

Royal DSM N.V.  
Triple P Report 2008

# Life Sciences and Materials Sciences Staying the Course

Unlimited. **DSM**

# Our Values

Our activities are aimed at creating value for all our stakeholders: for our suppliers, our customers and shareholders, as well as for our employees and the communities in which we operate. We achieve this by combining entrepreneurial drive with an awareness of the need for continuity and a strong sense of responsibility.

This is reflected in our Corporate Values:

- Respect for People
- Valuable Partnerships
- Good Corporate Citizenship

The DSM Values guide our choices and decisions and influence the way we conduct our business. They are also the standard against which the company's management and its employees are evaluated.

The DSM Values apply to all DSM employees, regardless of where they are based. They also apply to businesses acquired by DSM. Our induction procedures for new recruits and the work of the DSM Business Academy help our employees to familiarize themselves with our Values. Compliance with these Values is monitored by Corporate Operational Audit.

When forging structural relationships with other companies, we seek to ensure that these partners respect the DSM Values in all joint endeavors.

We like to be transparent about these guiding principles so that our stakeholders – our suppliers, our customers, our shareholders, our employees and the communities where we do business – know what DSM stands for.

## DSM – the Life Sciences and Materials Sciences Company

Royal DSM N.V. creates innovative products and services in Life Sciences and Materials Sciences that contribute to the quality of our lives.

DSM's products and services are used globally in a wide range of markets and applications, supporting a healthier, more sustainable and more enjoyable way of life. End markets include human and animal nutrition and health, personal care, pharmaceuticals, automotive, coatings and paint, electrical and electronics, life protection and housing. DSM has annual net sales of almost €9.3 billion and employs some 23,500 people worldwide. The company is headquartered in the Netherlands, with locations on five continents. DSM is listed on Euronext Amsterdam.

More information: [www.dsm.com](http://www.dsm.com).

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“When I’m making important decisions on behalf of DSM, I refer to the DSM Values. They help to determine my choices. It’s important to keep communicating the DSM Values proactively and to ensure that we all apply them in our daily work.”

Janna Chilton  
VP HR Shared Services DSM USA  
With DSM since January 2003

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# Helping to build stronger societies

## Our partnership with the United Nations World Food Programme

Our belief in the importance of building successful societies is the inspiration for our partnership with the United Nations World Food Programme (WFP). Hunger is the number one cause of death in the world, killing more people than AIDS, malaria and tuberculosis combined. A related global scourge is a type of under-nutrition referred to as hidden hunger, whereby people have enough food to survive, but have access only to a diet which lacks key micronutrients. Hidden hunger is associated with a wide range of chronic diseases as well as physical and cognitive underdevelopment. As the world's largest manufacturer of micronutrients and vitamins, DSM is committed to help in the fight against global hunger.

The largest humanitarian agency in the world, WFP provides food aid to an average of 90 million people, including 58 million hungry and malnourished children, in 80 of the world's poorest countries. By supporting WFP in defining a micronutrient strategy, we support the building of stronger societies that can make a positive contribution to the world economy in years to come. This requires creating a global alliance comprising a wide variety of stakeholders such as UNHCR, UNICEF, WHO and GAIN (Global Alliance for Improved Nutrition) who are dedicated to helping meet the needs of the ultra-poor.

In 2008 WFP and DSM received recognition for their role in these efforts in the form of an ICIS (International Chemical Information Services) Innovation Award. This was given for the development of MixMe™ micronutrient sachets.

Initiated in 2007, our partnership with WFP led to activities on many fronts during 2008. Drawing on the expertise in micronutrient science of our humanitarian initiative SIGHT AND LIFE as well as the support of our commercial Nutrition Improvement Programme (NIP), we provided much needed assistance in Bangladesh, Kenya, Nepal and Zambia, as well as supporting WFP at its headquarters in Rome. DSM employees and senior managers made their professional skills and experience available in a range of projects run by WFP, reporting back on their experiences in widely read web logs.





Women awaiting the distribution of food and MixMe™ sachets by WFP in a village near Jessor, Bangladesh, in May 2008. This area was devastated by Cyclone Sidr in 2007.

# Summary



2008 was a remarkable year for DSM. It saw us on the one hand posting a record operating profit and on the other responding to major challenges as the turmoil in the global financial markets triggered a downturn of the global economy which inevitably impacted some of DSM's operations, especially in the fourth quarter. It is against this backdrop of 'staying the course' in these challenging conditions that we report on the progress we have made towards achieving our sustainability targets within the context of our accelerated *Vision 2010* corporate strategy.

In our 2008 Triple P Report we present our achievements in the field of sustainability during the year under review, outline our sustainability goals to 2020, and report on our ongoing stakeholder engagement initiatives. We also discuss some of the practical and technical challenges which we are faced with as a globally operating Life Sciences and Materials Sciences company.

This year's report introduces some modifications to our reporting approach. We continue our established practice of reporting the highlights of our performance within the Triple P parameters of People, Planet and Profit; we also report once more on our activities in the context of the four global trends to which our sustainability strategy responds: Climate and Energy, Health and Wellness, Functionality and Performance and Emerging Economies.

We deviate from previous conventions, however, by integrating our reporting on major internal initiatives into our discussion of these global trends. This is because key developments such as our introduction of a new career management process are intended to empower our employees to offer effective responses to the challenges posed by the four global trends; it is an example of how we seek to integrate sustainability into our running business. Representatives from among our employees also provide their own personal views on sustainability throughout this report, as do some of our external stakeholders.

For each of the global trends, we publish our overall goals and our specific objectives. Our goal in respect of Climate and Energy is to increase awareness of the topic among our stakeholders, to measure the environmental impact of our activities, to reduce our energy consumption and to leverage new commercial opportunities. Concerning Health and Wellness, we strive to meet the nutritional needs of people in the world's 'nutritional pyramid'.

In the area of Functionality and Performance, we aim to offer products and processes which deliver innovative benefits in combination with a reduced eco-footprint.

As regards the Emerging Economies, our goal is to grow with a focus on China, ensuring that we apply our SHE and human rights standards uniformly worldwide.

On the People dimension, we saw further diversification of our workforce during 2008, as well as the introduction of a number of new systems designed to equip our people for the challenges ahead: a new approach to career management, a new learning and development architecture and a new global internal vacancy system.

On the Planet dimension, we can report that six out of the nine environmental targets for 2010 are well on track and are expected to be realized. Realization of three targets (emissions of NO<sub>x</sub>, VOC and SO<sub>2</sub>) is not yet certain and depends on the timely realization of several projects. Our energy efficiency, meanwhile, has improved by 3% since 2005. The emission of greenhouse gases has been reduced by 3.3 million tons of CO<sub>2</sub> equivalents relative to 2005 (equating to 30%), while the discharge of COD (oxidizable organic compounds) in wastewater was further reduced.

On the Profit dimension, DSM achieved a record year despite the impact of the global economic downturn in the last quarter of 2008. Economic headwinds increased, notably during the fourth quarter, and the company took various measures to improve cash flow, reduce costs and strengthen its profitability and future competitiveness. DSM remains fully committed to continued investments in innovation and will continue to invest in growth businesses.

Two other new features of this year's report are worthy of note here: the section on Awards and distinctions, in which we record relevant awards made to DSM, and a glossary of relevant terms.

We hope that these modifications make for a yet more transparent style of reporting fully in line with the DSM Values – values which remain unchanged at the end of a year that has witnessed many unexpected developments in the global economy.

This year we are proud to have improved the transparency of our reporting on sustainability, as is evidenced by our achievement of GRI A+ status for this report.

# Table of contents

3	Message from the Chairman
5	Key figures 2008
6	Our sustainability strategy
12	<i>Vision 2010</i> strategy update
15	New ways of growing DSM's response to four global trends
16	<i>Climate and Energy – Innovating in response to change</i>
26	<i>Health and Wellness – Discovering new relationships</i>
36	<i>Functionality and Performance – Achieving more with less</i>
46	<i>Emerging Economies – Capturing new opportunities</i>
54	People
60	Planet
66	Profit
72	Sustainability awards & distinctions 2008
74	What still went wrong
75	Progress on the implementation of the principles of the UN Global Compact
76	Glossary
78	About this report
80	Assurance report

# Message from the Chairman

## Sustaining progress in a changing world

The year behind us was in many ways a remarkable and exciting year. It saw us posting a record operating profit, which was largely attributable to strong developments in the global vitamins and fertilizer markets. It also confronted us with major challenges as the turmoil in the global financial markets triggered a downturn of the global economy which inevitably impacted some of DSM's operations, especially in the fourth quarter. On the positive side, we are pleased to report the progress we have made towards achieving our sustainability targets, the implementation of action plans in response to our 2007 Employee Engagement Survey, and the intensification of our partnership with the World Food Programme.

The financial and economic turmoil notwithstanding, we are proud of our achievements in 2008, also in the area of sustainability. Our commitment to creating innovative new products in a sustainable way is ever increasing. Our strengths and capabilities will help us to achieve our ambitious targets.

Achieving a productive and sustainable balance between the needs of people, planet and profit is fundamental to the way we do business: sustainability has never been more relevant.

During 2008 we continued to build on our proven capabilities. We proceeded with the implementation of our accelerated *Vision 2010* strategy and further developed the sustainability program which is intrinsic to this strategy. Year by year, sustainability is becoming increasingly integral to our day-to-day activities. This is a process which has not yet been completed and which, indeed, never can be fully completed. The current economic climate should not divert our attention from the real challenges confronting our world, which involve ensuring sustainable energy supplies, addressing climate change, and providing adequate levels of healthcare and nutrition for the globe's entire population. As the world changes around us, we must continually adapt, offering innovative solutions which create a positive dynamic not only for our customers and our company but also for the world in which we operate. 2009 is the double centenary of Darwin, whose *On the Origin of Species*, published in 1859, introduced the principle of 'survival of the fittest' and highlighted the crucial importance of adaptability in a constantly changing world.

Our sustainability strategy is one of adaptability. In 2007 we defined four global trends which we believe will increasingly shape our world: Climate and Energy, Health and Wellness, Functionality and Performance and Emerging Economies.



Feike Sijbesma visits children at the School of Hope, a small school in the slums of Dhaka, Bangladesh.

These children receive micronutrient fortified food when they come to school.

# Message from the Chairman



**“We cannot be successful,  
nor can we call ourselves successful,  
in a society that fails.”**

**Feike Sijbesma**  
**Chairman of the DSM Managing Board**  
**With DSM since January 1987**

During 2008 we responded to these trends with a variety of initiatives on which we report here, from the search for second-generation biofuels to the implementation of world-leading quality standards in the nutritional sector. We are also convinced that our combination of Life Sciences and Materials Sciences will provide new growth opportunities for DSM as we meet evolving needs in developing fields such as biomedical materials and renewable materials. Our commitment and expertise led to many achievements of which we can be justly proud – for instance, the award of Carbon Trust certification to our vitamin production site in Dalry, UK. We can also be especially proud of the way in which our employees around the world have engaged with our partnership with the World Food Programme. On many fronts, we are using our energy and professional expertise to help alleviate the suffering of some of the poorest people in the world and pave the way to a more sustainable future.

Yet so much remains to be done. The balance between people, planet and profit is not a constant: it has to be sought again and again as circumstances change. Our Employee Engagement Survey, which was run for the first time in 2007 and is to be repeated in March 2009, generated many positive results but also showed room for improvement. Key areas for attention were inspirational leadership (which is required of managers at all levels), high-performance culture (which is a prerequisite for implementing our accelerated *Vision 2010* strategy) and workforce diversity (which needs to increase in terms of gender as well as nationality, thus enabling us to remain innovative).

Our continuous inclusion in the top rank of the Dow Jones Sustainability Index (DJSI) reconfirmed our leadership position in sustainability but also pointed out the need for improvements regarding eco-efficiency, occupational health & safety, human capital development and customer relationship management.

To our deep regret we have to report a fatality at one of our plants – the death of a DSM employee who was blown off a tank container in Venlo, the Netherlands, while carrying out a routine procedure.

Sustaining progress in a changing world means giving full attention to the areas where we can and must improve. It means building on our strengths – our unique science base and technology platform, our global reach, and the skills and commitment of our employees – to create a sustainable way of doing things. Increasingly our focus is on using processes and creating products that generate a reduced eco-footprint throughout the entire value chain. But we must look beyond the visions of science and the specifics of manufacturing to a deeper understanding of sustainability – one which embraces every aspect of our working lives. Developing that understanding, living it out, and ensuring that it benefits the world which our children will inherit is our great challenge and our great opportunity. This stewardship is very much a work in progress, and we will report on the advances made during 2009 in next year's Triple P Report. The progress made during 2008 would not have been possible without the efforts and enthusiasm of our people, and I would like to take this opportunity of thanking them all.

This year we are proud to have improved the transparency of our reporting on sustainability, as is evidenced by our achievement of GRI A+ status for this report.

Feike Sijbesma

# Key figures 2008

	2008	2007
<b>People</b>		
Number of employees (year-end)	23,591	23,254
Number of employees by region		
Europe	14,493	14,343
- the Netherlands	7,452	7,219
- Rest of Europe	7,041	7,124
Asia	4,793	4,760
- China	3,557	3,564
- Rest of Asia	1,236	1,196
North and South America	4,030	3,873
Rest of the world	275	278
Female/male ratio (in %)	23/77	24/76
Total employee benefits costs (in € million)	1,465	1,389
Frequency Index of recordable accidents (per 100 employees; DSM and contractors)	0.72	0.82
<b>Planet</b>		
Energy use in PetaJoules	71	77
Greenhouse gas emissions in CO <sub>2</sub> equivalents (x million tons)	7.5	9.6
Emission of volatile organic compounds (x 1000 tons)	8.8	9.2
COD load (chemical oxygen demand) on surface waters (x 1000 tons)	7.6	11.0
Environmental incidents	539	540
Environmental complaints	78	96
<b>Profit (in € million)</b>		
Net sales, continuing operations	9,297	8,757
Operating profit before exceptional items plus depreciation and amortization (EBITDA), continuing operations	1,357	1,247
Operating profit before exceptional items (EBIT), continuing operations	903	823
Capital expenditure including acquisitions	739	568
R&D expenditure	394	372
Net profit	577	429
Cash flow (net profit plus amortization and depreciation)	1,028	1,003
Cash Flow Return on Investment (CFROI in %)	8.7	8.3
Return on capital employed (ROCE in %)	14.4	13.4
Net profit per ordinary share before exceptional items (€)	3.64	3.07
Net profit per ordinary share (€)	3.45	2.35
Dividend per ordinary share (€)	1.20	1.20

# Our sustainability strategy

Better products, better health,  
better eco-footprint, better value propositions

## How we work towards greater sustainability

### PEOPLE

- By offering our employees an inspiring working environment, a culture of accountability and a stable source of income
- By supporting the career development of our people
- By striving to continuously improve the safety and health of our employees, our customers and the people who live near our sites
- By being a responsible partner to society and all our stakeholders
- By working with works councils and other representative employee organizations in a mutually respectful manner
- By developing, manufacturing and marketing sustainable products and services in the fields of Life Sciences and Materials Sciences to support a healthier, more sustainable and more enjoyable way of life

### PLANET

- By using energy and raw materials efficiently
- By continuously improving the eco-efficiency of our processes
- By developing, manufacturing and marketing products that help to reduce the eco-footprint of our (end-) customers
- By increasing the sustainability of our value chains

### PROFIT

- By showing a solid long-term financial performance and thus creating attractive opportunities for investors
- By listening and responding to customers and prospects, shareholders and stakeholders and offering them sustainable, innovative solutions
- By cooperating with third parties in business and technology ventures
- By implementing, in developing countries, projects which are directly beneficial to the economic development of local communities and at the same time deliver profit for our company

Our mission as a company is to create sustainable growth. We do this by creating value via our products and services. At the same time, we aim to reduce our own eco-footprint, that of our customers and that of the value chain in which we operate.

### Creating more value with less environmental impact is achieved by combining:

- **Eco-efficiency** – reducing the negative impact of (running) activities
- **Eco-effectiveness** – developing and designing products with end-of-life in mind
- **Sustainable production and consumption** – more functionality using less material

We engage with our stakeholders to identify the changing needs of the world in which we operate. As part of our strategy and stakeholder dialogue, we have identified four global mega trends: Climate and Energy, Health and Wellness, Functionality and Performance and Emerging Economies. We believe that by focusing our sustainability efforts on these four trends, we can seize on new commercial opportunities. Addressing the changing needs of society within the framework of these four trends is integral to our corporate strategy *Vision 2010*.

Having identified currently unmet needs, we aim to develop innovative product and process concepts to meet them, either as part of DSM's innovation efforts or within the framework of partnerships. In developing products to meet society's changing needs, we pay close attention to the ethical management of our supply chain. Our objective is not only to apply high ethical standards to our own activities but also to agree with our suppliers to do the same. This we achieve by means of our Global Supplier Sustainability Programme. Offering innovative products helps our customers in turn to operate in a sustainable manner. The benefits are ultimately passed on to the end-consumer. We attempt to communicate as fully, accurately and transparently as possible about the contribution we make, our progress against targets, and challenges still to be resolved.

Our approach is inspired from start to finish by our Values: Respect for People, Valuable Partnerships and Good Corporate Citizenship. Our achievements are made possible by the talents, skills, experience and commitment of our employees. At the same time, we draw on our unique science base and technological capabilities to deliver innovative solutions that open up new possibilities and serve new markets.

“The good thing about DSM is that we don’t just say we care about sustainability but really put it into practice.”

**John Meijs**  
VP HR DSM China  
With DSM since July 1977



## Dow Jones Sustainability World Index

**Launched in 1999, the Dow Jones Sustainability Indexes (DJSI) are the first global indexes tracking the performance of the leading sustainability-driven companies worldwide. They provide asset managers with reliable and objective benchmarks to manage sustainability portfolios. DSM has been included in the top rank of the chemical sector of the DJSI since 2003 and was ranked number one for three years in a row from 2004–2006.**

In 2008 we retained our listing in the top rank of the Dow Jones Sustainability World Index. DSM's score showed an overall improvement from the 2007 figure of 85 to 86 points out of 100, and was one point behind the global leader for the chemical sector, BASF.

Our climate strategy was identified as having very strongly improved since 2007. Sustainable business development, environmental management system & transparent reporting, corporate governance and standards for suppliers were all marked as strengths. The main area pointed out for improvement was operational eco-efficiency (emissions to air and water). Occupational health & safety, human capital development and customer relationship management were also identified as requiring improvement.

Our response is as follows:

- In the area of operational eco-efficiency, we are addressing direct and indirect greenhouse-gas emissions as well as energy and water consumption.
- As regards occupational health & safety, we are fully committed to providing a safe and healthy work environment for our employees and contractors. To this end, we are rolling out a global health management program. We are also continuing our existing safety programs, including our behavior-based safety training program.
- Our activities in the field of human capital development involve the implementation of a new career development process and a new learning architecture in 2008, which will play a key role in helping us to achieve our strategic objectives as a company. Furthermore, Global Sharing ICT tools are being implemented to further support existing organizational learning. These tools support competence networks and enable further competence development in areas such as SHE (Safety, Health, Environment), Manufacturing, Innovation, ICT and R&D.
- Our operational and strategic CRM (customer relationship management) performance dashboards will be further developed by our business groups.

# Our sustainability strategy

## Sustainability targets

**Sustainability is integral to our Vision 2010 strategy. Our publicly stated sustainability objectives are to:**

- retain our top position in SHE and Sustainability rankings;
- maintain a global leadership position in industrial or 'white' biotechnology, providing among other things biobased food ingredients, biopharmaceuticals, biorenewable materials and second-generation biofuels;
- continuously reduce our eco-footprint;
- develop a more diverse, international workforce;
- double our energy reduction target from 1% to 2% per year.

We are currently working on new targets for the years to 2020 regarding:

- continued reduction of greenhouse-gas emissions;
- further improvement of our energy efficiency;
- reduction of greenhouse gases in our value chains;
- further reduction of water consumption.

In order to set concrete targets and monitor progress towards these targets, we are in the process of establishing product eco-footprints for the majority of our products and their impact in the most relevant value chains by 2010. Detailed sustainability targets will form part of our Vision 2015 strategy.

## How we organize Sustainability

**Sustainability is integrated into DSM's Vision 2010 strategy and objectives. Relevant disciplines incorporate sustainability in their approaches. At corporate level, our progress against sustainability targets is reported on a quarterly basis. DSM has dedicated departments for Corporate Sustainability and Corporate SHE (Safety, Health, Environment) and Manufacturing, while line management is supported by sustainability and SHE managers at business group level. Our sustainability performance was audited by Corporate Operational Audit in 2008, and proposed improvements were integrated into our ongoing sustainability activities.**

Sustainability has the attention of the entire Managing Board, with Jan Zuidam, Deputy Chairman of the Managing Board, as the primary focal point. He chairs both the DSM Sustainability Network and the Corporate SHE Committee. The DSM Sustainability Network is supported by the Corporate Sustainability Department.

The Corporate SHE Committee is supported by the DSM SHE Council, which is composed of all business group SHE managers. The DSM SHE Council plays an important role in developing practices and communications regarding SHE issues.

Furthermore, members of the Managing Board chair different sustainability-related projects, such as the World Food Programme (Stephan Tanda), Diversity (Feike Sijbesma) and Base of the Pyramid (Jan Zuidam).

## Ensuring sustainability in the value chain: Global Supplier Sustainability Programme

**Approximately 60% of DSM's total spend is globally sourced, the remainder being sourced from regional or local suppliers. DSM's supplier sustainability programme, which covers both global and local suppliers, comprises two main elements: compliance and reduction of DSM's eco-footprint.**

### • Compliance

Suppliers are requested to sign the DSM Supplier Code of Conduct, which is based on the DSM Values. In addition, a number of selected suppliers (based on risk potential and size) are invited to complete a self-assessment questionnaire. Some are additionally audited to verify the status of their sustainability profile or to develop joint improvement programs where appropriate.

During 2008 we made considerable progress regarding compliance:

- Approximately 67% of spend was covered by suppliers who had signed the Code of Conduct as at 31 December 2008 (6% ahead of our target for the year). Our target is for 90% of our suppliers to operate under the DSM Supplier Code of Conduct as of 2011.
- More than 100 positive self assessments occurred (more than doubling our target figure of 44 for the year).
- 28 audits took place (target 22) with good results including various joint improvement programs. DSM additionally verified the progress of several improvement programs which had been agreed with suppliers in 2007.

Our supplier programme has worked so well to date that no contracts have had to be terminated on grounds of non-compliance. A small number of potential suppliers failed to achieve selection purely due to sustainability considerations.

**“If we consider it necessary in the West to adhere to stringent standards in order to protect our environment, I can see no justification for applying lower standards in other countries.”**

**Robert Donker**  
**DSM Corporate SHE Manager**  
**With DSM since August 1981**



#### • Reduction of eco-footprint

In our efforts to reduce our eco-footprint we work closely with our suppliers. We achieve this reduction by various means, including the use of biobased chemicals and renewable energy, the use of lighter packaging and the use of more energy-efficient transport options.

