



# Corporate Social Responsibility Report 2013

# Corporate Social Responsibility Report 2013



Responsible Care®



## Contents

Introduction	3	Activities in Indian villages	24
About the report	4	Banana projects meet increasing participation from banana farmers in Brazil	26
Fulfilling CSR objectives for 2013	5	Production	28
CSR targets for 2014 and beyond	7	Supplier management	31
<b>Cheminova's business activities</b>	<b>8</b>	People	32
Plant protection	9	<b>Action plan</b>	<b>35</b>
Product Stewardship	10	Action plan	36
Handling of used packaging	12	<b>More information</b>	<b>38</b>
Portrait of Cheminova Deutschland	14	Management statement	39
Plant protection products are investigated in a broad range of tests	16	Assurance statement	40
Chemical production in Denmark - 75 years with environmental development	18	UN Global Compact	41
Openness and dialogue	20	GRI Reporting 2013	43
<b>Chemistry with Care</b>	<b>21</b>	Special references	48
More plant protection, less chemistry, fewer resources	22	Glossary	49

Date of issue: March 6, 2014. The report is a translation of the Danish original edition.  
Contact: Lars-Erik Kruse Pedersen (lars-erik.pedersen@cheminova.com)

# Introduction

*"Our long-term target is more plant protection through better products with less impact on the environment and reduced use of resources."*



Jaime Gomez-Arnau

Dear reader,

A key challenge is resting on farmers all over the world namely to provide enough food for the growing human population. The demand for the agricultural produce, food, feed and fiber will be further increasing in the years to come.

Our mission is to supply plant protection products to help farmers improve yields and quality of their crops. Our business is based on continuous development of new and improved products to be manufactured and supplied to farmers in more than 100 countries. However, manufacture and use of needed chemical products admittedly have a potential to leave an undesired impact on humans as well as the environment. Our business - like most other human activities - is not without such challenges and dilemmas.

Safety, sustainability and responsibility are prerequisites for our business and daily conduct in our global organization. Corporate social responsibility is about addressing such questions.

Our CSR strategy is ambitious and points at increased food production through more plant protection with less chemistry and fewer resources. In short: Helping you Grow – Chemistry with Care.

Again in 2013 a dialogue with Cheminova's many stakeholders has given valuable input and inspiration for targets and activities.

In addition to specific reporting on fulfillments on targets the report also contains articles that feature selected subjects in

more detail with the purpose of providing a broader impression of our activities.

Our employees are well known for their technical skills and great commitment which is reflected in a continuous improvement culture covering all our activities. It is therefore my hope that the present report will illustrate how our activities in CSR have led to progress on a number of challenges and dilemmas in 2013.

Jaime Gomez-Arnau  
CEO  
Cheminova A/S

# About the report

This report provides a status on Cheminova's work within the area of Corporate Social Responsibility (CSR) in the calendar year 2013 and thereby fulfills the reporting requirements set out in Section 99a of the Danish Financial Statements Act (Årsregnskabsloven) in accordance with the exception in paragraph 8. The present report constitutes in full the communication of progress in relation to the UN Global Compact. The CSR report provides information about Cheminova A/S, all subsidiaries and joint venture companies with an ownership of more than 50%. The target audience of this report is employees, the authorities, shareholders, customers and suppliers as well as any individuals and organizations who may have an interest in Cheminova.

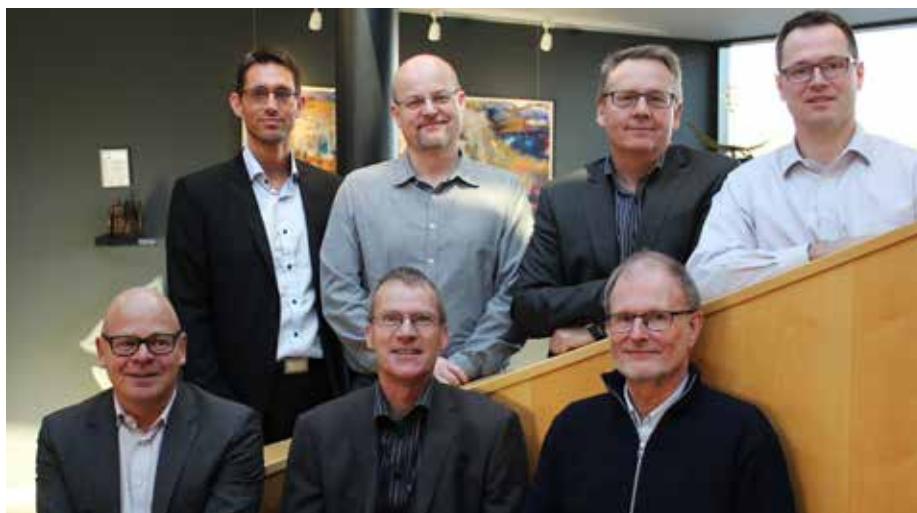
It is our intention that the report with its detailed articles on specific activities from 2013 will provide the reader with insight and understanding of the scope of our CSR work, and how these activities are an integrated part of the day to day business of the company.

## Global Compact and Global Reporting Initiative (GRI)

Cheminova has supported UN's Global Compact since 2009, and this report provides an update on our progress under each of the ten principles of Global Compact. GRI indicators are reported at level B and give a systematic overview of our activities. Both reportings are independent sections of the CSR report.

## Organization of the CSR work

Organizationally, the CSR work is rooted in Cheminova's day-to-day top management, the Global Executive Committee (GEC), that defines the scope of CSR activities and approves the CSR report. The CSR committee undertakes coordination of the daily work and reporting with reference to the GEC.



Members of the CSR committee are Rune Søndergaard, Director, Executive Support & Compliance, Søren Nørby Pedersen, Vice President, Safety, Health, Environment & Quality, Niels Morten Hjort, Senior Vice President, Production & Logistics, Jens Thorsen, Senior Vice President, Portfolio Management, Jakob Lyngsø Andersen, Senior Vice President, Human Resources & Communication, Uffe Stephansen, Manager, Safety & Health, and Lars-Erik Pedersen, Vice President, Corporate Communication.

Focus areas have been selected by the CSR committee with the purpose of providing an informing and systematic reporting concerning essential points of our CSR activities.

The inspiration for selecting the specific issues addressed in the present report is based on input and feedback from the stakeholders which have shown an interest in Cheminova's CSR activities throughout the year.

## Content of the report

The report includes facts and short sections on fulfillment of targets. Furthermore, the report contains detailed articles on progress in selected focus areas from 2013 and special initiatives with importance to our business area. The CSR targets and focus areas for 2014 and onwards are presented as an overview table and as a detailed action plan for the individual focus areas.

Additional information on Cheminova's CSR activities including progress on the 2013 focus areas and the targets for 2014 is available on our home page [www.cheminova.com](http://www.cheminova.com).

## Dilemmas and shared responsibility















It is Cheminova's mission to contribute to the world's food supply. Efficient agriculture is one of the prerequisites for achieving the UN Millennium Development Goals, which among other things are about reducing hunger and poverty and improving public health. Nevertheless, Cheminova faces a number of dilemmas as a supplier of products to societies and countries with diverse conditions particularly on safety and correct use of the products. As a company we have a shared responsibility to improve environmental and working conditions, especially in connection with our own production in developing countries, but also through supplier management and product stewardship. The CSR report describes how we address such issues.

# Fulfilling CSR targets for 2013

Overview of targets and fulfillment. Fulfillment of the specific areas is described in the paragraphs 'Follow up on targets' in the individual sections of the report.

Target		Fulfillment
<b>Village projects</b>		
India: In 2013, further 25 acres will be included in the project Aakash Ganga – conservation of rain water that otherwise would be lost through run-off		Project extended by 101 acres in the states Karnataka and Andhra Pradesh
India: In the Saheli project on women empowerment on safety, health and livelihood establishment of self-help groups will be supported		The project Saheli continued and new activities supported by Cheminova
India: The effect of the project activity will be evaluated for two villages and a plan will be made how the project can continue without the participation of Cheminova		Impact assessed. Exit strategy established
Brazil: The project among small-scale banana farmers in the state of Goias will be continued in 2013 and so will the dialogue with the Ministry of Agriculture with the purpose of establishing a closer co-operation		Momentum of the project kept and dialog with the ministry continued as required
Brazil: The project on safe and environmentally friendly control of plant diseases will in 2013 be extended to more banana farmers in an environmentally sensitive area in the state of São Paulo		Momentum kept and area expanded
<b>Helping you Grow – Chemistry with Care</b>		
More plant protection: An index illustrating the area of farm land where the crops and thus the food production is protected by Cheminova's products will be implemented in 2013		Index implemented
Less chemistry: An index illustrating the quantity of non-sustainable chemicals applied in Cheminova's plant protection products per area unit will be implemented in 2013		Index implemented
Less resources: An index illustrating the consumption of fossil fuel for manufacturing products at Cheminova's production sites in India and Denmark will be implemented in 2013		Implemented. The index covers the total energy consumption
At least 20 formulations with low content of volatile organic solvents will be developed in the period 2012-14		14 formulations were developed in 2013 (12 formulations in 2012)
Lower average toxicity of newly developed formulations measured through the classification of the formulation in the years 2012-14		The formulations developed in 2013 have a lower average toxicity compared to existing formulations
<b>Product Stewardship</b>		
India: Cheminova takes part in a project where the opportunities to return used packaging are examined with focus on environmentally correct disposal		Cheminova participated in the project initiative by CropLife India
<b>Production</b>		
India: The energy consumption for the production of two large products to be reduced by 2% per produced volume in 2013		Energy consumption was reduced by 2.5% compared to 2012
India: The content of COD in the treated waste water will be reduced by 3% in 2013		COD emission was reduced by 32% in 2013 compared to 2012



Target		Fulfillment
<b>Production</b>		
India: The frequency and severity of incidents at work will be reduced by 2% in 2013		Frequency was reduced from 19.9 to 18.0 accidents per million manhours (9.5%), severity was reduced from 14.13 to 11.10 mandays per million manhours (21%)
India: In 2013, the production at the Intermediate Division will be certified in relation to ISO 14001 and OHSAS 18001		Certification achieved
Denmark: Operation of the biological waste-water treatment plant will be reassessed in 2012-15 so that the potential of the plant is utilized in the best possible way		Two waste-water streams changed in 2013. Project runs according to schedule
Denmark: The quantity of waste per produced unit and Cheminova's total costs for treatment of hazardous waste will per year in 2012-14 be reduced by 5% and 10% respectively		Quantity of waste per produced unit increased 4% - target was a decrease of 10%. Costs have decreased by 13% - target was 19%
Australia: Obtain certification of the company's environmental management system according to OHSAS 18001 in 2014		Management system prepared and ready for certification in 2014
Australia: In 2013, the waste-water treatment will be improved, and renewed permit for discharge will be applied for		Studies on the waste water are completed. Submission to authorities planned for 2014
United Kingdom: In 2013, environmental and safety conditions will be reassessed and application for changes will be sent to the authorities		Work accomplished as planned. Necessary authority approvals achieved
Germany: In 2013, a filter to reduce the emission of dust from the production will be installed		Dust filter installed
<b>Supplier management</b>		
In 2013, a number of the company's employees will be trained to audit suppliers		18 employees from the global organization were trained in supplier audit
<b>Human Resources</b>		
In 2013, a global policy and procedure describing how Cheminova can attract the best match for each position will be established		Global Recruitment policy and recruitment procedure are prepared and communicated
In 2013-14, a new appraisal system will be developed and implemented. The system will among others be linked to the KPIs and values of the company. All employees will have minimum one appraisal per year		Appr. 80% of all appraisals globally have been carried out. Planned activities continue in 2014
In 2013, visible and successful career paths will be established globally. Also a new title and benefit structure will align role and responsibilities of each specific key position		All job positions from above a certain level are classified and the basis for defining career paths, bonus programs and benefits has been established and will be rolled out in 2014
During 2013-14, a mapping for establishing a country based classification of risk of corruption is carried out. Training activities for selected employees are planned		Initiatives to strengthen anti-corruption accomplished as planned. Planned activities continue in 2014
In Denmark the program SAFE will be continued to ensure that all employees are educated and involved by the end of the year		75% of employees are trained, the target was 100% ultimo 2013. The program continues in 2014



# CSR targets for 2014 and beyond

New targets have been established for the years to come. The targets are described in greater detail in the action plan on page 36.

## Village projects

### India

- Good agricultural practices and the use of low dose chemicals are promoted in 2014.
- The Saheli project on women empowerment on safety, health and livelihood will be continued in 2014.
- The water conservation project Aakash Ganga will be expanded further in 2014.

### Brazil

- The project among small-scale banana farmers in the state of Goias and the dialogue with local agronomists will be continued in 2014.
- The project with focus on safe and environmentally friendly control of plant diseases among banana farmers will be continued and expanded in 2014.
- In 2014, a project with axil application among banana growers in the state of Santa Catarina will be initiated.

## Helping you grow – Chemistry with care

- Index I: More plant protection, to be reported as a rolling 12 months index.
- Index II: Less chemistry, to be reported as a rolling 12 months index.
- Index III: Fewer resources, to be reported as a rolling 12 months index.
- At least 10 formulations with low content of volatile organic solvents to be developed in 2014.
- Lower average toxicity of newly developed formulations measured through classification of the formulations during 2012-14.



## Production

### India

- The content of COD in the treated waste water will be reduced in 2014.
- The production at the Formulation Division 1 & 2 will be certified according to ISO 9001, ISO 14001 and OHSAS 18001 in 2014-15.

### Denmark

- Operation of the biological wastewater treatment plant will be reassessed in 2012-15 so that the potential of the plant is utilized in the best possible way.
- Consumption of steam at a plant for recovery of an organic solvent will be reduced.

### Australia

- Obtain certification of the production according to OHSAS 18001 in 2014.
- Reassessment of environmental and safety performance to meet an up-to-date high standard in 2014.

### United Kingdom

- Continuous improvement of occupational safety and health.

## Supplier management

- In 2014, a global audit management system for filing audits and sharing experience and knowledge will be established.

## Human Resources

- In 2014, it is required that at least once a year all employees and their direct superior conduct a performance and development review.
- In 2014, a global Employee Engagement Survey will be prepared.
- In 2014, a base line for measuring gender diversity in the general workforce and managerial positions will be prepared.
- In Denmark, implementation of the program SAFE will be continued in 2014. The purpose of the program is to foster a positive safety culture and behavior.
- In 2013-14, mapping will be performed on the basis of which a classification of country-based corruption risks can be made in order to educate selected employees.



