn how to behave more safely and prevent accidents through targeted training courses, but – by also involving managers in the process – a strong emphasis is placed on the idea of »leading by example.« Safety is first and foremost a question of sensitivity to the dangers surrounding one's own work. For that reason, exemplary conduct and regular training is a must for managers and all employees. While it is therefore not necessary to make special agreements with employee interest groups, in some regions, for example in countries in North and South America, explicit regulations are drawn up with the relevant trade unions.



Clariant operated a total of 174 production sites worldwide in the year under review (including those operations that were closed over the course of the year). Of these, 163 have a working committee for safety issues. The remaining 11 sites have not set up an appropriate committee due to their very low headcounts. This means that, in the final analysis, over 95 % of staff employed in production are represented by a safety committee. Taking the workforce as a whole (production, procurement, sales, management), more than 85 % of staff are represented. At Clariant, safety issues are also addressed in committees that are not primarily tasked with this topic.

## VI. SUSTAINABILITY IN THE SUPPLY CHAIN

Sustainability criteria form an important part of Clariant's business relationships. Clariant developed and deploys an extensive set of criteria to select and manage its suppliers, outsourcing partners, and service providers. This selection is not only based on economic criteria, but on non-financial aspects as well, taking sustainability aspects clearly into account in the selection process. Clariant's sustainability standards are incorporated into its Procurement strategies, policies, and general guidelines (Code of Conduct for Suppliers).

In addition, Clariant works with its suppliers and partners to improve the entire supply chain from a sustainability perspective as well. This includes, for instance, optimized energy and transport management, increased use of renewables, and active waste management. In addition, Clariant has launched a global program to develop and realize sustainability projects with suppliers. These projects focus on risk, resource, and waste avoidance and are an integral part of Clariant's business relationship with its suppliers. These efforts and results contribute in developing Clariant's suppliers and customers into a »global Clariant network« (see page 48).

### Broad range of suppliers

Clariant produces and markets specialty chemicals for its customers. To this end, it requires raw materials, packaging, capital equipment, services, and other inputs, such as energy, sourced from suppliers throughout the world. Clariant procures most of its requirements directly from the relevant producers. Clariant is not particularly dependent on any of its suppliers. Of the total of almost 10 000 raw materials procured, the top five products make up around 25 % of the total volume for raw materials, about 150 products account for about 50 % of the total.

Around 1 500 products account for some 90 %. Around 45 % of the raw materials procured derive from oil. About 10 % of all products procured are natural and renewable raw materials, a percentage that has been growing year by year. Clariant's spend is about CHF 2 b per year for raw materials, and about CHF 1.2 b per year on capital equipment, energy and services.

**SALES BY REGION** in CHF m

|                             | 2013  | 2012  | 2011  | 2010  | 2009  | 2008  | 2007  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Europe, Middle East, Africa | 2 773 | 2 765 | 3 671 | 3 529 | 3 334 | 4 313 | 4 616 |
| North America               | 996   | 956   | 958   | 860   | 792   | 994   | 1 102 |
| Latin America               | 931   | 903   | 1 144 | 1 199 | 1 138 | 1 261 | 1 262 |
| Asia/Pacific                | 1 376 | 1 414 | 1 597 | 1 532 | 1 350 | 1 503 | 1 553 |

**Global sales markets**

Clariant markets and sells its products across the entire world. In recent years, Clariant's business has been more geographically diversified with significant sales growth in emerging markets. This increase was particularly pronounced in Asia/Pacific and Latin America. While only 17 % of sales were generated in Asia/Pacific in 2005, this figure increased to 24 % in 2013. In particular, Clariant's sales in China have grown from 5,4 % to 7,5 % during the same 8-year period. The share of Latin America increased from 13 % to 16.5 % during the same period. This has shifted significant procurement volumes to those emerging markets and, consequently, further and significantly increased Procurements efforts in the areas of sustainability.

**Sustainability check on suppliers**

Clariant assesses suppliers through an extensive program, also based on sustainability factors such as working conditions, respect for human rights, complaint management, safety standards, and financial creditworthiness. Clariant views the existence of certified management systems and sustainability policies and related deployment, as critical supplier evaluation criteria. To become a long-term Clariant partner, potential suppliers are required to share relevant information on social and environmental issues. Relevant suppliers are also requested to participate in Clariant's supplier assessment process. To monitor how suppliers deploy Clariant's standards, Clariant also carries out on-site audits. To further strengthen its sustainability program towards suppliers, Clariant's »Code of Conduct for Suppliers« provides a reference framework, and outlines expectations and requirements on business partners in terms of social and environmental protection.

### Code of Conduct for Suppliers

When procuring raw materials or other goods and services, Clariant's Procurement organization is expected to apply the same legal, ethical and moral standards in the selection of suppliers that Clariant applies in its own manufacturing operations. These standards form the basis of Procurement's Supplier Code of Conduct. Clariant expects its suppliers and partners to abide by this Supplier Code of Conduct and make efforts to keep any environmental risk arising from business activities to a minimum. Clariant's Procurement will monitor the behavior of its business partners in respect to its Supplier Code of Conduct. In the event of lack of compliance, Clariant reserves the right to determine the implications in the business relationship with the supplier.