During 2008 we defined and implemented the first eco-footprint improvements jointly with our suppliers:

- Renewable electricity contracts have been initiated on a trial basis for some of our European sites – Tienen and Genk, Belgium and Meppen, Germany.
- A number of environmentally friendly biobased raw materials have been identified as replacements for more hazardous ones which are oil based.
- New packaging solutions involving lower weight/less waste have been identified. For example, DSM Resins, DSM Food Specialties, DSM Nutritional Products and DSM Pharmaceutical Products now make use of 1000-liter Intermediate Bulk Containers (IBC), which replace the 250-liter steel drums formerly used. The main advantages are:
  - avoidance of waste via re-use of the IBCs, which saves the need for 2000 tons of new steel per year;
  - higher transport efficiency;
  - re-use of inner polyethylene IBC lining to produce plastic pallets, which saves almost 1000 tons of polyethylene per year;
  - significantly improved SHE aspects for the operators involved, on account of the replacement of manual handling by automated handling.

The eco-footprint of our lease car fleet in the Netherlands has been improved by 5% on account of increasing numbers of employees opting for company cars with lower fuel consumption and/or CO<sub>2</sub>-emissions. The number of ABC-label lease cars rose from 51% in Q1 2008 to 59% in Q4 2008.

#### Stakeholder views shape policy development

**Society's requirements are changing and giving rise to new needs. Working together with our stakeholders through partnerships and projects, we strive to develop long-term, mutually beneficial relationships. These help us to better understand the needs of the world around us, identify business opportunities and reduce our risk exposure.**

We are involved with the World Business Council for Sustainable Development, the China Business Council for Sustainable Development, the United Nations World Food Programme, the World Economic Forum, BioVision, The United Nations Global Compact and Young Leaders for Nature, an initiative of IUCN (the International Union for the Conservation of Nature), as well as a number of industry associations such as ICCA (the International Council of Chemical Associations), ACC (the American Chemistry Council), CEFIC (the European Chemical Industry Council), VNCI (the Dutch Association for the Chemical Industry), EuropaBio and the American Biotechnology Industry Organization.

We seek to engage with relevant key stakeholders: shareholders, suppliers, customers, local communities, industry peers, NGOs (non-governmental organizations), special interest groups and, of course, our own employees. Engaging with our stakeholders enables us to identify key societal and technological trends, to develop and test our responses to these, to anticipate and manage any potential conflicts of interest, and, above all, to cultivate trust in our company and its people.

During 2008 we continued to develop our Stakeholder Engagement Road Map. This identifies the strengths and weaknesses in our current network of stakeholder

# Our sustainability strategy

**“The company’s sustainability policy attracts people. And they stay longer with DSM as a result. It is one of the main reasons why DSM is so strong.”**

**Wei Lin Zhou**  
**HR Manager DSM Engineering Plastics Asia Pacific**  
**With DSM since January 2007**



relationships and provides us with a structured agenda for intensifying our dialogue with key groups. Within the framework of the four global trends, we are identifying and strengthening contacts with selected thought leaders, policymakers, business partners, NGOs (non-governmental organizations) and other influential bodies. We have been actively engaged in dialogues concerning:

- Food safety and quality. Addressing society’s growing concern about health issues related to food quality, we have launched our Quality for Life™ programme, which offers exemplary standards of product quality, traceability and reliability.
- Climate change. DSM believes industry can and must play a positive role in securing economic growth while simultaneously reducing the total carbon footprint.
- White biotechnology. We continue to invest in white biotechnology, which is considered to create alternatives to the fossil-fuel based economy.
- Hidden hunger. Our contribution to the fight against one of the world’s biggest public health issues is ongoing.
- Sustainable biomass. Our growing involvement in white biotechnology is attended by the need to secure a sustainable raw material base, and we are seeking further engagements in this area. Our activities must take into account both environmental biodiversity and possible societal effects.
- Active engagement with the societies in which we operate. As part of our License to Operate, we encourage local DSM organizations to actively support their local communities, as evidenced by for instance our ‘Torch’ program (see pages 32, 34, 50, 52).

Our stakeholder engagement activities, in which we strive to include the views of our stakeholders in our sustainability activities, are discussed in further detail in our chapters on Climate and Energy, Health and Wellness, Functionality and Performance and Emerging Economies.

## **Involving stakeholders in this report**

It is DSM’s policy to proactively canvas the views of its employees on issues of material importance to the company. The preparation of this report was facilitated by experts who were supported by a review group comprising employees selected from across the DSM organization. Building on the issue analysis we conducted with SustainAbility Ltd. in 2007, their views were taken into account when finalizing this report.

## **Seeking constructive dialogue**

DSM actively seeks constructive dialogue with politicians and society. Our objective is to contribute in a transparent, constructive and sustainable manner, basing our arguments on facts and on scientifically sound, publicly stated positions. Examples of topics discussed in such dialogue are the EU emission trading system, EU industrial sugar regulation, food safety and the bio-based economy.

## DSM in Society

**Our Values create an agenda for making a positive contribution not only to the world of business but also to society as a whole. DSM has a long tradition of encouraging local initiatives in support of the communities in which our sites are located. We report on these at various points throughout this document.**

DSM donated and/or made available approximately € 5 million to a wide range of initiatives in 2008. These included our partnerships with the United Nations World Food Programme (WFP) and the Dutch Olympic and Paralympic teams, our humanitarian initiative SIGHT AND LIFE, and charitable donations to a number of local causes.

## Respect for People; Human Rights

**Respect for People is one of the DSM Values, and we support and respect human values as outlined in the United Nation's Universal Declaration of Human Rights. Our employees represent 50 different nationalities: we support the equal treatment of all our employees irrespective of race, nationality, ethnic background, age, religion, gender, sexual orientation or disability. Respect for human rights is also integral to DSM's sourcing policy and Supplier Code of Conduct.**

DSM is a Dutch signatory of the United Nations Global Compact. We report on our implementation of these principles within our company on page 75.

DSM supports the work-related rights defined by the ILO (International Labor Organization) and therefore recognizes the International Labor Standards. In countries or companies where employees have third-party representation via a works council or collective bargaining, we respect these relationships and work with these third parties in a mutually respectful manner. In the event of an organizational restructuring which results in the reduction of a significant number of positions, DSM develops and implements either a Social Programme (aimed at assisting employees to continue in employment, whether inside or outside the company) or else a Severance Pay Program. We promote employee empowerment and human rights protection, and thus seek dialogue with our employees and their representatives (Works Councils, Labor Unions).

We utterly reject and condemn any form of forced labor or child labor, whether at our own premises or within our supply chain. This is clearly stated in our Values and the DSM Supplier Code of Conduct. We exercise due diligence when making investment decisions with the aim of excluding any relationships or practices which may be in contravention of human rights.

Our employees are trained in the meaning and application of the DSM Values, and the Managing Board holds management accountable for compliance with these. This training involves, among other things, awareness of potential corruption or fraud or other breaches of the DSM Values. A whistle-blower procedure (DSM Alert) and a consequence management policy are in place to support compliance in this respect. The DSM Compliance Officer responsible for dealing with violations of the DSM Values reports to the CEO and is invited to report independently once a year to the Supervisory Board.

Proven violations can result in immediate discharge. In line with this policy, 29 employees were requested to leave the company during 2008 for breach of the DSM Values or of other legal or local company regulations. Compliance with the DSM Values, legal and local regulations is regularly audited. In one case, an audit in 2008 led to a remark about excess of overtime in one of our Asian units. This situation was analyzed and is being monitored for follow-up. DSM is unaware of any cases of breach of human rights or the use of forced or child labor within its operations.



**"I think that everyone should try to do what they can for sustainability, and I am very happy to be associated with a company with a strong sustainability agenda. DSM's reputation is important to me as a sportswoman, just as my reputation as a sportswoman is important to DSM."**

**Marleen Veldhuis**  
**Dutch Olympic swimmer**  
**Sponsored by DSM since August 2008**

DSM is the innovation Partner in Sport of the Dutch Olympic Committee (NOC\*NSF) and personal sponsor of Marleen Veldhuis.

Marleen Veldhuis holds various world records and won a gold medal in the 4 x 100 Freestyle Relay at the 2008 Summer Olympic Games in Beijing, China.

# Vision 2010 strategy update



“To address the economic downturn, DSM is committed to taking swift action, including cost savings, to support its profitability and cash generation. However, DSM will never compromise its Values, including Sustainability.”

**Rolf-Dieter Schwalb**  
Member of the DSM Managing Board and Chief Financial Officer  
With DSM since October 2006

DSM's accelerated *Vision 2010 – Building on Strengths* strategy builds on the company's track record of portfolio transformation and sharpens its focus on Life Sciences and Materials Sciences at an increased pace. This focus is fueled by a number of societal trends. DSM aims to capture the opportunities offered by these trends.

DSM's focus on Life Sciences and Materials Sciences offers attractive growth potential, not just in the two individual fields but also in their combination. The cross-fertilization potential between Life Sciences and Materials Sciences is high. DSM is convinced that biotechnology, traditionally associated with Life Sciences, will increasingly play a role in developing new biomaterials while at the same time materials will be increasingly used in Life Sciences applications.

Description	Accelerated <i>Vision 2010</i> target
Organic Sales growth	> 5%
EBITDA margins	
• Nutrition	> 18%
• Pharma	> 19%
• Performance Materials	> 17%
• Polymer Intermediates	> 13 % (average)
Sales in China	USD 1.5 bn by 2010
Growth from innovation	€ 1 bn by 2010
CFROI	WACC (7.5%) + 100bp
Sustainability	Energy savings target doubled Other targets confirmed
Total shareholder return	Above average for peer group

The company has defined four Emerging Business Areas (EBAs) to create growth platforms that are based on the strengths and synergies of DSM's positions in Life Sciences and Materials Sciences. These EBAs are Biomedical, Personalized Nutrition, Specialty Packaging and White Biotechnology.

With a unique combination of market positions and technologies, as illustrated by the company's leading position in white biotechnology, its long history in advanced chemical synthesis and its strong know-how with regard to Materials Sciences DSM has ample opportunities for innovative growth.

The main building blocks of DSM's accelerated *Vision 2010* transformation include reshaping the portfolio at an increased pace, the setting of ambitious new targets, measures related to DSM's shareholders and a reinforcement of DSM's Triple P policy.

At the same time DSM continues to see market-driven growth and innovation, an increased presence in emerging economies and operational excellence as its key strategic drivers.

The acceleration of DSM's portfolio transformation is an important prerequisite for increasing the focus on Life Sciences and Materials Sciences. *Vision 2010* entails the carve-out of businesses which do not fit with the accelerated strategy. These activities are grouped in the Base Chemicals and Materials cluster.

DSM has slowed down the process given the current financial and economic environment but still has the ambition of completing the divestments within the timeframe of *Vision 2010*.

In 2008, DSM acquired seven companies. Most notably, the acquisition of The Polymer Technology Group (PTG) allowed DSM to further expand its biomedical materials business. The acquisition of PTG was an important step for DSM in realizing its ambitions in Biomedical, one of the Emerging Business Areas defined in the accelerated *Vision 2010* strategy.

DSM is continuing its stepped-up search for acquisition opportunities to further accelerate its evolution towards a Life Sciences and Materials Sciences company. DSM will however maintain its disciplined acquisition policy. Within the current market conditions, the company is identifying new growth opportunities, such as small-scale technology-related acquisitions.

By realizing the accelerated *Vision 2010* targets, DSM intends to achieve a total shareholder return that exceeds the average of its peer group<sup>1</sup>.

<sup>1</sup> This peer group consists of AkzoNobel, BASF, Ciba, Clariant, Danisco, EMS Chemie Holding, Lanxess, Lonza Group, Novozymes, Rhodia and Solvay.

## Listening to our employees, making necessary changes

**A committed workforce is critical for realizing our ambitious targets and managing the complex demands of the fast-moving global markets in which we operate. Our HR strategy *Passion for People* was therefore formulated in 2007 specifically to help deliver *Vision 2010*. *Passion for People* is founded on the concept of employee engagement. To assess levels of engagement throughout our company, we launched our first comprehensive DSM Employee Engagement Survey at the end of 2007.**

Almost 12,000 employees worldwide participated in this online survey. This figure represents 63% of the total target group population of 19,000 employees who have access to our company email system and were therefore able to participate. Working conditions and safety standards, job satisfaction, support from the relevant line manager and teamwork all received positive scores: most notably, 81% of respondents gave a high rating to working conditions and safety standards. In total, 62% of participants scored favorably on the DSM Engagement Index, while 25% scored a neutral response, indicating that 87% are to a greater or lesser degree pleased with their job, and that at least 62% of our employees are committed and proud and would recommend DSM as a great place to work. Compared with the average external benchmark (64%) we are pleased with this score. Nevertheless we will have to improve on it in coming years.

The consolidated results of the DSM Employee Engagement Survey led to the identification of three main areas for improvement across our company: Inspirational Leadership, High Performance Culture, and Diversity.

**“Sustainability is no longer an adjunct to profitability: it is a core component of profitability. Today’s investors understand that companies with a fully integrated sustainability strategy will survive.”**

**Marc Silvertand**  
DSM Investor Relations Officer  
With DSM since January 1996



# Vision 2010 strategy update

The management of DSM units around the world discussed their unit's results with their employees and in some cases determined issues that required specific local attention. They initiated actions to address these in the second half of 2008. These actions varied from site to site, depending on specific requirements. Representative responses included the integration in running change programs, organization of leadership training programs, the link to career development activities, the creation of new briefing formats and feedback mechanisms for employee interaction, the publication of dedicated newsletters, and the link to safety behavior programs. The survey will be repeated in March 2009 in order to check progress of both global and local action plans. The lessons learned from the first survey will be incorporated into the design of the second survey. The same global approach, giving rise to local action plans, will be employed. The survey will be available not only via e-mail but also on paper, and will be conducted in a total of 20 languages, allowing all our employees worldwide to participate.

Besides the survey, *Passion for People* resulted in a range of interconnected activities during 2008 designed to cultivate a skilled, diverse and engaged workforce. These activities include the implementation of a new learning architecture (supporting Inspirational Leadership), a new career management design and a global recruitment management system (both supporting High Performance), a global health management system, a global diversity drive (likewise in response to the findings of the Employee Engagement Survey), a global ICT platform facilitating interactive group-wide knowledge exchange, the DSM 'Torch' campaign and other initiatives in support of local communities, and also the voluntary participation of employees in our partnership with the World Food Programme.

# New ways of growing

## DSM's response to four global trends

In 2007 we analyzed the most important trends which result from our interactions with our stakeholders and create the context for our business and sustainability strategy. This analysis resulted in the identification of four global trends: Climate and Energy, Health and Wellness, Functionality and Performance, and Emerging Economies. We continued to implement our sustainability strategy within the framework of these four global trends during 2008.

The effects of climate change and the adverse consequences of dependency on fossil fuels are becoming increasingly apparent, calling for fundamentally new approaches. A growing and ageing world population suffering from both over- and under-nutrition is stimulating interest in health and wellness. Society is asking for products with entirely new levels of functionality and performance, and calling for new dimensions of product stewardship. And the growth of the emerging economies continues to change the economic balance of the globe, creating opportunities and challenges for international corporations.

The interrelation between the selected four global trends and DSM is a very dynamic one. Changes in the world around us prompt us to action, and at the same time, the changes that we bring about influence the outside world. By the same token, developments occurring in the context of the four global trends frequently influence each other. This urges DSM to increase its interaction with a growing number of stakeholders. It is more important than ever to understand the issues, select the most relevant ones for our company and engage with our key stakeholders on these issues.

Driven by the ambition to further develop into a Life Sciences and Materials Sciences company capable of sustainable growth, we constantly seek new opportunities for sustainable growth within the framework of these four global trends.

Our objectives cannot be achieved without the efforts of our employees. It is for this reason that we include some significant developments in HR at DSM within the following four thematic chapters.

# Climate and Energy

## Innovating in response to change



Responding to the challenge of climate change is a moral imperative but also an opportunity for value creation, as customers worldwide look for products which deliver new benefits while reducing their own carbon footprint.



## Our strategy for Climate and Energy

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Our strategy is to focus on Life Sciences and Materials Sciences in response to a number of long-term societal trends. One of these concerns Climate Change and Energy.

Our goal in respect of Climate Change and Energy is to increase awareness of the topic among our stakeholders, to measure the environmental impact of our activities, to reduce our energy consumption and to leverage new commercial opportunities.

In 2008 we published several articles on this topic in our internal media, established a carbon footprinting methodology and measured the eco-footprint of a number of our products.

Some of our specific objectives are to:

- Improve DSM's environmental performance by reducing our energy use and greenhouse-gas footprint. This will be achieved by means of our Manufacturing Excellence programs, our N<sub>2</sub>O reduction program and our sourcing program.
- Map our product eco and carbon footprints. Our Footprint Competence Center will establish a methodology which will enable us to measure up to 80% of our footprint by 2010.
- Create major production and product solutions through our innovation programs (for instance Climate Change Induced Innovation) and the cross-fertilization of Life Sciences and Materials Sciences (such as by means of white biotechnology).
- Use active internal advocacy and organizational learning to engage and align our employees in support of our sustainability agenda.
- Demonstrate our involvement by participating in initiatives such as the Carbon Trust and Thema1.

Our management approach to Climate Change involves engaging people both within and outside DSM.

Informed, engaged and aligned employees will foster improvement and drive innovation. Our wider employee base therefore receives general information on this topic, while our strategic direction is communicated in greater detail to departments like our Innovation Center, our Manufacturing Center, the DSM Marketing office, our Sourcing Department and our business groups. Externally we engage with start-up companies, academic and research establishment, governments, customers and peer companies to collaborate, innovate and offer solutions for today and the future.

This chapter outlines our main activities related to Climate and Energy during 2008, as well as offering some initial examples of DSM product eco-footprints.



“The need to change towards a low-carbon economy will challenge us to significantly increase our own energy and carbon efficiency and that of our customers and suppliers.”

**Fokko Wientjes**  
Manager Sustainable Development DSM  
With DSM since August 1988

**The limited availability and the environmental impact of fossil-based fuels and raw materials creates a need for new and sustainable energy resources and raw materials. To develop these, new business models, processes and products are required. DSM is contributing to the evolution of a low-carbon economy with products such as Dyneema®, Turane™ and Stanyl®, which enable the manufacture of lighter products with higher performance characteristics for a wide range of applications in, for example, the construction and automotive markets, as well as with products like enzymes for food processing. We are also contributing to the development of a new generation of sustainable and commercially viable biofuels and to the creation of a portfolio of coating resins with zero or near-zero VOC (volatile organic compound) emissions.**

### Eco-effectiveness drives innovation

Responding to the challenge of climate change is a moral imperative but also an opportunity for value creation, as customers worldwide look for products which deliver new benefits while reducing their own carbon footprint. Climate change has been an important focus of DSM's sustainability policy for some years. We are addressing this in numerous ways, including the development of waterborne coating resins, the use of renewable energy sources, and the inclusion of innovative enzymes in animal feed to help reduce the environmental impact of livestock farming. Our technologies, market knowledge and investments in innovation are used in pursuit of tangible improvements for society and the environment.

Our Climate Change Induced Innovation program taps into the opportunities created by global climate change. The objective of this program is to realize added value by responding in an innovative way. Exploiting the opportunities offered by climate change will take place in the context of DSM's strengths in Life Sciences and Materials Sciences and synergies between these domains. For example, DSM Venturing participates in Tianjin Green Bio-Science Co. Ltd. (China) for the development and production of biodegradable polymers and products.

With the world's population expected to increase from 6 billion currently to 9 billion by 2050 according to the United Nations, the demands on the planet's resources, both fossil and non-fossil, are continually growing. An important component of our response to this challenge is our expertise in white or industrial biotechnology. In certain cases, the application of biotechnology may replace chemical processes. This may offer significant benefits, as production under mild conditions results in lower utilization of water, energy and solvents. In other cases, biotechnology may offer the opportunity to use biomass as a raw material for a wide variety of products or to improve the efficiency in the valorization of biomass.

DSM has identified white biotechnology as an Emerging Business Area. We actively invest in the development of white biotechnology. We also liaise with regulators, industry peers and other thought leaders to promote the uptake of this valuable technology worldwide.

“We are proud to be part of a company that has put sustainability high on its agenda. DSM encourages us, the next generation, to take the lead in future sustainability developments so as to really make a difference.”

**Early career professionals and members of DSM NEXT:**  
Robbie van Bree, Hanneke Prinsen, Anne Janssens,  
Esther Kersten, Azra Alic and Felipe Toledo



In January 2008, DSM NEXT – the association for early career professionals within our company – held a joint workshop on Sustainability and Environmental Impact with Young Leaders for Nature (from IUCN). Deputy Chairman of the Managing Board Jan Zuidam joined this team to support the initiatives. This was followed by the roll-out of a DSM-wide DSM NEXT workshop on the topic ‘What does sustainability mean for you?’ Commenced in 2008, this initiative will be continued in 2009. This program was nominated among the top three entries for a Dutch Young Sustainability Award 2008 given by the Dutch Sustainability Congress.

## Consortium for second-generation biofuels

**‘First-generation’ biofuels are derived from biomass which might equally be used for the production of food or feed. ‘Second-generation’ biofuels are derived from biomass that is not edible, for instance agricultural byproducts or waste matter from the food and feed industry. ‘Second-generation’ biofuels could also be produced on the basis of non-food crops grown on land that is not suitable for the production of food crops.**

DSM is actively engaged in the ongoing dialogue concerning improved biofuels and sustainable biomass production. We were involved in the pre-summit stakeholder dialogue held by the FAO (Food and Agriculture Organization of the United Nations), which helped pave the way for a successful FAO Summit in June 2008. DSM has also decided to step up its efforts to find solutions in this area, in terms of both policy and of business activity.

The use of non-food biomass (such as switchgrass and corn stover) as feedstock will facilitate the operation of large-scale biorefineries to meet growing demand for biofuels, bio-based chemicals and other bio-derived end products. This has the potential to reduce the dependency of the chemical manufacturing industry on fossil raw materials.

Proprietary enzymes for hydrolyzing cellulose and xylose from plant residues have already been identified, but the process involved is not yet practicable on a commercial scale. Our experience in enzymes, together with our competencies in chemical engineering and biotechnology, place us well to further improve the process for producing second-generation biofuels. This will potentially be a major breakthrough for global society as well as for DSM’s future business.

In 2008 DSM received a grant from the US Department of Energy for a technical consortium dedicated to creating an innovative biotechnological approach to the production of bioethanol. The grant will fund an extensive enzyme development program aimed at producing bioethanol in a cost-effective manner. The research will be carried out by a technical consortium in which DSM will be the lead partner. The program is being delivered with the assistance of Abengoa Bioenergy New Technologies, Los Alamos National Laboratory and Sandia National Laboratory.

## Microprocess technology

**Microprocess technology is about continuously operated processes in reactors that are very small compared with the batch reactors traditionally used for pharmaceutical production. It is one of the technologies operated by DSM under the umbrella of Process Intensification (PI). DSM is taking PI very seriously in view of its potential for higher energy efficiency, lower production costs and better quality control. Microprocess technology can achieve a breakthrough in productivity by offering improved control over chemical reactions and transfer of molecules.**

Since 2005, DSM has been exploring the potential benefits of micro-reactors for chemical processes on an industrial scale. Micro-reactors, which may be of the size of a shoebox, offer many advantages, such as better energy efficiency, safety and reliability. DSM's site in Linz, Austria, operates one of the largest-capacity micro-reactors in the world. With an internal reactive volume of just 3 liters, it has a capacity of 2,000 tons per annum. It is currently used for the production of a fine chemical intermediate. The technology was developed in collaboration between the Karlsruhe, Germany based Institute for Mechanical Process Technology (IMVT), Graz University of Technology in Austria and DSM Fine Chemicals.