# Cheminova's business activities

## Mission:




We help improve quality of life for the world's population by supplying products that help farmers increase yields and quality of crops to satisfy the global demand for food, feed, fiber and energy.

## Vision:

We create results for our customers by being a sustainable and innovative world-class supplier of a broad range of quality crop protection products.

Value creation shall match the best among peer companies to the benefit of all stakeholders.

## Values:

-  We achieve ambitious goals
-  We are innovative
-  We decide and act
-  We recognize results
-  We are good corporate citizens



Increased yield from the field means more food.





# Plant protection

**Cheminova's primary activities are development, production, marketing and sale of chemical products for the protection of agricultural crops worldwide.**

The framework for the company's business activities is Cheminova's Code of Business Principles and Cheminova's mission, vision and values. These support and are consistent with the UN Global Compact, the European Chemical Industry Council's (CEFIC) Responsible Care program and the FAO Code of Conduct. In addition, Cheminova is a member of various global, regional and local professional organizations like for instance CropLife and resistance management groups under CropLife.

## Need for plant protection

UN's Agriculture and Food Organization, FAO, estimates that by 2050 70% more food than today has to be produced – on roughly the same agricultural area, which is already under cultivation. The yield per hectare should increase significantly just to keep pace with the growing population and the increasing food con-

sumption with the growing middle class. One of the consequences of this will be an increasing need to protect the crops which falls well within Cheminova's mission and business area. For example as seen in an impartial report from November 2013 published by Humboldt Forum for Food and Agriculture e.V. (HFFA). Here it is shown that productive agriculture in Europe contributes essentially to food safety, resource-efficiency, financial stability, improved bio-diversity and reduced CO<sub>2</sub> emission (<http://hffa.info/index.php/resources/download-publications/publications/working-paper-5.html>).

## Products

The company primarily produces herbicides, insecticides and fungicides. The products are sold mainly as ready-to-use plant protection products under our own brands, own registrations (use permits) and labels. The work underlying approval

of the products is described on Cheminova's website. Furthermore, an article on page 16 offers an insight into the methods used to investigate the properties of the plant protection products with regard to reducing the risk of harmful effects on the learning ability. These circumstances are included in the authorities' risk assessment which is the basis of approving the products.

In addition to ready-to-use plant protection products, Cheminova also supplies active ingredients to industrial customers for further processing to produce plant protection products. Moreover, we also manufacture and sell a number of fine chemicals for industrial use as well as micronutrients for agriculture.

Read more about the activities in Auriga's Annual Report on [www.cheminova.com](http://www.cheminova.com).



Healthy crops is the visible result of plant protection.



# Product Stewardship

Information about correct use of the products increases the safety of the users.

## Reduction of risks

The underlying principle for Cheminova's stewardship of plant protection products is risk reduction. The cornerstones are observance of national legislation concerning approval, marketing and sale of plant protection products in all countries where Cheminova's products are sold. In addition, export is subject to EU legislation and the rules of the Rotterdam convention concerning 'prior informed consent' (PIC). Furthermore we comply with the rules of FAO's Code of Conduct, and we are members of national/regional trade associations engaged in risk reduction in connection with the use of plant protection products. Further, we have phased out products belonging to the World Health Organization (WHO) Class Ia "extremely hazardous" and Ib "highly hazardous" outside the USA, Canada, EU, Australia and Japan.

## Cheminova's sales in 2013

In 2013, training and guidance on correct and safe use of Cheminova's products have been an integrated part of the daily marketing activities in developing countries. Labels and instructions for use, personal contact with distributors and users plus participation in campaigns are some of the important tools employed to promote safety. The quarterly reporting to the CSR committee on Product Stewardship from countries and regions continued in 2013.

Also the so-called third party products, supplied from other companies and being part of Cheminova's product portfolio,

are covered by our stewardship activities - as an example the herbicide paraquat, which we have already phased out from usage in backpack sprayers. According to the WHO, paraquat may be very hazardous if the concentrated product is ingested or spread on the skin. By the end of 2014 this product will be phased out from Argentina and Mexico, and in the future paraquat will only be sold under the same restrictions as we have in force for the WHO class I products.

Similar to previous years, our products are used in more than 100 countries.

For further comments on distribution between product types and geography, please refer to Auriga's Annual Report on [www.cheminova.com](http://www.cheminova.com).

## Sales of the most toxic products make up less than 1% of sales

After the previous year's phase-out of the most toxic products in developing countries sales have been replaced by less toxic plant protection products.

In 2013, the total sales to all countries of class I products made up less than 1% of total Cheminova sales. The breakdown of products by countries can be seen in the table below.

Overview of which class I ready-to-use products Cheminova sold in 2013 and where they were sold

Country	Product
Australia	Methomyl EC
	Omethoate EC
Spain	Fenamiphos EC
EC = Emulsion concentrate	

## Brazil

In Brazil, Cheminova's sales of methyl parathion in the form of WHO class I products have stopped and been replaced by less toxic insecticides, such as micro-encapsulated methyl parathion (WHO class II 'moderately hazardous') used in the cultivation of soybeans and cotton at professional large-scale farms. Sales of this product exclusively take place in large packaging which are not attractive to small-scale farmers, and sales are limited to states where soybeans and cotton are grown by professional farmers.

Cheminova's Brazilian subsidiary is connected to a hotline open around the clock for reporting and first aid information in case of spillage and accidents.

In 2013, a series of 199 farmer and customer meetings with all together 4,950 participants were conducted. The meetings had a.o. focus on safe and correct use of plant protection products and personal protection equipment.

Cheminova's subsidiary has continued its partnership in the national organization





for handling of used packaging (inpEV) whose purpose it is to promote proper disposal of used crop protection product containers, see page 12. In addition to these activities projects among banana farmers have continued, see page 26.

#### India

The extensive safe use program with training of dealers and farmers has been further expanded to include 665,000 persons in 2013. The program also includes

posters, video shows, demonstrations and hand out of personal protection kits and first aid kits. The activities are carried out in collaboration with local authorities wherever possible. The CSR activities in the villages are described on page 24. In addition, the subsidiary takes an active share in a two-year pilot project concerning secure disposal of used packagings, see the article on page 12.

*"The most toxic products have been phased out from developing countries."*



Information about correct use of the products is part of our marketing.



# Handling of used packaging

We participate in programs for organized collection and disposal of used packaging.

We support national initiatives for collection and proper management of used pesticide containers through national industry associations all over the world. We consider this a very important stewardship activity. Most important is collecting the empty containers from the farms in an organized manner to avoid contamination. In a number of countries the container management programs have been taken a step further and the rinsed plastic containers are shredded and the plastic material can be reutilized for certain types of products.

## A pilot project in India

In collaboration with farmers CropLife India is running a 2-years pilot project on safe handling of empty pesticide containers in a village in Andra Pradesh. As a member company we participate in this important stewardship activity. The empty containers are picked up in an organized manner and transported safely for proper destruction. So far approximately 40% of the used containers are collected, and although this is a very good result, there is still potential for further improvements. Together with our industry colleagues in CropLife India we are gathering useful experience through the ongoing project, and the results will be evaluated in 2014.

There have been little tradition for collecting used pesticide containers in India, and the ongoing project aims to avoid the unfortunate situations where used containers are reutilized in the household for storage of water or food. CropLife and

the Indian authorities recommend triple rinse and puncture of used containers, but an organized collection and proper destruction would provide additional safety and be a major step forward.

## An important stewardship activity in many countries

One of the most successful programs for collection and recycling is the Brazilian program, which has been run by the Instituto Nacional de Processamento de Embalagens Vazias (inpEV) since 2002. In 2005, the official National Campo Limpo (Clean Field) day was introduced to help set focus on proper disposal of empty containers from the farming communities. According to the inpEV website, almost 280,000 tons of empty pesticide containers have been collected in the period from 2000 to 2012, and more than 94% of the plastic containers are recycled. Cheminova Brazil is a joint owner of inpEV.

Cheminova Mexico supports the "Campo Limpio" (or Clean Field) program which is coordinated by the business association Amocali C.A. We are sending two trucks monthly to collect empty containers from the collection centers. The empty pesticide containers are transported to their final destination where they are processed for recycling or incineration. Cheminova Mexico has collected a total of about 20 tons of empty containers. The main objective for the program is elimination of empty pesticide containers from the farming communities in order to avoid contamination of the environment.

In addition to the above, Cheminova also participates in Campo Limpio programs in Argentina, Colombia and Peru.

The US program for recycling of empty containers is managed by the Ag Container Recycling Council (ACRC). The ACRC could celebrate its 20th anniversary in 2012, and since the beginning this recycling program has been extremely successful. The total plastic collected and recycled in these past 20 years exceeds 57,000 tons. The recycled plastic goes into the manufacture of approved end-use products such as field drain pipes. Cheminova's subsidiary in the USA is a member of ACRC.

Among other national programs which Cheminova supports either directly or through national industry associations are the drumMUSTER in Australia, Clean FARMS in Canada and the PAMIRA program in Germany.





*"Cheminova Mexico has collected a total of about 20 tons of empty containers."*



Removal of empty containers from the farms contributes to safety and a better environment.



# Portrait of Cheminova Deutschland

## Looking for new solutions.

Cheminova Deutschland in Stade provides solutions for plant protection: Products, technology and technical advice. The company has been focused on solutions since 1900 when it was founded, and as a member of the Cheminova family since 2008 it is a front runner in seed care solutions, manufacture of suspension concentrates and innovative packaging.

### A modern formulation and filling facility

Cheminova Deutschland in Stade is the home office for marketing of Cheminova's products in Germany, with sales representatives located in various parts of Germany. The site in Stade is also the location of a modern formulation and filling facility, which is supported by its own quality control unit as well as a development team and a GLP laboratory, both of which work in close cooperation with the

colleagues in Denmark.

The filling lines in Stade are flexible and can handle container volumes from 40 ml to 1,000 liter (IBC), and there is capacity for packing of twin-packs where two different products are packed together in one cardboard box.

A broad range of formulation types can be handled but the main focus is on suspension concentrates (SC) and special products for treatment of seeds. Suspension concentrates are water based and easy to handle for farmers in the field. The team in Stade has expertise with both scale-up and large-scale production of SC formulations.

Cheminova Deutschland has developed a range of sophisticated solutions for seed

care in collaboration with seed breeding companies. The expertise in the Stade formulation development team is highly valuable for Cheminova's global business in this segment.

### With constant care

Prevention of cross contamination is integrated in the work flow since a wide variety of formulations are produced in Stade, both Cheminova products and toll formulation for third parties. Clearly visible red tags on pipes, valves and handles show what is inside and provide documentation for the level of cleaning on the spot. A color code, where green is for herbicides and red is for insecticides and fungicides, is used as an additional measure to prevent cross contamination.

The production in Stade operates under a quality management system which is certified according to ISO 9001:2008. Within the requirements for the ISO certification there is an encouragement for constant improvements of procedures, and an external auditor comes in on a regular basis and challenges the staff on progress and adherence to procedures, e.g. whether written instructions are available and followed, if they correspond to actual practice, and how processes are documented. Staff training is documented as an integrated part of the quality management system.

Out of the total of 153 permanent staff employed by Cheminova in Germany 130 are located at the Stade site. An additional 30-40 contract workers work at the production site during peak season. The site in Stade has received several awards for education of laboratory technicians.







The site in Stade has well established procedures for handling of chemical waste where normal procedures for German industry are followed. Waste water is collected in a tank and picked up once or twice a week by an authorized company for incineration. Cheminova Deutschland carries out inspections of the disposal chain in order to be able to present documentation if so requested.

#### Keeping an eye on energy consumption

The energy consumption at the Stade site is in the form of natural gas for heating of buildings and electricity for the formulation process, i.e. for stirring and milling and also for melting of emulsifiers and semi-solid active ingredients.

Automated gates which open and close quickly have been installed to minimize the loss of heat from the production area and warehouses where trucks are driving in and out. This has led to significant energy savings, because gates are not left open by truck drivers who want to save time.

#### About Cheminova Deutschland GmbH

Cheminova Deutschland took on the Cheminova name in 2013. The former Stähler group was incorporated into the Cheminova group in the period 2008 to 2012. The present facility in Stade was established by Stähler in 1975.

The company was originally founded in 1900 by August Schacht who joined forces with Oskar Stähler in 1913 and the company Stähler GmbH was formed. Stähler became a well-established brand in crop protection not only in Germany.



Development of new products demand a systematic support from the laboratories.

#### Seed care solutions

Cheminova Deutschland offers complete seed care solutions with product, technology and technical advice to seed breeding companies. The recipes include stickers and powders to give the perfect seed dressing with no dust and freely flowing seeds. Tests are conducted to make sure the dressing has no adverse impact on germination.

Timing is an important parameter in seed treatment and is therefore specified in the recipe as well as the ingredients. The formulation chemists work in close cooperation with the seed breeding companies, so the seed care solution is adjusted to fit the equipment to allow for the best product.

Drift of dust from treated seeds into neighboring fields presents a potential hazard to crops and environment and is strictly regulated under German law. The seed care technology which is offered by Cheminova Deutschland helps seed breeders produce seeds that comply with the requirements for dust reduction.



# Crop protection products are investigated in a broad range of tests

The authorities perform a comprehensive risk assessment before our products can be marketed.

When reading headlines in the media or articles in scientific journals one can from time to time get the impression that crop protection products are not properly investigated for possible effects on human health. However, if one takes a closer look at the requirements for approval of crop protection products, it becomes clear that the possible effects on human health are in fact thoroughly tested before the products are placed on the market and in connection with periodic re-evaluations.

## A comprehensive risk assessment

Crop protection products are used in farming and we can be exposed to the products through our work, through residues in our food or by staying in or near areas where the products are used. Before we as producers of crop protection products are allowed to market our products, they must be approved by the authorities in the country, where they are going to be used, and the approval is subject to periodic re-evaluation typically after five or ten years. The approval process will often involve authorities for human

health, agriculture and environment. For example in Europe the evaluations are carried out by EFSA (the European Food Safety Authority), whereas the actual approval is the responsibility of the Commission Directorate General for Health and Consumers (SANCO) and the individual EU member states. Likewise in the USA it is the responsibility of the EPA (Environmental Protection Agency) in collaboration with the individual states.

