

Carbon Disclosure Project

CDP 2012 Investor CDP 2012 Information Request

Monsanto Company

Module: Introduction

Page: Introduction

0.1

Introduction

Please give a general description and introduction to your organization

Monsanto Company, along with its subsidiaries, is a leading global provider of agricultural products for farmers. Our seeds, biotechnology trait products, and herbicides provide farmers with solutions that improve productivity, reduce the costs of farming, and produce better foods for consumers and better feed for animals.

We manage our business in two segments: Seeds and Genomics and Agricultural Productivity. Through our Seeds and Genomics segment, we produce leading seed brands, including *DEKALB*, *Asgrow*, *Deltapine*, *Seminis* and *De Ruiter*, and we develop biotechnology traits that assist farmers in controlling insects and weeds. We also provide other seed companies with genetic material and biotechnology traits for their seed brands. Through our Agricultural Productivity segment, we manufacture *Roundup* brand herbicides and other herbicides and provide lawn-and-garden herbicide products for the residential market.

0.2

Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year. Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed

Sat 01 Jan 2011 - Sat 31 Dec 2011

0.3

Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
United States of America
Rest of world

0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

0.5

Please select if you wish to complete a shorter information request

0.6

Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email respond@cdproject.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Module: Management [Investor]**Page: 1. Governance****1.1**

Where is the highest level of direct responsibility for climate change within your company?

Other Manager/Officer

1.1a

Please identify the position of the individual or name of the committee with this responsibility

Monsanto's senior leadership is responsible for decisions about the company's environmental footprint and for bringing forward opportunities to add value to customers through agricultural technologies that result in lower carbon emissions and more soil carbon sequestration. Ultimately, the Science and Technology Committee of Monsanto's board of directors reviews our technology including issues related to carbon footprint and carbon opportunities afforded through the use of our products and the Sustainability and Corporate Responsibility Committee review the impact of our products on the environment.

1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

1.2a

Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
Environment/sustainability managers	Monetary reward	Environmental goals
All employees	Other non-monetary reward	

Further Information

The Sustainable Yield Pledge Awards promote, recognize and reward people and their work that exemplify Pledge values and support our work to make agriculture more sustainable. Our commitment to sustainable yield is what we do as a company. We have committed to work with farmers to produce more, conserve more and improve lives. The Pledge values are how we do what we do. The Pledge is founded on integrity and is demonstrated through dialogue, transparency, respect, sharing, benefits, taking ownership for results and creating a great workplace.

Page: 2. Strategy**2.1**

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

2.1a

Please provide further details (see guidance)

2.2

Is climate change integrated into your business strategy?

Yes

2.2a

Please describe the process and outcomes (see guidance)

A team of 20 of Monsanto's top scientists spent the better part of a year reviewing studies and working with leading academics in this area. They looked at the data, the trends, and the implications for agriculture. They also researched Monsanto's preparedness to meet climate risk and opportunities. The panel's consensus is that changing temperatures have the potential to change crop productivity and cropping patterns. Other impacts could include increases in the range and reproductive capabilities of weeds, increased geographic range of insect pests, increases in the incidence of mycotoxins (toxic fungi that form at the site of an insect intrusion into the plant), and increases in plant diseases. The panel's analysis also concluded that Monsanto's operations have been continuously reducing their carbon impact per pound of product.

This information is used to help inform Monsanto decisions going forward and is considered when investing in technologies. Decisions on future biotech products continue to take into account climate change implications.

2.3

Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

2.3a

Please explain (i) the engagement process and (ii) actions you are advocating

Explained in the business interventions at the UN sessions and supporting room documents. Monsanto is an active party in the Business Major group for UN FCCC (Framework Convention on Climate Change) and CSD (Commission on Sustainable Development), as well as related UNEP (United Nations Environment Programme) undertakings. We are also members in USCIB (United States Council for International Business) and ICC (International Chamber of Commerce).

