

CDP 2013 Investor CDP 2013 Information Request

JBS S/A

Module: Introduction**Page: Introduction****0.1****Introduction**

Please give a general description and introduction to your organization

With six decades of history, JBS is currently the world's leading producer of proteins. The company processes beef, pork, lamb and poultry meat products in addition to producing leather. The company also commercializes hygiene and cleaning products, collagen, cans and biodiesel among other products.

JBS is divided into four business units – JBS Mercosul, JBS USA Beef (including operations in Australia and Canada), JBS USA Pork and JBS USA Poultry (including operations in Mexico and Puerto Rico).

The group's diversified portfolio includes well recognized brands in Brazil and worldwide, such as Swift, Friboi, Maturatta, Cabana Las Lilas, Pilgrim's, Gold Kist Farms, Pierce, and 1855. Such product variety and presence in 22 countries across 5 continents (including production platforms and offices) serves over 300,000 customers in more than 150 nations.

The company went public in 2007, with its shares traded on the BM&FBovespa in the Novo Mercado segment of corporate governance in the Brazilian capital market. In 2012 the company posted net revenue of R\$ 76 billion, 22.5% up on the previous year.

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

Sun 01 Jan 2012 - Mon 31 Dec 2012

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 Arab Emirates
Argentina
Australia
Belgium
Brazil
Chile
China
Czech Republic
Egypt
United Kingdom
Hong Kong
Italy
Japan
Mexico
Paraguay
Puerto Rico
South Korea
Taiwan
United States of America
Uruguay
Russia

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.

BRL(R\$)

0.6**Modules**

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry and companies in the information technology and telecommunications sectors 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 not appear below but will automatically appear in the navigation bar when you save this page. 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-questions.aspx>.

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

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

Individual/Sub-set of the Board or other committee appointed by the Board

1.1a

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

- (i) Sustainability Committee Board.
- (ii) Created in 2008, the Sustainability Committee is responsible for developing strategies and social and environmental best practices that are applied to the business of the company. It reports directly to the Board. The Committee develops and establishes policies and guidelines for sustainability strategies, including strategies aimed at climate change and sustainability policies for the company. In order to review the progress of the proposed actions, the committee performs quarterly meetings, where new guidelines are established. Currently two members of the Administrative Board are part of the Sustainability Committee, which has contributed to the engagement of senior management with the issues related to the environment and climate change.

The Sustainability Committee, chaired by CEO of JBS (Wesley Mendonça Batista), has responsibility for the actions related JBS's climate change. -This organ has the following duties: (a) advise the Executive Board of the Company on all aspects related to sustainability, through identification, evaluation and treatment of critical issues that represent risks or may have a material impact on the business, (b) make recommendations the Executive Board and monitor the implementation of policies, strategies and actions that relate to the sustainability of company's business, and (c) evaluating the strategies proposals investments of the Company from the perspective of sustainability, and make recommendations to the Executive Board for decision making regarding those investments.

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	Incentivized performance indicator
Business unit managers	Monetary reward	100% raw material (cattle) monitored by the environmental and social monitoring system
Other: Coordinators and Analysts	Monetary reward	The business units have targets for implementation of the environmental management system (NBR ISO 14001:2004), which contains targets for water consumption and by-product recovery in wastewater treatment plant (number of indicators related to production). The recovery of the by-product effluent treatment plant reduces emissions by reducing organic carbon (COD) in the effluent and thus the potential for formation of methane in the wastewater treatment steps that follow. These goals are related to JBS's program of annual bonus.

Further Information

Since 2011, JBS expanded the organizational boundary of its emissions inventory, including its major industrial units around the world. With this report, and with additional experience in reporting emissions, JBS feels confident to start defining incentives towards the management of greenhouse gases and climate change. The subject has been widely discussed and it is believed that next year's goals for better management of greenhouse gases will be established. JBS has in its current business plan performance indicators with monetary reward in relation to issues of reducing water consumption, effluent discharge standard, and energy savings. These factors, which will be worked on next year, indirectly influence GHG emissions along with other potential emission sources.