The approval of a crop protection product is based on an assessment of the risk associated with use of the product, both in terms of impact on the environment and on human health. In this article we want to give a short presentation of the diversity of tests that are required as documentation for the possible impact on human health. In connection with re-assessments or if more knowledge is needed in certain respects the requirements for documentation may be increased. The results from the many different tests are used to establish reference values which are used in the risk assessment.

## A wide range of tests

Crop protection products are tested in a range of standardized tests which are meant to elucidate the possible health effects of the products – both acute and chronic. Specific examples of chronic effects are testing if rats develop cancer if they are exposed to the test substance through their food for a period of two years, or if the reproductive ability of the rat is affected if it is exposed to the test substance through the food. Specific examples of acute effects are testing if rats show signs of poisoning after inhalation of the test substance or if there are clear signs of skin irritation after exposure to the test substance.

The test program is defined in the legislation and includes approximately 25 specific investigations which are typically conducted on rats, but can be extended to include additional types of tests, if additional properties need to be studied. The table below provides an overview of the tests, which are typically required by the authorities for approval of crop protection products.

Acute effects	Long term effects	Other effects	Special studies
Acute toxicity by digestion, inhalation and through skin	Toxicity from daily intake over longer period: 3 months study 2 years study	Absorption, distribution, metabolism and elimination in the body	Effect of metabolites
Skin and eye irritation	Mutagenicity	Endocrine disrupting properties	Special impact on off-spring
Sensitization	Impact on reproduction	Impact on immune system	Effect on development of the nervous system
Absorption through skin	Cancer		Damages to nervous system





Our products are thoroughly tested and help farmers grow healthy food crops.

We do not conduct these tests ourselves. The investigations are carried out by specialized laboratories with permission to conduct toxicology testing, and the tests are performed according to internationally recognized guidelines, e.g. the OECD harmonized guidelines for testing of chemicals and guidelines for Good Laboratory Practice. Interpretation of the observations made in such investigations and tests requires a high level of scientific knowledge and experience, e.g. to be able to decide if a tumor is malignant or benign or if an observed effect is caused by the test substance or by other factors.

#### Safety factors provide increased protection

Results from all the different tests are taken into consideration when the authorities, e.g. the EFSA and the EU Commission, establish the reference values to be used in risk assessments. As a first step it is established how the substances may impact human health, and as a second step the magnitude of the doses which are necessary to bring about the effect is derived. A safe dose which does not result in any health effects (the NOEL, No Observed Effect Level) can also be derived from the individual tests.

The reference values are normally set at a level 100 times lower than the lowest NOEL found in the entire test program. This additional safety factor is used to account for the difference between humans and laboratory animals and the fact that not all humans are completely alike. All together it provides a wide safety margin.

In this way the authorities can set limits for how much of a substance one can safely digest every day through food from agricultural produce throughout an entire life without adverse effect on health.

#### Special studies

A test for impact on learning ability is among the special studies, which are used when there is a need to investigate whether a given substance may have an impact on development of the central nervous system. There are several standard tests, one of which is the Morris Water Maze test where the ability to learn how to navigate through a water pool by means of distal cues is tested. The test has proven useful for assessment of whether the formation of new nervous junctions in the brain is adversely affected, in particular in the hippocampus which plays a role in memory and the ability to navigate both in humans and in rats.

If rats, which have been dosed with the test substance, demonstrate impaired ability to navigate and to learn how to find their way, this may be an indication that the test substance has destroyed or decreased the ability of the rat to develop new nervous junctions in hippocampus. This means that the brain is adversely affected. The regulatory authorities may require an investigation of whether adverse effects may be due to exposure of the foetus. For this purpose the test may be conducted in parallel with rat offspring which has been dosed directly or indirectly through dosing of the mother animal during gestation.

#### Crop protection products are thoroughly investigated

Organophosphate (OP) insecticides have been on the market for more than 50 years and are among the most carefully studied substances, i.e. because manufacturers throughout the years have responded to society's increasing demand for solid knowledge about the chemical substances in our surroundings. The OP insecticides have among other things been tested for possible effects on the nervous system because of the specific mode of action for these substances. The results from this type of testing are therefore included in the reference values which are used by the authorities, e.g. the EPA in the USA, when they evaluate if OP insecticides can still be used in a safe manner or when new uses are approved.

Several authorities who are involved in approval of crop protection products make the evaluations on which the approvals are based publicly available, e.g. the USA and the EU. Information about the general requirements for documentation as well as evaluations of individual crop protection products is available on the EPA and EU Commission websites, respectively.

#### Literature:

CFR Title 40 Part 158 Subpart F Data requirements for pesticides – Toxicology.

Commission Regulation (EU) 283/2013 Setting out data requirements for active substances in accordance with Regulation (EC) No 1107/2009 of the European Parliament and the Council concerning the placing of plant protection products on the market.

NIH Morris water maze: Procedures for assessing spatial and related forms of learning and memory. [http://ec.europa.eu/food/plant/pesticides/index\\_en.htm](http://ec.europa.eu/food/plant/pesticides/index_en.htm)

<http://www.epa.gov/pesticides/index.htm>



# Chemical production in Denmark – 75 years with environmental development

Cheminova was founded in 1938 and over the past 75 years the perception of appropriate treatment of waste from chemical production has changed significantly as the general knowledge about the impact on the environment has increased. Our ability to handle chemical waste in an environmentally responsible manner has also changed significantly.

Cheminova has had production plants in Denmark for 75 years, and through all the years we have developed the technology for handling the environmental aspects related to chemical production. When Cheminova started chemical production in Denmark in 1938, it was at a time where the scientific knowledge about treatment of waste emissions, both water, air and solid waste, was rather limited. It was thought that once emitted to the atmosphere, to the sea or buried in the ground, any contaminants would be diluted or simply disappear, e.g. the waste water from Copenhagen was lead directly into the sea at that time. Today we know that whatever waste we produce it will not disappear without proper treatment.

## The early days of production (1938 – 1953)

Cheminova's production in Denmark has taken place at four different locations. The first site near Gladsaxe was only in operation for a few years and in reality only for laboratory scale productions with limited generation of waste. The production was moved to a new location near Måløv in 1946, and the new plant allowed for large-scale production. The chemical waste from Cheminova's production of a wide range of chemical products at the facility in Måløv was to some extent buried at the manufacturing site.

At that time it was in general accepted as the appropriate way for disposal of chemical waste and even recommended by the authorities. In 1970 after the site was taken over by another company, the question of a possible ground water contamination was raised. Cheminova offered to establish a facility which could purify the ground water, with the intention that the local authorities should operate the facility. Unfortunately, it was not possible to come to an agreement. Today the task of pumping and treatment rests with the regional authorities (Region Hovedstaden).

## Harboøre Tange in Western Jutland and Groyne 42

Cheminova moved the production facility to Harboøre Tange in 1953. The general recommendation for handling of waste from chemical production was still burying in the ground or discharge directly into the sea. This approach resulted in a contamination of the area where the plant was first located and Cheminova is still engaged in remediation measures by pumping. The water is directed to Cheminova's waste-water facility. The general recommendation for burying chemical waste also led to the establishment by the Danish state of a dump on the west coast of Denmark. The dump is known in Denmark as Groyne 42. It was a dump

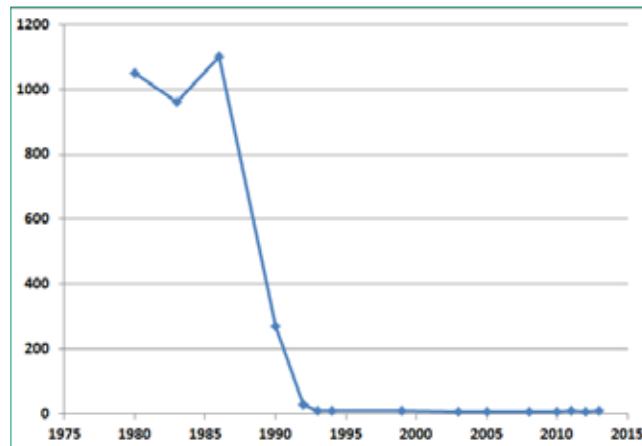
for various types of chemical waste, and Cheminova was also advised to use it for disposal of chemical waste. The dump was used until 1962.

In the 1980'es the major part of the buried chemicals was moved from the dump to a mine in Germany. Later on, in 2006, the regional environmental authorities (Region Midtjylland) have encapsulated the contaminated area to avoid leaching to the North Sea. A pilot project with in situ clean-up of contaminated sand has been initiated by the regional authorities with support from the EU (North Pest Clean). Cheminova supports the project by taking care of the extensive sample analysis work which is necessary for documentation of the clean-up. Cheminova's analytical laboratories have many years of experience analyzing for the type of substances which are found in the sand. By making scientific expertise and laboratory capacity available we contribute significantly to the project, since this work would otherwise represent a significant cost for the project.

In the 1960'es the manufacturing plant was established at its current location at Rønland, in the beginning primarily for manufacture of OP insecticides. One challenge related to this production was disposal of sulfur containing waste, and



The large waste-water treatment plant was put into operation in 1988, and it is a prerequisite for operation of the production plant.



The discharge of phosphorus to the North Sea (stated as tons of phosphorus per year) from Cheminova's production plant decreased dramatically, when the biological waste-water treatment plant was taken into operation. The discharge was 7 tons in 2013 compared to 1,050 tons in 1980.

a new deposit facility made of concrete was constructed at the plant site. Today, sulfur is efficiently recovered directly by means of modern technology and re-used in our production and for industrial manufacturing of sulfuric acid, among others. The old sulfur deposit at Rønland is no longer in use and the content has been removed (see page 28).

#### A period with solutions

The Danish legislation on protection of the environment went into force in 1974 with a requirement for companies to use the best available technology. Over the following years, technology evolved and Cheminova worked determinedly with development of suitable technology and with establishment of environmental plants to handle waste water and process air from the production. The total investment was more than half a billion Danish kroner (appr. 90 million USD). Development of suitable waste-water treatment procedures have for many years been a significant element in the development of new chemical processes. All emissions are today controlled and must meet fixed criteria established by the authorities.

#### Waste water treatment

The first investigations of the possibilities for establishment of a biological waste water treatment plant were initiated in 1982. The aim was in particular to remove phosphorus containing compounds originating from the production of organophosphate insecticides, and the plant turned out to be very successful in this respect (see figure at the top). The plant was set into operation in 1988. Over time, the micro-organisms in the biological waste-water treatment plant

have adapted so they are able to degrade a wider range of organic contaminants originating from a more diverse production. The microbiological degradation is combined with chemical pre-treatment and/or boiling of the process waste water, depending on the nature of the contaminants. The final discharge is carefully monitored to make sure the permitted maximum limits for individual compounds are not exceeded when the purified waste water reaches the North Sea, 500 m off the coast of Jutland. A dedicated waste water incineration plant was taken into operation in 1994 as a supplement to the biological treatment plant.

#### Air incineration

The process air incineration plant was also established during the late-eighties. The process air is incinerated at high temperature whereby organic contaminants are decomposed. After incineration the air is passed through a so-called scrubber where water-soluble contaminants are trapped before final emission of the air to the atmosphere. The content of specific components in the emission gas is monitored and held against a set of permitted maximum limits.

Process air from specific production plants contain residues of volatile organic solvents, e.g. hexane, which can be recovered before incineration of the air and re-utilized in the production.

#### Solid waste

Concurrent with the increasing demands in the Danish society for safe disposal of chemical waste the need for a central specialized chemical waste treatment plant became apparent, and the then

publicly owned facility Nord was established in 1971 (then under the name KommuneKemi). All types of chemical waste could be forwarded for safe disposal against a fee, and Cheminova has since then made use of this option for safe disposal of chemical waste which cannot be properly treated at the current environmental facilities at Rønland.

#### Environmental accounts

In the same way as we publish our financial results with a balance of costs and earnings, we have also since 1995 published our environmental results. We account for all emissions and products and match it up with the consumption of raw materials.

The full environmental approval 25 years ago was an important milestone for Cheminova, since it was the license to operate the chemical manufacturing plant at Rønland, the backbone in our production activities.

#### Cheminova elsewhere

Cheminova has chemical production facilities in Denmark and India. Besides, Cheminova has formulation and filling facilities in Australia, Germany, Italy and the United Kingdom. Chemical waste from these facilities are handled either by means of external or internal incineration under strictly controlled and regulated conditions or treatment in biological waste-water treatment units according to local standards.





# Openness and dialogue

We receive important input to our business and CSR from an open dialogue with Cheminova's many stakeholders.

Cheminova values a continued dialogue with its neighbors, the local community, authorities, educational institutions, politicians and others. We observe the limitations to openness from stock exchange rules, protection of sensitive personal information, general data protection rules and regulations as well as competition law. We do of course engage in a continued and open dialogue with the relevant authorities in the countries where we operate.

A dialogue with the company's many stakeholders as well as the general public debate on sustainability is a source of inspiration for the CSR work and the selection of focus areas presented in the CSR report.

The company actively strives to keep well-informed within the many fields of relevance to its operations as well as current and potential business areas. Via open literature as well as scientific publications and trade sources, the press, specific searches on topics and the internet, information and expressions of opinion in respect of CSR related issues are sought. Particularly concerning product properties, side effects and applications, and in general, issues linked to dilemmas and controversies within the company's sphere of interest.

## Local engagement

Cheminova is an important part of the local society where we operate facilities and employ people. We contribute to the local economy and offer a wide range of

job opportunities. We make a point of good neighbor relations and participation in local cultural life and activities. The influence on the environment from production plants is described elsewhere in this report.

In 2013, two open house arrangements were held at the headquarters in Denmark and additionally we had several groups of visitors (politicians, students, organizations etc.). Altogether more than 2,500 people visited the premises.

At the production site in India we have received more than 500 visitors, among others farmers, governmental officials as well as a group of women engaged in Saheli self help activities in a project village in the state of Madhya Pradesh.

In countries where we have manufacturing facilities we have an on-going dialogue with environmental and other supervising authorities, for instance the Danish Environmental Protection Agency and the Gujarat Pollution Board in India.

## Investors

Of primary interest to stock market analysts and investors, a number of investor meetings are held both physically and online and are thus accessible to all stakeholders, including almost 7,500 shareholders of the parent company Auriga. Presentations from these meetings including CSR related issues, among others, are publicly available on Cheminova's website.

## Customers and suppliers

CSR forms part of the dialogue with the company's customers, many of whom appreciate to co-operate actively with Cheminova in promoting product stewardship and environmental responsibility among farmers. Information on the safe use of products – as mentioned in the section on product stewardship – is an integrated part of the marketing of products to end-users in developing countries.