Page: 3. Targets and Initiatives

3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

No

3.1e

Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

3.2a**Please provide details (see guidance)**

According to ISAAA, biotechnology crops contribute to a reduction of greenhouse gases and help mitigate climate change in two principal ways. First, permanent savings in carbon dioxide (CO₂) emissions through reduced use of fossil-based fuels, associated with fewer insecticide and herbicide sprays; in 2009, this was an estimated savings of 1.36 billion kg of CO₂, equivalent to reducing the number of cars on the roads by 0.6 million. Secondly, additional savings from conservation tillage for biotech food, feed and fiber crops, led to an additional soil carbon sequestration equivalent in 2009 to 16.3 billion kg of CO₂, or removing 7.2 million cars off the road. Thus in 2009, the combined permanent and additional savings through sequestration was equivalent to a savings of 17.6 billion kg of CO₂ or removing 7.8 million cars from the road.

According to ISAAA, conventional agriculture has impacted significantly on the environment and biotechnology can be used to reduce the environmental footprint of agriculture. Progress to date includes: a significant reduction in pesticides; saving on fossil fuels; decreasing CO₂ emissions through no/less ploughing; and conserving soil and moisture by optimizing the practice of no till through application of herbicide tolerance. The cumulative reduction in pesticides for the period 1996 to 2009 was estimated at 393 million kilograms of active ingredient, a savings of 8.8% in pesticides, which is equivalent to a 17.1% reduction in the associated environmental impact of pesticide use on these crops, as measured by the Environmental Impact Quotient - a composite measure based on the various factors contributing to the net environmental impact of an individual active ingredient. The corresponding data for 2009 alone was a reduction of 39.1 millions kgs of active ingredient (equivalent to a savings of 10.2% in pesticides) and a reduction of 21.8% in EIQ.

3.3**Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)**

Yes

3.3a**Please identify the total number of projects at each stage of development, and for those in the implementation stages, estimated CO₂e savings**

Stage of development	Number of projects	Total estimated annual CO ₂ e savings (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*		
Not to be implemented		

3.3b**For those initiatives implemented in the reporting year, please provide details in the table below**

Activity type	Description of activity	Estimated annual CO ₂ e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period

3.3c**What methods do you use to drive investment in emissions reduction activities?**

Method	Comment

Further Information

In relation to 3.3: Monsanto has technology and cost continuous-improvement programs in place which simultaneously result in Greenhouse Gas emissions reductions. These include, for example, a Six-Sigma program, fuel switching and process improvements.

Page: 4. Communication**4.1**

Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in other places than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section Reference	Identify the attachment
In voluntary communications (complete)	Pages 58-59	2011 Corporate Social Responsibility and Sustainability Report

Further Information

Monsanto has reported information about its carbon footprint since 2001 in our annual Sustainability and Corporate Responsibility Report. The 2011 Corporate Social Responsibility and Sustainability Report can be found online at www.monsanto.com.

Module: Risks and Opportunities [Investor]**Page: 2012-Investor-Risks&Opps-ClimateChangeRisks****5.1**

Have you identified any climate change risks (current or future) that have potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

5.1g

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

Climate change regulation could impose burdens on our manufacturing sites through emission control and reduction requirements, and costs from compliance and potential off-set purchases. The company operates a site in Europe and so is already regulated under the mandates of the EU Emissions Trading Scheme. Climate legislation in the U.S. has been debated extensively in recent years. Cap and trade legislation, if ever passed, would most likely result in higher operating costs for manufacturers, including Monsanto. One concern is that U.S. manufacturers could be unfairly burdened in the marketplace against emerging economies like China and India if those countries do not undertake similar countrywide GHG constraints. As an agricultural inputs company, Monsanto is always interested and concerned about the effect of legislation upon our customers – the world's farmers. Farming is an energy intensive business. Diesel is used to power the planters and harvesters. Where irrigation is needed, energy powers the pumps. Energy is also an important component of the fertilizer, insecticide and herbicide production processes and those sectors are certain to pass along their higher input costs in the price of their products sold to the farmers. Monsanto is carefully monitoring evolving legislation, and working with grower organizations, to help find solutions that reduce GHG levels while allowing US farmers to continue to be productive, profitable and good environmental stewards.