Key aspects of the Code of Conduct for Suppliers are:

- Human rights: To safeguard the health and safety of their employees, suppliers must comply with the guidelines on workplace safety and the International Labor Organization's international standards on occupational health and safety.
- Anti-discrimination: Suppliers may not discriminate against any employees on the basis of race, social background, ethnicity, nationality, age, religion, gender, sexual orientation, political opinions or disability.
- Forced labor and child labor: Suppliers may not allow any forced labor or child labor and must, in particular, comply with ILO conventions 138 and 182.
- Freedom of association: Suppliers must grant the right to collective bargaining (the right to strike and trade union membership) and practice fair remuneration policies (including adherence to the relevant legislation on working hours, salaries and overtime pay)
- Environment: Suppliers must adhere to safety standards on the protection of nature and people, particularly local residents of nearby production sites.
- Product stewardship: Suppliers are expected to control the environmental impact of the goods and services they produce in their development, production, sales, utilization, and disposal processes.
- Resource efficiency and climate protection: Suppliers commit to continuously reducing waste and emissions into air, soil, and water, and to using energy-efficient and sustainable technologies.
- Competition and business relationships: Suppliers must guarantee law-abiding behavior (full compliance with international, national and local legislation), fair competition (adherence to commercial and competition law, as well as adequate monitoring and rejection of bribery and other unfair advantages), avoidance of conflicts of interest, confidentiality (data protection and information security) and transparent financial reporting, as well as accurate bookkeeping and rejection of money laundering.

In the course of 2013, Clariant assessed some 400 suppliers of raw materials. Suppliers are assessed and audited, as required. On-site audits are largely planned based on the results of the supplier assessments. Both Clariant employees and external auditors participate in these site visits.

In order to further strengthen and expand its reach Clariant has decided to outsource part of its supplier sustainability audits (including environmental and social assessments) to third-party service providers.

Within Clariant's supplier qualification process, ISO and other certifications, and commitment and participation to initiatives such as »Global Compact« play a major role. In fact, they represent a clear indication of Clariant's suppliers in terms of active and substantial engagement and adherence to sustainability principles, programs, and deployment.

In 2013 Clariant's extensive audit system focused on suppliers in the key growth regions of China and India. Clariant's supplier audits cover a wide range of topics including financial and ecological factors, as well as the working conditions of supplier's employees and safe transportation of products.

Clariant views its suppliers as partners. In order to strengthen this vision and approach, Clariant hosts a variety of events such as the »Supplier Days«. Through them, Clariant presents its sustainability program and objectives, and engages with its suppliers in the deployment and realization of activities. Highly successful events were held in China and India, in particular. In these countries, not only did participation exceed 80 %, but there is also a strong spontaneous demand coming from suppliers to attend these events.

## Globally diversified procurement

Corporate policy concerning local suppliers. Clariant prefers to procure goods and services within the region in which its respective operating facilities are located, as far as qualitatively compatible, technically feasible, and economically justifiable. This way, Clariant's activities support the economic development of the regions concerned. This is particularly relevant and encouraged especially in emerging markets.

### PROCUREMENT VOLUME BY REGION

in CHF m

|                               | 2012  | 2013  |
|-------------------------------|-------|-------|
| <b>Asia/Pacific</b>           | 378   | 464   |
| of which procured locally     | 338   | 421   |
| number of suppliers           | 1707  | 1944  |
| <b>Europe</b>                 | 1219  | 1327  |
| of which procured locally     | 1132  | 1233  |
| number of suppliers           | 1587  | 1741  |
| <b>Latin America</b>          | 371   | 378   |
| of which procured locally     | 240   | 243   |
| number of suppliers           | 839   | 880   |
| <b>Middle East and Africa</b> | 31    | 63    |
| of which procured locally     | 8     | 25    |
| number of suppliers           | 34    | 338   |
| <b>North America</b>          | 141   | 270   |
| of which procured locally     | 133   | 238   |
| number of suppliers           | 317   | 516   |
| <b>Total</b>                  | 2140  | 2502  |
| of which procured locally     | 1852  | 2159  |
| number of suppliers           | 4 486 | 5 422 |

Investment agreements that include human rights clauses/have undergone human rights screening (UNGC). All investments with a total volume of more than CHF 1 m must be approved by the Investment Subcommittee of the Executive Committee (EC). The Subcommittee will make its decision based on financial, strategic and sustainability criteria, the last of which also include human rights aspects.

Clariant rejects any form of child labor with the aforesaid workplace directive and strictly complies with local regulations concerning legal minimum age requirements for work permits. ILO convention numbers 138 and 182 are expressly acknowledged as the minimum standard here. Clariant is not aware of cases of child labor in the company or at its suppliers. Similarly, Clariant rejects any form of forced labor or slavery. Clariant is also not aware of any cases of forced labor or slavery in the company.

## VII. PRODUCT RESPONSIBILITY

Clariant attaches particular importance to protecting the environment and nature. The company's Product Stewardship Organization ensures that the product portfolio corresponds to the international environment and safety standards as specified, for example, by REACH or the Global Product Strategy. Thus, Clariant has not yet had to close or avoid any business areas due to potential environmental risks. Clariant would not hesitate to separate itself from products if the company found that they proved a risk to the environment.

Clariant is convinced that a company cannot enjoy economic success on a sustained basis without knowing the exact needs of its customer base. Innovation and customer focus are extremely important in this respect. Clariant is constantly developing new and improved products and services to add value for its customers and the environment. At the same time, Clariant makes sure that employ-

ees, customers, the general public and the environment can rely on the safety of its products throughout the entire product lifecycle. As part of its active product portfolio management, Clariant is also attempting to reduce the toxicity of its products constantly by replacing existing hazardous chemicals with those that are safer.