Suppliers are audited with focus on the environment, safety and labor standards in accordance with the company's Supplier Code of Conduct which forms the natural basis for a constructive dialogue.

## Employees

In 2013 where Cheminova celebrated its 75 years anniversary throughout the global organization, there has been focus on company values, strategy, development and global sense of community. In 2013, more than 40 newsletters were sent to employees in all subsidiaries. On several occasions CSR related issues were addressed in these newsletters.

CSR is regularly discussed throughout the global organization in relation to the local daily business. At the local level, e.g. cooperative relationships, general well-being of employees and continued education have been on the agenda.





# Chemistry with Care

Following up on targets.





# More plant protection, less chemistry, fewer resources

Future food security depends on increased agricultural production.

Global agriculture needs to increase production by 70% (measured in calories) on the present agricultural area in order to feed the world population that in 2050 will have passed nine billion people according to FAO.

**“Over the next several decades, the world faces a grand challenge - and opportunity - at the intersection of food security, development and the environment,” said Dr. Andrew Steer, President and CEO of World Resources Institute. “To meet human needs, we must close the 70 percent gap between the food we will need and the food available today. But, we must do so in a way that creates opportunities for the rural poor, limits clearing of forests, and reduces greenhouse gas emissions from agriculture.”**

## Increasing yields

Since the middle of the 20th century chemical plant protection has become a major factor behind the increasing yield, farmers can harvest per hectare.

Input in the form of efficient plant varieties, fertilizers and pesticides have increased food production almost enough to keep pace with population growth, although food waste, unequal distribution and other factors still mean that one in eight human beings are starving.

In addition to population growth the expected increase of livestock production as well as use of agricultural land for bio-fuel put demands on agriculture to pro-

duce more - even without bringing additional parts of nature under cultivation with wheat, corn, rice and other agricultural crops.

## “More with Less”

Agriculture needs more efficient plant protection products that can ensure growth with minimal impact on nature. Moreover, industrial production in general is faced with demands to reduce energy consumption. This also applies to the production of crop protection products which means that Cheminova’s production and products are also part of these dilemmas.

More plant protection based on a more sustainable input is among Cheminova’s long-term objectives.

## Chemistry with Care

Cheminova will address and illustrate this through indexes, showing the degree to which Cheminova’s products contribute to more plant protection while using less non-sustainable chemistry and consuming fewer resources in the manufacturing process. From now on we will develop strategic objectives for this area and report on the results obtained.

## Development of three indexes

Below is a brief description of the three indexes covering Cheminova’s own products. A more detailed description can be found in the section on accounting principles on [www.cheminova.com](http://www.cheminova.com).

Products sold on behalf of other companies (so-called third party products) are not included in these indexes. The exact composition of these products is not always known to us; likewise information about energy consumption in the production is not available.

## More plant protection

Like other suppliers to agriculture Cheminova is not directly involved in the use of our plant protection products, since we do not participate in farming. Thereby, our knowledge about the detailed product usage does not constitute a sufficient basis for this index. Instead, data from specialists in market analysis that can provide data on the consumption of specific active ingredient per hectare in all relevant crops and countries are used. Data from Cheminova’s total sales of each individual active substance is weighted against this background, providing the best possible assessment of the acreage of farmland protected by each active substance. The index is a summary of all Cheminova manufactured products sold in the relevant period.

## Less chemistry

The index shows the amount of non-sustainable chemistry per hectare applied as plant protection products. Non-sustainable chemistry is to be understood as active ingredients no matter origin as well as additives that are non-renewable or are extracted from fossil fuels.



As an example we aim at reducing the amount of organic solvents, which frequently have been used as solvents in plant protection products.

#### Fewer resources

This index indicates the amount of purchased energy in the form of electricity, natural gas, fuel oil, biomass and the like required for Cheminova's own production of plant protection products on the synthesis plants in Denmark and India. Both places undertake chemical synthesis, which is a highly energy consuming industrial process. These two sites are responsible for over 90% of Cheminova's direct energy consumption.

#### Index for the period 2009-2013

The year 2009 is used as baseline (index 100).

#### Index I: More plant protection

The area of farm land protected with Cheminova's products has been calculated from own sales figures weighted against experts' market analyses for all relevant countries and crops by means of an independently validated method. For the years 2010-2012, we do not have sufficiently specific data of sales quantities for all products to be able to calculate the index. The index can be calculated for 2013 and forward.

Indexes for 2009 and 2013 show a significant increase in the plant protected area.

#### Index II: Less chemistry

Also in this area, the lack of data for the period 2010 to 2012 makes us unable to calculate the index.

Index for 2009 to 2013 shows a significant decrease in quantity of non-sustainable chemistry used with Cheminova's products per hectare.

#### Index III: Fewer resources

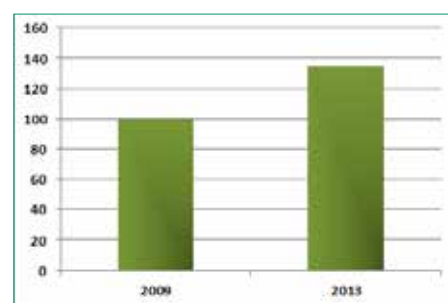
The index shows the trend in energy consumption at the plants in India and Denmark. The total energy consumption is relative to the produced quantities providing baseline figures for energy requirement per kg product. Based on these key figures and the production it is possible to estimate an energy demand that fluctuates according to the level of activity.

As shown the index increases at the beginning of the period which is due to a sharp decline in the company's activity as a result of the global crisis, which caused a relatively poor production efficiency.

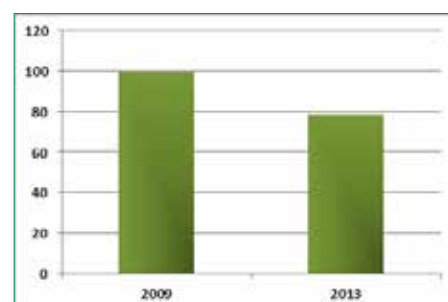
At the end of the period the index is below 100, which indicates that a combination of increased level of activity and energy savings resulted in lower energy consumption for a given activity.

#### Objectives for 2015 and beyond

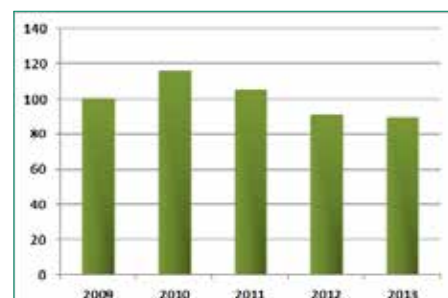
Based on these baseline data and trends in 2014 we will establish more precise targets for future development.



Index I: More plant protection. Hectares protected by Cheminova's products (relative to 2009).



Index II: Less chemistry. Quantity of non-sustainable chemistry per hectare (relative to 2009).



Index III: Fewer resources. Energy consumption per kg produced product (relative to 2009).





## Activities in Indian villages

Agricultural and social development are the key targets of our activities among the local population in nine villages located in several states of India.

In 2013 we have kept focus on continued improvement of agricultural practice including safe use of plant protection products. Additionally Cheminova has supported several activities on general community development.

### Follow-up on targets

Assessments involving external stakeholders have been carried out in two villages in 2013 based on which an exit strategy has been established. The plan of exit will be further discussed and initiated in 2014. The overall intention is to reduce Cheminova's direct participation in consideration of maintaining the achievements obtained in these two villages since the projects were initiated in 2010. The relation to the farming communities in the villages will be continued.

### Village Prabdera in West Bengal

Together with representatives from the Directorate of Extension Education as well as the local elected village head (Sarpanch) the impact of Cheminova supported activities in Prabdera was evaluated. Progress was observed on focus areas such as training and demonstrations of safety and better farming practice leading to improved yields, reduced farming costs and increased awareness of safety measures during spray operations. Further, water purification at the local school as well as subsidies to poor families has improved awareness of pro-

per schooling as a valuable asset for the local community. Likewise has the Women empowerment project Saheli as well as a medical camp for gynecological and pediatric problems improved awareness of health and livelihood among the village women.

### Village Narukheri in Haryana

The many activities in this village since 2010 were endorsed by the Choudhary Charan Singh Haryana Agricultural University and the Sarpanch.

The village level activities were focused on training in safe and correct use of plant protection products involving farm-

ers, farm women and school education. Training programs on pest control and wheat diseases have helped the farmers manage their crops. Personal protection equipment has been demonstrated and kits have been distributed. Further children's health and nutrition as well as establishing of women Saheli self-help groups has been part of the successful program in this village.

### Further external evaluation

In 2014 the activities in two more villages will be evaluated externally similarly to the impact assessment undertaken by the Royal Danish Embassy in 2012.



Selfhelp groups for women create value in the village community. In this case we support them with sewing machines.





A great difference with simple solutions:  
Plantgrowth is enhanced with Aakash Ganga.

### Aakash Ganga – an expanding success

By knowledge and simple means it has been possible to help farmers grow additional yield.

This project on rain water management has been expanded by 101 acres farm land. The project is managed with the assistance of Professor Ayyappa Masagi, who has been an inspiring force to the participating farmers.

The message from the Professor is that rain fed agriculture will benefit from subsoil water storage, particularly after a weak monsoon. A simple cost effective method of plowing trenches across the field has proved efficient to keep the soil moist during the growth season.

The feedback from the participating farmers confirms an increased yield of pigeon-peas and other crops.

### Progress for village farm women

Women in agriculture have involved themselves in several entrepreneurship activities through formation of self help groups.

Like in the previous years the activities under the project umbrella Saheli (Safety Health and Livelihood) has also in 2013 been many and of diverse nature.

The traditional engagement in agriculture



Extra water in the soil means good plant growth and increased yield.

and safe use of plant protection products as well as health, nutrition, schooling and wellbeing of the children has continued in all Saheli groups.

Additionally new activities supported by Cheminova have been taken up, illustrated by the following two examples. A group of 33 farm women from the village Ekalduna in Madhya Pradesh was given a trip to visit Cheminova's factory site in Panoli in Gujarat. This trip was very educational among other things in providing understanding of the nature of plant protection products and their safe handling. A similar group from the village Kachma-

chanahali in Karnataka was given the opportunity to visit the Central Food Technology Research Institute in Mysore. The group members took a special interest in cereal product technology, food machinery, fruit and vegetable product and the protein specialty division.

This visit propelled the group to have their own mini-mill for processing ragi millet which is a crop rich in valuable proteins.



# Banana projects meet increasing participation from banana farmers in Brazil

During 2013 the banana growers in São Paulo state of Brazil have shown an increasing interest in using Cheminova's reduced impact technology for disease control in environmentally sensitive areas.

In the near coastal banana growing area in Vale do Ribeira Cheminova's team has for two years worked with the banana farmer's organization ABAVAR as well as individual farmers on a CSR project to reduce the environmental impact of fungicide use in sensitive areas.

The project addresses the dilemma of how to control devastating diseases in banana plantations along rivers, streams, roads and houses without broadcasting fungicides.

If these areas are left without control yield will drop dramatically and the area will become a bridgehead for infestation to spread. On the other hand the traditional aerial application over these areas means a high risk of unnecessary pollution of the environment.

Cheminova's low-tech hand held precision technology makes it possible to apply a few drops of a systemic fungicide directly to the plant. This axil application

forms an environmentally friendly and highly efficient alternative that has proven attractive to the farmers. The technology also has the benefit of avoiding use of mineral oil as an additive to the fungicide spray fluid. The axil application method is endorsed by local agronomic experts.

At the November 2013 Feibanana fair in the area the experience achieved was discussed with advisors, dealers and farmers. The method appeared attractive to small as well as large scale farmers and the area under the axil application program with Flutriafol has increased from 200 to approx. 300 hectares in 2013.

## Project with small scale farmers in the state of Goiás

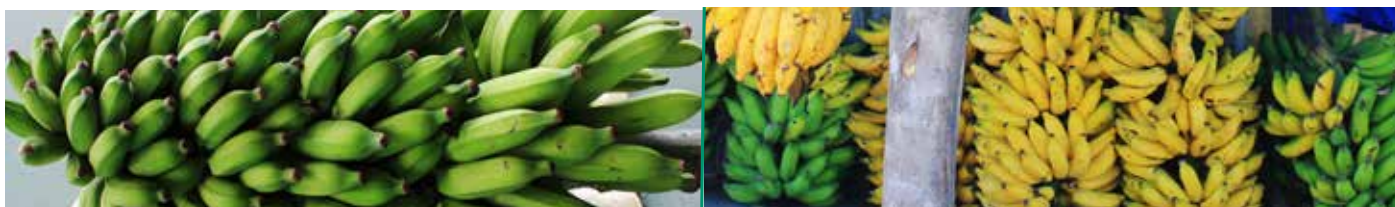
In the village Bureti Alegre the axil application to control the plant disease yellow sigatoka has become the method of choice among an increasing number of farmers now covering approximately 150 ha. The method is endorsed by lo-

cal agronomic experts as an efficient and safe method of disease control. Cheminova has assisted in introducing a better variety of bananas in the area. Due to a relatively weak organization of the local farming community further progress in establishing improved marketing and branding effort of bananas from this area has been discontinued. However the axil application technology has spread to other areas of Goiás.

## New project in Santa Catarina

With the intention of establishing a similar project in the state of Santa Catarina - primarily with small scale farmers - tests have been carried out. The initial evaluation of the practical validity of the axil application method with flutriafol has shown very promising results in 2013.





*"More than 3 years of research with the systemic fungicide Impact® applied in the axil of banana plants have shown impressive results in significantly reducing the severity of black sigatoka. The implementation of this new technology is a good tool to help in the management of black sigatoka in banana crop, for small, medium and large producers."*

Dr. Wilson da Silva Moraes  
Agronomist , Researcher From APTA  
(Agência Paulista de Tecnologia em Agro-  
negócios), Phytopathology.  
Vale do Ribeira Regional Pole,  
São Paulo State, Brazil



Dr. Wilson (left) explains the effect of our technology on plant diseases.



Cheminova's booth at the banana fair had focus on environment and personal protection equipment.





# Production

In 2013, production activities have been increased. Environment, health and safety are first priorities at all production sites.

Data pertaining to environment, health and safety for these plants are shown in the fact box on page 30. The production in Denmark and India constitutes the overall majority. All manufacturing plants are included in the statements for 2011, 2012 and 2013.