## Fermentation processes

**Process and product innovations continue to drive the growth of our portfolio of bio-based products destined for applications in the feed, food, beverage and pharmaceutical sectors. These are specialty products based on fermentation processes.**

Besides offering functionalities which can be deployed against conditions such as diabetes, high blood pressure and excess weight, bio-based products have the benefits of being more efficient to manufacture than compounds produced by chemical synthesis. This means that they require far fewer solvents and far less energy. DSM Anti-Infectives, for instance, uses an 'Energy and Utility Scorecard' to help proactively reduce its consumption of resources. In 2008 the business group set itself the target for 2010 of reducing its energy consumption by 27% compared to its 2005 utilization – the most ambitious target for a DSM business group.

## Bio-based intermediate for polymer production

**An important step in the development of bio-based performance materials was announced in January 2008. DSM and the French starch and starch-derivatives company Roquette joined forces to implement and commercialize the fermentative production of succinic acid, which can be used as an intermediate to produce bio-based polymers (polymers are used to create plastics and foams which find application in a host of industrial and consumer sectors).**

The development forms part of DSM's strategy within the Emerging Business Area (EBA) white biotechnology and shows the innovation opportunities of cross-fertilization between DSM's expertise in Life Sciences and Materials Sciences.

Succinic acid is currently produced as a derivative from crude oil and natural gas. Bio-based succinic acid will be produced by fermentation, drawing on sugar as a feedstock. This novel production process will stimulate further market development of bio-based polymers. Fermentation processes based on renewable resources will in this case lead to an energy saving of 30-40% compared to a typical chemical process, thus reducing CO<sub>2</sub> emissions.

The current target of the cooperation is to have a demonstration plant in Lestrem, France operational at the end of 2009. The capacity of this plant will amount to several hundred tons per year. It is expected that after a successful trial, the technology will be transferred to large-scale production in 2011.

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**“Broad knowledge of life science processes plus good platform technologies are the prerequisite for responding to the diversity of market demands for new processes and products.”**

**Willy de Greef**  
Secretary General EuropaBio  
Brussels, Belgium

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# Climate and Energy

## EMPLOYEES MAP THEIR OWN ECO-FOOTPRINT DURING SUSTAINABILITY WEEK

In May, a Sustainability Week was held at our site in Delft, the Netherlands. The purpose of this initiative was to educate our employees in Delft further to the exciting possibilities of sustainability and to engage them more closely in our sustainability agenda. Each day was dedicated to a different aspect of sustainability, while the company restaurant ran a special 'Food and Sustainability' program for the week. Employees had the opportunity, among other things, to calculate their own eco-footprint, explore the theme of cradle-to-cradle manufacturing, examine green solutions for the automotive sector, and listen to the experiences of a colleague who had just returned from an assignment with the World Food Programme (WFP) in Kenya.

## Bio-based processes

**DSM continues its efforts to develop a 'green' route to caprolactam, the building block for nylon 6. This long-term development option should result in new manufacturing plants being fed with ligno-cellulosic feedstock and delivering 'green' caprolactam (Bio-Cap) with both improved economy and a reduced eco-footprint.**

Progress on this project, for which an external partner network has been set up to supply complementary technology, has so far delivered novel enzyme-based conversion steps, and several patent applications have been filed.

## DSM Anti-Infectives invests in enzymatic processes

**DSM Anti-Infectives is currently investing to upgrade activities in India, Mexico, Europe and China towards enzymatic processes.**

DSM's enzymatic technology provides substantial environmental advantages in comparison with chemical processes – such as a strong reduction in waste and energy consumption – but also enhanced quality, and is more cost-effective throughout the value chain.

## DSM reduces greenhouse-gas emissions by more than 20%

**In 2008 DSM Agro reduced the emissions of N<sub>2</sub>O (dinitrogen oxide) in its four nitric acid plans in Sittard-Geleen and IJmuiden, the Netherlands. New technology was installed, resulting in a reduction of two million tons of CO<sub>2</sub> equivalents, which is more than 20% of our worldwide emission of greenhouse gases.**

In recognition of this achievement, VNCI (the Association of the Dutch Chemical Industry) awarded DSM Agro the Responsible Care Award 2008. The success of this project goes far beyond what is required legally under IPPC (European Integrated Pollution Prevention and Control Directive). As a consequence, DSM Agro can sell excess emission allowances under the ETS (European Emission Trading System). In that sense, outstanding environmental performance and good business go hand in hand.

## Greenhouse-gas emission trading to be upgraded

**The European Emissions Trading System (ETS) was initiated in 2005 to support the reduction of greenhouse-gas emissions in Europe. Until now, emission allowances have been allocated to operators based on their emissions in the past. DSM actively advocated abandoning this so called 'grandfathering' system and replacing it by the allocation of allowances based on best performance (benchmarks).**

At the end of 2008 the European authorities decided that from 2013 onwards, benchmarks will be used for the allocation of allowances to industries that are exposed to global competition. The allowances per unit of product (the benchmark) will be derived from the top 10% best-performing production plants in the EU.

“Sustainability is a moral issue. If we don’t take responsibility for it, DSM cannot look forward to a long future.”

**Luca Rosetto**  
Vice-President Europe/Americas DSM Anti-Infectives  
Corporate Vice-President CSHE&M from 1 March 2009  
With DSM since November 1996



DSM very much welcomes this approach, which rewards the most efficient producers and stimulates the further reduction of greenhouse gases. At the same time, it prevents unfair competition on the global market for producers in the European Union, which is also good for employment in this region.

In order to make the ETS sustainable, however, some important issues still need to be resolved. First, the allocation of allowances should be based on actual production levels rather than production in past reference years. In the latter case, companies that reduce their emissions in Europe by shifting production from Europe to other continents would benefit from the ETS without really contributing to the global reduction of greenhouse gases.

Second, benchmarks need to include the use of electricity in order to compensate for the impact of ETS on electricity prices in the EU. This should include an adequate arrangement for CHP (combined heat and power) plants, in order to unlock the huge potential of this technology for reducing greenhouse-gas emissions. DSM actively contributes to the ongoing discussion aimed at further improving the ETS and making it suitable for application not only in Europe but also in other regions of the world.

## Eco-efficient enzymes portfolio

**Enzymes are naturally occurring proteins that act as biological catalysts. DSM manufactures enzymes for innovative applications in both the feed and the food and beverage sectors.**

Used in feed for livestock, enzymes have an important role to play in current farming systems. They can increase the digestibility of nutrients, leading to greater efficiency in the production of animal products such as meat and eggs.

At the same time, they can play a role in minimizing the environmental impact of increased animal production. Enzymes produced by DSM also find use in a broad spectrum of food and beverage applications such as dairy, baking, fruit processing and beer brewing. They are deployed to improve product characteristics such as flavor, appearance and stability. The year 2008 saw the launch of Panamore™, an alternative to chemical emulsifiers. This natural ingredient improves the performance of flour in a cost-effective and sustainable way.

## Claristar® best practice in carbon footprinting

**An important addition to our enzyme portfolio in 2007 was Claristar®, which is used to clarify wine. The use of Claristar® requires less energy and water than is the case with traditional wine clarification techniques, thereby creating less waste and less impact on the environment.**

In 2008 Claristar® was used as an example of best practice by the Product Carbon Footprint Pilot Project Germany, as it allows consumers to clearly see the carbon footprint of the product they consume. The Carbon Footprint Pilot Project Germany was initiated by the Institute for Applied Ecology (Öko-Institut) of the Potsdam Institute for Climate Impact Research (PIK), the Berlin-based think/do tank THEMAt1, and the World Wildlife Fund (WWF).

# Climate and Energy

## Environmentally friendly UV-curable coatings

**Considered a 'green' technology, UV-curable coatings convert instantly from liquid to solid upon exposure to UV light, and offer a variety of processing and environmental benefits. Although some UV-curable coatings nevertheless require a certain amount of solvent in their production and give off a certain amount of solvent when applied, DSM's UV-curable coatings for fiber optics are entirely solvent-free.**

They are therefore considered much safer for both workers and the environment. An additional benefit of UV curing is that this procedure does not require traditional curing ovens, which require high temperatures and consume a great deal of energy.

A dedicated UVention™ group within DSM Desotech is tasked with delivering new innovations in UV-curable coatings to a variety of markets including aerospace, medical, automotive, industrial finishing, pipe manufacturing and more.

In March 2008 DSM Desotech, a global leader in the development of materials that can be cured with UV light, strengthened its portfolio by acquiring Texas-based Polymeric Processes Inc. (PPI), which specializes in UV-curable coatings for pipe applications.

In June 2008 DSM Desotech opened a newly-expanded China facility for their production of UV-curable inks for optical fiber, DSM Desotech Specialty Chemicals (Shanghai) Ltd. (DDSC). The ISO-9001 certified operation was relocated from Gonglu to Xinghou, China, and the new facility designed in such a manner as to be able to accommodate anticipated growth in the optical fiber and cable market (for more information on the relocation see page 51).

## Product eco-footprinting

**To determine a product's effect on the environment, its entire life cycle must be examined. DSM uses PEF (product eco-footprinting) to chart the ecological footprint of products. DSM's Global Manufacturing Competence Center deploys PEF to analyze all phases of a product's existence, from the extraction of raw materials through the manufacturing process and use of the product to the disposal of the product once it has reached the end of its useful life.**

This approach makes it possible to develop and manage products on the basis of detailed insights as well as principles of product stewardship. Some of our customers have recently begun to ask for a 'PEF hallmark' that clearly states the effects of their product on the environment. DSM is investigating this possibility. In 2008 we conducted PEFs for Rapidase® apple maceration enzymes, Claristar® wine stabilizer, Brewers Clarex® beer stabilizing enzyme, Synthon B resolution, Stanyl®, cephalexin and vitamin C.

## REACH and ICCA-GPS: supporting global product stewardship

**Product stewardship aims to improve the SHE performance of products during their entire life cycle. Communication about the potential risks involved in handling and using substances is fundamental to this intention. In 2008 DSM started implementing REACH (Registration, Evaluation and Authorization of Chemicals), the new European Union legislation on product safety information. We pre-registered all the substances that we manufacture in, and import into, the EU, which total approximately 600.**

Between now and 2018 we will prepare dossiers describing the hazards presented by these substances and the conditions for their safe handling and use. This will be done in cooperation with the producers and downstream users of these substances. Although the full implementation of REACH will cost DSM some tens of millions of euros, we welcome this legislation as an opportunity to strengthen our product stewardship.

DSM is also actively contributing to the GPS (global product strategy), an initiative of the ICCA (International Council of Chemical Associations). This initiative aims to introduce globally harmonized practices for product stewardship and, in addition, greater transparency concerning the safety of substances. In this context, we contributed to the development of formats for Basic Set of Information and Product Stewardship Reviews. In 2009 DSM will start publishing product stewardship reviews according to this format.

## A challenge for DSM

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### Using chemistry to combat climate change

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“The demands placed on the world’s ecosystem by the fossil-fuel-based economy are unsustainable. Alternative sources of energy must be found. DSM believes that the energy challenge – and thus the climate change challenge – cannot be solved without the enabling agency of chemical manufacturers.

The chemical industry can help to reduce the world’s energy consumption by delivering products which encourage the use of less fuel – for instance, materials for the production of windmill blades and solar panels, lightweight materials for the automotive sector, or foam for insulating buildings. These are just some examples of the many ways in which chemical manufacture can be used to promote the move towards a low-carbon economy.

As a Life Sciences and Materials Sciences company, DSM consumes considerable amounts of energy. Our aim is to generate more units of energy savings in the value chain than the units of energy we consume. We have investigated several of our production processes with this in mind and found that they all demonstrate a positive return. Our challenge is to ensure that this positive ratio of energy consumption to energy saving is applied across our entire product portfolio and to continuously increase the ratio of energy saved to energy used.”

**Jan Zuidam**  
**Deputy Chairman of the DSM Managing Board**  
**With DSM since May 1973**

# Health and Wellness

Discovering new  
relationships

The world's population is growing at an unprecedented rate. At the same time, people are living longer. The twin scourges of under-nutrition and over-nutrition affect people in developed and developing countries alike, triggering a range of damaging conditions with long-term consequences.



# Health and Wellness

## Our strategy for Health and Wellness

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Our strategy is to focus on Life Sciences and Materials Sciences in response to a number of long-term societal trends. Health and Wellness represents an important trend.

Our goal in respect of Health and Wellness is to meet the nutritional needs in the 'nutritional pyramid'. Some of our specific objectives are to:

- Deliver the highest standards in this field by means of our Quality for Life™ promise.
- Anticipate and meet the changing needs of our customers and other stakeholders by means of innovative solutions.
- Serve the needs not only of the most privileged sectors of society but also of the poorest.

DSM's management approach to Health and Wellness is part of the DSM Life Sciences and Materials Sciences strategy. DSM's sites comply with global quality and safety standards. We seek cooperation on knowledge development, advocacy, and product and application development with universities, customers, NGOs and other stakeholders.

DSM additionally engages in the global coalition to raise awareness of the key role played by nutrition in fostering healthy individuals and societies. We achieve this by means of our humanitarian initiative SIGHT AND LIFE and our global partnership with the United Nations World Food Programme. The examples provided in this chapter offer insights into some of our stakeholder engagement activities and innovation areas as well as into developments with a general societal and economic relevance.



**“DSM’s unique expertise in enzyme production and application allows us to offer increasingly innovative and eco-effective solutions throughout the entire food chain.”**

**Stephan Tanda**  
**DSM Managing Board member**  
**Responsible for DSM’s Nutrition cluster**  
**With DSM since March 2007**

**The world’s population is growing at an unprecedented rate. At the same time, people are living longer. The twin scourges of under-nutrition and over-nutrition affect people in developed and developing countries alike, triggering a range of damaging conditions with long-term consequences. DSM has a range of initiatives that help people in situations as diverse as the refugee camp and the hospital operating theatre.**

850 million people in the world, of whom 350 million are children, currently suffer from under-nutrition. A far greater number – approximately two billion – suffer from ‘hidden hunger’, a condition whereby food intake is sufficient in caloric terms but lacking in micronutrients. A further approximately three billion have to spend some 50% of their entire income on staple food. Higher up the food pyramid, some one billion people are sufficiently well-off to support their lifestyle choices with functional foods and beverages. The top of the pyramid is occupied by about 500 million individuals whose basic needs are fully served and who can invest in personalized nutrition – foods and dietary supplements which precisely meet the requirements of their own physiology.

Drawing on our expertise in Life Sciences and Materials Sciences, we serve people at every level on this global pyramid of need. Our humanitarian initiative SIGHT AND LIFE, our Nutrition Improvement Program and our partnership with the World Food Programme help the poorest of the poor. Our commitment in this area was further underlined when our CEO Feike Sijbesma joined the Global Agenda Council on Chronic Diseases and Malnutrition of the 2008 World Economic Forum, contributing to global awareness of the risks and societal consequences of hidden hunger.

Our Base of the Pyramid activities seek to create sustainable solutions for people in the developing world whose economic circumstances are severely limited.

Meanwhile our expertise in nutritional science and pharma allows us to develop health-promoting applications for the global food and beverage and dietary supplement markets. We are also taking a leading role in the drive for quality and safety in the food chain ‘from farm to fork’. At the same time, rising healthcare costs are encouraging the development of new and more cost-effective treatments, and we are creating innovative new approaches using biopharmaceutical and biomedical solutions such as Dyneema Purity®.

### **New quality guarantee**

**A number of recent and widely-publicized cases of food contamination worldwide have reconfirmed the importance of safe food and feed. Manufacturers and consumers alike are paying heightened attention to this issue.**

There is increasing concern about the safety and ethical conditions under which products destined to enter the food chain are produced. In 2008 DSM responded to these concerns by launching a unique new quality seal: Quality for Life™. The Quality for Life™ seal underwrites our commitment to the highest standards of product safety. Standing for product quality, reliability and traceability, it shows that we are supplying the very best ingredients, produced in a sustainable and ethical manner which is fully compliant with the strictest regulations in food and feed process and product safety.

# Health and Wellness

## HEALTHIER EMPLOYEES

The concept of health and wellness plays an important role in the life of our people. Our Global Health Management initiative involves a health promotion program for DSM executives as well as a web-based tool for helping employees to assess their health risks and set themselves healthy lifestyle goals. This program is called DSM Vitality Checkpoint. Where DSM Vitality Checkpoint has been introduced, it has been combined with comprehensive health checkups and individual follow-up on any health issues identified.

Whereas the DSM Vitality Checkpoint is a tool for the self-monitoring of health by employees, the DPNS (DSM Personalized Nutrition System), which was launched in 2008, creates possibilities for active, self-managed change. DPNS is a scientifically-validated nutritional management system that attempts to achieve long-term sustainable improvement in overall wellness. Supported by web-based interfaces, electronic feedback devices and behavioral change interventions, DPNS enables users to manage their food choices and activity levels.

Health management is also included in our learning programs. For example, 'Health at Work' forms an integral part of SHE training programs for managers and engineers.

## Clinton Global Initiative meeting

**The 2008 Clinton Global Initiative annual meeting held in New York in September brought together prominent business and government leaders from around the world to examine and discuss the major global challenges of health, energy and climate change, education, and poverty alleviation, with the goal of working together to develop and implement sustainable solutions.**

Mauricio Adade, President of DSM Nutritional Products' Human Nutrition and Health division, participated in the panel discussion 'Ensuring a Healthy Start: Maternal and Child Nutrition', which examined and emphasized the profound impact that maternal health has on the health and development of children, as well as their greater risk of chronic disease as adults as a result of childhood undernutrition.

## Serving the ultra-poor

**SIGHT AND LIFE is a humanitarian initiative supported by DSM. It was founded in 1986 to help combat vitamin A deficiency in developing countries.**

The project nowadays also aims to address other essential micronutrient deficiencies including nutritional anemia. SIGHT AND LIFE has invested over USD 30 million to support humanitarian and scientific projects since its founding. In 2008 it launched a podcast series on the subject.

SIGHT AND LIFE hosted a groundbreaking round-table discussion entitled 'Hidden Hunger: Socioeconomic and Scientific Challenges' in March. Held in Santa Barbara, California, the event was attended by nearly 50 nutrition and economic thought leaders from 11 countries, including two Nobel Laureates and Medal of Science winners. In September, SIGHT AND LIFE achieved another first, co-organizing together with the German Society for Applied Vitamin Research (GVF) the 1st Dialogue on Nutrition and Politics in Berlin. SIGHT AND LIFE Secretary General Dr. Klaus Krämer gave a presentation on the social consequences of the quality of nutrition in developing countries.

“DSM's commitment to sustainability not only benefits our working environment but also opens up opportunities for 'green innovations'.”

**Inge Massen-Biemans**  
**Branding & Communications Manager DSM Innovation Center**  
**With DSM since November 1999**



## Nutrition Improvement Programme

**Our NIP (Nutrition Improvement Programme) deploys our expertise in nutrition to create practical ways of fortifying staple foods with the micronutrients which are essential for health (nutrients that cannot be synthesized in the body and are required only in minute quantities daily, such as vitamins, trace elements and most minerals).**

The combined skills of NIP and SIGHT AND LIFE play a central role in our partnership with the World Food Programme. NIP and SIGHT AND LIFE together developed MixMe™ micronutrient sachets. In 2008 MixMe™ sachets were distributed by WFP to over 250,000 victims of hunger in Bangladesh, Nepal and Kenya. These sachets can be sprinkled on cooked food or mixed into beverages to provide the daily dose of essential vitamins to people who lack access to a nutritionally balanced diet. A year's supply of 150 sachets for one person costs just a few dollars. Working in collaboration with WFP, DSM intends to significantly increase distribution in the coming years.

The year 2008 saw two further important developments for NIP: it applied for a new patent for its rice fortification technology NutriRice® and also received approval from the Chinese authorities for the addition of vitamin A to staple foods. Vitamin A plays an important role in helping children to grow and to develop a healthy immune system.

## Low-carbon manufacturing

**In June 2008, DSM's commitment to improving its environmental performance was recognized by the award of a Carbon Trust Standard certificate. Established and funded by the UK government in response to the threat of climate change, the Carbon Trust is a company whose mission is to accelerate the move to a low-carbon economy.**

The Carbon Trust Standard certificate is awarded to organizations which achieve reductions in CO<sub>2</sub> emissions via their own autonomous efforts rather than by off-setting or green tariffs.

DSM was one of 12 'Pathfinder' organizations to benefit from this first-ever issue of Carbon Trust Standard certificates, and was the only one in the fields of Life Sciences and Materials Sciences. The award was given in recognition of the CO<sub>2</sub> emission reductions achieved by DSM Nutritional Products' production site in Dalry, UK. This facility, which celebrated its 50<sup>th</sup> anniversary in 2008, is the only manufacturer of vitamin C in the Western world. It produces the vitamin under the brand name QUALI-C™. In September 2008, Carbon Trust Standard certification was further secured for the QUALI-C™ product carbon footprint. Carbon Trust certification is one example of DSM's wider efforts to seek business opportunities based on climate change and at the same time to offer carbon transparency to our customers in the value chain.

# Health and Wellness

## EMPLOYEES SUPPORT HEALTH AND WELLNESS IN LOCAL COMMUNITIES VIA 'TORCH' INITIATIVES

The 'Torch' campaign helps our employees to support their local communities. This initiative has been running since 2002. Employees propose initiatives for specific local interventions, and selected projects are sponsored by DSM. 2008 witnessed the implementation of a diverse range of 'Torch' projects around the globe. These included:

- Providing free meals for impoverished elderly people in Seoul, South Korea
- Funding a music therapy program at the 't Steyntje childcare centre in Stein, the Netherlands
- Providing Internet access to handicapped children in Istanbul, Turkey, thus allowing them to connect with the outside world
- Helping to clean the seashore of garbage in Fukori, Japan
- Providing a school bus to take orphans to school in Bhopal, India

In 2008 DSM once more called on all employees to put forward proposals for 'Torch' projects to be carried out in 2009.

## Efficient antibody production reduces eco-footprint

**DSM Biologics and Crucell N.V. announced record levels of IgG antibody production yield during 2008. This accomplishment, which was achieved using standard bioreactor equipment and a readily available cell culture medium, provides the biotechnology industry with a reliable production platform for the economical manufacture of therapeutic proteins.**

The combination of Crucell's PER.C6® technology and DSM's XD™ (extreme density) technology made possible an unprecedented yield of over 27 grams per liter, creating a new paradigm for the effective manufacture of protein products. Higher yields help to reduce the eco-footprint of manufacturing facilities. They also lower the cost of developing new drugs.

## Decoding of penicillin genome

**In 2008 DSM published a breakthrough analysis of the DNA sequence of the fungus *Penicillium chrysogenum* in the renowned scientific journal *Nature Biotechnology*. Discovered by Sir Alexander Fleming in 1928, penicillin became arguably the most important drug of the 20<sup>th</sup> century. It continues to play a vital role in the treatment of many infectious diseases worldwide.**

DSM's findings will help DSM Anti-Infectives to improve current production methods for beta-lactam antibiotics, the most widely-used group of antibiotics available. It will also allow greater innovations in the development of production mechanisms from which our customers, and the patients in need of these products, will benefit.