As part of the product safety and product responsibility programs, Clariant is constantly looking for substitutes for and alternatives to hazardous substances. This not only includes participating in activities within the EU registration program REACH, but also in Clariant internal initiatives such as EcoTain®, which aims to define product design while taking into consideration the entire product lifecycle. At the same time, innovation policy is aiming at future societal needs. In terms of animal protection, there are already strict external and internal guidelines in place to govern the unavoidable issue of animal testing. Moreover, Clariant is continually working on developing innovative alternatives to animal testing as part of its Intelligent Testing Strategy.

Clariant constantly monitors and carries out regular reviews on all business aspects and processes, including issues related to Responsible Care®, in order to ensure that they continue to conform to the company's commitment to sustainability. Quality and performance monitoring is an integral part of the company's business processes and strategic planning.

Clariant is making ongoing efforts to improve corporate performance in terms of safety, health and environmental protection, as well as product quality with respect to sustainability. In addition to optimizing product features relevant to safety and the environment, emphasis is placed on communication with customers and other stakeholders. In its pursuit of the highest possible level of transparency, Clariant publishes its position papers relating to sustainability on its internet page ([www.sustainability.clariant.com](http://www.sustainability.clariant.com)). The values Performance, People, Planet, are paramount for Clariant. Internally developed assessment systems such as EcoTain promote modern innovations to meet actual and future societal needs.

Clariant maintains contact with customers at all times, thus ensuring that they receive support in the application and use of Clariant products. Laboratories are on hand to solve any specific problems. The service offering also features comprehensive product information, in particular in respect to optimum and safe application, health risks, waste disposal and handling packaging. Safety data sheets containing the relevant substance data, information on the safe handling and storage of products, and measures in the event of incidents such as product spillages/release and fire are provided by Clariant to all parties involved in the further handling of the substances.

Clariant provides customers with a special internet-based REACH Dialog System (RDS) enabling them to obtain information about the supply chain. Here, every Clariant customer is able to securely receive REACH-relevant information on the specific products that they have purchased. The purpose of the system is also to satisfy the stringent REACH communication requirements concerning the use of products. Using this system, the users of Clariant products in the customer chain can check and, if necessary, update or change the REACH-relevant information provided by Clariant promptly and reliably. Clariant is thus providing customers with a system in order to ensure that all of the relevant information is communicated simply and completely throughout the customer chain. This system is constantly being improved, simplified and adjusted in line

with legal requirements. This has been met with positive reactions from customer groups and it is also in compliance with the recommendations of national and European associations.

In the year under review, there have also been no incidents – neither offenses nor criminal investigations – related to product-related health and safety issues or on account of breaches against the applicable law and voluntary codes of practice in relation to information about the labeling of products and services.

Clariant is also dealing with goods that are subject to different trade control regimes such as chemical weapons conventions or the dual-use regulation.

All of the respective national and international trade control regimes as well as embargo regulations are monitored by a global trade control network within the Clariant organization. Based on the IT system together with organizational control checks, all deliveries are controlled in order to ensure trade compliance. Thus, for example, controlled goods can only be delivered if the necessary permits are obtained from the relevant authorities as well as end-user statements from the customer. Clariant makes sure that all trade control requirements are fulfilled.

There were no incidents – neither offenses nor criminal investigations – on account of breaches against applicable law and voluntary codes of practice in relation to information about the labeling of products and services. Similarly, Clariant is not aware of any incidents in which there have been infringements of laws/regulations in terms of the procurement, use or supply of products and services. There have also been no complaints regarding breaches of data protection laws in the year under review, nor has there been any loss or theft of customer data.



## VIII. PERSONNEL DEVELOPMENT

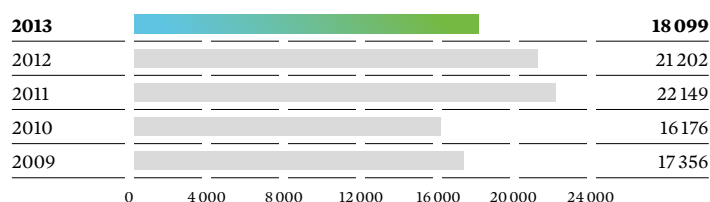
A responsible approach to dealing with customers, fellow human beings, and the environment strengthens partnerships with key groups which determine Clariant's success – both in the current market environment and in the future. The most important element in this process, however, are the employees, as their performance alone determines the economic strength and competitiveness of Clariant. In recent years, Clariant has therefore drawn up numerous employee advancement and development programs, with a wide range of services.

Both attracting qualified employees and ongoing employee training and development are therefore of great importance to Clariant. Special programs and facilities have been established to this end, such as the Clariant Academy. Clariant provides its employees with the skills and resources they need to work in an even more efficient and innovative way. The company has already set exemplary standards in this area with numerous (training) programs. Clariant also aims to become more attractive as an employer and keep employees within the company for as long as possible through measures including a modern family policy and special demography management.

## Portfolio optimization affects the workforce

At the end of 2013, Clariant employed 18 099 full-time employees.

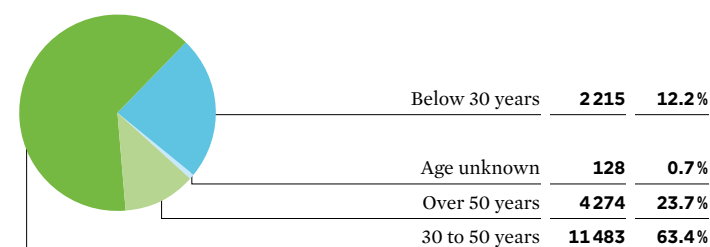
### CHANGES IN THE NUMBER OF FULL-TIME EMPLOYEES as of 31. December



### THE 2013 WORKFORCE BY AGE GROUP

Information based on full-time employees (FTE)

Total: 18 099



Half of the workforce's employment contracts are based on agreements reached with staff representatives. Managerial positions are generally not included in such agreements. Clariant is generally committed to paying its employees fair and appropriate compensation in the form of wages and salaries, social components and other perks. This compensation should meet minimum statutory standards and in principle exceed them in each country in which Clariant is active.