Detailed information for the companies, which are included in the statement, may be found at [www.cheminova.com](http://www.cheminova.com), where the applied CSR accounting policy is also located.

## Contaminated sulfur depot removed

For many years an authorized depot for chemical waste has been situated at Cheminova's manufacturing site at Rønland in Denmark. The depot has held remnants of sulfur, sand and concrete containing low concentrations of organophosphate chemicals and mercury. Back in 2010 Cheminova entered into an agreement with the Danish Environmental Protection Agency about removal of the depot over a period of time. The removal procedure was initiated at the end of 2012 and continued throughout 2013. In December 2013 the excavation was concluded and on December 27 the last load was shipped from Denmark. The sulfur waste has now been deposited in a special depot in Norway, more specifically on the island of Langøya in the Oslo fjord. The depot is one of Europe's most recognized centers of competence for

## The Cheminova group owns the following manufacturing plants:

Name	Production	Country	Location
Cheminova A/S	Chemical synthesis, formulation and packaging	Denmark	Rønland, Lemvig
Cheminova India Ltd.	Chemical synthesis, formulation and packaging	India	Panoli north of Mumbai
Cheminova Deutschland GmbH & Co. KG	Formulation and packaging	Germany	Stade west of Hamborg
Althaller Italia s.r.l.	Formulation and packaging	Italy	San Colombano, south of Milano
Headland Agrochemicals Ltd.	Formulation and packaging	United Kingdom	Deeside, North Wales
Cheminova MFG Pty. Ltd.	Formulation and packaging	Australia	Wyong north of Sydney

the treatment of dangerous waste. This concluded a long process where more than 19,000 metric tons of sulfur waste was removed.

## Environmental improvements and energy savings

The significant discharges of treated waste water take place from the manufacturing sites in Denmark and India, where the recipients are the North Sea and the Gulf of Chambal, respectively.

During 2013 the plant in India has experienced increased production, with record-breaking amounts of several important active ingredients. In spite of this, waste water treatment has been improved by continuous upgrading of the biological waste water treatment facility and pretreatment of the waste water. For instance the Chemical Oxygen Demand (COD) has been reduced significantly, among other things by changing the aeration system and introducing improved hypo chlorite treatment of the waste water before it is channeled into the biological waste water treatment facility.

The area where the Indian company's production plant is located is a large industrial area with many other chemical plants. Occasionally, this has resulted in problems with air quality and smell. In this connection Cheminova has worked on reducing smell and problems related to the work environment, among other things by installing new technical facilities in 2013 such as automated and closed packaging systems, closed drying facilities etc. Cheminova has also been involved in a project to establish green zones of trees in the area. More than 2,000 new trees are planted on Environment Day each year.

The majority (> 90%) of the energy consumption at Cheminova's manufacturing plants is related to the sites in Denmark and India, where active substances for plant protection products are manufactured by chemical synthesis. These processes are highly energy demanding and the major part of the steam and electricity consumption is produced with natural gas as energy source, the remaining part with other types of fuel, primarily oil.



Generally, we are continuously working on improvements within the areas of energy and environment at all the production plants. It may be through reduction of various emissions, reduction of energy consumption or improved recovery of chemicals as an alternative to incineration.

#### REACH - EU's substance regulation

In mid-2013, stage 2 of the EU substance regulation REACH was concluded. Stage 2 involved the registration of non-crop protection substances, which are produced or imported to the EU in volumes of 100-1,000 metric tons per year.

Back in 2010 the first stage was concluded involving registration of substances produced or imported in volumes of more than 1,000 metric tons per year. In mid-2018 the last stage awaits involving registration of substances produced or imported in volumes of 1-100 metric tons per year.

In the first and second stage Cheminova has obtained 21 registrations with 10 'in situ isolated intermediates' and 6 'transported isolated intermediates' with limited data requirements. Furthermore, full registration of 5 substances was obtained, including 3 flotation agents which are used in the mining industry for separation of metals from the ore. These flotation agents are manufactured at Cheminova's plant in Denmark. The two other substances are micronutrients for fertilizing purposes manufactured at our subsidiary Headland in the United Kingdom.

#### Follow-up on objectives for 2013 India

- The energy consumption for the production of two large products to be re-

duced by 2% per produced volume.

*Comments:* The energy consumption was reduced by 2.5% compared to 2012 and the objective achieved.

- The content of COD in the treated waste water will be reduced by 3%.

*Comments:* The COD in the treated waste water was reduced by 32% from 17.8 tons in 2012 to 12.1 tons in 2013 and the objective achieved.

- The frequency and severity of incidents at work will be reduced by 2%.

*Comments:* In 2013 there were no accidents with absence of more than 48 hours. The frequency of non-reportable accident (incidents) was reduced from 19.9 per one million man-hours worked in 2012 to 18.0 in 2013 corresponding to 9.5% improvement. The severity rate was reduced from 14.13 lost man-hours per 1,000 man-hours worked in 2012 to 11.10 in 2013 corresponding to 21% improvement. For that reason the objective is achieved.

- The production at the Intermediate Division will be certified according to ISO 14001 and OHSAS 18001.

*Comments:* The audit of the certifying company was accomplished in May and the certificates were received in June. The objective is achieved.

#### Denmark

- Operation of the biological waste water treatment plant will be reassessed in 2012-15 so that the potential of the plant is utilized in the best possible way.

*Comments:* Two waste water streams were changed in 2013. The operation of the waste water plant is unaffected from the changes. Several applications

are pending with the authorities. The plan is on schedule.

- The quantity of waste per produced unit and Cheminova's total costs for treatment of hazardous waste will be reduced by 5% and 10% respectively per year in 2012-14.

*Comments:* Waste/product (kg/kg) index in 2013 was 104 (objective 2013 index 90). Cost/product (DKK/kg) index for 2013 was 87 (objective 2013 index 81). The objective is not achieved. The initiated activities for reduction of tonnage and costs have been overtaken by new waste streams and changes in product mix to products that generate more hazardous waste. This will challenge the possibility for achieving the objective also in 2014.

#### Australia

- Obtain certification of the company's occupational health and safety management according to OHSAS 18001 in 2014.

*Comments:* The management system is prepared and audited internally. Certification is expected in 2014 according to schedule.

- The waste water treatment will be improved and renewed permit for discharge will be applied for.

*Comments:* Studies on the waste water and the treatment process are completed. Submission to council for an updated approval is to be prepared and submitted. Objective is partly achieved.

#### United Kingdom

- Environmental and safety conditions will be reassessed and applications for changes will be sent to the authorities.



*Comments:* The Major Accident Prevention Policy and COMAH Safety Report were developed and submitted to the competent authorities in Q2, meeting the requirements of the regulations. The permit was granted during Q2 of 2013 and thereby the target achieved.

#### Germany

- A filter to reduce the emission of dust from the production will be installed.

*Comments:* The dust filter was installed and commissioned in Q3. It operates as expected. Objective is achieved.

#### Comments on the development from 2012 to 2013

Measured on the consumption of raw materials the overall activity has increased by 4%. Most significant changes are seen as increasing activity in Denmark, India and Italy. The increase in consumption of process water and total energy is due to the increased activities.

**Note 1:** In India, the reduction of consumption of cooling water is relatively high caused by changes in product mix. In Denmark, a tighter control has reduced the consumption of cooling water despite a higher production.

**Note 2:** Figures for 2012 are corrected.

**Note 3:** In India the consumption of natural gas is decreased due to use of bio fuel for steam generation at one of the sites.

**Note 4:** The emission of phosphorus in India decreased because of changes in product mix. Unintentional emission of sludge from the biological waste-water treatment plant in Denmark caused a substantial increase.

**Note 5:** The emission of particles in India increased from 2012 to 2013 due to increasing production and an additional steam boiler.

#### Fact box: Environment, health and safety

		Unit	Note	2013	2012	2011
<b>Water consumption:</b>	Cooling	Mio. m <sup>3</sup>	1	28	29	31
	Processes and ord. consumption	Thousand m <sup>3</sup>	2	729	659	682
<b>Energy consumption:</b>	Natural gas	GWh	2 + 3	295	309	337
	LPG	GWh	2	0.67	0.73	0
	Electricity	GWh		77.9	70.6	67.2
	Fuel oil	GWh		1.90	1.80	2.7
	Bio fuel	GWh	3	29	0	0
<b>Materials:</b>	Raw mat. consump.	1000 tonnes		112	108	103
<b>Discharge of waste water:</b>	COD	Tonnes		152	148	206
	Nitrogen	Tonnes		19	22	31
	Phosphorus	Tonnes	4	9	7	9
<b>Air emissions:</b>	Particles	Tonnes	5	7.3	5.7	4.5
	CO <sub>2</sub>	1000 tonnes		76	63	71
<b>Ordinary waste:</b>	Recycling	1000 tonnes	6	3.2	3.0	3.7
	Incineration	1000 tonnes	7	0.3	0.26	0.47
	Depositing	1000 tonnes	8	18.3	17.9	15.8
<b>Hazardous waste:</b>	Recycling	1000 tonnes	9	2.5	1.76	0.58
	Incineration	1000 tonnes	10	13.3	12.3	7.6
	Depositing	1000 tonnes	11	5.6	4.9	2.28
<b>Spillage and waste:</b>		Number		11	10	19
<b>Accidents:</b>		Number	12	11	18	20
<b>Accident frequency:</b>		–		1.9	3.3	4.0
<b>Absence from work due to accidents:</b>		–		0.1	0.2	1.0

Information about accounting policies can be found on Cheminova's website.

**Note 6:** The increase is mainly caused by changed activities in India and Denmark. In Germany, the quantity has increased because of a tidying-up campaign.

**Note 7:** Increase in Denmark where empty packaging from raw materials previously was classified hazardous waste.

**Note 8:** In the United Kingdom a considerable change happened because of changes in the classification of waste that previously was composted (classified recycling).

**Note 9:** The increase is caused by changes in India, where the waste is now re-processed or used as fuel in the cement industry.

**Note 10:** The amount of waste is increased due to increased activity and changes in product mix in Denmark.

**Note 11:** The increase is mainly caused by commissioning of a new production in India. As reported on page 28 more than 19,000 metric tons of sulfur waste was removed from a depot in Denmark. Because the sulfur waste originates from production in the 1970'es this waste is not included in the reported figure.

**Note 12:** In all companies internal reporting is made up of both reportable and non-reportable accidents. Reportable accidents occurred in Denmark only.





# Supplier management

Supplier management has been strengthened through education and training of our employees.

In recent years our focus within supplier management has been on development and implementation of global policies, especially concerning procurement of raw materials, active ingredients and services such as toll formulation and filling of end user products. Furthermore, focus has been on strengthening the established global team of Technical Responsible Persons that carry out the overall global supplier management.

More than 60 times Cheminova staff has either done a complete supplier audit or screened a potential supplier in 2013. Relevant findings were recorded and critical issues will be followed up.

To ensure a consistent approach to these processes while considering the cultural differences in the countries and regions of Cheminova's suppliers, one of the targets of 2013 was to conduct common education and training. In august 2013 a number of relevant employees from different disciplines/areas in the global organization and with an interest in supplier management participated in a joint training session in Denmark with PwC as facilitator. There were many topics and objectives (cf. box).

## Administration of company audits in a global company

With the number of suppliers steadily increasing there is a growing need for

an improved administration and filing system for documentation generated in connection with CSR audits. During 2013, several tools have been evaluated, all capable of managing and storing data about audits in a global company. We have opted for utilizing our global ERP system (SAP) which has an 'Audit Management' module and which also matches Cheminova's global policies. In addition to being a filing tool the system is also characterized by being able to administer planned audits in the global organization. We expect the system to be tested in Q1 2014 and to be up and implemented mid-2014.

Inspection of the production facilities of a supplier.



## Joint training in essential aspects of supplier management:

### Topics covered:

- introduction to CSR standards, requirements and risk
- suppliers and the interaction with the business
- supplier management and Cheminova's policies in this regard
- roles, responsibility and contributions in supplier management of purchasers, project managers, people responsible for quality and the CSR organization.
- how do we obtain advantages from CSR audits globally

### The objectives were to gain an understanding of how to:

- improve relations to suppliers
- improve product quality
- secure fulfillment of customer requirements and expectations
- plan, execute and report CSR audits



# People

The values set the standard.

One of our goals in 2012 was to focus on the values in the Cheminova group and we continued our efforts in 2013 to make them the baseline for all employees in their daily work both internally within the Cheminova organization and externally, e.g. when cooperating with our customers and suppliers.

The five global Cheminova values are:

-  We achieve ambitious goals
-  We are innovative
-  We decide and act
-  We recognize results
-  We are good corporate citizens

The introduction to our values starts during the recruitment process and continues during the onboarding phase. Once the employee has joined the Cheminova group, the experienced colleagues and managers secure that all new employees comply with the values.

## Our organization is growing

Also in 2013 the increase in the number of employees continued. Since 2008 the number of employees globally has increased by 18%. The main increase is seen in Asia whereas by and large the numbers for Denmark and the other European countries stay at the same level. The geo-

graphical distribution of employees from 2008 to 2013 is:

	2008	2013
Americas	12%	12%
Asia	27%	34%
Denmark	43%	37%
Europe	18%	17%

Naturally, it requires knowledge and adherence to the Cheminova values, policies and processes in order to secure the necessary alignment. Considering that more than half of our workforce has more than 5 year's seniority we consider our baseline to be solid.

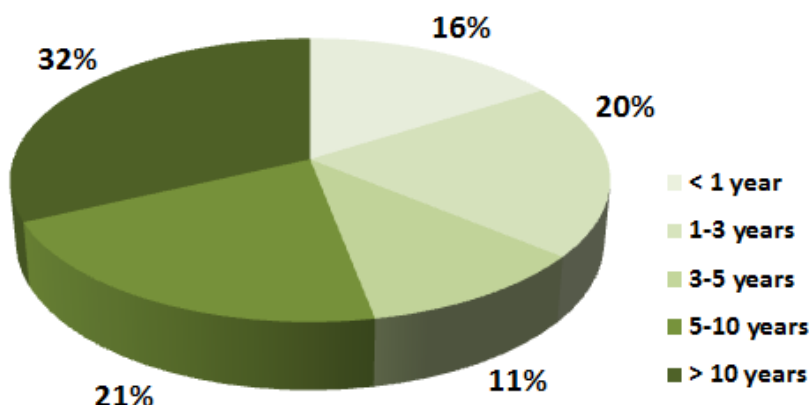
## Survey - employee engagement

To ensure that the global workforce of more than 2,200 persons has a high

degree of job satisfaction and commitment, a global employee survey will be initiated during the second half of 2014. The purpose is to measure the individual departments' overall employee engagement and commitment. The subsequent follow-up will secure that areas and/or units that are having a need for increased employee satisfaction and commitment will receive the support needed.