DSM's paper on the genome of *Penicillium chrysogenum* is the result of a major research project initiated by DSM in 2004. It involved the participation of seven international research groups and resulted in a high-quality genome sequence of 32.2 million base pairs with 13,653 unique genes. The DNA sequence of this strain has never previously been mapped to this level. This 2008 breakthrough follows DSM's 2007 publication of the DNA sequence of the fungus *Aspergillus niger*, a micro-organism that DSM deploys for the production of enzymes and other compounds mainly used in food ingredients. This research resulted in numerous patent filings by DSM and a range of new DSM products, such as innovative applications for the bakery market.

## Rapid expansion in Biomedical

**DSM's growth in this field was accelerated in 2008 by the acquisition of The Polymer Technology Group (PTG) of Berkeley, California, USA, a pioneer in the field of biomaterials. PTG's materials portfolio includes some of the world's most extensively tested biomaterials in clinical use today, and gives DSM a leading position in the field of biomedical polymers.**

These are used to manufacture devices such as pacemakers, neural stimulation leads, contact lenses, catheters and implantable sensors. In the area of ophthalmic and vascular diseases, meanwhile, DSM Biomedical launched its drug delivery platform Trancerta™, which facilitates the design of drug delivery systems for these conditions. Drawing on DSM's expertise in both Life Sciences and Materials Sciences, DSM Biomedical is one of DSM's four EBAs (Emerging Business Areas) and has shown rapid development since its inception in 2006. DSM received funding for four R&D projects from the BMM (Biomedical Materials Programme), a Dutch public-private partnership, which will help to accelerate the development of new biomedical materials.

## Omega-3 products for heart and brain health

**Derived principally from oily fish, Omega-3 long-chain polyunsaturated fatty acids (LC-PUFA) are needed by the body from infancy into old age. They help to reduce blood pressure and maintain heart health, and their positive effects on brain functionality are becoming increasingly apparent. Consumption of oily fish has declined in many parts of the world, however.**

DSM addresses this gap by producing Omega-3 products of unique purity, designed for a broad range of applications in the food, beverage and dietary supplement sectors. In 2008 DSM Nutritional Products applied for a patent for an improved process for the production of its ROPUFA® product range. It also launched its purest and most stable Omega-3 fish-oil-based form to date – ROPUFA® '10' n-3 INF Powder S/SD. This new powder contains the ideal nutritional balance of polyunsaturated fatty acids for infant formulae and is ideally suited to meet the highly demanding standards set by the infant nutrition industry. Like all the ROPUFA® range, it delivers the benefits of Omega-3 in odorless and flavorless form.

## DSM EMPLOYEES WALK 3,500 KILOMETERS FOR WFP

On 1 June, 700 DSM employees in Egypt, India, the Netherlands, Switzerland and the USA together covered 3,500 kilometers as part of the World Food Programme's annual sponsored walk. Involving employees of DSM, TNT, Unilever and WFP plus other corporate partners, humanitarian institutions, and civil organizations, 'Walk the World' is now the world's largest annual global fundraising event. It attracts hundreds of thousands of people in more than 70 countries and involves a collective walk of five kilometers. This is the average distance a child in a developing country has to walk to school – frequently on an empty stomach. Our participation is part of the Employee Engagement pillar of our partnership with WFP.

In October, DSM's locations in Beijing, China, Capua, Italy, Kaiseraugst, Switzerland, Parsippany, USA, Toansa, India and Heerlen, Sittard-Geleen and Zwolle, the Netherlands held an awareness-raising 'Friends of WFP' day. 'Friends of WFP' is an internal initiative designed to create a group of ambassadors for WFP within our company. Their role is to foster awareness of our partnership program and to stimulate other employees to get involved in it.

# Health and Wellness

## EMPLOYEES SHOW THE DSM SPIRIT IN SUPPORT OF LOCAL COMMUNITY

Employees of DCNA (DSM Chemicals North America), based in Augusta, Georgia, gave further proof of their commitment to supporting education in the local community during 2008. DCNA provides two schools in Augusta – East Augusta Middle School and Hornsby Elementary School – with financial support, tutors, coaches and equipment. This assistance enabled the two schools to achieve Adequate Yearly Progress for the first time in 2007. This achievement was repeated in 2008. In 2008, DCNA employees additionally ran a career awareness program introducing 7th and 8th graders to technical trade positions, as well as participating in River Road CAP (a forum in which community leaders, residents and chemical companies address issues concerning communication, safety and the environment) and improving the facilities of United Way Safe Homes (a residence for abused women and their children). Using their free time for these initiatives, DCNA employees clearly demonstrated the spirit of good corporate citizenship which is one of DSM's key values.

## Sustainable Alpine cosmetics

**DSM draws on traditional Alpine herblore to create a range of products which protect the skin and hair from the negative effects of the environment. We collaborate with farmers from Valais in Switzerland to cultivate Alpine plants whose healing properties have been known since Ancient Roman times.**

These plants have a high resistance to UV (ultra-violet) radiation and large temperature variations on account of the extreme elevations at which they grow. Their natural protective characteristics have developed as a result of the extreme environmental conditions in which they grow such as strong UV radiation and large temperature variations. They are deployed in our ALPAFLOR® range of functional cosmetic ingredients, which have anti-inflammatory, anti-oxidant, calming and soothing properties. DSM's subsidiary Pentapharm operates sustainable cultures of these plants, applying our philosophy of supporting economic activity that is profitable to farmers and preserving natural sites and rare plants from wild harvesting. The plants are 100% organically cultured according to the Bio-Swiss standards and the resulting extracts are ECOCERT certified. All extracts are preserved with sodium benzoate and potassium sorbate, which are not only allowed by ECOCERT for natural cosmetics, but which are also used in the food industry.

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“Companies like DSM that are investing heavily in science need to be at the cutting edge – and if they remain there, they will be at the front of a large and growing need for products.”

**Dr Alfred Sommer**  
**Dean Emeritus Johns Hopkins University**  
**Baltimore, USA**

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## Reduction in animals used for compulsory studies

**As an innovative company, DSM is continuously developing new products. By law we are required to assess the properties and safety profiles of these products. With the aim of reducing animal testing in our discovery process for nutritional compounds, we increasingly make use of *in silico* (computer modelling) and *in vitro* techniques (for instance cell arrays) to identify candidate substances.**

By comparison with earlier practices, this considerably reduces the use of animals for testing per new substance. For example, by applying NMR (nuclear magnetic resonance) computer tomography, the number of animals used can be reduced by 80-90% in the said test compared with the previous standard procedure.

Unfortunately, however, animal tests cannot yet be fully dispensed with for proving the efficacy and safety of products for use in the animal and human health and nutrition sectors, as well as for testing the safety of chemicals and materials. We seek to further reduce animal studies by articulating justifications for waiving safety tests in cases where we believe that the relevant information can be provided by alternative means. However, although the scientific community may accept certain concepts, their translation into practice is sometimes hindered by the relevant legislation and the procedures demanded by the respective authorities. Testing remains compulsory, although the elements tested are exactly the same as those used in products that have previously been tested.

DSM is committed to further reducing, refining and replacing animal tests, the so-called '3R' approach (Reduce, Refine, Replace). However, innovation as well as the implementation of REACH (a European Union regulatory framework for the registration, evaluation and authorization of chemicals) could result in more animal testing if the development and acceptance of alternative methods do not keep pace. DSM cooperates in external networks and with academic partners in developing and promoting alternative testing methods. Examples include the EPAA (European Partnership for Alternatives to Animal Testing) and the Long-range Research Initiative of the ICCA (International Council of Chemical Associations).

## A challenge for DSM

### Speeding up the commercialization of 'second-generation' biofuels




"The unsustainability of the fossil-fuel economy creates a pressing need for alternative fuel sources. One of these is biofuels – fuels produced from plants. The production of fuels from plants raises ethical questions, however. Considerable opposition exists to the use of land and water for the ultimate creation of fuel, and to the use of edible crops for this purpose. The current generation of biofuels is based on the use of sugar and starch derived from crops such as corn cobs. Extensive and long-term use of such crops for biofuels could lead to scarcity in the global food market. DSM does not endorse this approach. In its White Biotechnology program, DSM strives to develop 'second-generation' feedstocks for the biorefineries of the future. This involves finding ways of recovering sugars from vegetable material that is currently treated as agricultural waste. The enzymes which are needed to pre-treat this waste are still to be made commercially viable. While the use of yeasts which can access these sugars has been successfully trialed at lab scale, we estimate that it will take at least another five years before production on an industrial scale is practicable. Our challenge is to make second-generation biofuels available as quickly as possible."

**Volkert Claassen**  
**Vice President DSM White Biotechnology**  
**With DSM since March 2006**

# Functionality and Performance

Achieving more with less



At a time when consumer expectations are more sophisticated than ever before, people are also thinking more critically than ever before about the products they use. The search is on for products which show how 'less is more' in communication, mobility and convenience. DSM is creating a new generation of eco-efficient high-performance products – from resins to medical devices.



# Functionality and Performance

## Our strategy for Functionality and Performance

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Our strategy is to focus on Life Sciences and Materials Sciences in response to a number of long-term societal trends. Functionality and Performance is one of these trends.

Our goal in respect of Functionality and Performance is to offer products and processes which deliver innovative benefits in combination with a reduced eco-footprint.

Some of our specific objectives are to:

- Develop, together with our customers, more efficient applications that offer increased functionality in combination with less material usage.
- Use our Footprint Competence Center to measure the eco and carbon footprints of an increasing number of our products.
- Launch products with clear environmental benefits.
- Continue our innovation efforts aimed at delivering next-generation materials which demonstrate reduced environmental impact (for instance through increasing our utilization of renewable raw materials).

DSM's management approach to the challenges of Functionality and Performance is part of our Life Sciences and Materials Sciences strategy. Our business groups are supported in defining the eco-footprint of their products by the DSM Footprint Competence Center. The DSM Marketing Office provides support with product launching and value propositioning. Cooperation on product footprint standards, knowledge development, and product and application development is sought with academic and research establishments, customers, original equipment manufacturers, NGOs and other stakeholders. The cross-fertilization between Life Sciences and Materials Sciences is considered to be a major strength of DSM, and among the important drivers of innovation within our company.

The examples provided in this chapter offer insights into the main challenges we face and into the innovations taking place as a result of cross-fertilization between the Life Sciences the Materials Sciences. We also outline some of the relevant contributions which we make in the value chain.



“The development of new product functionalities and heightened performance is driven by the quest for lighter and stronger materials, the desire for miniaturization and the trend towards electronification.”

**Nico Gerardu**  
DSM Managing Board member  
Responsible for DSM's Performance Materials cluster  
With DSM since October 1975

**At a time when consumer expectations are more sophisticated than ever before, people are also thinking more critically than ever before about the products they use. The search is on for products which show how ‘less is more’ in communication, mobility and convenience. DSM is creating a new generation of eco-efficient high-performance products – from resins to medical devices.**

The world is looking for innovative new ways to create products which are smaller, lighter and less energy-intensive to produce. Our products can help manufacturers to develop those products. At the same time, manufacturers and consumers alike are seeking high-performance characteristics from these new products – greater strength, flexibility and durability, for instance. The life cycle of performance materials is also being understood in new terms, driving manufacturers to consider not only the development and application of innovative new products but also the process for recovering and reusing their constituent elements once they have reached the end of their useful existence.

DSM's competencies in Life Sciences and Materials Sciences open new avenues for research into this new generation of products, which find application in all of the industrial sectors in which we are active. These range from new concepts in food manufacture and packaging to materials that can make vehicles lighter and thus more energy-efficient. At the same time, we actively promote a high-performance culture within our organization to deliver those concepts. The essential importance of high performance is emphasized by our decision to discuss our performance-related HR programs in this report within the broader context of our efforts in the field of Functionality and Performance.

## Products that deliver more with less

**DSM Engineering Plastics creates products designed to replace for instance metal in car manufacture in order to reduce vehicle weight and thus fuel consumption. Products for emissions-reducing engine control systems have over the past few years been experiencing a steady growth.**

DSM Engineering Plastics has a strong product portfolio including high-temperature Stanyl® (polyamide 46), Akulon® (polyamide 6), Arnitel® (thermoplastic polyester elastomers) and an innovation pipeline including breakthrough developments such as the new halogen-free polymers, Stanyl® Diablo and the new polymer Stanyl® ForTii™ (previously called PA4T) – the first new polymer to be developed in the 21<sup>st</sup> century. DSM Engineering Plastics continuously invests to secure its global presence, taking advantage of the strong growth in plastics manufacture in the emerging economies.

DSM Engineering Plastics has extended its product offerings to include halogen-free grades in all its product lines, ahead of future legislation. The short life cycles of electronic appliances such as laptops, mobile phones and PDAs (personal digital assistants) make it important to re-use valuable materials such as copper through recycling and extraction. These processes introduce risks of generating hazardous by-products from halogen-containing compounds, such as flame retardants, when recycling processes are not optimal.

DSM Resins likewise supplies a range of innovative products designed to meet environmental concerns and offer greater energy efficiency while ensuring high performance.

# Functionality and Performance

Our portfolio of advanced resins finds application not only in the paints and coatings sector but also in the fields of automotive and energy generation. In paints and coatings, our resins are used as an ingredient, while for automotive and energy they are delivered as composites. In 2008 we commenced construction of a new factory in Parets, Spain for the production of waterborne polyurethanes. This factory will come on stream in 2009. A new factory for waterborne acrylics in Shunde, China, work on which commenced in 2007, was completed in 2008. Meanwhile the factory for waterborne acrylics in Waalwijk, the Netherlands, work on which commenced in 2007, is on track to come on stream in 2009. Together, these factories represent a capital investment of approximately € 60 million.

With alternative energy sources finding increasing uptake, the number of wind turbines is growing fast in Europe as well as in developing markets such as China. Larger turbine blades, which generate more energy, require stronger and lighter materials. Our composite resins portfolio is continuously being developed in response to this global trend. They are also being used to replace steel in the construction of bridges. Our composite resins systems have other important advantages. They cure faster than traditional resins, which leads to shorter production cycle times and therefore less energy-intensive manufacture. We have also developed special grades which can be used in extreme climates, opening up the possibility for wind turbines to be located in parts of the globe which previously would have been unsuitable for this type of energy generation.

Meanwhile environmental concerns are creating new applications for Dyneema®, the world's strongest fiber™. The use of Dyneema® fiber in place of traditional materials by the aviation industry, for example, has been shown to save fuel while also reducing CO<sub>2</sub> emissions.

## World's strongest fiber for surgery and fish farming

**In 2008 DSM Dyneema and Maastricht University Hospital, The Netherlands, commenced joint research into new solutions to improve surgical outcomes for patients with spinal deformities. Combining the materials technology of DSM Dyneema with the clinical expertise of the university, this project aims to develop solutions that support the trend toward minimally invasive surgical procedures as well as the need for preserving mobility.**

The project team is leveraging Dyneema Purity®, an ultra high molecular weight polyethylene fiber offering maximum strength and minimum weight, to enhance post-operative mobility and quality of life for surgery patients.

Meanwhile in a very different field, DSM Dyneema and Badinotti Group – a global leader in netting for commercial fishing – are jointly working on enhanced netting technologies using Dyneema® fiber. One area of focus in 2008 was the development and testing of stronger and safer 'predator' nets for South America's fish farming industry which protect the farmed fish from the attacks of predators such as seals and sea-lions.

**"This report shows what DSM is doing in the field of sustainability. While our sustainability performance can always be improved, I am proud of what DSM has achieved so far."**

**Jeroen Konings**  
**Senior Chemist DSM Research & Development**  
**With DSM since September 1988**



## Resins with a range of environmental benefits

**Traditional decorative paints for professional painters contain VOC (volatile organic compounds). By offering the new DECOVERY™ product family, DSM NeoResins+ offers a low-VOC waterborne and solvent-based product portfolio that goes beyond all environmental and technical requirements of solvent emission legislation in Europe and North America.**

While meeting recent and upcoming worldwide environmental regulations until 2010, the DECOVERY™ family offers the high quality needed by professional painters. Between today and 2013, more than 50% of the € 1 billion-plus European and North American decorative resins market (excluding wall paints) is expected to transfer to these new types of technologies. Similar trends are to be expected in Asia at a later stage.

Solvent-free powder-coating resins present many environmental advantages over traditional solvent-borne systems. They are also safer for the painter than their solvent-borne predecessors. For this technology to achieve its full promise, however, powder-coating systems have to demonstrate performance equal or superior to the less environmentally friendly systems which they replace. They must show that less really is more, providing excellent properties and aesthetics in combination with lower resins content.

In response to this need, we further expanded our HiTone® coating resins portfolio in 2008, helping to offer more choice to paint manufacturers who wish to offer environmentally friendly systems that do not compromise on product performance. DSM Powder Coating Resins also launched Uralac® Corres in 2008 – a new technology platform, based on breakthrough innovative polyester resins for corrosion-protective coatings. This new technology brings some big advantages to the coating process. Through a reduction in the use of pre-treatment chemicals, less process waste is created, and so Uralac® Corres can contribute to a significant reduction in the metal-coating process impact on the environment.

## NEW CAREER MANAGEMENT

A new career management design was developed in 2008. The new design stimulates a high-performance culture, introduces simplified tools and processes, accelerates the career management cycle from three years to one year, and links career management directly to performance management. It also provides transparency concerning career opportunities within DSM, increases the visibility of global talent, stimulates employee engagement, and fosters increased ownership and accountability for career development on the part of managers and employees.

The new design will help DSM to achieve the objectives defined by its Vision 2010 strategy. To prepare for the roll-out, workshops were held in all business groups and service units, with additional regional training sessions being organized in the Netherlands and China. Furthermore, a global communication launch took place to draw managers' and employees' attention to the new design; this was complemented by communication activities within individual business groups and service units. The new career management design was launched with effect from 1 January 2009, together with the global internal vacancy system designed to ensure transparency regarding career opportunities within DSM worldwide.

## Inaugural Resins Sustainability Award presented to DSM customer

**At the China Coat trade show in Guangzhou, China, in November 2008 DSM Resins presented for the first time a DSM Resins Sustainability Award Asia to one of its customers.**

The award was presented by Wei-Ming Jiang, DSM Corporate Vice President and President of DSM China, and Pascal de Sain, Business Director DSM NeoResins+, to Siegwerk Inks, China, for their work in replacing solvent-based inks by waterborne inks for paper packaging applications.

# Functionality and Performance

“It is vital for DSM to produce environmentally friendly products. But people find it difficult to believe that a company with a chemical background can really be committed to sustainability.”

**Diana Vermeij, Business Development Manager  
DSM Specialty Packaging / Product Development  
With DSM since November 2005**



## More efficient solar panels

**DSM's innovative picture glass @claryl is the first commercial product in DSM's functional coatings program to apply DSM's proprietary coating technology platform to various applications.**

Besides picture glass, the Functional Coatings program is also working on applying DSM's proprietary coating technology platform to solar panels to improve their efficiency. The anti-reflective coating developed by DSM for solar cell cover glass increases the light transmission into the solar cell by up to 4%, which translate into an increase in energy output of the solar cell.

@claryl offers other environmental benefits as well: the high-tech process whereby it is produced is energy-saving, meaning that this innovative product can be manufactured using approximately 30% less energy than is the case with traditional anti-reflective glass.

Although the picture-framing market is still dominated by regular glass, growth in demand for @claryl during its first year indicates that it is a very promising product. In 2008 DSM announced a major capacity expansion for @claryl. Within a year of its launch, demand for this new product had risen so quickly that DSM decided to build an additional oven at its manufacturing facility in Sittard-Geleen, the Netherlands, increasing production capacity by 50%.

## Bio performance materials platform introduced

**In 2007 a New Business Development organization for Performance Materials was created. During 2008, this organization carried out an assessment which resulted in the creation of a new business platform for bio-based performance materials.**

By means of this platform, which will start operating in 2009, DSM will work on a range of bio-based materials from bio engineering plastics and resins to sustainable additives and bio composites. These materials will provide solutions to customer needs in applications where both performance and sustainability are valued. They are targeted at a broad range of applications from automotive through coatings to electronics.

## Combating vascular diseases

**Unhealthy lifestyles and the ageing of the world's population are contributing to the current growth in vascular diseases. In September, DSM Biomedical and Caliber Therapeutics, Inc. announced their intention to jointly develop a novel drug delivery balloon catheter for the treatment of vascular diseases such as atherosclerosis.**

Caliber Therapeutics, a privately-held company based in the United States, develops proprietary, minimally-invasive, balloon-based drug delivery products. Combining drugs and mechanical devices, these products respond to the growing need for effective vascular disease treatments.

The novel devices to be developed by DSM and Caliber Therapeutics will enable the controlled and sustained release of drugs targeting this condition, which is caused by the build-up of plaque (composed of fat, cholesterol, calcium and other substances) inside the arteries. Atherosclerosis can develop into coronary artery diseases (CAD), the leading cause of death in the western world.

The partnership will combine proprietary drug delivery technology from DSM with balloon and catheter technology from Caliber Therapeutics. In addition, DSM Biomedical will grant Caliber Therapeutics a worldwide exclusive license for the use of DSM's recently launched Trancerta™ Drug Delivery platform for the development of this specific application. This cooperation is another example of DSM leveraging its competences in Materials Sciences into Life Sciences applications.

## NEW APPROACH TO LEARNING FOR DSM'S LEADERS

Supported by the outcome of the DSM Employee Engagement Survey, DSM reviewed its approach to learning in 2008 and made an important commitment to the professional development of the Executive and Management population. A new DSM Learning Architecture which will support a stronger alignment with our Vision 2010 strategy was introduced. The new Learning Architecture creates a common approach to learning and program design, facilitates the development of a DSM learning culture, and provides enhanced learning for top performers and high potentials. It focuses on the key drivers for success:

- External orientation
- Growth
- Innovation
- A high-performance culture with clear accountability
- A sustainable diversity drive

The architecture was developed in close collaboration with leading international business schools (IMD, Wharton, Erasmus, Babson), supported by a diverse internal faculty, primarily consisting of DSM's top management. The new programs have a modular set-up with a strong focus on innovative learning methods, e.g. round-table discussions, business simulations, web-casting, (team) assignments and e-learning. The key building blocks are: Executive Leadership Programs, Management Leadership Programs, Executive & Management Toolkits, Executive Coaching and Functional Learning Programs.

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**"We see DSM's position with regard to the changes and challenges in the automotive industry as a very strong one."**

**Ralf Kalmbach**  
Partner, Roland Berger, Munich, Germany

# Functionality and Performance

## SUSTAINABLE KNOWLEDGE MANAGEMENT

A company the size of DSM amasses a huge amount of technical and highly specialized knowledge. This knowledge is extremely valuable, and maintaining it within the organization is key to our sustainable development. For this reason, the DSM Global Manufacturing Competence Center has established six technical manufacturing competencies and created a network for each to stimulate the exchange, collation and management of knowledge within these areas.

The six technical competencies are Manufacturing Excellence, Life Science Engineering, Energy and Waste, Materials and Corrosion, Process Safety and Process Control. The networks for each competence are composed of representatives from DSM's business groups who have particular skills in the relevant competence. These network groups share their experiences and knowledge and provide knowledge management support in the relevant competencies to business groups. Working in close association with the DSM Business Academy, they develop training programs in these competencies and organize coaching activities. All activities for each competence are incorporated in multi-year plans. This learning concept has been used by DSM's manufacturing community for three years and will be further strengthened in coming years by the introduction of new online tools such as the single integrated company intranet which is to be rolled out during 2009.