In 2013, 4 700 employees left Clariant, 2 700 of them through the sale of parts of the company. The remainder, about 11 % of the workforce, either left voluntarily, were made redundant on organizational or operational grounds (approx. 400), or left due to retirement, the termination of fixed-term contracts, or other reasons (approx. 1 000 in all). Over the same period 1 496 employees newly joined the company. Of the approximately 2 000 people leaving the workforce, 29 % are younger than 30, 42 % are between 30 and 50 years old and 29 % are older than 50. Of the approximately 1 500 people entering the workforce 43 % are younger than 30, 48 % are between 30 and 50 years old and 6 % are older than 50 years.

#### THE STRUCTURE OF THE CLARIANT WORKFORCE IN 2013

| Information based on full-time equivalents (FTE) | total         | in %         |
|--|---------------|--------------|
| <b>Employees</b>                                 | <b>18 099</b> | <b>100,0</b> |
| Male   | 14 252        | 78,7         |
| Female   | 3 848         | 21,3         |
| <b>Employment relationship</b>                   |               |              |
| Full-time employees                              | 17 786        | 98,3         |
| Male   | 14 032        | 77,5         |
| Female   | 3 754         | 20,7         |
| Part-time employees                              | 365           | 2,1          |
| Male   | 57            | 0,3          |
| Female   | 308           | 1,8          |
| Temporary employees                              | 314           | 1,7          |
| Male   | 220           | 1,2          |
| Female   | 94            | 0,5          |
| <b>Type of employment</b>                        |               |              |
| Employees  | 10 751        | 59,4         |
| Male   | 7 459         | 41,2         |
| Female   | 3 292         | 18,2         |
| Wage-earners                                     | 7 349         | 40,6         |
| Male   | 6 793         | 37,5         |
| Female   | 556           | 3,1          |

#### TOTAL WORKFORCE BY REGION & GENDER

| Region                          | FTE           | in %<br>region | in %<br>total |
|---------------------------------|---------------|----------------|---------------|
| <b>Asia</b>                     | <b>4 234</b>  | 100            | 23            |
| Male                            | 3 408         | 80             | 18            |
| Female                          | 826           | 19             | 4             |
| <b>Europe</b>                   | <b>8 537</b>  | 100            | 47            |
| Male                            | 6 618         | 77             | 36            |
| Female                          | 1 919         | 22             | 10            |
| <b>Latin America</b>            | <b>2 589</b>  | 100            | 14.3          |
| Male                            | 2 102         | 81             | 11            |
| Female                          | 487           | 18             | 2             |
| <b>Middle East &amp; Africa</b> | <b>1 029</b>  | 100            | 5             |
| Male                            | 831           | 80             | 4             |
| Female                          | 198           | 19             | 1             |
| <b>North America</b>            | <b>1 708</b>  | 100            | 9             |
| Male                            | 1 292         | 75             | 7             |
| Female                          | 416           | 24             | 2             |
| <b>Grand Total</b>              | <b>18 099</b> | 100            | 100           |

No intentional differentiation is made in the company benefits provided by Clariant according to the type of employment contract, but this does not exclude differences depending on the individual case and local circumstances. The decisive component in this is the common market practice checked within the framework of continuous benchmarking. However, a systematic survey has yet to be undertaken.

Of Clariant's 18 099 employees at the end of 2013, a total of 439 took advantage of the opportunity to take parental leave in the year under review. Of these, 180 were female and 259 male. At the end of their parental leave, 63 % of the women and 88 % of the men returned to their place of work.

With a view to providing parents of new-born babies with the opportunity to combine work and private life without sacrificing career opportunities within the company, Clariant introduced a Family Support Policy in 2012. The relevant guidelines – some of which go beyond the legal requirements – apply worldwide to the entire company. Apart from that they guarantee a comparable position to all mothers upon their return to work, up to one year following the birth or adoption of a child.

Employees are promptly informed of all significant operational changes by the company. In addition to the regular and ad hoc information provided to all employees via the intranet as well as information letters from the CEO and management, the company complies with all local statutory and operational requirements in regard to the provision of information to employee representatives and employees. Information is also disseminated about the reporting lines for the relevant hierarchical levels. Moreover, voluntary corporate information sessions are regularly held.

### **Initial and continuing vocational training**

Clariant considers it important that its employees have the opportunity to realize their potential and develop a successful career. In addition, Clariant believes that motivating and training its employees will contribute significantly to the company's success. For this reason, based on the principle of equal treatment and equal rights, Clariant offers its employees internally and externally conducted specialist and interdisciplinary training and qualification measures.

### **Family policy**

In 2012, Clariant initiated a program to promote more family-friendly job opportunities. As part of this program, all mothers are guaranteed a comparable position upon their return to work up to one year following the birth or adoption of a child. For the two years following the birth or adoption, Clariant grants mothers ten days of paid leave for family purposes, in addition to their standard annual leave. Fathers are also entitled to the same benefit after the birth of their child.