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

- (i) JBS has a process to identify risks and opportunities related to climate change as part of the overall strategy of the company. The strategy distinguishes various types of business risks including physical, regulatory, reputational and competitive risks, which converge to the financial risk. This process is under the responsibility of the Sustainability Direction, which reports to the Sustainability Committee.
- (ii) To evaluate the risks and opportunities within the company, in relation to climate change, the process follows a methodology issued by the Sustainability Committee in which its main steps are described below:
 - (a) Description of risks and opportunities identified, the mapping process is performed by the Technical Team.
 - (b) Analysis of mapped Risks and Opportunities and their prioritization. This step is based on business impact and likelihood of occurrence.
 - (b.1) Each risk or opportunity is classified as a consequence of its impact on business and its likelihood of occurrence. It is developed under three different scenarios: short, medium and long term.
 - (b.2) The Sustainability Committee focuses the Action Plan on the short-term scenario with risks / opportunities classified as high impact to business and high probability of occurrence or medium and high likelihood or high and medium probability impact. In the scenarios of medium and long term, only the risks / opportunities classified with high business impact and high probability of occurrence are the object of attention of the Sustainability Committee.
 - (c) The risks are studied to be transformed into opportunities.
 - (iii) In the asset level, each manager is responsible for monitoring the environmental legislation of their country and establishes measures for compliance. In the United States, for example, many states have been announced or adopted programs to stabilize and reduce GHG emissions, and federal legislation has been proposed in Congress, including the creation of a system of cap and trade. The EPA regulates emissions of greenhouse gases through the Clean Air Act. Some of the Company's facilities are already required to monitor and report emissions of greenhouse gases, according to reports by the EPA. In addition, the Australian federal government recently approved the "Clean Energy Future" a legislative package of laws that substantially reform the rules on environmental regulation. Among other provisions, the legislative package "Clean Energy Future" provides a mechanism to price carbon for waste, which establishes an automatic limit of liability for emissions greater than 25.000 tons of CO₂, a greenhouse gas in a given year. In addition, Brazil has recently approved a legislation establishing a national policy on climate change and GHG reduction. Internationally, the Kyoto Protocol set targets for the reduction of greenhouse gases by some developed countries and created a mechanism for carbon trading.
 - (iv) The Sustainability Committee meets every quarter, where major advances and new opportunities and risks identified are evaluated. It reports to the Board, and the guidelines are forwarded to the technical team developing the necessary actions.
 - (v) The criteria for priorities is determined by assessing the impact of the risk and the probability of occurrence. The results are evaluated by the Sustainability Committee. The identified opportunities for emission reduction are assessed considering additionality and the potential for emission reduction, therefore these both criteria are considered for decision making of Sustainability Committee.
 - (vi) The sustainability committee is chaired by Wesley Mendonça Batista, JBS's CEO, and besides him, the results are reported to the Executive board, which is chaired by Joesley Mendonça Batista, J&F Investimentos's CEO.

2.2

Is climate change integrated into your business strategy?

Yes

2.2a

Please describe the process and outcomes

- (i) JBS's business strategy is directly influenced by climate change. The Company has an Environmental Policy being aware of its responsibility as the largest animal protein company in the world, as well as all the impacts generated by its operations in each region.

JBS focuses on a policy of sustainability applied to the entire production chain and the implementation of its strategy, which must be aligned with this policy so that its processes are always based on the environment and strategies to mitigate the environmental impacts of their activities. JBS has an environmental policy that established the commitment of JBS for: pollution prevention, compliance with legal requirements, setting objectives and targets for continuous improvement in processes and optimization of natural resources. Thus, among the goals and targets set by the company, the responsibility on climate change is given by the Guidelines for sustainability.

(ii) The Guidelines for sustainability are divided between suppliers and industrial processes. The aspects of climate change that guide the company are: good practices in agribusiness, hiring legal providers according to the company's social and environmental criteria for suppliers, industrial processes, legal compliance, continual improvement in industrial projects and eco efficiency. Among the projects of eco efficiency, investments in technology for reduction of GHG emissions are included.

(iii) Components of climate change that have influenced its short term business strategy: In order to measure the climate change impacts due to JBS's activities, since 2009 the company develops GHG emissions inventory in an annual basis. Each year JBS expands the number of production units in inventory reported. In 2010, for example, the inventory reported each production unit and operation of meat and leather in Brazil. From 2011, JBS applied the global scope of its operations. From 2010, JBS joined a market index - Carbon Efficient Index (ICO2), established by BM & FBOVESPA – IbrX-50.