5.1h

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

Physical risks relate to our manufacturing facilities and our seed production farms as well as our customer farms. Severe weather, ranging from drought and flooding to catastrophic events such as hurricanes, earthquakes, tornadoes, floods and tsunamis, could cause property damage to company facilities including manufacturing, research, seed conditioning and office locations. Monsanto operates a number of herbicide manufacturing sites around the world. First and foremost in Monsanto's priorities is the safety of our employees, customers and communities. Monsanto designs and constructs its manufacturing facilities to withstand severe weather. These facilities are regularly inspected to ensure physical preparedness. People

are well trained in how to best respond to emergency situations, including weather events. This preparedness was put to the test in August of 2005 when Hurricane Katrina roared through the Gulf of Mexico, delivering a major blow to New Orleans and surrounding communities. Monsanto operates a herbicide manufacturing facility in Luling, Louisiana, just outside of New Orleans. When the path and size of the storm became known, Monsanto people at the site, coordinating with many colleagues at headquarters and through the Monsanto network, worked quickly and around the clock to remove or secure raw material stocks and chemical processing structures. Most employees were sent home to allow them time to secure their own homes and get their families to safety. A small crew stayed onsite in a protected area to handle any unforeseen situations and also to begin recovery as soon as the hurricane had passed. Because the plans were in place well before the hurricane, the plant, although partially submerged in water immediately following the storm, was able to recover quickly – and safely – and was also able to help its employees and community rebuild. In the farm field, the warming atmosphere may increase the frequency or intensity of natural factors that must be managed routinely. These challenges could include potential crop damage at Monsanto's seed bulking sites and to our customers' farm operations from too much or too little moisture or heat, or increased pest pressure brought on by climates more favorable to insects than in the past.

5.1i

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Real or potential risks identified to date have been identified in previous sections.

[Page: 2012-Investor-Risks&Opps-ClimateChangeOpp](#)

6.1

Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

6.1g

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

6.1h

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

6.1i

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]

[Page: 7. Emissions Methodology](#)

7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO ₂ e)	Scope 2 Base year emissions (metric tonnes CO ₂ e)
Sat 01 Jan 2000 - Sun 31 Dec 2000	1277270	868848
Sat 01 Jan 2011 - Sat 31 Dec 2011	1483289	1144031

7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

Other

7.2a

If you have selected "Other", please provide details below

WBCSD / WRI and custom

7.3

Please give the source for the global warming potentials you have used

Gas	Reference
Other: UNFCCC GWP's	

7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: WBCSD / WRI and custom			

Further Information

2000 is the base year for our Crop Protection business (Agricultural Productivity segment). 2011 is now the new base year for the entire company, and includes both Crop Protection and the Seeds & Traits business (Seeds and Genomics segment). Note that base year Scope 1 emissions shown also include emissions from the combustion of biomass/biofuels.

Page: 8. Emissions Data - (1 Jan 2011 - 31 Dec 2011)

8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Equity share

8.2a

Please provide your gross global Scope 1 emissions figure in metric tonnes CO₂e

1389817

8.3a

Please provide your gross global Scope 2 emissions figure in metric tonnes CO₂e

1144031

8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

No

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and Scope 2 figures that you have supplied and specify the sources of uncertainty in your data gathering, handling, and calculations

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 2% but less than or equal to 5%	Assumptions Extrapolation Data Management	There are no significant sources of data uncertainty. There may be minor sources of data uncertainty, primarily related to extrapolation for some of the data. Note that for the Seeds & Traits business, data was not gathered from all locations. It was gathered from a number of representative sites, and then extrapolated for a global estimated total using appropriate scalars for similar operations (global throughputs, research acres, etc.). There may also be other minor sources of data uncertainty, related to data reporting systems, data transcription and certain emission factors.	More than 2% but less than or equal to 5%	Assumptions Extrapolation Data Management	There are no significant sources of data uncertainty. There may be minor sources of data uncertainty, primarily related to extrapolation for some of the data. Note that for the Seeds & Traits business, data was not gathered from all locations. It was gathered from a number of representative sites, and then extrapolated for a global estimated total using appropriate scalars for similar operations (global throughputs, research acres, etc.). There may also be other minor sources of data uncertainty, related to data reporting systems, data transcription and certain emission factors.