## A challenge for DSM

### Harnessing the potential of nanotechnologies

Nanotechnologies are a wave of diverse technologies aimed at mastering matter at the supramolecular level, or the nanoscale. Nanostructured materials take on new and interesting properties that can facilitate the creation of products with much improved and specific functionalities. DSM's production of @claryl picture glass, for example, involves the use of nanotechnologies.

DSM views the development of nanotechnologies as the logical next step in chemical research. Research into nanotechnology is leading to further improvements in high-performance materials and to the development of exciting new medical devices and therapies. Increased attention to research into nanotechnologies is fully in line with DSM's position as an innovative and sustainable company. In demonstration of this belief, we participated in the European Chemical Industry Council's first-ever Europe-wide stakeholder conference on nanotechnology, which was held in Brussels, Belgium on 24 June 2008.

We understand the safety concerns about nanomaterials. It is the responsibility of manufacturers to ensure that their use of nanotechnologies is safe, and to communicate effectively on this issue with customers. DSM conducts internal risk assessments and implements pragmatic exposure controls to minimize any potential risk exposure on the part of our employees, our customers, end-users or the environment resulting from the deployment of these technologies.

Our challenge is, as an entrepreneurial organization, to explore potentially unique applications of nanotechnologies and, as a good corporate citizen, to collaborate with industry peers and regulators to help create an effective framework for their safe use.

**New ways of growing**  
*Climate and Energy*  
*Health and Wellness*  
**Functionality and Performance**  
*Emerging Economies*

# Emerging Economies

## Capturing new opportunities



With growth rates above those for Europe and the United States in 2008, the emerging economies represent an important opportunity for DSM. While expanding more of our production into these countries so as to take advantage of local expertise and local market growth, we simultaneously apply our company values and our SHE standards to every country in which we operate.



## Our strategy for the Emerging Economies

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Our strategy is to focus on Life Sciences and Materials Sciences in response to a number of long-term societal trends. The emerging economies represent one of our areas of attention.

Our goal in respect of the emerging economies (Brazil, Russia, India, China) is to grow with a focus on China, ensuring that we apply our SHE and human rights standards uniformly worldwide.

Some of our specific objectives are to:

- Achieve sales of \$ 1.5 bn in China by 2010.
- Innovate and explore opportunities presented by the Base of the Pyramid.
- Apply the DSM Values and DSM SHE standards uniformly in all regions.

DSM's management approach to the challenges of the Emerging Economies is part of our Life Sciences and Materials Sciences strategy. Our country organizations in China, India and Russia exist to support business growth and represent DSM's smaller business groups. They provide the necessary business infrastructure and shape specific regional policies.

The examples provided in this chapter offer insights into DSM's relevant operations, our innovative business developments and our License-to-Operate activities in China, India and Brazil.

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**With growth rates above those for Europe and the United States in 2008, the emerging economies represent an important opportunity for DSM. While expanding more of our production into these countries so as to take advantage of local expertise and local market growth, we simultaneously apply our company values and our SHE standards to every country in which we operate.**

Growth within the emerging economies is a cornerstone of our accelerated *Vision 2010* strategy, and DSM is well positioned to capture the opportunities offered by these markets.

The combination of a growing middle class with increasing spending power, rising urban populations with an appetite for the newest products, and wide-ranging industrial advances within these markets represents significant opportunities.

DSM's response to this growth in demand is to build local production facilities. This approach has the advantages of spreading our global presence, accelerating the internationalization of our asset base and workforce, and bringing our operations closer to the local markets they serve, thus reducing our currency exposure.

“With advanced experience in managing the control and traceability of each segment of the food chain, DSM is well placed to advise food standards agencies worldwide on best practice.”

**Wei-Ming Jiang**  
**DSM Corporate Vice President & President of DSM China**  
**With DSM since August 2006**



## China

**DSM China is fully committed to DSM's Triple P sustainability strategy. DSM's global SHE standards apply in China as elsewhere in the world, and in 2008 DSM China published its own first Triple P Report. Modeled on the global Triple P Report, this document makes clear that sustainable development is one of the business principles of DSM in China as well.**

This commitment is further underlined by the building of a new DSM China Campus to cutting-edge environmental standards (LEED) as well as by the participation of Wei-ming Jiang, DSM Corporate Vice President & President of DSM China, in the CBCSD (China Business Council for Sustainable Development). Founded in 2003, CBCSD provides a platform for exchange and cooperation among Chinese and foreign enterprises, government and social communities to help companies improve their performance in EHS (environment, health and safety), CSR (corporate social responsibility) and climate change in the service of sustainable development.

## DSM supports food safety drive in China

**In September, DSM signed a memorandum with Shanghai FDA (Food & Drug Administration) to extend the existing cooperation in the area of food safety. In 2007, DSM had supported Shanghai FDA in its hosting of a Food Safety and Public Policy International Seminar which advanced the development of farm produce traceability through the introduction of European Union food safety regulations.**

At this forum, DSM has introduced the SQRT principles of Safety, Quality, and Reliability & Traceability in the food chain. September 2008 also saw the opening of the China International Food Safety & Quality Conference 2008 in Beijing. Hosted by AQSIQ (the Administration for Quality Supervision Inspection & Quarantine), this conference was supported by DSM as a gold sponsor. Wei-Ming Jiang hosted a roundtable discussion on the theme of 'Issues and solutions of emerging global food safety' together with the Vice President of the IAFP (International Association of Food Protection). Martijn Adorf, Global Marketing Manager Human Health & Nutrition of DSM Nutritional Products, outlined how DSM achieves sustainable quality standards for its ingredients on a global basis.

“DSM is converting its strategy to focus on biotechnology, and will be able to extend its existing business in China.”

**Prof Chen Si Wei**  
**Former Vice-Chairman of the People's Congress**  
**Beijing, China.**

# Emerging Economies

## NEW RECRUITMENT STRATEGY

In 2008 we further strengthened our regional recruitment footprint to ensure that we continue to attract top talents from across the globe. The number of non-Dutch and female professionals entering DSM continues to grow. Details can be found in the People chapter on page 57.

We are seizing the opportunity to strengthen the diversity of our leadership team. While recognizing the need to attract external talent, we also recognize the need to stimulate existing talent across DSM. A new global recruitment management system was introduced in 2008 which will be integral to our future recruitment activities.

A single vacancy tracking and management system for all DSM vacancies worldwide, accessible to all DSM employees, will provide greater transparency concerning career opportunities and will also further internationalize our employee base.

Another noteworthy initiative during 2008 was the development of a unique EVP (Employer Value Proposition) within the context of DSM's corporate brand. We undertook extensive research with both internal and external stakeholders to understand what we need to do better and to capture this in the messages we convey to the labor market. The DSM EVP will form an integral part of all employer branding initiatives directed at our target groups, including new academics, professionals and executives worldwide. The date for the formal launch of the EVP is currently being determined.

Throughout 2008 we also continued to strengthen our presence in the academic arena by further developing our strategic collaborations with universities and key business schools in Europe, China and the United States.

## DSM supports earthquake victims in China

**The earthquake that struck China's Sichuan Province on 12 May 2008 triggered a powerful reaction among DSM employees. Wei-Ming Jiang, Corporate Vice President and President of DSM China, was quick to offer DSM's support for the recovery effort. DSM China, its subsidiaries and employees donated in excess of € 275,000 in disaster relief.**

Meanwhile DSM proactively cooperated with key customers to make available over € 64,000 worth of amoxicillin for child application, cephalexin, vitamins and other emergency items to help treat the injured. € 92,000 of the funds donated was allocated to the China Youth Development Foundation to help build Hope Schools, allowing children in affected areas to resume their studies as soon as possible. DSM will continue to support these schools in the future by making employee volunteers available to help out in them as well as by providing additional financial assistance.

One of DSM's Chinese business partners, ChemChina, was directly affected by the disaster. DSM made an additional donation of 50 cases of vitamin supplements and 450 pairs of protective gloves reinforced with Dyneema® fiber worth €13,000 to support ChemChina in its recovery efforts.

## New China Campus: sustainable design and construction

**In support of our strong commitment to growth in China, we completed the construction of a new China Campus in 2008. The project was awarded 'Gold' certification from the US Green Building Council within the LEED® (Leadership in Energy & Environmental Design) Green Building Rating System™: it is one of the first LEED Gold-certified buildings in China.**

These 'green' considerations include: optimum orientation to avoid overheating and glare; occupant movement sensors to reduce unnecessary internal lighting; green roofs that insulate and retain rainwater for re-use; sophisticated heating, cooling and ventilation systems, together with high-performance windows that provide a healthy and comfortable indoor environment but not at the expense of high energy consumption; high attention for indoor air quality; maximum use of local materials and materials with recycled content; recycling of construction waste, and the use of local plants to provide greenery.

The China Campus, which is situated in the Zhangjiang Hi-Tech Park in the Pudong New Area of Shanghai, will house both the

**“Customers and employees admire DSM because of our company’s sustainability policy. It is a very important motivating factor.”**

**Du Guan Hou**  
**Director Mergers and Acquisitions DSM China**  
**With DSM since July 2008**



Shanghai offices of the DSM (China) Ltd. Holding and several business groups, as well as the R&D labs of DSM in China. The new campus will house approximately 600 people, and it will be DSM’s most important research facility outside Europe and the United States. The creation of this ‘Green Facility’ in China not only fits well with our corporate policy on sustainability; it also demonstrates that we can assist emerging economies in taking a leadership position on global issues. On 29 October 2008, Tim Jeanné, General Manager of DHV in Shanghai, gave a presentation for Dutch prime minister Jan-Peter Balkenende about the DSM Campus as a model for sustainable construction in China. In support of DSM’s commitment to sustainability, the DSM Managing Board decided in 2008 to apply LEED® norms to all new DSM office buildings as well as office reconstruction projects.

### **Social plan on closure of Gonglu site**

**At the request of the local government and with the aim of supporting local residential development, we closed down our site in Gonglu in May 2008. Selected activities formerly carried out at this site were transferred to our site in Xinghuo, Shanghai. A detailed and comprehensive social plan was put in place for employees who had worked at the Gonglu site.**

Prepared by management and discussed and approved by the representatives of the Labor Union, this plan included additional items on top of the normal compensation stipulated by Chinese labor law. Retention of employees was optimized by various means. Where activities had been transferred to Xinghuo, the employees assigned to them were likewise relocated. Vacancies at Xinghuo site were kept open until the relevant employees from Gonglu became available to take

### **DIVERSITY PROGRAM**

*Successful implementation of our accelerated Vision 2010 strategy requires a wide variety of outside-in views, diverse capabilities and backgrounds, and a mix of local and global experiences. This balance ensures optimal decision-making combined with fast and reliable implementation.*

*The development of a more diverse workforce is therefore a cornerstone of our HR strategy, and is carefully overseen by DSM’s Diversity Council, which was founded in 2007 and is chaired by Feike Sijbesma, Chairman of the DSM Managing Board. At the beginning of 2008, DSM decided that the intake of non-Dutch executives must be increased to at least 60%. This was achieved by a clear margin during 2008, the score as at 31 December being 65%. DSM’s aim is for 25% of executives joining from outside the company in the period from 2008 to 2010 to be women. In 2008 this figure was 18%.*

*Recognizing that our efforts in this area need to be increased, focus groups comprising women from various areas of DSM were organized during 2008 to ascertain how more women can be encouraged to apply for jobs at, as well as internal promotions within, DSM.*

# Emerging Economies

these up, and a number of additional skilled employees were transferred to Xinghuo in order to anticipate the future growth of the site. We additionally liaised with several local agencies and companies to identify job opportunities for those employees who could not be relocated.

## India

**India is one of the countries where DSM is developing Base of the Pyramid (BoP) activities. Four billion people in the world make up the Base of the Pyramid. They earn two dollars a day, or less.**

The 'BoP philosophy', first articulated by C.K. Prahalad, states that companies have the resources and the expertise to develop new products or services to serve the needs of the poor, thus combining commercial success with poverty alleviation. Serving the Base of the Pyramid requires a clear understanding of the needs and wants of these four billion poor people, and involves developing innovative business models and new technologies. Through its dedicated Indian BoP operation DSM Neev, DSM engages in the development of new business models and teams up with local partners to implement these. We have embarked on business projects that aim to support rural farmers in India to create more value by providing performance nutrition services (a combination of diagnostic tools, training modules, basic farm management and animal feed). In addition, projects have been initiated to improve local biogas production through the use of additives which help convert agricultural waste and manure into a local source of heat, cooking gas and off-grid electrical power.

## Animal nutrition programme

**DSM Neev implements DSM's Base of the Pyramid strategy in India. The word 'Neev' is Hindi for 'base' or 'foundation', and the starting point of DSM Neev is the development of sustainable business that benefits both the poverty-stricken in India and DSM.**

In November 2007, DSM Neev set up an animal nutrition program for the dairy sector in India. Delivered together with Pradan (an Indian self-help group), AMUL (a dairy cooperative) and BAIF (a research and development foundation), the initiative will offer DSM cattle feed to selected farmers. It is hoped that this three-year collaboration will help to shorten the inter-calving period, reduce the frequency of mastitis, and increase milk yields. DSM's innovative iCheck™ system, which is used to check  $\beta$ -Carotene levels in cows' blood, is also being made available to help Indian farmers assess the health

of their livestock. This is a win-win situation, offering economic returns to DSM and opportunities for sustainable growth to impoverished farmers.

## Foundations for bio-village

**In July, villagers in Toansa, Punjab, India, took a step in the direction of organic farming with the help of a DSM 'Torch' initiative.**

Called 'Towards a Bio-village', the project was inaugurated at the suggestion of local DSM employees with the object of helping local farmers adopt more environmentally friendly practices. Whereas local farmers currently use chemical fertilizers to improve their soil, this initiative will provide them with the means to start farming organically. Several vermicompost installations are being provided in Toansa and the local farming community is being trained in their use.

## Brazil

**Obesity, which can trigger diabetes, is recognized as a growing health problem by the government of Brazil.**

In 2008 DSM joined forces with ANAD, the National Diabetics Aid Association of Brazil, to promote InsuVital™ in foods and beverages by using the ANAD quality seal on the product labels. Manufactured by DSM Food Specialties, InsuVital™ represents a breakthrough in the management of type 2 diabetes. It enables manufacturers to create products which are clinically proven to help type 2 diabetics actively manage blood glucose (sugar) levels after a meal. DSM also participated in the 2008 ANAD Congress. DSM Nutritional Products Brazil is also collaborating with Unilever on that company's global 'Choices' program. Forming part of the company's Vitality agenda, this program makes use of a front-of-pack 'Choices' logo designed to make it easier for consumers to opt for healthy choices when buying foods and beverages. The 'Choices' seal stands for food safety, sustainability within the food chain, environmental care, responsibility and quality. DSM Nutritional Products in Brazil is proud to be recognized as sharing these important values.

## A challenge for DSM

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### Balancing diversity and unity in the workforce

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“DSM has its origins in Limburg, a province in the south of the Netherlands. For over a century, our activities have been centered there and have drawn heavily on the labor market of the region.

While still headquartered in Limburg, the DSM of today is a globally operating company. As such, we need a diverse workforce that reflects the many different markets we serve. Our duty as an employer means that we must increase the diversity of our workforce in a carefully managed way. This involves increasing the proportion of non-Dutch nationals within our company and also the ratio of women to men in senior positions.

Addressing the current imbalances between non-Dutch and Dutch nationals is only part of the challenge, however. In China, for instance, we need to see non-Chinese nationals committing themselves to longer postings and to learning the Chinese language. We also need to encourage greater cross-regional fertilization, diversifying our Chinese workforce by the addition of Chinese nationals drawn from such places as Hong Kong and Taiwan.

Our challenge is to create a common sense of identity and purpose for our employees while increasing the cultural diversity and rectifying the gender imbalance in our workforce. This can only be achieved if we understand ourselves as a single global company.”

**Wei-Ming Jiang**  
**DSM Corporate Vice President &**  
**President of DSM China**

# People



## Highlights

- In 2008 DSM became more international: the percentage of non-Dutch members of our management group increased from 45% in 2007 to 53% in 2008.
- The percentage of women in our management group increased from 17% in 2007 to 20% in 2008.
- A new career management programme stimulating a high-performance culture was developed in 2008.
- A new DSM learning and development architecture was introduced in 2008.
- In 2008 we attracted 486 top talents from across the globe, of whom 77% were non-Dutch and 38% were women.
- In 2008 we designed a global internal vacancy system to ensure transparency regarding career opportunities within DSM worldwide.

## Our employees

### Workforce composition

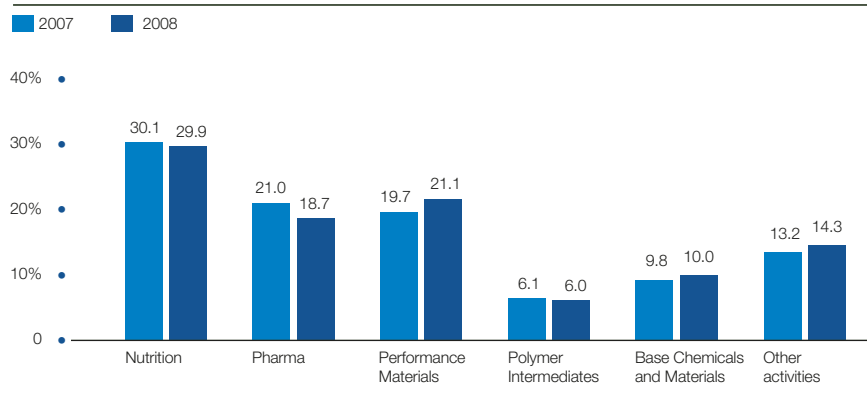
The HR strategy *Passion for People* and our DSM Employee Engagement Survey resulted in a range of interconnected activities designed to cultivate a skilled, diverse and engaged workforce.

In recent years, supported by the reshaping of our portfolio, DSM has become more international in terms of the regional

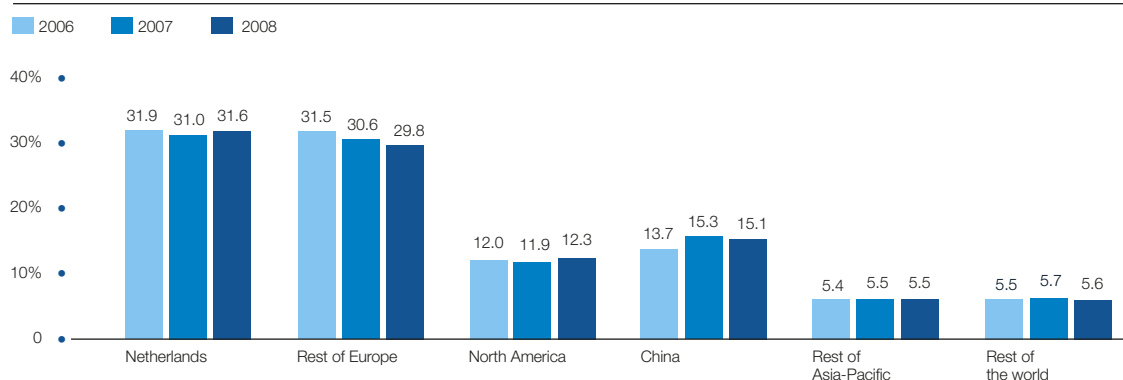
spread of our employees. In 2008 we saw a small increase in the number of positions situated in the Netherlands.

This is attributable to the fact that some of our main growth businesses (such as DSM Dyneema and the DSM Innovation Center) are primarily located or headquartered in the Netherlands. In the coming years, based on possible opportunities for acquisitions and our divestment program, we expect to see a further increase in the international spread of our employees.

### Employees per cluster (in %)



### Employees per region (in %)



# People

## Workforce diversity

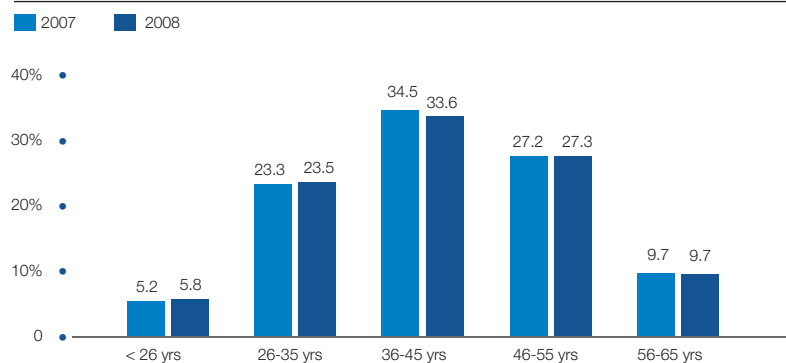
DSM has a global diversity drive to increase the diversity of our workforce, in terms of both nationality and gender. In 2008, the DSM workforce developed accordingly. We are especially satisfied to see the growth in diversity, both in gender and in internationalization of our management group.

The new career management, designed in 2008 and launched with effect from 1 January 2009 (see page 41), provides more transparency concerning career opportunities within DSM, increases the visibility of global talent, stimulates employee engagement, and fosters increased ownership and accountability for career development on the part of managers and employees.

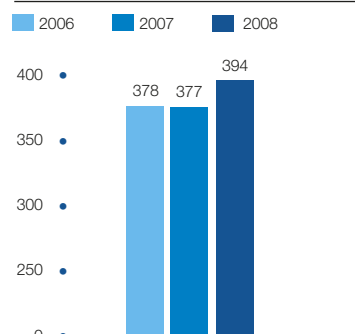
The new design will help DSM to achieve the objectives defined by its accelerated *Vision 2010* strategy.

Reviewing initial experiences in the preparation of the new career management, we see a promising development in that the increase in diversity in our management group is also reflected in our talent pipeline and the identification of our potentials for the future.

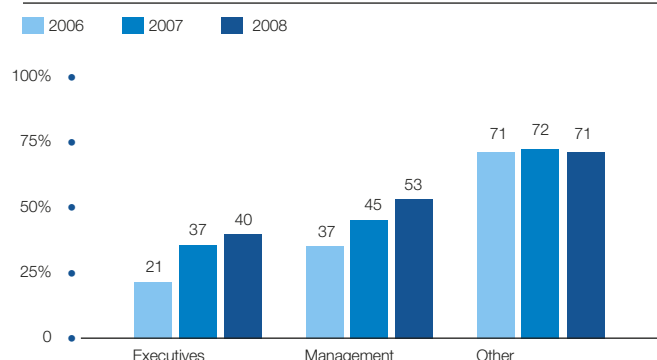
Employees per age category (in %)



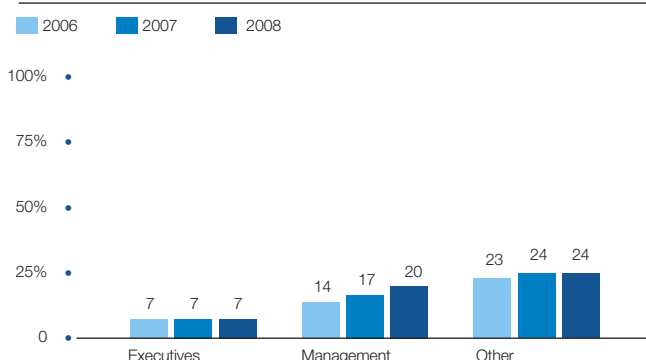
Net sales per employee (x € 1,000)



Workforce diversity (% non-Dutch)



Workforce diversity (% women)



## Our new employees

### Executive hires

DSM's Diversity Council, headed by Feike Sijbesma, the Chairman of the Managing Board, formulated targets to have an average % inflow of new non-Dutch executives of 60% (65% realized in 2008) and to have an average inflow of 25% of new female executives (18% realized in 2008) by the end of 2010.