## EMPLOYEES WORLDWIDE

| Nationality   | FTE           | in %         |
|---------------|---------------|--------------|
| <b>Total</b>  | <b>18 099</b> | <b>100.0</b> |
| German        | 4 789         | 26.5         |
| Chinese       | 1 351         | 7.5          |
| Brazilian     | 1 175         | 6.5          |
| French        | 1 023         | 5.6          |
| Indian        | 969           | 5.4          |
| Indonesian    | 880           | 4.9          |
| Italian       | 776           | 4.3          |
| Mexican       | 558           | 3.1          |
| Turkish       | 391           | 2.2          |
| Spanish       | 386           | 2.1          |
| South African | 385           | 2.1          |
| Columbian     | 293           | 1.6          |
| Japanese      | 285           | 1.6          |
| Swiss         | 256           | 1.4          |
| Ukrainian     | 254           | 1.4          |
| Thai          | 214           | 1.2          |
| Venezuelan    | 184           | 1.0          |
| Argentine     | 173           | 1.0          |
| British       | 158           | 0.9          |
| Malaysian     | 157           | 0.9          |
| Polish        | 147           | 0.8          |
| Pakistani     | 113           | 0.6          |
| Chilean       | 96            | 0.5          |
| Swedish       | 94            | 0.5          |
| Taiwanese     | 93            | 0.5          |
| Singaporean   | 91            | 0.5          |
| Others*       | 2 811         | 15.5         |

\*including all employees in the United States and Canada, whose nationality is not recorded

This is defined globally by the Clariant Employment Policy. Each individual employee is supported in terms of their ability and desires, their efforts as regards the quality of their work and compliance with environmental, safety and health protection laws and regulations, both individually and within teams. Global consolidation of all educational and training programs according to scope and employee group or gender has not taken place as yet. Therefore, no reliable overall indication of the average scope of the training can be given on the basis of the currently available information. Clariant is considering the feasibility of centrally controlling training measures, including global recording of the relevant data.

Clariant considers the continuous training of employees within the framework of the internal talent management process important, partly because it produces high-performing young professionals. The Clariant Employment Policy provides the basis for this. Clariant is setting out to establish and sustain a high-performance culture which reflects our vision of becoming the world's leading specialty chemicals company. In order to drive the company forward into the future, we rely on well-trained and highly motivated employees.

The Clariant Academy began fulfilling this task back in 2006. In the spring of 2013 the Academy was adapted to the broader set of duties, restructured, and the range of training courses expanded considerably. The Clariant Academy is designed firstly to teach management skills and techniques, secondly to develop and improve managerial and organizational skills, thirdly to optimize core business processes (Functional Excellence), and fourthly to train employees in managing change. This new range of courses supplements the other initial and continuing training programs already available at Clariant.

In 2013, more than 10 000 employees took part in Clariant training courses, attending a total of about 117 000 hours of training. Clariant Academy programs accounted for almost a third of these, the focus being on leadership training courses, in which about 800 employees attended some 26 000 sessions. More than 80 000 hours of training were provided by local advanced education programs focusing

mainly on language courses, communication and presentation skills, performance management and business administration. Employees also attended courses in information technology (IT), environment/safety/health (ESH), law and technology. However, because data about these is not gathered centrally we do not have figures for these courses yet.

### Addressing demographic change

In late 2010, Clariant launched the Demography Management project as a pilot project at its German sites so as to gain greater understanding of demographic change. The aim of the project is to keep staff with the company as long as possible and to secure a notable increase in employer appeal. By the end of 2013, about 5 000 employees had been involved in the pilot project.

Demography Management consists of the following analytical and action fields: »Health management,« »family & career,« »workplace of the future« and »knowledge transfer between different generations« of staff at Clariant. The basis of the project is the exact analysis of the employee structure in terms of education, functions and activities, age, health and, in particular, the needs of employees. Based on the findings, specific programs and initiatives are being developed with the help of which notable improvements in the aforementioned fields can be achieved.

Health Management covers a whole range of services, from regular health check-ups, sports and »healthy workspaces« all the way to active breaks and massage. Management of Family & Career covers several points such as Clariant's Family Support Directive, part-time positions, emergency childcare provision, holiday programs for employees' children and comprehensive advice and support services for families (from third-party service providers).

In the year in review Clariant developed long-term accounts for its employees in Germany. These are working-time accounts to which employees can add income or working time to finance paid vacation (even for extended periods). This gives employees greater flexibility in planning their lives, for instance enabling them to take paid vacation before retirement. In 2013, Clariant also expanded its employee childcare offering following the extremely successful launch of the program at our Rhine-Main location.

Clariant promotes further training and provides young people with sound apprenticeships. This was precisely what Clariant had in mind when it established the Clariant Academy as an additional educational organization that brought under a single roof all the training programs that address Clariant's values, mission and strategic goals.

An essential tool for customizing the training measures offered is the internal talent management process at the local, regional and global levels. During Talent Reviews, strengths and development areas are systematically identified and individual development plans drawn up. One of the aims of the 360-degree feedback process and the annual performance dialog is to reflect the ongoing development potential of employees and agree on appropriate development goals and activities. Clariant considers the continuous training of employees within the framework of the internal talent management process important as it ensures well-functioning succession planning within the company.

Demographic change, especially in industrialized countries, means that companies must think early about attracting qualified staff. This happens, on the one hand, by increasing the appeal as an employer and, on the other hand, by encouraging, developing and supporting staff in order to keep them with the company for as long as possible.

In 2012, Clariant began the phased introduction of a new comprehensive performance management process for its employees. By the end of 2013, about 1 060 employees at the highest five managerial levels had been included in this (about 6 % of the total workforce) as well as 4 000 employees at lower levels of the hierarchy, accounting for about 22 % of staff. This process will be expanded in 2014, when a further 920 management-level and about 6 500 lower-level employees will be involved. This will then account for almost 70 % of all employees, of whom 69 % will be male and 31 % female. The expansion of the process to include the remaining target groups is scheduled for 2015. The Performance Management System focuses on the following levels: defining and evaluating individual objectives throughout the year, talent management and development plans, as well as the implementation of corporate values and conduct.