8.6

Please indicate the verification/assurance status that applies to your Scope 1 emissions

Not verified or assured

8.7

Please indicate the verification/assurance status that applies to your Scope 2 emissions

Not verified or assured

8.8

Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

Yes

8.8a

Please provide the emissions in metric tonnes CO₂e

93472

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)**9.1**

Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

9.1a

Please complete the table below

Country	Scope 1 metric tonnes CO2e
United States of America	1124466
Rest of world	265351

9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division

9.2a

Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e
Crop Protection	1188385
Seeds and Traits	201432

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)**10.1**

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a

Please complete the table below

Country	Scope 2 metric tonnes CO2e
United States of America	1005414
Rest of world	138617

10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division

10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 metric tonnes CO2e
Crop Protection	827066
Seeds and Traits	316965

Page: 11. Emissions Scope 2 Contractual**11.1**

Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

Yes

11.2

Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?

No

Page: 12. Energy

12.1

What percentage of your total operational spend in the reporting year was on energy?

12.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy type	MWh
Fuel	3968135
Electricity	2416356
Heat	
Steam	33695
Cooling	

12.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Natural gas	2025339
Other: Waste Fuels	1052849
Other: Biomass / Biofuel	359013
Bituminous coal	235563
Sub bituminous coal	146979
Liquefied petroleum gas (LPG)	103152
Distillate fuel oil No 2	23661
Diesel/Gas oil	21579

Page: 13. Emissions Performance

13.1

How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Decreased

13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in output	3	Decrease	Note that this comparison of Scope 1 and 2 combined emissions is for the Crop Protection (CP) business only, as 2011 is the first year that the reported emissions also include the Seeds & Traits (ST) business. Future comparisons will be using 2011 now as a new baseline for CP and ST combined. There was approximately a 3% decrease in emissions for CP

Reason	Emissions value (percentage)	Direction of change	Comment
			from 2010 to 2011 (2010 CP total was 2,068,947 tonnes; 2011 CP total was 2,015,451 tonnes). Intensities reported below include both CP and ST, so % change from previous year is not calculated (since ST data for the previous year is not available).

13.2

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO₂e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
0.0002143	metric tonnes CO ₂ e	unit total revenue		N/A	% Change is not indicated, as 2010 data did not include Seeds and Traits. Intensities will be compared next year with 2011 being the new baseline (now including both Crop Protection and Seeds & Traits).

13.3

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO₂e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
123.0	metric tonnes CO ₂ e	FTE Employee		N/A	% Change is not indicated, as 2010 data did not include Seeds and Traits. Intensities will be compared next year with 2011 being the new baseline (now including both Crop Protection and Seeds & Traits).

13.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
0.0008446	metric tonnes CO ₂ e	Other: EBITDA - in USD (\$)		N/A	% Change is not indicated, as 2010 data did not include Seeds and Traits. Intensities will be compared next year with 2011 being the new baseline (now including both Crop Protection and Seeds & Traits).
1.552		metric tonne of product		N/A	% Change is not indicated, as 2010 data did not include Seeds and Traits. Intensities will be compared next year with 2011 being the new

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
					baseline (now including both Crop Protection and Seeds & Traits).

Further Information

As was indicated in section 7, 2011 is now the new base year for the entire company; being the first year that includes data from both the Crop Protection (CP) and the Seeds & Traits (ST) businesses. Great progress has been made though in the CP business, as evidenced by comparison of 2011 CP-only Scope 1 and 2 emission intensities to the previous CP-only base year 2000 (excluding emissions from the combustion of biomass). CP intensity for combined Scope 1 and 2 emissions (relative to technical product output) in base year 2000 was 6.155. Comparing this to CP intensity in 2011 of 4.474 indicates a significant efficiency improvement of approximately 27%.

Page: 14. Emissions Trading

14.1

Do you participate in any emission trading schemes?

Yes

14.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO ₂ e	Details of ownership
European Union ETS	Tue 01 Jan 2008 - Mon 31 Dec 2012	1577660	0	231189	Facilities we own and operate

14.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

Our strategy for complying with emissions trading schemes in which we participate is to keep actual emissions below allocated allowances, and purchase allowances if necessary.

14.2

Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

Page: 2012-Investor-Scope 3 Emissions

15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO ₂ e	Methodology	If you cannot provide a figure for emissions, please describe them
------------------------------	---------------------------------	-------------	--

15.2

Please indicate the verification/assurance status that applies to your Scope 3 emissions

15.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Further Information

Scope 3 data is not available.

Module: Sign Off

Page: Sign Off

Please enter the name of the individual that has signed off (approved) the response and their job title

Jennifer Luchte
Manager of Sustainable Agriculture Policy

Carbon Disclosure Project