In 2008, our focus was on hiring executives in emerging economies (Latin America/India/China). Also, our hires were very much focused on the Performance Materials cluster, an area where it is difficult to secure female candidates for senior management positions.

For the coming years, we will continue our focus on emerging economies, and we will step up our efforts to proactively approach female executives in the market so as to create a pipeline for anticipated hiring needs.

Anticipated growth in the Nutrition cluster, where the number of senior female candidates is relatively higher, is also expected to help these numbers to improve.

### Professional hires

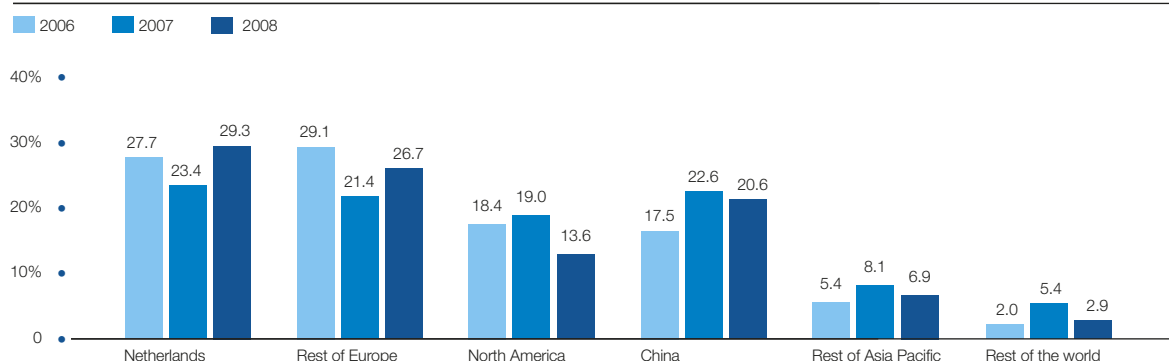
In 2008 we further strengthened our regional recruitment footprint to ensure that we continue to attract top talents from across the globe. The number of non-Dutch and female professionals entering DSM continues to grow.

In 2008, we recruited in total 486 professionals (graduates and experienced hires), of whom 77% were non-Dutch and 38% were women. In 2007, 65% of our recruits were non-Dutch and 32% were women. This once again underlines our efforts to strengthen the diversity of our workforce.

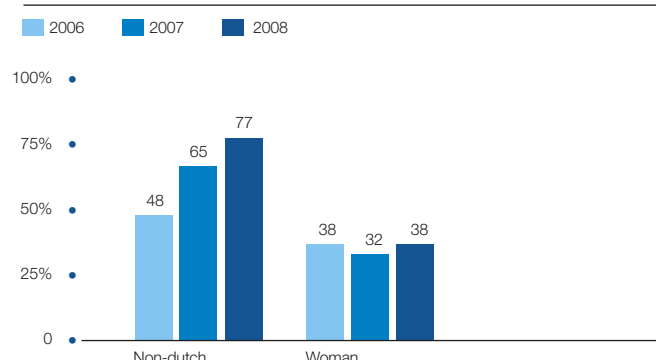
### Total workforce hires

The total workforce inflow of new employees in DSM during 2008 was strongest for positions situated in the Netherlands. This is attributable to the fact that some of our main growth businesses (such as DSM Dyneema and the DSM Innovation Center) are primarily located or headquartered in the Netherlands.

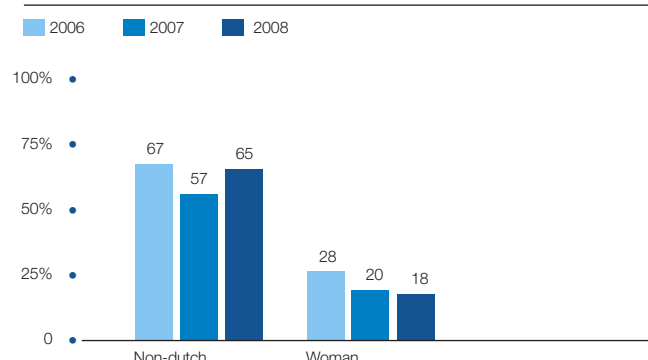
**New hires per region** (total workforce in %)



**Professional hires - diversity** (% non-Dutch)



**Executives hires - diversity** (in %)



## Employability and development of our employees

We are seizing the opportunity to strengthen the diversity of our leadership team by means of our recruitment efforts. While recognizing the need to attract external talent, we also recognize the need to stimulate existing talent across DSM. A new global recruitment management system was designed in 2008, giving employees access to all DSM vacancies worldwide. This will provide greater transparency concerning career opportunities and will also further internationalize our employee base.

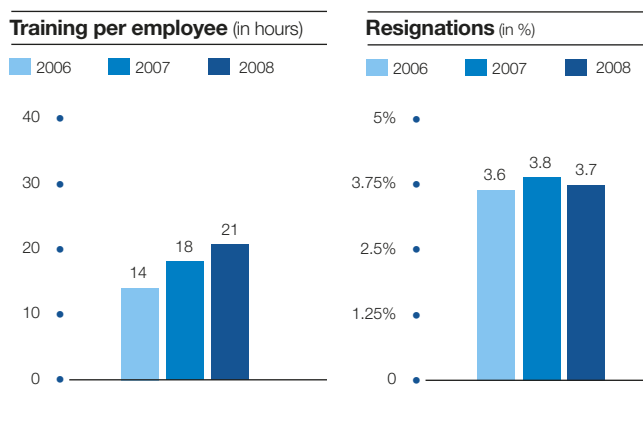
The DSM HR policy states that we encourage our people to improve their own and their colleagues' performance and that we invest in their knowledge and skills on an ongoing basis to ensure their long-term employability. To facilitate this, we provide our employees with coaching and mentoring for growth and personal development.

In 2008, the number of hours of training invested in our employees (total workforce) rose once again (see graph below).

In 2008, 1513 DSM professionals coming from 29 different countries where DSM is active, participated in training programs provided by the DSM Business Academy.

## Outflow of employees

In 2008 we had a total outflow of 1,712 employees. 170 employees retired, 869 employees resigned of their own will and, most unfortunately, 13 DSM employees died, of whom one regrettably lost his life in an accident at DSM (see page 74). In 2008, 173 employees were requested by DSM to leave the company (for performance and compliance-related reasons). A further 487 were made redundant due to reorganizations.



## DSM Alert whistle-blower procedure

DSM's governance system includes the DSM Alert whistle-blower procedure, which was introduced in 2005.

DSM Alert gives employees the opportunity to flag up cases of suspected abuse or deviations from internal or external regulations without fear of retribution.

Employees can report with the utmost confidentiality to the dedicated DSM Alert Officer, who in turn reports direct to the Chairman of the Managing Board. In 2008, 15 cases of suspected abuse were reported. The DSM Compliance Officer deals with these cases according to the set procedure.

Proven violations will result in immediate discharge (see page 11).

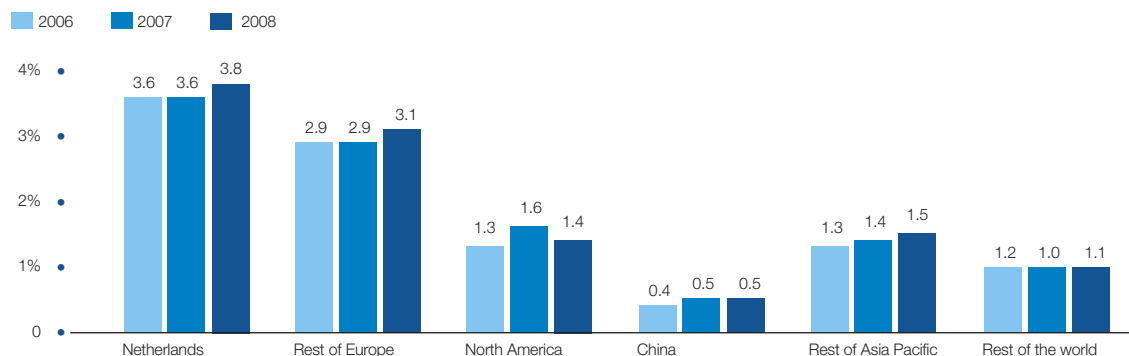
## Health and safety of our employees

The concept of health and wellness plays an important role in the lives of our employees, and we at DSM believe that organizational and safety performance are directly linked to the health and well-being of our employees. This link between health and organizational performance is demonstrated by a wide range of health-related initiatives occurring at local sites worldwide (see page 30).

Our Global Health Management initiative involves a health promotion program for DSM employees including a web-based tool helping employees to assess their health risks and set themselves healthy lifestyle goals. This program is called DSM Vitality Checkpoint. Where DSM Vitality Checkpoint has been introduced, it has been combined with comprehensive health checkups and individual follow-up on any health issues identified. In 2008, 1414 DSM employees (response rate 91%), in both the Netherlands and the USA, participated in DSM Vitality Checkpoint. It is our aim to stimulate further roll-out in the organization in the coming years.

Absenteeism is determined by calculating the total number of employees absent due to illness in hours as a % of the total possible working hours. The figure for the total possible working hours is calculated by using the average actual workforce in FTEs for the respective period, multiplied by the number of hours that are the basis of one FTE (52 weeks multiplied by the 'normal' number of hours per week, not taking into account leave of absence and holidays).

## Absenteeism (in %)



## Safety

Much to our regret, on August 28 a fatal accident occurred at DSM Pharmaceutical Products in Venlo, the Netherlands. More information on this tragic accident is given on page 74.

DSM has set itself the target of reducing the FI (Frequency Index, the number of cases per 100 employees per year) of recordable injuries by 50% between 2005 and 2010. This target includes both DSM employees and contractors. The FI for recordable injuries was 0.72 in 2008, compared to 0.95 in 2005, a reduction of 25%. The FI for Lost Workday Cases of our own employees fell from 0.33 in 2005 to 0.20 in 2008, a reduction of 40%.

Several units have demonstrated that our programs on compliance, behavior-based safety, training and learning from incidents are effective.

In addition to these programs, the 10 sites on which 40% of all our accidents happen have been urged to step up their efforts to improve their safety performance.

In 2008, the 2007 SHE Award was given to DSM Anti-Infectives in Cairo, Egypt.

We consider it a very positive development that this award for outstanding achievements in Safety, Health and the Environment is awarded to a site outside Europe or the USA.

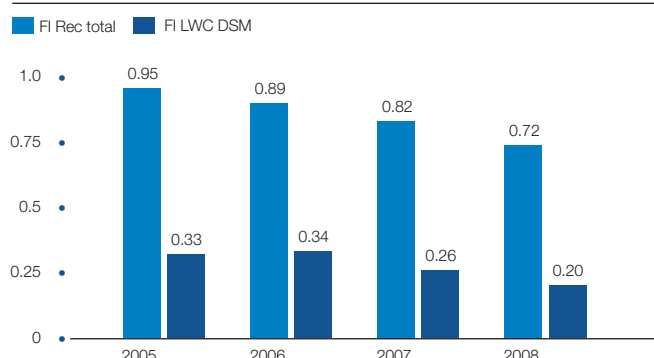
## Occupational Health

In 2008 a total of 18 Occupational Health Cases were reported, the same as in 2007. Reported cases feature physical troubles (11), psychological troubles (5) and allergic reactions (2).

As a follow-up to the completeness check of our risk assessments for chemical substances in 2007, a new practice was implemented as a guide to performing risk assessments on the shop floor. A web-based database and calculation tool are part of this practice. Furthermore, health-oriented audit checklists were developed and implemented and will be used as a pilot in one of the audits in 2009.

In addition, an Industrial Hygiene Network of specialists was established, which in 2009 will deliver the first joint industrial hygiene initiatives.

## Safety performance



# Planet



## Highlights

- Six out of our nine environmental targets for 2010 are well on track and are expected to be realized. The realization of three targets (emissions of NO<sub>x</sub>, VOC and SO<sub>2</sub>) is not yet certain and depends on timely realization of several projects.
- Energy efficiency (energy consumption per unit of product) has improved by 3% since 2005. The main improvements were realized at DSM Anti-Infectives and DSM Nutritional Products. The improvement is lower than the figure that was reported last year (4%). This is the result of the fact that several of our units reduced their output in the last quarter for economic reasons, which results in lower energy efficiencies. As this situation is expected to be temporary, we expect to realize the target of 8% in 2010.
- The emission of greenhouse gases was reduced by 3.3 million tons of CO<sub>2</sub> equivalents relative to 2005 (30%). This is mainly due to the new technology installed at DSM Agro at the end of 2007 to remove N<sub>2</sub>O. The N<sub>2</sub>O reduction target (40% reduction) has been amply achieved.
- The discharge of COD (oxidizable organic compounds) in wastewater was further reduced, mainly due to improvements that were realized in China at DSM Fibre Intermediates in Nanjing and DSM Anti-Infectives in Zhangjiakou.

## Environmental targets for 2010

The table below shows DSM's environmental reduction targets for 2010 and the progress made relative to 2005. The environmental targets are based on the principle that all of DSM's sites in the world should as a minimum meet the standards as applied in the European Union or the United States. New plants and major plant modifications should meet this requirement right from the start, whereas existing plants should meet it within five years.

Items for which we have already achieved the 2010 target or are on track are indicated green in the table.

The items for which achievement of the targets is not yet certain and which require additional effort for their realization are marked in yellow.

In the following paragraphs, we give DSM's total emissions and energy consumption in 2008 and comment on our progress towards meeting the reduction targets for 2010. It should be taken into account that several plants reduced their output in the last quarter of 2008 for economic reasons.

The reporting of the data by the sites is regularly audited by the Corporate Operational Audit department of DSM.

Target name	Reduction realized 2008, relative to 2005 (%) <sup>1</sup>	Reduction target 2010, relative to 2005 (%)
Dust	75	75
N <sub>2</sub> O	65	40
NO <sub>x</sub>	7	20
SO <sub>2</sub>	45	75
VOC	20	50
COD	65	15
Landfilling of non-hazardous waste	40	5
Landfilling of hazardous waste <sup>2</sup>	95	100
Energy	3	8

<sup>1</sup> Assuming the same production volumes and product types as in the reference year 2005

<sup>2</sup> For hazardous waste DSM intends to ban landfilling for all situations where this is feasible

## Emissions to air

### Dust

Based on the improvements realized in previous years, the target for 2010 has already been achieved.

### N<sub>2</sub>O

Emissions of N<sub>2</sub>O (dinitrogen oxide) have decreased strongly due to reduction projects that were realized in the nitric acid plants of DSM Agro in Sittard-Geleen and IJmuiden, the Netherlands, at the end of 2007. The target for 2010 was achieved.

The main source left for N<sub>2</sub>O emissions is at the caprolactam plants of DSM Fibre Intermediates in Sittard-Geleen, the Netherlands, Augusta, USA and Nanjing, China. Measurement of N<sub>2</sub>O in these plants is complex, which causes some uncertainty in the reported values. Improved measurements may thus lead to corrections in the coming years.

DSM Fibre Intermediates is working on new technology for N<sub>2</sub>O abatement in caprolactam plants. For our 2020 targets we take into account that the development and application of this new technology will be successful.

### SO<sub>2</sub>

Emissions of SO<sub>2</sub> have decreased significantly since 2005.

Due to limited sampling of the coal used at DSM Fibre Intermediates in Nanjing, China some uncertainty exists regarding the accuracy of the absolute SO<sub>2</sub> data.

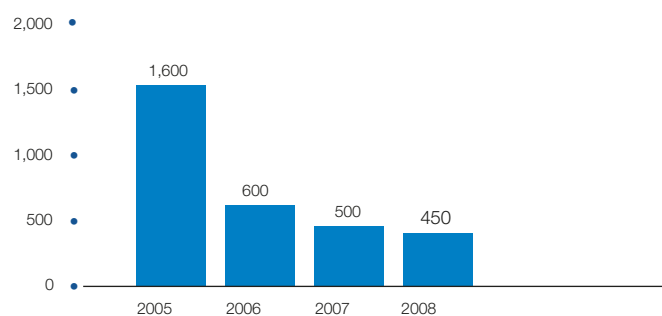
Closure of our DSM Nutritional Products site in Gonglu, China and the divestment of DSM Deretil have resulted in a reduction of approximately 350 tpa compared to 2007. Further reductions are planned at the DSM Anti-infectives sites in Toansa, India and Zhangjiakou, China. Reduction possibilities at DSM Fibre Intermediates Nanjing, China are being evaluated and will be implemented by the end of 2010. Depending on the timely realization of these projects, we expect to realize the reduction target of 75% in 2010 or one year later.

### NO<sub>x</sub>

NO<sub>x</sub> emissions fell compared to 2007 due to the closure of our site DSM Nutritional Products Gonglu, China and the reduced output of several other plants, as a result of the economic situation. Realization of the target of 20% reduction in 2010 is related to the citric acid business activities.

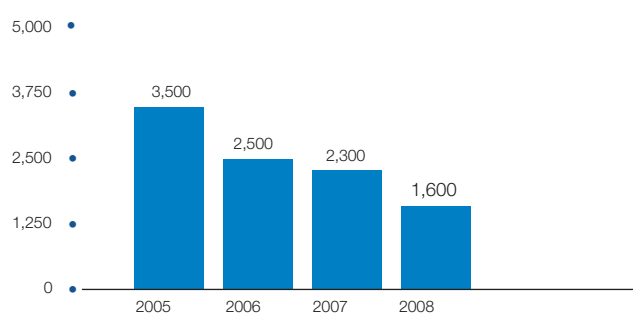
Emissions to air (in tons)

Dust



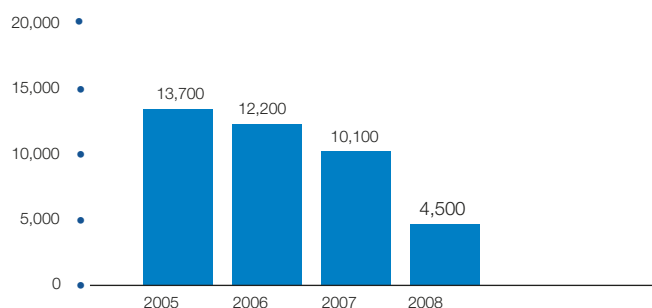
Emissions to air (in tons)

SO<sub>2</sub>



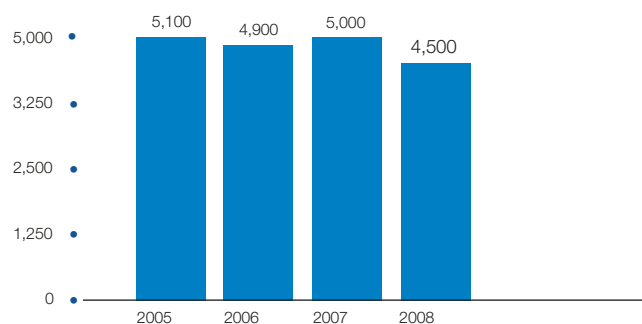
Emissions to air (in tons)

N<sub>2</sub>O



Emissions to air (in tons)

NO<sub>x</sub>



## VOC

Total emissions of volatile organic compounds fell by approximately 350 tpa compared with 2007.

Reductions resulted from lower production volumes at DSM Anti-Infectives, Toansa, India and DSM Fibre Intermediates, Augusta, USA the closure of DSM Nutritional Products Gonglu, China and the divestment of DSM Deretil. An incident at DEX Plastomers, Sittard-Geleen, the Netherlands resulted in an increase (see page 74).

Further reduction projects are planned at the DSM Anti-Infectives sites Ramos Arizpe, Mexico, Toansa, India and Zibo, China. The achievement of the reduction target of 40% depends on the timely realization of these projects and improvements at DSM Fibre Intermediates Augusta, USA.

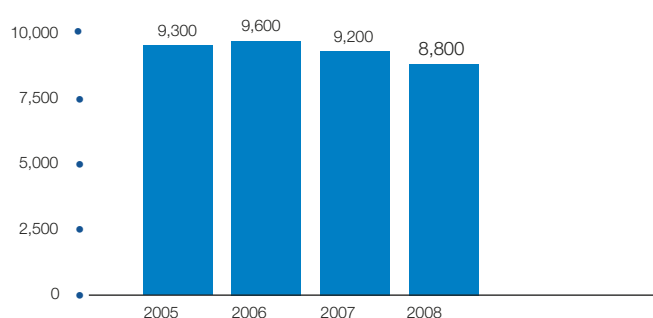
## Emissions to water

### COD

The discharge of COD was significantly reduced compared to 2007, mainly due to improvements at DSM Fibre Intermediates Nanjing, China and DSM Anti-infectives Zhangjiakou, China and the divestment of DSM Deretil. As a result of these and previous reductions, the target for 2010 has amply been achieved.

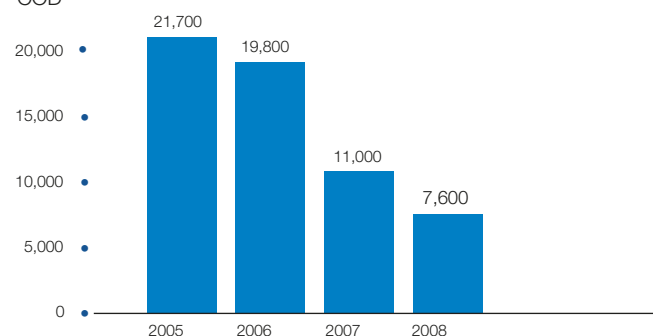
#### Emissions to air (in tons)

##### VOC



#### Emissions to water (in tons)

##### COD



## Waste

### Non-hazardous waste

The landfilling of non-hazardous waste was significantly reduced compared to 2007. A major reduction resulted from a change in the destination of the mycelium at DSM Nutritional Products Wuxi, China which has been used as fertilizer since April 2008. Further reductions resulted from the divestment of DSM Deretil and reduced production of one of the products at DSM Nutritional Products in Dalry, UK.

As a result of these and previous reductions, the target for 2010 has amply been achieved.

### Hazardous waste

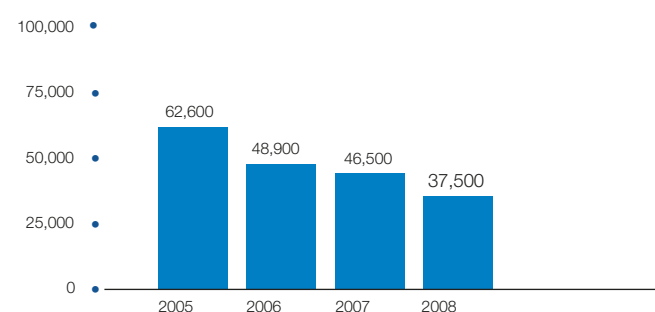
DSM intends to ban the landfilling of hazardous waste for all situations where feasible alternatives exist, which has been expressed via the 100% reduction target. Landfilling is only accepted within DSM if there are no technically feasible or legally permissible alternatives.