The follow-up will also ensure that our employees have the opportunity to live in accordance with the Cheminova values in a constructive way and for both employees and Cheminova to benefit and develop professionally and personally. Equal opportunities for everyone are our foundation and the survey will highlight whether the prerequisites are present in our organization.

The split on seniority for Cheminova employees before year-end 2013 is:





We offer a variety of jobs.

### Diversity

Naturally, Cheminova also focuses on diversity in the organization as well as the associated opportunities and benefits. Considering the mere fact that we have employees in 23 countries, nationality alone increases the level of diversity. As far as distinction of genders is concerned we have in 2013 set up a goal for the distinction of genders at board level and we expect to continue this work in the rest of our organization. Initially, we shall start monitoring the distinction of genders at the management level. Our long-term objective is that the distinction of genders will reflect the structure of the total workforce. The overall gender structure in the Cheminova group is approx. 80% male, 20% female, however, with substantial regional differences.

In 2013 a global recruitment procedure was implemented. The recruitment procedure will among others help to secure and reflect diversity, including but not limited to, focus on the distinction of genders when identifying the field of candidates during the recruitment process.

### Yearly appraisals

To emphasize the importance of developing the individual employee and thereby ensuring the qualifications needed, a yearly appraisal between the employee and manager is scheduled and completed. During the appraisal

both development and qualifications will be discussed. In 2013 80% of the global workforce has completed appraisals, and in 2014 we shall continue focusing on having appraisals and a follow-up on the subsequent feedback and conclusions. We believe that both the employee and Cheminova will benefit from the appraisal process. To have visible career paths in the Cheminova group rather than just the management career path, new and other visible career paths within e.g. specialist and project leader functions will be created also making these obvious choices for development and career.

### Whistleblower process

In 2013 we experienced a need for a new whistleblower set-up as our former supplier decided to end our cooperation. By the end of the 4th quarter the new whistleblower set-up was implemented. All employees have been informed about the new whistleblower function which consists of an external website where reports can be placed anonymously through a hotline either in writing or by calling a specific phone number. All reports placed through this external website are forwarded – anonymously – to the whistleblower committee which is responsible for investigating the high-lighted violations. Every quarter a report is sent to the audit committee unless special reports require a direct and immediate involvement from the board. No whistleblower

violations were reported in 2013.

### Communication

A new global intranet will be launched in 2014. By streamlining the information flow and access to global policies, procedures etc. and securing that all employees have the same access to communication and tools, we hope to see a positive impact on the implementation of a wide range of procedures.

### Anti-bribery

Both bribery and corruption are identified as priority areas for governments and authorities world-wide. Legislative developments in combination with an increased understanding of the private sector's role in eliminating bribery and corruption influence especially the global companies which are facing challenges and a need for continuously developing their policies and procedures.

Similar to the past years we implemented initiatives to retain and strengthen our anti-bribery program in 2013. The objectives in the present report show that we are working systematically with both risk analysis as well as education of a selected number of employees in Denmark and the group's subsidiaries world-wide.

The initiatives are firmly entrenched in our values with the acknowledgement that the Cheminova group can contribute





## People, continued

positively to the elimination of bribery and corruption within the business areas where we are operating. A natural part of the process is to revise policies and procedures on a regular basis to secure that these are still valid and up-to-date according to applicable legislation and identified risks.

### Health and safety at work

Our first priority is to have a safe working environment and therefore Cheminova continuously monitor work-related accidents as well as near-miss reporting. The purpose is, naturally, to avoid accidents from happening again. In 2013 a specific health and safety program, SAFE, was introduced in Denmark in a new and improved version. SAFE is a program where employees are trained in conducting a health and safety audit in other departments. The SAFE program will continue in

2014. The feedback and experiences are very positive and concrete improvements have already surfaced in connection with SAFE walks – also an improvement in the employees' attitude towards SAFE has been registered. This ensures the constant and necessary focus on health and safety at work.

### Safety drills

One of our global focus areas in 2013 has been safety drills. The purpose of having these safety drills is to prepare the employees in case of fire or gas leakages. The training in firefighting, evacuation or life-saving is part of the safety program at our production facilities. The plants have contingency plans which are the foundation for these safety drills. Please refer to the below examples from India and United Kingdom where training and drills are described.

In 2013 we carried out 112 safety drills in India. Three of these took place at the Panoli office. At the production facilities the safety drills included training in fires in chemicals and electrical installations, leakage of toxic chemicals, electrical discharges and personal injury when falling from heights.

In the United Kingdom we carried out a fire drill including emergency call, firefighting, evacuation, roll call etc. for all employees including business associates, contractors and other guests.

In 2014, we are planning an extensive safety drill in Germany where also an external firefighting service will be participating.



As a part of the celebrations of Cheminova's 75th anniversary Brazilian colleagues won a visit to the Danish factory site.



## Action plan





# Action plan

## Village projects

Focus area	Objective/action	Timetable	Success criteria
India: Village projects	<u>Objective:</u> To promote Good Agricultural Practices <u>Action:</u> This area encompasses all activities concerning Improved Agricultural Practices i.e. from land preparation, seed treatment, weed management and promotion of low dose chemicals	2014	Establish use of Good Agricultural Practices in village project
	<u>Objective:</u> Continuation of Saheli Project on Women Empowerment <u>Action:</u> This concept is a step to take Good Agricultural Practices (above activity) further to involve all members of farming families i.e. men, women, children and other stakeholders	2014	Skill development program for Self Helps Groups
Water conservation project	<u>Objective:</u> Promote water conservation in Rainfed Agriculture <u>Action:</u> A very large area of Indian Agriculture comes under Rainfed Agriculture	2014	Increase adoption of this concept over 250 acres in three states i.e. Karnataka, Andhra Pradesh and Tamil Nadu
Brazil: Development of village based environmentally friendly control of banana diseases	The project among small-scale banana farmers in the state of Goias will be continued and the dialogue with local agronomists	2014	The project keeps momentum
	The project with focus on safe and environmentally friendly control of plant diseases among banana farmers in the state of São Paulo will be continued	2014 - 15	The project keeps momentum and involves an increasing number of farmers
	Initiate a project with axil application among banana growers in Santa Catarina	2014 - 15	The project is initiated at farm level

## Helping you Grow – Chemistry with Care

Focus area	Objective/action	Timetable	Success criteria
Chemistry with Care	<u>Objective:</u> More plant protection <u>Action:</u> Continued improvement in 12 months rolling index illustrating the area of farm land where crops and thus the food production is protected by Cheminova's products	2014-17	Ongoing reporting of a 12 months rolling index with continued improvement compared to the previous quarter and base year 2009
	<u>Objective:</u> Less chemistry <u>Action:</u> Continued improvement in 12 months rolling index illustrating the quantity of non-sustainable ingredients applied in Cheminova's products per area unit	2014-17	Ongoing reporting of a 12 months rolling index with continued improvement compared to the previous quarter and base year 2009
	<u>Objective:</u> Less resources <u>Action:</u> An index illustrating the energy consumption for manufacturing products at Cheminova's production sites in India and Denmark will be implemented	2014-17	Ongoing reporting of a 12 months rolling index with continued improvement compared to the previous quarter and base year 2009
	Development of at least 10 formulations with a low content of volatile organic solvents	2014	Recipes filed at Cheminova A/S or Cheminova India Ltd
	Lower average toxicity of newly developed formulations measured through the classification of the formulation	2012-14	By each year the average WHO classification of newly developed formulations must be lower than the average classification of Cheminova's plant protection products. Only plant protection products, where the active ingredient is owned by Cheminova, are included

## Production

Focus area	Objective/action	Timetable	Success criteria
India	<u>Objective:</u> Reduction of the amount of COD discharged in treated waste water by 3% <u>Activity:</u> Segregation of high COD stream and their in-house treatment within manufacturing plants	2014	COD amount in the treated water reduced by at least 3% compared to 2013
	<u>Objective:</u> Certification of the production at the Formulation Division 1 & 2 in relation to ISO 9001, ISO 14001 & OHSAS 18001 <u>Activity:</u> Implementation of a management system that meets the requirements of the standards	ISO 9001: 2014 ISO 14001 and OHSAS 18001: 2015	ISO 9001: Certificates obtained from the certification company ISO 14001 and OHSAS 18001: Prepared and ready for certification in 2015



Focus area	Objective/action	Timetable	Success criteria
Denmark	Revision of the operation of the biological waste-water treatment plant where the waste water from the individual production plants is treated/optimized so that the potential of the plant is utilized in the best possible way <u>Activity:</u> It will be examined whether waste-water streams, which are today treated externally, may instead be treated biologically, possibly after a pre-treatment. In case of a positive result we will ask the authorities for permission	2014	With adherence to the discharge requirements for the biological waste-water treatment plant approval is achieved annually for supply of two new waste water streams to the plant after necessary pre-treatment
	<u>Objective:</u> To reduce consumption of steam at a plant for recovery of an organic solvent – hexane – through optimization of the recovery sequence <u>Activity:</u> Surveillance of mass balance for the plant through continuous measuring of inlet and outlet concentrations and flow is established. Based on the outlined mass balance it is estimated whether the recovery sequence may be optimized based on mass flow of solvents in inlet air and at the same time ensure an acceptable emission. If necessary, the control system of the plant is updated in order to make the mentioned optimization possible	2012-15	Steam consumption per liter recovered solvent in the period 2010-2011 used as basis. Steam consumption to be reduced min. 10% compared to basis
Australia	<u>Objective:</u> Obtain certification of the production in relation to OHSAS 18001 <u>Activity:</u> Implementation of a OHSAS 18001 management system	2014	Certificate obtained from the certification company
	<u>Objective:</u> Reassessment of environmental and safety performance to meet the high standard <u>Activity:</u> Submission of a MHF report to the competent authority	2014	High standard met on environmental and safety performance. MHF report submitted to the authority
United Kingdom	<u>Objective:</u> Continuous improvement of occupational safety and health <u>Action:</u> Increase the number of near misses being reported. Complete all safety critical training. Raise awareness through toolbox talks and poster campaigns	2014	Total number of reportable and non-reportable accidents recorded during 2014 ≤ 25. Total number of near misses reported ≥ 70. Investigation of all near misses documented. Authority Reportable Incidents ≤ 1. Lost time accident frequency rate ≤ 10

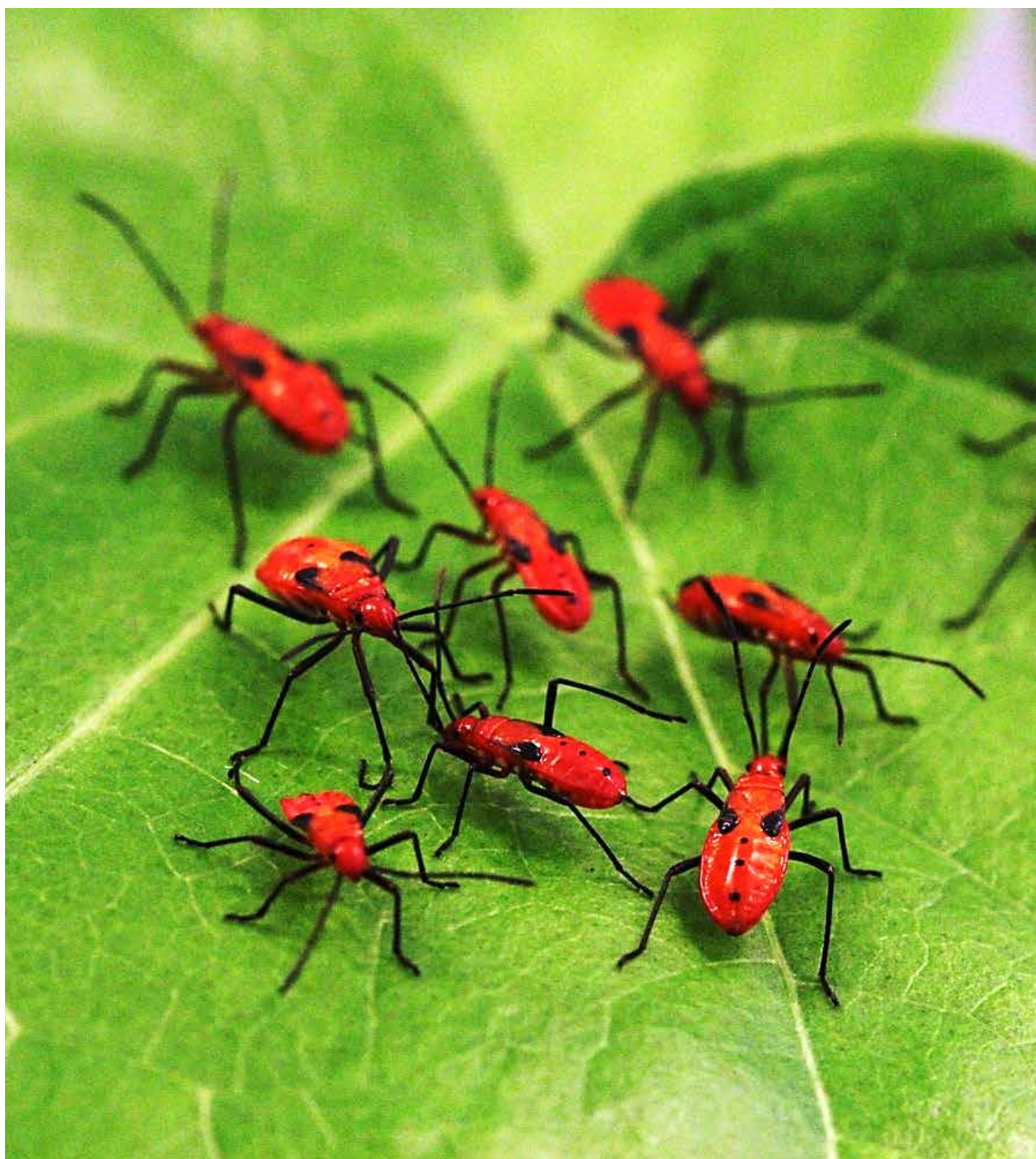
## Supplier management

Focus area	Objective/action	Timetable	Success criteria
Global Audit Management System	<u>Objective:</u> Establishment of a global system for filing audits and share experience and knowledge <u>Activities:</u> Setting up a global data base in SAP. Implementation of the data base and management system by training auditors	2014	Full implementation of the global system where SAP is implemented