### **Diversity and equal opportunities**

In 2013, the Board of Directors of Clariant consisted of three Swiss citizens, three German citizens, one British, one Austrian and one US/Swiss citizen. The members of the committees were members of the Board of Directors. The Executive Committee consisted of four German citizens. The members of the Board of Directors were all at least 44 years old (average age: 49) and the members of the Executive Committee were all at least 48 years old (average age: 53). Clariant has not introduced any specific quotas for women, specific nationalities, ethnic minorities or special age groups for the Board of Directors and Executive Committee. All the candidates are evaluated and selected on the basis of the same list of criteria. All the members of the Board of Directors and the Executive Committee are male.

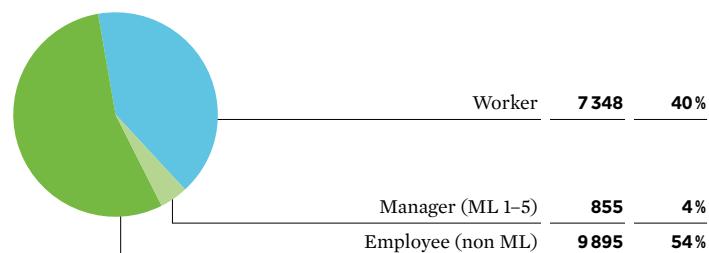


**EMPLOYEES BY CATEGORY AND GENDER**

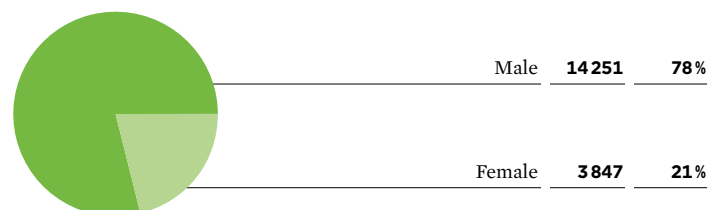
| Employee Category  | Gender | FTE           | Percent    |
|--------------------|--------|---------------|------------|
| Manager (ML 1–5)   | Female | 91            | < 1        |
|                    | Male   | 763           | 4          |
| Employee (non ML)  | Female | 3200          | 17         |
|                    | Male   | 6694          | 37         |
| Worker             | Female | 555           | 3          |
|                    | Male   | 6793          | 37         |
| <b>Grand Total</b> |        | <b>18 099</b> | <b>100</b> |

**EMPLOYEE CATEGORY**

Total: FTE 18 099 / 100 %

**EMPLOYEE GENDER**

Total: FTE 18 099 / 100 %



Clariant's global employment policy strives for a diverse workforce and aims to find the candidates best suited for an open position. Clariant is a non-discriminatory employer, hiring and promoting employees based solely on the qualifications and skills required for the work. The recruitment of employees is based only on their suitability for the open position and their individual potential for a successful future at Clariant – in line with the corporate strategy and objectives. In 2013, half of the individuals hired at the top four management levels were citizens of the country in which the hiring Group division was located.

**Wages and minimum pay**

Clariant pays wages and salaries that are determined by local relevant competitive markets rather than by legally defined minimum wages. For this reason any minimum wage ratios are not reflected.

**No sex discrimination on pay**

Globally, the average basic salary of female employees is 93 % of that of the average male employee. That's a slight improvement over last year's figure of 92 % and also reflects a reaction of the systemic approach to regulation, this means that performance and position in range of salary are important values in determining salary development. However, the remaining difference cannot be explained as simply systematic misallocation, rather it is a reflection of the relatively low number of women in managerial positions, which is why the average is lower.

### **Coverage of the defined benefit plan obligations**

Pension and other employee benefit plans are monitored globally by Clariant for relevance, compliance, costs and suitability as a valuable employee benefit. Clariant is aware of the significance of these pension and other benefit plans as a way of retaining staff. The staff retention value of pension and benefit plans is understood and consequently benefits are periodically benchmarked to be consistent with current typical practice in each country. Amending and revising pension plans is difficult and the impact on employees as well as any consultation requirements are always considered before any changes are implemented. The accounting and financial consequences of these pension and benefits plans can be found on page 125 of the 2013 Clariant Annual Report.

### **Complaints about working practices**

Clariant supports freedom of association. As part of this, it respects the right of entitled employees to join unions and to be represented by representatives of these unions internally and externally in accordance with the applicable national or local laws and practices. Clariant knows of no cases in which freedom of association or the right to collective bargaining have been seriously jeopardized or even breached.

Clariant rejects any form of child labor and strictly complies with local regulations concerning legal minimum age requirements for work permits. ILO convention numbers 138 and 182 are expressly acknowledged as the minimum standard here. Clariant is not aware of cases of child labor in the company or with its suppliers. Similarly, Clariant rejects any form of forced labor or slavery. Nor is Clariant aware of any cases of forced labor or slavery in the company or any cases in which the rights of indigenous people were violated.

Clariant is aware that a varied workforce is of great value to the company. Consequently, Clariant does not tolerate any discrimination based on the race, ethnicity, sex, religion, world view, a disability, age or sexual identity of employees – either within the company or by business partners. None of Clariant's national companies has reported any breaches of this principle to date. In order to document its societal commitment Clariant has also adopted a suitable workplace directive («Clariant Employment Policy») on these issues.