In 2008 a total of approximately 4100 tons of hazardous waste were landfilled. By far the largest amount (3700 tons) came from DSM Anti-infectives Toansa, India. This concerned different types of waste that had been stored at the site in previous years and are now being transferred to an authorized landfill. No other feasible alternative is available.

For practically all the other materials it was also shown that no technically feasible or legally permissible alternatives exist.

#### Waste (in tons)

##### Non-hazardous waste



## Climate Change: energy and greenhouse gases

Due to lower production volumes, total energy consumption has decreased significantly compared to 2007. Energy efficiency has improved by approx. 3% relative to 2005. The most important changes contributing to the improved efficiency are shifts to more efficient technology at DSM Anti-Infectives and DSM Nutritional Products, combined with a growth in production volume in these business groups. On the downside, a number of business groups had significantly lower production levels, especially in the fourth quarter of 2008, resulting in inefficiencies.

Our total greenhouse-gas emissions are shown in the graph. They include direct CO<sub>2</sub> emissions (emissions from our own processes), indirect CO<sub>2</sub> emissions (emissions from the generation of purchased electricity and steam) as well as emissions from N<sub>2</sub>O and other greenhouse gases. The total emission of greenhouse gases was greatly reduced. This is primarily the result of a significant reduction of N<sub>2</sub>O emissions due to the reduction of N<sub>2</sub>O at the plants of DSM Agro in Sittard-Geleen and IJmuiden, the Netherlands, that was realized end 2007.

In 2008 we reviewed the options to reduce greenhouse gases, direct emissions of N<sub>2</sub>O and CO<sub>2</sub>, as well as indirect emissions of CO<sub>2</sub> due to the use of electricity and steam. On the basis of this review, we have set a target of 25% reduction in greenhouse gases for the period 2008-2020, taking into account the realization of the intended changes in our portfolio and a certain dimension of production growth. To achieve this 25% reduction target, an average annual energy efficiency improvement of 1.7 % is necessary, as well as successful development and application of the new technology to reduce the N<sub>2</sub>O emissions in our caprolactam plants.

In addition to reductions effected by DSM, some of our products and services will also contribute to the reduction of

greenhouse gases in the value chain. In 2008 we continued life cycle analyses to quantify the present impact and to develop a proper method for quantifying improvements. We expect to be able to derive meaningful targets for this in 2010.

## Non-compliances and penalties

Four DSM sites were given environmental penalties by the competent authorities. Two of these were fined. The total amount paid in fines amounted to approximately € 110,000, compared to € 185,000 in 2007. The fines were imposed on DSM Anti-Infectives Zhangjiakou, China and DSM Engineering Plastics in Genk, Belgium, in both cases for exceeding waste water discharge limits.

To the best of our knowledge, no other fines or non-monetary sanctions were incurred in 2008.

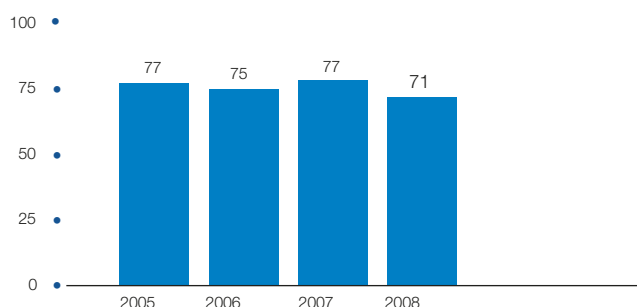
## Environmental incidents and complaints

The total number of environmental complaints was 78. Just as in previous years, most complaints were about odor (36) and noise (36). The sites that received most complaints were Delft, the Netherlands (18) and Seclin, France (19).

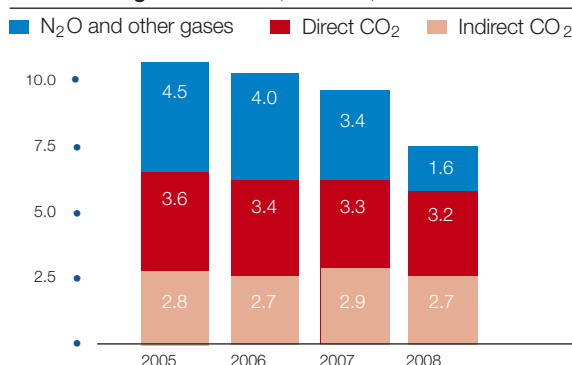
The total number of all environmental incidents was 539. Of these incidents, 17 were rated as serious. This increase compared to 2007, when three incidents were classified as serious, is the result of a change in the definition of serious incidents.

Of the total number of 539 environmental incidents, 251 have also been classified as related to process safety. Together with 10 of our LWCs in which contact occurred with process chemicals, this adds up to 261 incidents that have a relation to process safety.

**Energy consumption** (in PJ)



**Greenhouse gas emissions** (in million tons)



This is the first year that DSM reports a total number of these so-called 'process safety incidents'.

Industry recognizes the need for performance indicators for process safety. It has been concluded that exclusively focusing on recordable injuries may hamper insight into performance on process safety. However, uniform reporting standards for process safety incidents are not available yet. We have therefore decided to use our own criteria, applying relatively low reporting thresholds. A process safety incident is defined as either a release of hazardous materials from an installation above previously defined reporting thresholds, or a lost-workday case due to contact with process chemicals.

In 2008 DSM started a dedicated 'process safety competence network' where specialists from all over the world work together on maintaining high process safety standards and sharing good practices. The above mentioned information on process safety incidents will be analyzed to identify areas where we can improve further and to prioritize efforts following a risk based approach.

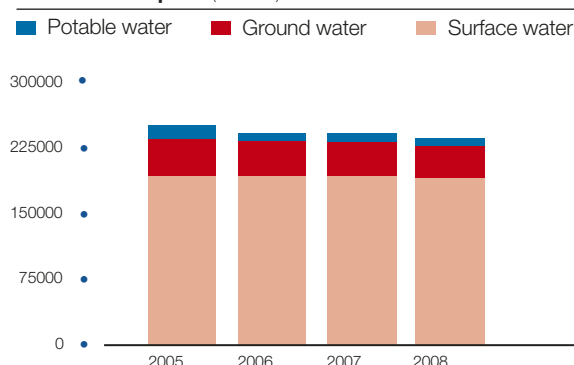
## Water consumption

DSM's global water consumption is shown in this graph. DSM wishes to reduce its water footprint in the future in view of the fact that water scarcity is a growing issue worldwide and water is likely to become a strategic resource.

The first step is to compare the consumption figures of DSM sites in 2008 to a water scarcity database (WHO, UNICEF and the Water Resources Institute). This will be done in 2009.

On the basis of this initial scan, DSM will prioritize actions and set differentiated targets in a water policy for different water scarcity levels.

### Water consumption (1000 m<sup>3</sup>)



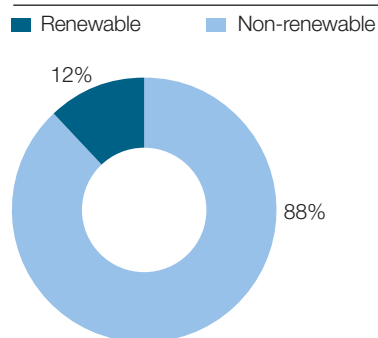
## Biodiversity

In order to evaluate whether our operations can have a potential impact on biodiversity, we asked all our production sites whether they are in, or within a distance of 500m from, a protected area or an area of high biodiversity. In parallel, we conducted an independent internet search into this issue for the sites with the highest emissions. From these investigations it was shown that DSM has 12 sites in or adjacent to (protected) areas of high biodiversity. From a first analysis we have no indication of any impact of our operations on these areas. The analysis will be finalized in 2009.

## Raw materials

DSM wishes to shift from non-renewable raw materials to renewable raw materials. In order to chart our progress over the coming years, we analyzed our raw material consumption in 2008. From the total amount of raw materials of approximately 4.9 million tons that DSM used in 2008, 12% can be classified as renewable. This category comprises mainly sugar, molasses and vegetable oils.

### Raw materials



# Profit



## Highlights

- DSM achieved a record year despite the impact of the global economic downturn in the last quarter of 2008.
- Economic headwinds increased, notably during the fourth quarter, and the company took several measures to improve cash flow, reduce costs and strengthen profitability and future competitiveness.
- DSM remains fully committed to continued investments in innovation and will continue to invest in growth businesses.

### Key figures for 2008

(in € million)	2008	2007
Net sales, continuing operations	9,297	8,757
Operating profit before exceptional items plus depreciation and amortization (EBITDA), continuing operations	1,357	1,247
Operating profit before exceptional items (EBIT), continuing operations	903	823
Capital expenditure including acquisitions	739	568
R&D expenditure	394	372
Net profit	577	429
Cash flow (net profit plus amortization and depreciation)	1,028	1,003
Cash flow return on investment (CFROI in %)	8.7	8.3
Return on capital employed (ROCE in %)	14.4	13.4
Net profit per ordinary share before exceptional items (€)	3.64	3.07
Net profit per ordinary share (€)	3.45	2.35
Dividend per ordinary share (€)	1.20	1.20

### Main developments in 2008

In spite of the developments in the last quarter, the full-year 2008 result showed a record operating profit for DSM due to excellent performances throughout the year from DSM Nutritional Products, DSM Dyneema and DSM Agro.

At 8%, organic growth for the full year was clearly above DSM's strategic target (5%). The relatively weak volume development was due to the economic weakness that materialized in the last part of the year.

DSM was able to post a record operating profit in 2008, in spite of the economic turmoil in the fourth quarter. The main contributor was Nutrition, where DSM's focus on innovation and differentiation in combination with structural changes in the vitamin industry has resulted in significantly higher profitability.

In addition, DSM Dyneema was able to sustain its solid growth and DSM Agro showed substantial pricing strength resulting in higher profits.

Net profit before exceptional items increased from € 558 million to € 608 million (+9%). Earnings per share (continuing operations, before exceptional items) increased to € 3.64 per ordinary share (+19%) for the full year due to the higher net profit and the share buy-back.

Net finance costs increased from € 75 million to € 102 million. The increase was mainly caused by the higher net debt. The effective tax rate was 25%, the same as last year.

Cash flow from operating activities amounted to € 910 million for the full year, of which € 392 million was generated in the fourth quarter.

# Profit

At € 587 million, capital expenditure was clearly higher than last year (€ 475 million) and above the level of depreciation and amortization.

Compared to year-end 2007 net debt increased by € 443 million to € 1,781 million, representing a gearing level of 28%. This increase was amongst other things caused by the share buy-back program.

More information about DSM's financial performance and position can be found in the Annual Report 2008.

## Emerging opportunities for Sustainability and Profit

Investments in sustainability are increasingly paying off in hard cash. DSM has left the period when sustainability efforts were traditionally focusing on improving SHE performance. In today's world, sustainable entrepreneurship is directly related to improving profitability as well.

Investments in energy efficiency are a case in point; they not only save money but also contribute to a better environment. At the DSM Resins site in Schoonebeek, the Netherlands, DSM has succeeded in reducing emissions of both CO<sub>2</sub> and NO<sub>x</sub>, and at the same time cutting back on gas consumption. Furthermore, the investment will result in a trouble-free process, eliminating the risk of odor nuisance and leading to a further increase in security of supply. This is an investment that adds value to people, planet and profit.

## Sustainability during an economic downturn

DSM is committed to sustainability and although the company is taking measures to address the current economic downturn, we will keep our focus on our strategic sustainability targets.

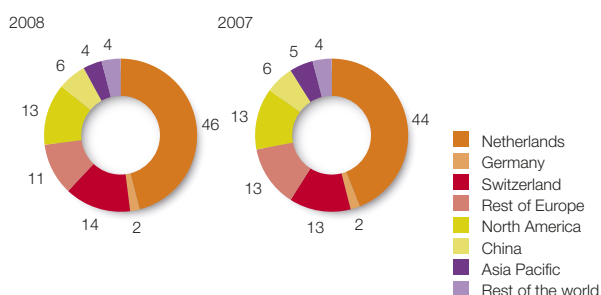
The current situation is offering opportunities for DSM to accelerate innovations. Via innovative sustainable solutions, DSM can add value to its customers' processes. For example by supplying enzymes that can reduce production time in nutrition. Shorter lead times mean less work in progress and less working capital.

From a strategic point of view, DSM is convinced that the current turmoil will not change the importance of the main global societal trends. The turmoil in fact highlights the importance of sustainable solutions. An example is the United States, where the new government has indicated it will change its focus from traditional fossil energy to new renewable energy sources such as wind energy, solar energy and second-generation biofuels based on biomass. DSM aims to provide solutions with its current businesses and is actively engaged in developing value-added solutions for the future.

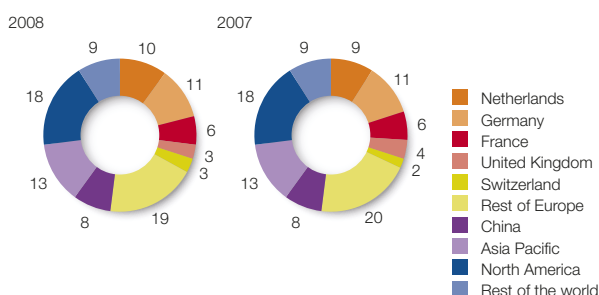
Plans of the new US government and other governments in the world to stimulate economic recovery include measures aimed at improving the digital infrastructure. For DSM this is a huge opportunity as DSM Resins is a world global market leader in the market for UV curable coating systems for optical fibers. DSM Engineering Plastics can provide a full range of halogen-free solutions for the electrical and electronics industry, contributing to a better digital infrastructure, a better eco-footprint and enhanced profits for DSM.

Sustainability has never been more relevant than right now.

Net sales by origin



Net sales by destination



## Financial

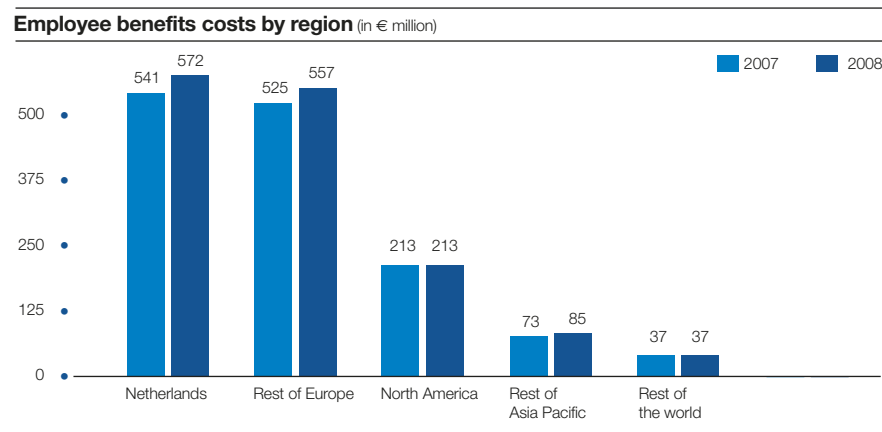
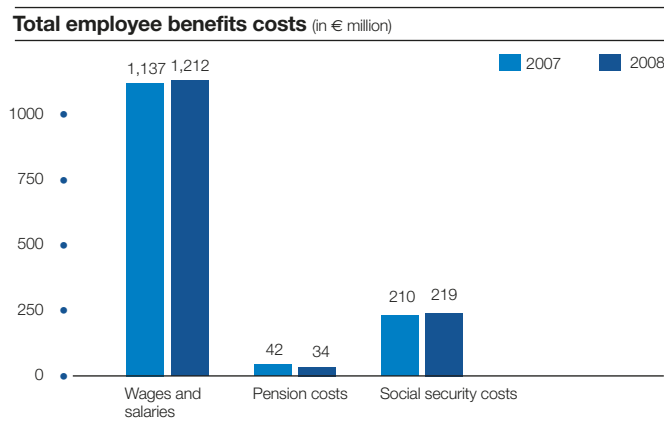
DSM's financial position remained strong in 2008 despite the worsening economic environment. DSM reacted swiftly when the first signs of the economic downturn became visible. The first action was to prioritize cash over short-term profitability via inventory reduction through plant shutdowns, reduced purchasing spend, focused credit control and the postponement of some projects. In doing so, DSM has been able to maintain its strong balance sheet and limit its dependency on the financial system. This prioritization of cash has been very successful, as evidenced by the fact that cash flow from operations in the fourth quarter alone amounted to € 392 million. In combination with difficult, but successful, actions to refinance short-term debt, DSM's cash position at the end of the year amounted to € 601 million. For the full year 2008, cash flow showed a 2.5 % increase to € 1,028 million. Net debt stood at € 1,781 million at year-end, an increase of € 443 million. The increase was mainly due to the share buy-back program. Gearing stood at 27.5 % at year-end. The rating agencies maintained their single-A credit rating for DSM.

## Financial position and policy

DSM has a policy of retaining a strong balance sheet and limiting financial risks. In the current economic environment this policy enables the continued execution of the *Vision 2010* strategy. However, in the light of the current more difficult market conditions, the company is re-evaluating and postponing some projects without jeopardizing the strategic direction.

One of the key targets of *Vision 2010* is to achieve a cash flow return on investment which exceeds the weighted average cost of capital by at least 100 basis points. DSM further aims for a net debt which is between 30 and 40% of equity plus net debt (that is, in normal times; currently the objective is to stay below 30 %) and an operating profit before amortization and depreciation which is at least 8.5 times the balance of financial income and expense. This underlines the company's aim of maintaining its single-A long-term credit rating.

An important element of DSM's financial strategy is the allocation of cash flow. DSM primarily allocates cash flow to investments aimed at strengthening its business positions and to dividend payments to its shareholders. The cash flow is further used for strengthening the Life Sciences and Materials Sciences businesses by means of selective acquisitions.



## Dividend

DSM aims to provide a stable and preferably rising dividend to shareholders. The dividend on ordinary shares proposed for the year 2008 amounts to €1.20 per share (2007: € 1.20 per share). An interim dividend of € 0.40 per ordinary share having been paid in August 2008, the final dividend will amount to € 0.80 per ordinary share, subject to approval by the Annual General Meeting of Shareholders.

In order to further enhance its service to shareholders, DSM introduced the possibility for shareholders to participate in a DRIP (Dividend Re-Invest Plan). DRIP allows shareholders to use their net cash dividends to buy shares in the company in a convenient way and at competitive costs. DRIP benefits not only shareholders but also the company, as it is another way to stimulate long-term share ownership and long-term shareholder involvement in the company.

## Repurchase of shares

On 27 September 2006 DSM announced the first share buy-back program with a total value of € 750 million as a main building block to realize the desired balance sheet structure in the framework of the *Vision 2010* strategy. In 2006 the company purchased a total of 6,700,000 shares under the first phase of this program. In 2007 the company initiated the second phase of the share-buy-back program and bought back an additional 13,828,008 shares. The second phase, and hence the first program, was completed in 2007 and the shares bought back under the program were cancelled in accordance with a decision of the Annual General Meeting of Shareholders.

On 27 September 2007 DSM announced a second share buy-back program, identical to the program launched in 2006. The first phase of this second program saw DSM buy back 6,855,000 shares for a total consideration of € 250 million.

During the second phase, executed in 2008, another 6,615,000 shares were bought back for a total consideration of € 250 million. DSM has meanwhile decided to cancel the remaining € 250 million part of this program.

On 31 December the company had 162,227,062 shares outstanding.

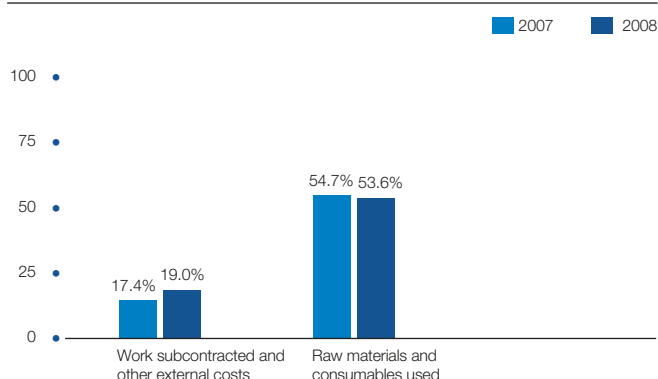
## Information to investors

During 2008, DSM kept the financial community well informed: via press releases, presentations, meetings, conferences, site visits and the DSM website. DSM visited its investors in most financial capitals of the world several times, staging road shows and conferences. The financial community was able to meet with senior management during these events. In these meetings, sustainable entrepreneurship and DSM's view on a sustainable future were on the agenda. The company increased its efforts to engage in a dialogue with private retail investors, both directly and through organizations that represent such investors. Every quarter, DSM published a so-called 'Presentation to Investors' giving insight into its quarterly results and progress on the sustainability agenda.

On the occasion of the annual DSM Analysts' Conference in September 2008 sustainability was discussed in the context of DSM's strategy and illustrated with a number of concrete examples from various businesses. Furthermore, the conference highlighted DSM China's commitment to sustainability and the fact that the Chinese government had commended DSM for its good SHE performance.

DSM was recognized by leading international financial institutes for the quality of the financial information it provided during 2008 via its website, its annual report, its quarterly presentations and press releases, and directly via its spokespeople. At the request of institutional and private investors an interactive version of the annual report was added to the website to enhance accessibility of the information and provide users with downloading possibilities.

**Costs of goods and services purchased** (in % of net sales)



## Risk management and governance

DSM reports extensively about governance and risk management in the Annual Report 2008 and in the corporate governance section on [www.dsm.com](http://www.dsm.com).

### Governance

DSM's business-steering model remained unchanged in 2008, after having been adapted to the *Vision 2010* strategy in 2006. The business groups are the main building blocks of the organization; they have integral long-term and short-term business responsibility and have at their disposal all functions that are crucial to their business success. In order to facilitate selective leveraging of expertise and implementation capabilities in the approach to markets, products and technologies, business groups with the most important commonalities in these areas are grouped into clusters. The business groups within a specific cluster report to one member of the Managing Board. This Board member has the responsibility of managing synergy within the cluster. In order to ensure sufficient independence with regard to financial management, the Chief Financial Officer has no business groups reporting to him.

In 2008, the framework was adapted to reflect the transition from four to five clusters (Nutrition, Pharma, Performance Materials, Polymer Intermediates and Base Chemicals and Materials) that was implemented on 1 January 2008 in order to facilitate the divestment of the activities in the Base Chemicals and Materials cluster.

The main elements of the framework at Managing Board, corporate and operational level are presented here:

- The Managing Board adheres to the Regulations of the Managing Board.
- In addition, the Managing Board and corporate staff departments and services work according to the Management Framework for the corporate level. This implies amongst other things that they adhere to the DSM Values and applicable corporate policies and requirements, and set the company's strategic direction and objectives in the CSD (Corporate Strategy Dialogue). The framework further defines the roles of clusters, corporate staff departments, shared-competence and business-support functions, the China Governance function, the DSM Innovation Center and the charters of several Boards. Together they define the basic organizational structure and the division of responsibilities between the Managing Board, these corporate and central functions and the business groups and clusters.

- The operational units conduct their business within the parameters of the Management Framework for operational units. This implies amongst other things that the operational units establish the strategy and objectives of their business according to the BSD (Business Strategy Dialogue), in which process various scenarios and related risk profiles are investigated. The framework further stipulates that strategy implementation must take place in line with corporate policies and multi-year plans in several functional areas and in compliance with the Corporate Requirements. Whenever a special situation calls for it, the Corporate Requirements are extended to include so-called Management Directives.