## Human Resources

Focus area	Objective/action	Timetable	Success criteria
Employee development	<u>Objective and activities:</u> At least once a year all employees and their direct superior conduct a performance and development review – conclusions are documented and implemented	2014	Overall number of performance and development reviews conducted. Progress in implementing the agreed conclusions
Employee engagement	<u>Objective and activity:</u> Conduct a global Employee Engagement Survey	2014	Overall response rate higher than 70%. Develop action plans by organizational units to either secure or increase engagement level as needed
Diversity	<u>Objective:</u> Ensure that diversity is taken into consideration when positions are vacant <u>Activities:</u> Create base line for measuring gender diversity in the general workforce and managerial positions. Objectives for gender diversity to be defined	2014	Operational base line created. Objectives for gender diversity documented
Denmark	<u>Target:</u> Ensure a safe work environment by increasing all employees' involvement and foster a positive safety culture and behavior <u>Action:</u> Starting from Cheminova's values employees are educated and trained in understanding colleagues' job functions, interactions in the organization and care in time	2014	By the end of 2014 all employees have been educated and involved in the SAFE program
Anti-corruption	Mapping from which a classification of country based corruption risks can be made. Educational activity for selected employees	2014	GEC approval of mapping. Educational activities for selected employees has been undertaken

# More information



# Management statement



Jaime Gomez-Arnau  
CEO & Region President,  
Europe



Jakob Lyngsø Andersen  
Senior Vice President,  
Human Resources &  
Communication



Anton Bro  
Senior Vice President,  
Development & Registration



Rico T. Christensen  
President,  
Region North America



Niels Morten Hjort  
Senior Vice President,  
Production & Logistics



Pramod N. Karlekar  
President,  
Region International



Cesar Rojas  
President,  
Region Latin America



René Schneider  
Chief Financial Officer,  
Finance & Support

On February 19, 2014 the company's day-to-day top management, the Global Executive Committee (GEC), considered and approved the CSR report for 2013.

Cheminova's CSR work is founded on UN's Global Compact and GRI (Global Reporting Initiative) which are internationally approved codes together with Responsible Care which is the chemical industry's own code. Internally, the CSR work is rooted in Cheminova's Code of Business Principles and the CSR Strategy as well as policies and procedures in our Global QC and CSR Manual ([http://www.cheminova.com/en/sustainability/corporate\\_social\\_responsibility/csr\\_policy/management\\_approach\\_to\\_csr\\_management.htm](http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm)).

GEC has the overall responsibility for Cheminova's global business and activities, including CSR.

It is the GEC's view that the CSR report for 2013 provides an accurate picture of the company's CSR activities in the areas described.



Jens Thorsen  
Senior Vice President,  
Portfolio Management



# Assurance statement

## Independent Assurance Statement for the stakeholders of Cheminova A/S

We have assessed the Cheminova A/S Corporate Social Responsibility Report 2013 for the purpose of expressing a conclusion on the descriptions of target attainment, non-financial data and indices regarding 'more plant protection', 'less chemistry' and 'fewer resources' contained in the Report as well as its capacity as a Communication on Progress Report (CoP Report) occasioned by the Cheminova A/S signature to the UN Global Compact.

### Criteria applied

The criteria for CSR-related target attainment are stated in the Corporate Social Responsibility Report 2012, in which targets as well as success criteria for the focus areas Village Projects, 'Helping you grow – Chemistry with care', Product Stewardship, Production, Supplier Management and Human Resources, are presented.

The criteria for preparation of non-financial data and indices contained in the Report are evident from the accounting policies described at the website: [http://www.cheminova.com/download/sustainability/csr\\_accounting\\_principles\\_2013\\_en.pdf](http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf). These contain information concerning which of the Cheminova Group's businesses and activities are included in the types of data reported as well as Management's reasons for selecting environmental and occupational health and safety data and the indices.

### Responsibilities

Cheminova A/S Management is responsible for preparing the Report, including for setting up registration and internal control systems with a view to ensuring reliable reporting. Company Management is furthermore responsible for specifying acceptable reporting criteria as well as selecting data to be collected.

Moreover, Cheminova A/S Management is responsible for preparing a CoP Report presenting the progress of Cheminova A/S in re-

spect of supporting the UN Global Compact principles.

Our responsibility is, on the basis of our work, to express a conclusion on the information contained in the Report regarding target attainment, non-financial data and indices as well as on the Report as a CoP Report.

### Scope of our work

We planned and performed our work in accordance with the International Auditing Standard ISAE 3000 (assurance engagements other than audits or review of historical financial information) for the purpose of obtaining moderate assurance that:

- the status of attainment of established CSR targets for 2013 on pages 5-6 is in accordance with the listed criteria for CSR targets, which were published in the Corporate Social Responsibility Report 2012;
- the environmental and occupational health and safety data stated on page 30 as well as the indices on page 23 have been recognised in accordance with the criteria stated for preparation of the non-financial data and indices of the Report;
- the Report in its entirety is consistent with the company's CSR activities and progress with a view to supporting the UN Global Compact.

The assurance obtained is limited as compared to that of an audit. Our work has therefore, based on an assessment of materiality and risk, primarily included inquiries concerning goal attainment, including on a judgemental sample-basis obtaining documented confirmations regarding goal attainment from local managements, interviews with selected key managerial employees responsible for the goal attainment and review of selected documentation.

Moreover, our review of local targets and data has included visits to the production companies in India, Germany and Denmark, and we paid visit to the sales company in India.

The criteria stated concerning statement of environmental and occupational health and safety data as well as the indices, as described in the accounting policies, have primarily been assessed from inquiries concerning procedures for calculation and measurement of the concrete data. Furthermore, we have performed technical accounting analyses of reported data and have reviewed selected documentation.

We have reviewed the Report with a view to assessing its informative value in relation to expectations for a CoP Report. Through interviews with Management and selected key employees, we have gained insight into Management's commitment and status of embedding the UN Global Compact and the values of Cheminova on the basis of implementation of activities.

As agreed with the Management of Cheminova A/S, we have not performed any procedures relating to the reliability of the GRI reporting for 2013.

### Conclusion

Based on our review, nothing has come to our attention that causes us to believe that the descriptions covering the status of the attainment of CSR targets for 2013 on pages 5-6 are not accurate.

Furthermore, nothing has come to our attention that causes us to believe that the environmental and occupational health and safety data stated on page 30 as the indices on page 23 have not been recognised in accordance with the criteria stated for preparation of the non-financial data and indices of the Report.

We confirm that the Report serve as the CoP Report of Cheminova A/S, and based on the total work performed, nothing has come to our attention that causes us to believe that the Report in its entirety is not based on specific activities and the progress of Cheminova A/S with a view to supporting the UN Global Compact.

Hellerup, March 6, 2014

**PricewaterhouseCoopers**

Statsautoriseret Revisionspartnerselskab



Brian Christiansen

State Authorised Public Accountant



Jens Pultz Pedersen

MSc (Engineering, Diploma  
(Business Economics))

# UN Global Compact

## Progress report on the implementation of the principles of the UN Global Compact.

Cheminova has supported the United Nations Global Compact since 2009. We support the endeavors to make globalization more socially and ecologically compatible and to raise standards in the fields of human rights, labor rights and environmental protection and in the fight against corruption. The following table shows the activities and management systems

at Cheminova that support the 10 principles of the Global Compact and the results which were achieved in the period under review. Information on the Global Compact can be found at [www.unglobalcompact.org](http://www.unglobalcompact.org).

The page numbers refer to relevant sections of this report.

Systems	Measures 2013	Achievements 2013
<b>Human Rights:</b> Principle 1: Support of human rights Principle 2: Exclusion of human rights violations		
<ul style="list-style-type: none"> <li>Code of Business Principles (p. 48)</li> <li>Supplier Code of Conduct (p. 48)</li> <li>Management approach to CSR management (p. 48)</li> <li>UN Global Compact</li> </ul>	<ul style="list-style-type: none"> <li>In 2013, establishment of visible and successful career paths globally will be initiated</li> <li>In 2013, a global recruitment policy and recruitment procedure will be prepared and communicated</li> <li>The project Saheli on women empowerment on safety, health and livelihood in India will be continued in 2013</li> </ul>	<ul style="list-style-type: none"> <li>Executed (p. 6)</li> <li>Executed (p. 6)</li> <li>Executed (p. 5)</li> </ul>
<b>Labour Standards:</b> Principle 3: Observance of the right to freedom of association Principle 4: Abolition of all forms of forced labour Principle 5: Abolition of child labour Principle 6: Elimination of discrimination		
<ul style="list-style-type: none"> <li>Code of Business Principles (p. 48)</li> <li>Supplier Code of Conduct (p. 48)</li> <li>Management approach to CSR management (p. 48)</li> <li>UN Code of Conduct (p. 48)</li> <li>UN Global Compact</li> </ul>	<ul style="list-style-type: none"> <li>In 2013, establishment of visible and successful career paths globally will be initiated</li> <li>In 2013, a global recruitment policy and recruitment procedure will be prepared and communicated</li> <li>Production at Cheminova MFG Pty. in Australia will in the period 2013-14 be certified in relation to OHSAS 18001</li> </ul>	<ul style="list-style-type: none"> <li>Executed (p. 6)</li> <li>Executed (p. 6)</li> <li>Implementation plan followed (p. 6)</li> </ul>
<b>Environment:</b> Principle 7: Precautionary environmental protection Principle 8: Specific commitment to environmental protection Principle 9: Diffusion of environmentally friendly technologies		
<ul style="list-style-type: none"> <li>Code of Business principles (s. 48)</li> <li>Responsible Care (p. 48)</li> <li>Supplier Code of Conduct (p. 48)</li> <li>Management approach to CSR management (p. 48)</li> <li>UN Code of Conduct (p. 48)</li> <li>UN Global Compact</li> </ul>	<ul style="list-style-type: none"> <li>In India, the project Aakash Ganga on water conservation will be continued in 2013 and extended with further 25 acres.</li> <li>The project among small-scale banana farmers in the state of Goias in Brazil will be continued in 2013</li> <li>A new project on safe and environmentally friendly control of plant diseases will be launched among banana farmers in the state of São Paulo in Brazil in 2013</li> </ul>	<ul style="list-style-type: none"> <li>Executed (p. 5)</li> <li>Executed (p. 5)</li> <li>Executed (p. 5)</li> </ul>

Systems	Measures 2013	Achievements 2013
	<ul style="list-style-type: none"> <li>• The production at the Intermediate Division in India will in 2012-13 be certified in relation to ISO 14001.</li> <li>• The energy consumption for the production of 2 large products in India will in 2013 be reduced by 2% per produced volume.</li> <li>• In India, the COD content in waste water will be reduced by 3%</li> <li>• Revision of the operation of the biological waste-water treatment plant in Denmark in the period 2012-15 where waste-water streams will be pretreated/optimized so that the potential of the biological waste water treatment plant is utilized in the best possible way.</li> <li>• In the period 2012-14 at least 20 formulations with low content of volatile organic solvents will be developed</li> </ul>	<ul style="list-style-type: none"> <li>• Executed (p. 6)</li> <li>• Executed (p. 5)</li> <li>• Executed (p. 5)</li> <li>• Implementation plan followed (p. 6)</li> <li>• Implementation plan followed (p. 5)</li> </ul>
<b>Anti-Corruption:</b> <b>Principle 10: Measures to fight corruption</b>		
<ul style="list-style-type: none"> <li>• Code of Business principles (s. 48)</li> <li>• Management approach to CSR management (p. 48)</li> <li>• UN Global Compact</li> </ul>	<ul style="list-style-type: none"> <li>• Mapping for establishing a country based classification of risk of corruption. Training activities for selected employees in 2013-14</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation plan followed (p. 6)</li> </ul>



# GRI Reporting 2013

The page numbers refer to the relevant sections of this report, and AR refers to page numbers in Auriga's Annual Report 2013.

F = Fully reported; P = Partially reported.

	Information about the company	Links and comments		Page
<b>1. Strategy and analysis</b>				
1.1	Statement from the president, CEO and the Global Executive Committee	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 3	F	3 and 39
1.2	Description of essential impacts, risks and opportunities	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 12-13	F	16,22 and 23
<b>2. Organisational profile</b>				
2.1	Name of the organization	-	F	1
2.2	Primary brands, products, and/or services	<a href="http://www.cheminova.com/en/products__innovation/products__innovation.htm">http://www.cheminova.com/en/products__innovation/products__innovation.htm</a>	F	8 and 9
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	<a href="http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm">http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm</a>	F	-
2.4	Location of organization's headquarters	-	F	50
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	<a href="http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm">http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm</a> <a href="http://www.cheminova.com/en/contact/worldwide/worldwide.htm">http://www.cheminova.com/en/contact/worldwide/worldwide.htm</a>	F	10
2.6	Nature of ownership and legal form	<a href="http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm">http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm</a>	F	-
2.7	Markets served	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 10-11	F	-
2.8	Scale of the reporting organization	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 4 and notes p. 39-62	F	-
2.9	Significant changes during the reporting period regarding size, structure, or ownership	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 5	F	4
2.10	Awards received in the reporting period	We have received no awards during the reporting period	F	-
<b>3. Report parameters</b>				
<b>Aspect: Report profile</b>				
3.1	Reporting period for information provided	<a href="http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf">http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf</a>	F	4
3.2	Date of most recent previous report	March 15, 2013	F	-
3.3	Reporting cycle	<a href="http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf">http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf</a>	F	-
3.4	Contact point for questions regarding the report or its contents	-	F	2
<b>Aspect: Report scope and boundary</b>				
3.5	Process for defining report content	-	F	4
3.6	Boundary of the report	-	F	4 and 28
3.7	Limitations on the scope or boundary of the report.	As stated on page 4 the CSR report provides information about Cheminova A/S, all subsidiaries and joint venture companies with an ownership of more than 50%	F	4