Clariant currently has no Group-wide notification and reporting system in the event of legal action or complaints in respect of human right breaches. However, in 2011 plans were started for one such global system. So far only the locations in South Africa, Malaysia and Australia have introduced a formalized data recording system for legal action on account of human rights breaches and only in the event of complaints from employees. In 2013, Clariant received no internal complaints of breaches of human-rights issues.

In the reporting period Clariant processed 59 complaints from employees regarding breaches of occupational safety or labor law, 56 of which were received in 2013. Of these 59 complaints, 34 were processed conclusively. A further 24 complaints processed in 2013 were from earlier reporting periods. Clariant has no global complaints body. Rather it espouses a culture of trust and feedback. Complaints are received via line managers or works councils within the relevant statutory framework. Beyond this, if the aforementioned procedure does not achieve the desired outcome, complaints can also be made through Compliance (i.e. reported to the regional HR department or compliance officer or Group Compliance Officer). The relevant mechanisms as well as the reporting itself are defined internally for HR staff.

# Reporting limits AND REPORTING STRUCTURE

## STRUCTURE AND LIMITS OF THIS REPORT

Clariant has based both the structure of this Sustainability Report and the representation of individual sustainability issues and topics on the framework of the Global Reporting Initiative (GRI). The »G4 comprehensive« reporting profile (previously »G3«) is used, and the points therein have been taken into account. The materiality of the relevant aspects is shown on page 8. Topics within the G4 profile that have little or no relevance to Clariant are mentioned but not discussed in detail. (G4-18)

This Clariant Sustainability Report encompasses all Group companies and plants (provided Clariant owns more than half of the shares) as well as all relevant business and specialist areas. An organizational overview is provided on page 80 of this Sustainability Report. A more extensive version thereof can be found on pages 50 to 75 of the 2013 Clariant Annual Report. (G4-17)

An overview of the most important Clariant Ltd Group companies can be found on pages 188 to 191 of the 2013 Clariant Annual Report. In exceptional cases, deviating reporting is expressly identified and explained in the respective location. There are no other restrictions. The representation of the sustainability areas and activities in this report cover all major issues for Clariant. This report was prepared with the utmost care following an in-depth evaluation. This is so that Clariant can present a balanced picture of its sustainability efforts. (G4-20, G4-21)

In the course of 2013, Clariant divested further business areas in order to balance its current corporate, activity and product portfolio. Most of its activities will be continued. In contrast to the Annual Report, these changes do not affect the 2013 Sustainability Report. Divested units are included until the date on which they were no longer part of Clariant. The information about the status quo is based not on a period, but on a specific day. Logical exceptions are marked accordingly. In accordance with the International Financial Reporting Standard 5 (IFRS 5), Group segments that are held for sale must be reported in the income statement and balance sheet of the Annual Report as discontinued operations, held for sale respectively. There were no other structural changes from the previous year's Sustainability Report. (G4-22, G4-23)

The figures presented in this report cover the entire Clariant Group as well as the acquired former Süd-Chemie. However, it has sometimes been necessary to show the figures for the former Süd-Chemie separately. This is the case if, for example, differing product categories made it more difficult to have a common time series with regard to environmental issues. Moreover, the figures for 2012 may differ slightly from those given for the same period in last year's report. This is because subsequent calculations and corrections have changed the relevant values somewhat.

The reporting period of this Sustainability Report comprises January 1 through December 31, 2013 and is therefore identical to the financial year of Clariant. Clariant's Sustainability Report is currently published on an annual basis in the quarter following the reporting year.

The last sustainability information published on Clariant in printed form was made available in March 2013 as part of the 2012 Sustainability Report. A continuously updated version can be found in the relevant area of the Clariant website.

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This Report has not been audited externally. Instead, GRI conducted a materiality check.

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# External Confirmation

For this report a »Materiality Matters« check was conducted by the Global Reporting Initiative (GRI). This check confirms, that the most critical disclosures in the report based on the GRI G4 Sustainability Reporting Guidelines are have been correctly located at both the GRI Content Index as well as in the final report.



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## NOTE ABOUT FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements based on current assumptions and projections made by management. Such statements are subject to known and unknown risks, uncertainties and other factors which may cause the actual results and performance of Clariant International Ltd to differ from those expressed in, implied or projected by the forward-looking information and statements. The information published in this report is provided by Clariant International Ltd and corresponds to the status as of the date of publication of this report.

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# Glossary

## **ADDITIVE**

A substance added to products in small quantities to achieve certain properties or to improve a product (Clariant Additives Business Unit).

## **ADSORBENTS**

Usually solid substances which are able to selectively accumulate certain substances from adjacent gaseous or liquid phases (Clariant Functional Materials Business Unit).

## **BUSINESS AREA**

In 2013 Clariant adjusted its reporting segments and grouped its businesses with similar end-user markets and growth drivers into four distinct Business Areas: Care Chemicals, Catalysis & Energy, Natural Resources, and Plastics & Coatings.

## **CLARIANT EXCELLENCE**

Clariant Excellence is an initiative launched in March 2009 with the aim of establishing a culture of continuous improvement. The initiative is based on a change in mindset among all employees and at all levels of the company. It aims to improve competitiveness through gains in efficiency and to create added value. The four elements of Clariant Excellence are: Operational, Commercial, People, and Innovation Excellence.

## **CO<sub>2</sub>**

Carbon Dioxide

## **CO<sub>2</sub> EQUIVALENT**

CO<sub>2</sub> equivalent is a parameter describing the effect of greenhouse gas emissions. A factor known as the global warming potential (GWP) shows the effect of the individual gases compared with CO<sub>2</sub> as the reference value.