Compliance with the Corporate Requirements and the effectiveness of the risk-management and internal-control system are monitored by the entities themselves and discussed regularly between the Managing Board and the operational units. Compliance is subject to independent audits.

### Risk management

The DSM risk management system is based on the COSO-ERM Framework. It aims to achieve maximum integration of the risk management process in the normal business processes. It provides for risk assessment tools, controls for risks that commonly occur in the company and monitoring and reporting procedures and systems. The internal controls for the goods and money flows have been 'built into' standard business processes and tools have been developed to support their implementation and to monitor their effectiveness in operation. In this way, a high level of internal control can be achieved efficiently. Based on developments within and external to the company as well as findings from the various monitoring efforts, the risk management system is regularly adapted and optimized.

# Sustainability awards & distinctions 2008

The following is a list of awards and distinctions with a direct bearing on DSM's sustainability program.

## January

DSM received the North Carolina International Community and Economic Development Award, an award given by the N.C., USA Department of Commerce in recognition of the important civic and philanthropic contributions made by foreign-owned businesses. During the celebration, and to honor the hard work of employees who volunteer their time for community service, DSM donated USD 500 each to the ALS Association North Carolina Chapter, Habitat for Humanity of Pitt County, PC Stars after school program, and the Greenville Community Shelter.

## June

DSM's UK-based vitamin manufacturing facility in Dalry was awarded Carbon Trust Standard Certification. The Carbon Trust Standard is the world's first accreditation scheme designed to allow companies to measure the carbon footprint of their operations and facilitate an independent, specialist review of their energy management practices. The Standard is awarded by The Carbon Trust, an independent organization set up by the UK Government in 2001 to accelerate the move to a low carbon economy by working with organizations to reduce carbon emissions and develop commercial low carbon technologies.

The VNCI (Association of the Dutch Chemical Industry) awarded DSM Agro the prestigious Responsible Care Award 2008. Responsible Care® is a global chemical industry performance initiative that is implemented in the Netherlands through the VNCI. The award is given annually to the company that has made impressive progress in the area of Safety, Health and the Environment and that is an example to other companies.

For the second year in a row, DSM Desotech was named among Chicago's '101 Best & Brightest Companies to Work For' in 2008, as published by the National Association for Business Resources and the Michigan Business & Professional Association.

The award, established to honor companies who recognize employees as their greatest asset, is based on a broad range of criteria that reflects best policies and practices in human resource management, including: Communication, Community Initiatives, Compensation & Benefits, Diversity & Multi-Culturalism, Recognition & Retention, and Work-Life Balance.

## July

DSM Food Specialties received the Ringier Technology Innovation Award, a prestigious award within the Food & Beverage industry in China. The award was in recognition of DSM Food Specialties' product Brewers Clarex®, a breakthrough solution for brewers globally with many clear benefits, among others substantial cost and environmental savings which are on every brewer's agenda. Brewers Clarex® won this technology award because of its innovative character and its relevance to the Chinese market.

## September

In the Dow Jones Sustainability World Index 2008, DSM was once again listed as one of the top three leaders in the chemical industry sector. In 2003 DSM was included in the Dow Jones STOXX sustainability index for Europe for the first time. Since 2004 DSM has been listed in leading positions in both the European and the global index every year.

DSM was independently assessed according to the FTSE4Good criteria, and has satisfied the requirements to remain a constituent of the FTSE4Good Index Series. Created by the global index company FTSE Group, FTSE4Good is an equity index series that is designed to facilitate investment in companies that meet globally recognized corporate responsibility standards. Companies in the FTSE4Good Index Series have met stringent social, ethical and environmental criteria, and are positioned to capitalize on the benefits of responsible business practice.

DSM Composite Resins received the Environment Prize of the AVK (German Federation of Reinforced Plastics) Innovation Award for its new resin system Palapreg® Premium. The product sets a new industry standard, lowering total emissions in SMC application by a factor of 10 down to around 100ppm, according to VDA 278. This new development heralds a breakthrough reduction in VOC emissions, meeting the automotive sector's strict demands for low VOC emissions.

## October

The 2008 ICIS (International Chemical Information Services) Innovation Award for Best Business Innovation was awarded to DSM Nutritional Products and the World Food Programme (WFP) for the MixMe™ micronutrient powder. In a joint initiative, DSM and WFP developed MixMe™ sachets to provide people in developing countries with micronutrients that can be mixed with food at home. This 'home fortification' is a novel approach to the enrichment of food with micronutrients, as food is usually fortified industrially during the processing stage.

## November

DSM's blood pressure controlling lactotripeptide ingredient, TensGuard™, received the gold award for most innovative new health ingredient at the 2008 Health Ingredients Europe exhibition. TensGuard™ was awarded the prestigious first prize by an independent judging panel of retailers, manufacturers and scientists including Kellogg's Europe, Unilever Foods, Danone and Albert Heijn.

## December

DSM was named China's Top Employer™ 2009 by CRF China, an international publishing company that conducts research into best business practice in ten countries on three continents. This is the fourth time, and also third year in a row, that DSM China received this honor, after being named Beijing Region China's Top Employer™ in 2007-2008 and Shanghai Region China's Top Employer™ in 2007 and 2008.

# What still went wrong

**DSM strives to continually improve its performance in the field of safety, health and environment (SHE). However, there is always the possibility of something going wrong. The following list summarizes the most important things that went wrong in 2008.**

## Fatality at DSM Pharmaceutical Products

On August 28 a fatal accident occurred at DSM Pharmaceutical Products in Venlo, the Netherlands. A DSM employee was blown off an empty, clean, nitrogen-pressurized tank container while he was depressurizing the tank via the manhole. The manhole suddenly opened and he was lifted to a height of 15-20 meters. He fell to the concrete floor and died instantly.

In response to this tragic occurrence, all DSM units have reviewed their loading and unloading procedures. During the Global Manufacturing Conference held in Shanghai, China in November 2008, a 'closing the safety loop' initiative was started by Feike Sijbesma, Chairman of the DSM Managing Board.

### Q1

- At the DSM Fibre Intermediates facility in Augusta, USA a maintenance employee was hurt by hot water when installing blanks on a heat exchanger.
- During transport of a resins product in France an IBC (intermediate bulk container) that was not properly secured was lost from a truck on a public road.
- A small hydrogen fire occurred in the Caprolactam plant of DFI in Geleen, the Netherlands due to a leakage from the hydrogen compressor.
- At DSM Agro in Sittard-Geleen, the Netherlands a mechanic was observed working without a valid work permit and not appropriately applying the Lock-Out/Tag-Out procedure, which is required to safeguard against restarting of the equipment (serious near miss).

### Q2

- A truck carrying resins caught fire due to an off-site collision in Italy.
- A 400 V cable was hit at DSM Melamine in Sittard-Geleen, the Netherlands while soil drilling was in progress.

### Q3

- The DSM Fibre Intermediates plant in Augusta, USA is under scrutiny from state regulators concerning its acknowledged under-reporting of cyclohexane emissions in the past. The under-reporting was reported by DSM immediately after its discovery.
- At DSM Fibre Intermediates in Nanjing, China on 20 August a number of employees were exposed to an ammonia gas cloud that came from a neighboring (non-DSM) site. A total of 232 employees (both DSM employees and contractors) required treatment and observation in the hospital.
- At DEX Plastomers in Sittard-Geleen, the Netherlands approximately 500 tons of hexane was emitted via the cooling water system due to a leakage of a heat exchanger.
- A limited number of batches of Fromase® XL, an ingredient produced by DSM Food Specialties to coagulate milk for cheese-making, were found to cause a difference in the taste of the end product. The relevant batches were identified. It was shown that the product had no adverse effect on health. New product has been available since September 2008.

### Q4

- An employee at DSM Pharmaceutical Products in Linz, Austria suffered second-degree burns to his legs when scalded by hot water that spilled from a filter as he opened it.
- At DSM Nutritional Products in Lalden, Switzerland and DSM Elastomers in Triunfo, Brazil, small fires occurred in a classified (potentially explosive) area.
- During industrial cleaning work at DSM NeoResins+ in Hoek van Holland, the Netherlands, a contractor sustained serious injuries when his hand was caught in the high pressure beam.
- At DSM Engineering Plastics Jiangsu, China, an operator started to feel sick when working in a liquid nitrogen installation. Although the installation is in the open air, the oxygen concentration at the spot was only 9 %. The operator managed to flee quickly from the spot.

# Progress on the implementation of the principle of the UN Global Compact

In 2007 DSM became signatory of UN Global Compact. We fully support its principles and are continuing to integrate appropriate actions into our business activities. The following table shows the pages in this document on which we report on relevant values and activities.

## DSM - Principles of the Global Compact

		Pages in this report
Principle 1	Support of human rights	Our Values (inside cover) 11
Principle 2	Exclusion of human rights violations	Our Values (inside cover) 11
Principle 3	Observance of the right to freedom of association	Our Values (inside cover) 11
Principle 4	Abolition of all forced labor	Our Values (inside cover) 11
Principle 5	Abolition of child labor	Our Values (inside cover) 11
Principle 6	Elimination of discrimination	Our Values (inside cover) 11
Principle 7	Precautionary environmental protection	6 - 11 18 - 25
Principle 8	Specific commitment to environmental protection	21 18 - 25 31, 41, 42, 49
Principle 9	Diffusion of environmentally friendly technologies	23, 24, 31 38 - 45
Principle 10	Measures to fight corruption	Our Values (inside cover) 11

# Glossary

## Accident

An event at a DSM site in which a DSM employee, a visitor or an employee of a contractor sustains physical injury or an incident that occurs outside the DSM site in which an employee is involved while carrying out an assignment.

## Antibody

A blood protein produced in response to and counteracting a specific antigen. Antibodies combine chemically with substances which the body recognizes as alien, such as bacteria, viruses, and foreign substances in the blood.

## Audit

A systematic assessment of an organization, its working methods and procedures.

## Biofuel

A fuel which is derived from renewable organic resources, as distinct from one which is derived from non-renewable resources such as oil and natural gas.

## Carbon footprint

The impact of a certain activity on the emission of CO<sub>2</sub> to the atmosphere.

## CO<sub>2</sub>

Carbon dioxide.

## CO<sub>2</sub> equivalent

A parameter to describe 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> (reference value).

## COD

Chemical Oxygen Demand: an indicator of the degree of pollution of wastewater by organic substances.

## Eco-efficiency analysis

Analysis of both economic and environmental aspects to be considered when developing and optimizing products and processes. The aim is to offer the best environmental performance at reasonable cost.

## Emerging Business Area (EBA)

One of four areas of special focus within DSM's corporate strategy *Vision 2010*: White Biotechnology, Personalized Nutrition, Biomedical and Specialty Packaging.

## Employer Value Proposition (EVP)

The articulation of an organization's attractiveness to employees, used in the 'hunt for talent'.

## Environmental incident

An incident which, without having implications for safety, has or might have an adverse impact on the environment.

## Enzyme

A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction.

## EuropaBio

Association representing 1800 small and medium-sized biotech companies in Europe

## Fermentation

A production process in which renewable raw materials are reacted with the aid of micro-organisms such as bacteria, fungi or cell cultures.

## FI

Frequency Index: a unit of measurement for safety. The number of lost-day cases per 100 employees per year.

## HR

Human Resources: Personnel & Organization.

## ICIS

International Chemical Information Services, the world's largest information provider for the chemical and oil industry.

## Incident

An incident is an event that has or could have a direct negative effect on safety, health or the environment or for the company's license to operate. Examples are all events that led or could have led to physical injury, acute damage to health, occupational disease, damage to plants, environmental damage, loss of primary containment (escape of substances), nuisance, complaints, harm to the company's reputation (expressions of concern in the press or by politicians or negative publicity regarding safety, health and the environment).

Incidents can occur at DSM sites, can relate to DSM employees carrying out an assignment outside the site or can occur outside the site during the transport or storage of DSM products.

## Key performance indicators (KPI)

A quantifiable measurement that can be used to track progress in achieving important goals within a company.

## LEED®

Leadership in Energy & Environmental Design Green Building Rating System™

## MWh

Megawatt hour: a measuring unit for electricity, 1,000 kWh.

## N

Nitrogen. A mostly inert gas constituting 78% of the earth's atmosphere, nitrogen is present in all living organisms.

## N<sub>2</sub>O

Dinitrogen oxide. A gas that is formed during combustion. When emitted to the environment, it contributes to global warming.

## NO<sub>x</sub>

Nitrous oxides. Gases that are released mainly during combustion and cause acidification.

## OECD

The Organization for Economic Cooperation and Development is an international body headquartered in Paris, France.

## P

Phosphorus. A multivalent non-metal of the nitrogen group. It is an essential element for all living cells.

## Product Eco-Footprinting (PEF)

The analysis of the environmental impact of a product.

## Product stewardship

A concept whereby safety, health and environmental protection center around the product itself and the uses to which it is put, whereby everyone involved in the life cycle of the product is called on to assume responsibility for helping to reduce its SHE impact.

## REACH

A European Union regulatory framework for the registration, evaluation and authorization and restriction of chemicals.

## Reference year

The year that serves as the reference date for measuring progress made. For example, the reference year for DSM's 2010 environmental targets is 2005.

## Renewable resources

A natural resource which is replenished by natural processes at a rate comparable to, or faster than, its rate of consumption by humans or other users. The term covers perpetual resources such as solar radiation, tides, winds and hydroelectricity as well as fuels derived from organic matter (bio-based fuels).

## Respirable dust

Particulate matter that can penetrate a person's lungs. This fraction, the so-called PM<sub>10</sub> fraction, is defined and laid down in international agreements.

## Responsible Care®

A program of the international chemical industry to improve its performance on safety, health and the environment as well as on communication with stakeholders.

## SHE

Safety, Health & the Environment.

## SHE&M

Safety, Health, Environment & Manufacturing.

## SO<sub>x</sub>

Sulphur dioxide and other sulphur oxides. They are formed during the combustion of fossil fuels and cause acidification.

## Stakeholder engagement

A formal process of relationship management through which companies or industries engage with a set of their stakeholders in an effort to align their mutual interests, to reduce risk and advance the company's performance in terms of people, planet and profit (the 'triple bottom line').

## UNHCR

United Nations High Commission for Refugees.

## UNICEF

United Nations Children's Fund.

## United Nations Global Compact

A strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption.

## United Nations' Universal Declaration of Human Rights

On 10 December 1948, the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights. Following this historic act, the Assembly called upon all Member countries to publicize the text of the Declaration and 'to cause it to be disseminated, displayed, read and expounded principally in schools and other educational institutions, without distinction based on the political status of countries or territories.'

## Value-adding chain

Successive steps in a production process, from the raw materials through various intermediate steps to the finished product.

## VOC

Volatile organic compounds. The term covers a wide range of chemical compounds, such as organic solvents, some of which can be harmful.

## WEF

World Economic Forum.

## WFP

United Nations World Food Programme.

## Whistleblower procedure

A procedure which gives employees the opportunity to report cases of suspected abuse or deviations from internal or external regulations without fear of retribution.

# About this report

## Reporting policy and justification of choices made

This is our sixth annual Triple P Report, which consolidates our reporting on People, Planet and Profit. In this report, we explain our vision and policy with respect to sustainable enterprise and report on our activities in this field during 2008. In the period from 1993 to 2001, in addition to financial reporting in the annual report and the financial statements, DSM also reported on safety, health and the environment in its Responsible Care Progress Report. This Report has since been integrated into DSM's Triple P Report. The Triple P Report for 2008 was adopted by the Managing Board.

The structure of this report is based on the three Ps of People, Planet and Profit (Triple P). Besides these three categories, we report additionally on our sustainability strategy, our stakeholder engagement activities, and the organization of sustainability at DSM. Furthermore, we discuss the four global trends around which our sustainability strategy is based and four main challenges which we must successfully confront as a globally operating life sciences and materials sciences company.

## Global Reporting Initiative (GRI)

We base our reports on the GRI (Global Reporting Initiative) guidelines. For this report, we used the GRI matrix G3. We believe that this report merits G3 level A+ which is the highest standard, self declared and externally assured. For the GRI matrix for 2008, please see [www.dsm.com](http://www.dsm.com).

## Assurance

Once again we asked KPMG Sustainability to provide limited assurance on the whole Triple P Report.



Report Application Levels								
		2002 In Accordance	C	C+	B	B+	A	A+
Mandatory	Self Declared							
	Third Party Checked			Report Externally Assured		Report Externally Assured		Report Externally Assured
	GRI Checked							

## Selection of topics

The topics covered in this report were selected on the basis of the GRI guidelines, our own management systems and their relevance and impact for DSM, and our various stakeholders. On the basis of the principle of materiality, we have attempted to make a distinction between topics whose importance warrants publication in the printed version (these are topics that are relevant to both DSM and its stakeholders), topics whose importance warrants publication on the Internet (these are topics that are important to either DSM or its stakeholders) and topics that are relevant neither to DSM nor to its stakeholders.

Subjects of major significance from a governmental perspective include our new environmental targets to 2020 and our advocacy of smart greenhouse-gas emission trading. Topics relevant to our employees include career management, resourcing, learning, diversity and health, as well as our corporate social responsibility initiatives, in which our employees play a key role. Subjects of importance to local residents near our sites include the Torch program and our environmental performance. In making our selection of topics, we also listened to the opinions of various national and international organizations and other expertise centers for sustainability.

## Boundary

For the first time, we have grouped relevant awards received by DSM in a separate section. We are also reporting separately on our progress in implementing the principles of the UN Global Compact.

This report includes environmental information about all the production sites in which DSM has a majority stake or where DSM exercises management control. The other data cover all sites and offices of DSM.

Subsidiaries and joint ventures are consolidated from the acquisition date until the date on which DSM ceases to have control or joint control.

The safety, health and environmental data for newly acquired companies are reported in the year following the first full year after the acquisition. This is because these companies' reporting procedures first have to be aligned with those of DSM.

## Quality of data

The data for the sites are based on these sites' own measurements and calculations, which are based on definitions, methods and procedures established at corporate level. The year-on-year comparability of the data can be affected by changes in the portfolio as well as by improvements that have been made in the measurement and recording systems at the various sites. Whenever this is the case, it is stated in the report.

Details for the individual sites are published on [www.sustainability.dsm.com](http://www.sustainability.dsm.com), together with an explanation of the definitions used.

## Manner of reporting

All data are consolidated at corporate level by the relevant corporate departments. The working group for the Triple P Report was made up of representatives from those corporate departments. The qualitative reports on various subjects were provided by experts throughout the organization.

# Assurance report

## To the readers of the DSM Triple P Report 2008

We were engaged by the Managing Board of Royal DSM N.V. to provide assurance on the information in the DSM Triple P Report 2008 (further referred to as The Report). The Report, including the identification of material issues, is the responsibility of the company's management. Our responsibility is to issue an assurance report on The Report.

## What was included in the scope of our assurance engagement?

Our engagement was designed to provide the readers of The Report with:

- reasonable assurance on whether the financial data in the Profit Key Figures for 2008 on pages 67 to 71 are properly derived from the 2008 financial statements of Royal DSM for which the independent auditors issued an unqualified audit opinion;
- limited assurance on whether the 2008 environmental data and explanatory notes in the Planet section on pages 61 to 65 are reliable;
- limited assurance on whether the other information in The Report is fairly stated.

Procedures performed to obtain a limited level of assurance are aimed at determining the plausibility of information and are less extensive than those for a reasonable level of assurance. To obtain a thorough understanding of the financial results and financial position of Royal DSM N.V. the reader should consult the DSM audited financial statements for the year ended 31 December 2008.

## Which reporting criteria did DSM use?

DSM applies the Sustainability Reporting Guidelines of the Global Reporting Initiative (G3) together with internal corporate reporting guidelines as detailed on page 78 and 79 of The Report. It is important to view the performance data in the context of this explanatory information. We believe that these criteria are suitable in view of the purpose of our assurance engagement.

## Which assurance standard did we use?

We carried out our engagement in accordance with Standard 3410N 'Assurance engagements relating to sustainability reports' of the Royal Netherlands Institute of Register Accountants. This Standard requires, amongst others, that the assurance team possesses the specific knowledge, skills and professional competencies needed to understand and review the information in The Report, and that they comply with the requirements of the IFAC Code of Ethics for Professional Accountants to ensure their independence.

## What did we do to reach our conclusions?

For the financial data we:

- reconciled the financial data in the Profit Key Figures for 2008 (on pages 67 to 71) with the audited 2008 financial statements of Royal DSM.

To determine whether the 2008 environmental data and explanatory notes are reliable we reviewed:

- the environmental data submitted by all sites for central aggregation, together with an assessment of the quality of the data validation process at corporate level;
- the results of environmental data reviews which formed part of the Operational Audits at key DSM sites in 2008 carried out by the Corporate Operational Audit department of DSM;
- the environmental data trends and the explanations provided in the report and discussed these with management at corporate level;

To determine whether the other information in the report is fairly stated we:

- performed a media analysis and internet search on environmental, safety and social issues relating to DSM, to obtain information on relevant sustainability issues in the reporting period;
- reviewed the systems and processes for information management, internal control and processing of the qualitative and quantitative information in the report, at corporate level;

- interviewed relevant staff at corporate level responsible for the reported information on specific issues in the report including CSR Strategy, Climate and Energy, Human Resources, Environment, Safety, Emerging Economies, and for the information on selected products in the “Functionality and Performance” and “Health and Wellness” sections;
- collected and reviewed internal and external documentation to determine whether the qualitative information is supported by sufficient evidence;
- checked the GRI application level declared by DSM on page 78.

During the assurance process we discussed changes to the various drafts of The Report with DSM, and reviewed the final version of The Report to ensure that it reflected our findings.

## What are our conclusions?

Based on the above,

- the financial data in the Profit Key Figures for 2008 on pages 67 to 71 are properly derived from the 2008 financial statements of Royal DSM for which the independent auditors issued an unqualified audit opinion;
- the environmental data and explanatory notes in the Planet section on pages 61 to 65 do not appear to be unreliable;
- the other information in The Report does not appear to be unfairly stated.

## What else did we observe?

Without affecting the conclusions presented above, we would like to draw readers' attention to the following:

- DSM has obtained relevant stakeholder views for DSM's impacts on society. These form the basis also for DSM's Triple P report, however this is not yet part of a structured process to assess the information needs of stakeholders. To obtain such input for the Report, we recommend DSM to further formalise the stakeholder consultation process.
- In the Report DSM outlines the strategy and approach for the sustainability challenges and opportunities the company faces. In our view these vary in terms of mutual alignment and integration. We recommend DSM to develop the current initiatives further into a more comprehensive sustainability strategy that integrates the sustainability issues, from a company and stakeholder perspective, into a single agenda and to report on progress against targets.

Amsterdam, 17 February 2009  
KPMG Sustainability

Drs. W.J. Bartels RA (Partner)

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DSM officially committed itself to the Responsible Care Program in 1991. By doing this, the company has undertaken to continuously work on improving its performance in the field of safety, health and the environment.



DSM is a member of the World Business Council for Sustainable Development and the China Business Council for Sustainable Development.



In 2008, DSM was listed as one of the leaders in the chemical industry sector of the Dow Jones Sustainability Indexes.



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