## GRI reporting 2013, continued

	Information about the company	Links and comments		Page
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations	-	F	4
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the indicators and other information in the report	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a> <a href="http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf">http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf</a>	F	-
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	There are no re-statements in the reporting period	F	-
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	There are no significant changes	F	-
3.12	Table identifying the location of the Standard Disclosures in the report	The table will be published as part of the 2013 CSR report.	F	43-47
3.13	Verification	-	F	40
<b>4. Governance, commitments and engagement</b>				
<b>Aspect: Governance</b>				
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight	<a href="http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf">http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf</a>	F	39
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	<a href="http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/board_of_directors.htm">http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/board_of_directors.htm</a> <a href="http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/independence.htm">http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/independence.htm</a>	F	-
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members	<a href="http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/board_of_directors.htm">http://www.cheminova.com/en/about_us/management_and_structure/board_of_directors/board_of_directors.htm</a>	F	-
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	-	F	20
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements) and the organisation's performance (including social and environmental performance)	<a href="http://www.cheminova.com/download/about_us/policy/ved-erlagspolitik_uk.pdf">http://www.cheminova.com/download/about_us/policy/ved-erlagspolitik_uk.pdf</a> <a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a> <a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 16-18	F	-
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a>	F	-
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organisation's strategy on economic, environmental, and social topics	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a>	F	-
4.8	Internally developed statements of vision, values, principles etc. and their implementation	<a href="http://www.cheminova.com/en/about_us/mission_vision_values/mission_vision_values.htm">http://www.cheminova.com/en/about_us/mission_vision_values/mission_vision_values.htm</a> <a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/code_of_business_principles/code_of_business_principles.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/code_of_business_principles/code_of_business_principles.htm</a> <a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/supplier_code_of_conduct.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/supplier_code_of_conduct.htm</a>	F	32-34
4.9	Procedures of the Board for overseeing the organisation's economic, environmental and social management and performance	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a> <a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013, p. 16-18	F	-

	Information about the company	Links and comments		Page
4.10	Processes for evaluating the Boards own performance	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a> <a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013, p. 16-18	F	-
Aspect: Commitments to external initiatives				
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organisation	-	F	3, 12, 13, 16, 17, 22 and 23
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organisation subscribes or endorses	-	F	4, 40 and 48
4.13	Memberships in associations	-	F	9 and 48
Aspect: Stakeholder engagement				
4.14	List of stakeholder groups engaged by the organizations	-	F	20
4.15	Basis for identification and selection of stakeholders with whom to engage	-	F	20
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	There is a current and open dialogue with our stakeholders	F	20
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded	<a href="http://www.mst.dk/NR/rdonlyres/DDF068A0-2986-46F6-86C5-096249DAD5B2/0/Cheminova_VVM_udvidelse.pdf">http://www.mst.dk/NR/rdonlyres/DDF068A0-2986-46F6-86C5-096249DAD5B2/0/Cheminova_VVM_udvidelse.pdf</a> Climate changes and potential harm from plant protection products are focus areas among our stakeholders	F	16, 17, 22 and 23
	Indicators of company's CSR	Links		Page
Economics				
	Management approach	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_corporate_governance.htm</a> <a href="http://www.cheminova.com/download/investor/financial_reports/2012/uk/auriga_ar12_uk_nav_1403131_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2012/uk/auriga_ar12_uk_nav_1403131_websiteuk.pdf</a> - AR 2012, p. 4	F	-
Aspect: Economic performance				
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 4 and 39-62	F	-
EC3	Coverage of the organization's defined benefit plan obligations	<a href="http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf">http://www.cheminova.com/download/investor/financial_reports/2013/uk/auriga_ar13_uk_nav_060314_websiteuk.pdf</a> - AR 2013 p. 52-53 <a href="http://www.cheminova.com/download/about_us/policy/ved-erlagspolitik_uk.pdf">http://www.cheminova.com/download/about_us/policy/ved-erlagspolitik_uk.pdf</a>	F	-
Aspect: Market presence				
EC7	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation	<a href="http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf">http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf</a>	F	-
Environment				
	Management approach	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	-
Aspect: Materials				
EN1	Materials used by weight or volume	-	F	30
Aspect: Energy				
EN3	Direct energy consumption by primary energy source	Natural gas 294 GWh corresponding to 1059 TJ (Terra joule) LPG 0.7 GWh corresponding to 2.5 TJ Fuel oil 1.9 GWh corresponding to 6.9 TJ Biofuel 29 GWh corresponding to 104 TJ	F	30









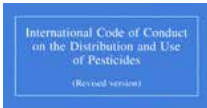



## GRI reporting 2013, continued

	Indicators of company's CSR	Links		Page
EN4	Indirect energy consumption by primary source	Electricity 77.9 GWh corresponding to 280.5 TJ	F	30
	Aspect: Water			
EN8	Total water withdrawal by source	-	F	30
	Aspect: Biodiversity			
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<a href="http://www.cheminova.com/en/about_us/news_views/biodiversity.htm">http://www.cheminova.com/en/about_us/news_views/biodiversity.htm</a> <a href="http://www.cheminova.com/en/about_us/news_views/production_sites_and_natural_resorts.htm">http://www.cheminova.com/en/about_us/news_views/production_sites_and_natural_resorts.htm</a>	F	-
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	<a href="http://www.cheminova.com/en/about_us/news_views/biodiversity.htm">http://www.cheminova.com/en/about_us/news_views/biodiversity.htm</a> <a href="http://www.cheminova.com/en/about_us/news_views/production_sites_and_natural_resorts.htm">http://www.cheminova.com/en/about_us/news_views/production_sites_and_natural_resorts.htm</a>	F	-
	Aspect: Emissions, effluents and waster			
EN16	Total direct and indirect greenhouse gas emissions by weight	<a href="http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf">http://www.cheminova.com/download/sustainability/csr_accounting_principles_2013_en.pdf</a>	F	30
EN21	Total water discharge by quality and destination	-	F	30
EN22	Total weight of waste by type and disposal method	-	F	30
EN23	Total number and volume of significant spills	-	P	30
	Aspect: Products and services			
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	<a href="http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm">http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm</a>	F	10-11, 16-19 and 22-23
	Labour practices and decent work			
	Management approach	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	20 and 32-34
	Aspect: Occupational health and safety			
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related facilities by region	Only for the manufacturing companies	P	30
LA8	Education, training, counselling, prevention, and risk-control programmes in place to assist workforce members, their families, or community members regarding serious diseases	<a href="http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf">http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf</a>	F	24-25
	Human Rights			
	Management approach	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	34 and 49
	Aspect: Freedom of association and collective bargaining			
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	<a href="http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf">http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf</a> <a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	-
	Aspect: Child labour			
HR6	Operations identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour	<a href="http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf">http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf</a> <a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	-
	Aspect: Forced and compulsory labour			
HR7	Operations identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of forced or compulsory labour	<a href="http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf">http://www.cheminova.com/download/sustainability/gri_indicators_labour_practices_en.pdf</a> <a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	-

	Indicators of company's CSR	Links		Page
	<b>Society</b>			
	Management approach	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	33 and 48
	<b>Aspect: Community</b>			
S01	Impacts of operations on communities, including entering, operating, and exiting	-	F	20
	<b>Aspect: Corruption</b>			
SO3	Percentage of employees trained in organisation's anti-corruption policies and procedures	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	P	-
	<b>Aspect: Public policy</b>			
SO5	Public policy positions and participation in public policy development and lobbying	-	P	20
	<b>Product responsibility</b>			
	Management approach	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>	F	10-11 and 48
	<b>Aspect: Customer health and safety</b>			
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	<a href="http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm">http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm</a>	F	-
	<b>Aspect: Product and service labelling</b>			
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	<a href="http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm">http://www.cheminova.com/en/about_us/news_views/safety_and_health.htm</a> Covering all plant protection products	F	-



# Special references

Reference	Explanation	Where to find it
<b>Ownership and organization</b> 	An overview of Cheminova's global organisation, regions, ownership and anchoring of CSR in the organisation	<a href="http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm">http://www.cheminova.com/en/about_us/management_and_structure/organization/organization.htm</a>
<b>Responsible Care</b>  <b>Responsible Care®</b>	The European Chemical Industry Council's (CEPIC) Responsible Care programme for continuous improvement within safety, health and environment	<a href="http://www.cheminova.com/en/sustainability/production/responsible_care/responsible_care.htm">http://www.cheminova.com/en/sustainability/production/responsible_care/responsible_care.htm</a>
<b>Code of Business Principles</b> 	A description of the company's Code of Business Principles which must be complied with by all employees and which support responsibility in relation to management, cooperation and society	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/code_of_business_principles.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/code_of_business_principles.htm</a>
<b>Mission, vision and values</b> 	A description of the company's mission, vision and values	<a href="http://www.cheminova.com/en/about_us/mission_vision_values/mission_vision_values.htm">http://www.cheminova.com/en/about_us/mission_vision_values/mission_vision_values.htm</a>
<b>Supplier Code of Conduct</b> 	The fundamental principles which Cheminova's suppliers have to comply with	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/supplier_code_of_conduct.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/supplier_code_of_conduct.htm</a>
<b>CSR Accounting Principles</b> 	The principles for data collection on environment, safety and health	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_documentation/csr_accounting_principles.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_documentation/csr_accounting_principles.htm</a>
<b>FAO's Code of Conduct</b> 	Voluntary international standards of responsibility and behaviour concerning distribution and use of pesticides	<a href="http://www.fao.org/docrep/005/y4544e/y4544e00.htm">http://www.fao.org/docrep/005/y4544e/y4544e00.htm</a>
<b>UN's Millennium Goals</b> 	UN's 8 goals for reduction of poverty before 2015	<a href="http://www.un.org/millenniumgoals/">http://www.un.org/millenniumgoals/</a>
<b>Management approach to CSR Management</b> 	Summary of principles and procedures on CSR management	<a href="http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm">http://www.cheminova.com/en/sustainability/corporate_social_responsibility/csr_policy/management_approach_to_csr_management.htm</a>
<b>Principles of good corporate management</b> 	The statutory report on Corporate Governance 2011 – comments on recommendation on good corporate management	<a href="http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_the_financial_reporting_process_and_internal_controls.htm">http://www.cheminova.com/en/about_us/management_and_structure/corporate_governance/report_on_the_financial_reporting_process_and_internal_controls.htm</a>



# Glossary

**Active ingredient:**

Active chemical in its pure or technical form.

**Auditing:**

Review of accounts.

**Chemical synthesis:**

Process, where chemical compounds react with each other so that new compounds are formed.

**Class I product:**

A product, which according to WHO's recommended guidelines is classified as highly hazardous or extremely hazardous.

**CLP:**

Classification, Labelling and Packaging. The CLP Regulation ensures that the hazards presented by chemicals are clearly communicated to workers and consumers in the European Union through classification and labelling of chemicals.

**COD:**

Chemical Oxygen Demand - measure for the content of organic compounds in water.

**CSR:**

Corporate Social Responsibility. Social, environmental and ethical demands made between companies, customers, interested parties and collaboration partners.

**Emulsifiable concentrate:**

Mixture of a liquid active ingredient, solvents and surfactants that enable the product to be diluted with water to a low concentrate spray fluid.

**FAO:**

The UN's Food and Agriculture Organisation.

**FAO's Code of Conduct:**

FAO's international guidelines concerning the distribution and use of pesticides.

**Fenamiphos:**

Insecticide used against soil-living pests (nematodes).

**Formulation:**

Active ingredient to which has been added accessory agents that make the product a ready-to-use as control agent.

**Fossil fuel:**

Coal, oil and gas.

**GC:**

Gas Chromatography: A common type of chromatography used in analytical chemistry for separating and analysing compounds that can be vaporized without decomposition.

**GDP:**

Gross Domestic Product.

**GEC:**

Global Executive Committee. Cheminova's day-to-day management group.

**Global Compact:**

A UN initiative giving ten general principles for companies' work with corporate social responsibility.

**GRI:**

Global Reporting Initiative with guideline for reporting on CSR.

**HPLC:**

High-performance liquid chromatography – a very common analysis method of chemical compounds.

**HSE:**

Health, Safety & Environment.

**ISO 14001:**

International environmental certification covering the surrounding environment.

**ISO 9001:**

International certification of quality management system.

**KPI:**

Key Performance Indicator.

**Low VOC:**

Low Volatile Organic Compound, defined as maximum 20% evaporation at 115°C in 60 minutes cf. Estimation of Volatile Emission Potential of Pesticides by Thermogravimetry, California Department of Pesticide Regulation, February 9, 2005.

**Marketing portal:**

An internal website with useful information concerning marketing.

**Methomyl:**

Insecticide, in Mexico mostly used in cotton and vegetables.

**Methyl parathion:**

Insecticide mostly used in cotton.

**Microcapsules (microcapsule formulation):**

Fluid product where the active ingredient is encapsulated in microscopic capsules which are dispersed in water.

**Micronutrients:**

Mineral fertiliser which the plants need in small quantities.

**Nm³:**

Normal cubic meter (volume at standard pressure and temperature).

**OHSAS 18001:**

International environmental certification covering the working environment.

**Omethoate:**

Insecticide among others used to control mites.

**Pesticides (plant protection products):**

Collective name for insecticides, herbicides and fungicides.

**PIC:**

Prior Informed Consent (Prior informed consent that has to be established before a product from the PIC list is exported).

**Product stewardship:**

Overall description of responsible management of a company's products.

**Ramsar areas:**

Wetlands where wildlife is protected according to the convention of wetlands of international importance, particularly as habitats for birds.

**REACH:**

Registration, Evaluation and Authorisation of Chemicals (Common EU regulation on documentation requirements concerning chemicals).

**Registration data:**

Test results and documentation that must be submitted to the authorities in order to obtain registration certificates for import and sales permissions.

**Responsible Care:**

Objectives concerning responsible conduct, adhered to by Cheminova.

**SAFE:**

Safe Attitude (behaviour) For Everybody.

**Saheli:**

Saheli is formed taking the first two letters from each of the three core areas Safety, Health and Livelihood.

**Suspension concentrate:**

An active ingredient in solid form suspended in water with surfactants which enables the product to be diluted with water to a low concentrate spray liquid.

**Third-party products:**

Sales products not produced by Cheminova but bought from other suppliers.

**WHO:**

World Health Organisation.

**Cheminova A/S**  
P.O. Box 9  
DK-7620 Lemvig

**Headquarters:**  
Thyborønvej 78  
DK-7673 Harboøre

Tel. +45 9690 9690  
Fax. +45 9690 9691

[info@cheminova.com](mailto:info@cheminova.com)  
[www.cheminova.com](http://www.cheminova.com)