## **COMPLIANCE**

Compliance is a key element of Corporate Governance. It refers to compliance with the law and directives as well as with voluntary codes within the company.

## **EBIT**

Earnings before interest and taxes.

## **EBITDA**

Earnings before interest, taxes, depreciation, and amortization.

## **ESH**

Environment, Health & Safety

## **EXECUTIVE COMMITTEE**

Management body of joint-stock companies; at Clariant the Executive Committee currently comprises four members

## **R&D**

Research & Development

## **FULL TIME / PART TIME / FTE**

Full time / Part time status has been derived from FTE per employee as follows:  $\geq 0.90$  FTE has been defined as full time employment,  $< 0.90$  FTE as part time

## **GLOBAL PRODUCT STRATEGY (GPS)**

The Global Product Strategy aims to establish global product stewardship standards and practices for companies. The program, initiated by the International Council of Chemical Associations (ICCA), strives to ensure the safe handling of chemicals by reducing existing differences in risk assessment.

## **ISO**

International Organization for Standardization

## LOST DAYS

Lost days in which an employee is absent from work due to a work-related injury or illness.

They do not include:

1. the initial day of injury or illness,
2. any days on which the employee would not have worked even though able to work (i. e. holidays, weekends with no scheduled work, etc.).

## LTA

Lost Time Accidents

## LTAR

Lost Time Accident Rate (the ratio of the number of occupational accidents where at least one day's work was lost to every 200 000 hours of work)

## LWDR

LWDR = Lost Workday Rate (the ratio of the number of days lost due to accidents at work to every 200 000 hours of work)

## MATERIALITY MATRIX

Presentation of relevance of pertinent topics for Clariant's stakeholders

## OHSAS 18001

The Occupational Health and Safety Assessment Series (OHSAS) comprises, among other things, the standard OHSAS 18001 which includes a management system for occupational safety. This system can be integrated into an existing quality and environmental protection management system and certified accordingly.

## PIGMENT

Pigments are substances used for coloring; they are used in a technical manner, for example in the manufacture of dyes, varnishes, and plastics (Clariant Pigments Business Unit).

## REACH

REACH is an E.U. regulatory framework for the registration, evaluation and authorization of chemicals.

## RESPONSIBLE CARE®

Responsible Care® refers to a worldwide initiative by the chemical industry to continuously improve its performance in the fields of environmental protection, health and safety.

## STAKEHOLDER

Stakeholders are people or groups whose interests are linked in various ways with those of a company. They include shareholders, business partners, employees, neighbors, and the community.

## UNGC

UN Global Compact is a voluntary United Nations initiative, under which companies commit to ensuring that their business activities and strategies are in line with 10 principles relating to human rights, labor standards, environmental protection, and the fight against corruption.

## VALUE CHAIN

The value chain describes the series of steps in the production process, from raw materials through the various intermediate stages to the finished end product.

# Financial SUMMARY

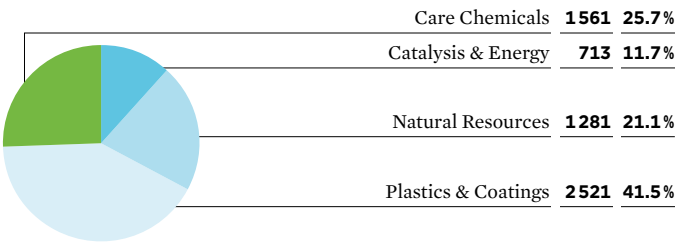
| KEY FIGURES in CHF m                               |        |                   |
|--|--------|-------------------|
|  | 2013   | 2012 <sup>1</sup> |
| Sales <sup>2</sup>                                 | 6 076  | 6 038             |
| EBITDA before exceptionals <sup>2</sup>            | 858    | 817               |
| EBITDA margin before exceptionals (%) <sup>2</sup> | 14.1   | 13.5              |
| EBIT before exceptionals <sup>2</sup>              | 574    | 546               |
| Net income <sup>2</sup>                            | 323    | 203               |
| Basic earnings per share <sup>2</sup>              | 0.98   | 0.68              |
| Operating cash flow                                | 301    | 468               |
| Investment in property, plant and equipment        | 292    | 311               |
| Research & Development costs <sup>2</sup>          | 199    | 175               |
| Total assets                                       | 8 174  | 9 467             |
| Equity   | 2 780  | 2 666             |
| Equity ratio (%)                                   | 34.0   | 28.2              |
| Net debt   | 1 500  | 1 789             |
| Gearing ratio (%)                                  | 54     | 67                |
| Employees  | 18 099 | 21 202            |

<sup>1</sup> Restated (see note 1.03 of the Annual Report 2013)

<sup>2</sup> Continuing operations

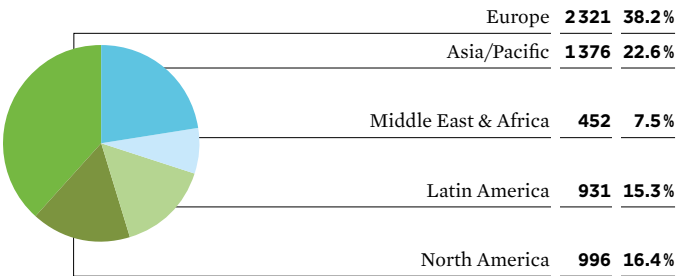
## SALES BY BUSINESS AREA in CHF m

Total 2013: 6 076



## SALES BY REGION in CHF m

Total 2013: 6 076



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