(iv) Components of climate change that have influenced its long term business strategy: JBS intends to include all sectors of its supply chain worldwide in its GHG emission inventory and also to promote the mitigation of JBS and its supply chain emissions. Therefore, JBS's aims to reduce directly and indirectly climate change impacts due to JBS's activities.

(v) The company has a better understanding of the risks and opportunities related to climate change. Therefore, we consider ourselves more prepared to possible climate change impacts and we take advantage of the opportunities and we believe this represents a strategic advantage. For example we are the first company of our sector with a CDM project registered on UNFCCC and one of the pioneers on elaborating GHG emissions inventory in Brazil. Other actions that show the influence of climate change in JBS's business strategy are the development and implementation of CDM projects - which demonstrates the pioneering company, the first sector to see this type of project in the UN, and the environmental diagnosis conducted periodically on its industrial units. This is done to evaluate and invest in new technologies to reduce emissions of greenhouse gases, making their operations more efficient.

(vi) Practical actions have also been applied in policy and in the livestock sector of our cattle supply chain. The expansion of pasture for the Amazon biome is a known process, although the company does not have its own herd of livestock farming. The company prepared internal guidelines on the purchase of cattle from the Amazon biome, pledging to purchase cattle only from farms that are in regularity with social, environmental and land standards. For every negotiation, the company consults with the official list of IBAMA (Brazilian Institute of Environment), which indicates that there are farms in environmental compliance, and with the Ministry of Labor and Education, which indicates farms analogous to slave and / or child labor. Whether one falls within any of the list, trade relations are immediately canceled with suppliers. Besides these controls, the company also performs satellite monitoring, where suppliers are located in the Amazon biome. If deforestation is identified in conservation areas, the trade is canceled, thus preventing the acquisition of raw materials from deforestation. This action aims to ensure the source of our raw material, but also serves to aid the reduction of deforestation in the Amazon Biome, and therefore lower CO2 emissions from forest degradation.

Moreover, with researches initiated two years ago, the company has an extensive environmental assessment to identify opportunities for improvement of the environmental indicators of beef processing plants in Brazil and developed an investment plan that includes more than 270 projects with total investment in around R\$ 48 million. In 2012, 10.85 million were invested; the projects are related to wastewater treatment, reuse energy waste, byproduct recovery in wastewater treatment plant, installation of equipment for air pollution control, and projects to reduce consumption water.

2.3

Do you engage in activities that could either directly or indirectly influence policy on climate change through any of the following? (tick all that apply)

- Direct engagement
- Funding research organizations

2.3a

On what issues have you been engaging directly?

Focus of legislation	Corporate Position	Details of engagement	Proposed solution
Other: Avoid deforestation	Support	Technical Cooperation Agreement with EMBRAPA to inform and support farmers in implementing best practices in agribusiness, such as sustainable use of natural resources involved in production.	JBS has implemented the Sustainable Farming Program, which was developed based on the technical cooperation agreement with EMBRAPA. The main strategies adopted by JBS's Sustainability Committee to promote the Sustainable Farming Program in Brazil are related to decreased pressure on new pastures and thus contributing to reducing deforestation, and consequently to reduce CO2 emissions. The main strategies adopted by JBS's Sustainability Committee to promote the Sustainable Farming Program in Brazil are related to decreased pressure on new pastures and thus contributing to reducing deforestation, and consequently to reduce CO2 emissions.

2.3d

Do you publicly disclose a list of all the research organizations that you fund?

Yes

2.3e

Do you fund any research organizations to produce public work on climate change?

No

2.3h

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Since 2010, We have been supporting EMBRAPA in 2010 for developing a Technical Cooperation Agreement to inform and support farmers in implementing best practices in agribusiness, such as sustainable use of natural resources involved in production. Based on this best practices in agribusiness, the main strategies adopted by JBS's Sustainability Committee to promote the Sustainable Farming Program in Brazil are related to decreased pressure on new pastures and thus contributing to reducing deforestation, and consequently to reduce CO2 emissions. Establishment of a Sustainable Forestry Team, comprised of sustainability experts, strategically allocated to industrial units in Brazil.

- Skills development and livestock events preparation.
- Free technical assistance and training to cattle suppliers, to increase productivity, focusing on better use of pastures and supplementary feeding, reducing the lifetime of the animals in the field. This would contribute to reducing emissions from agricultural activities.
- Participation in the Working Group on Sustainable Livestock (GTPS), formed by producers, NGOs, financial institutions, and retailers.

JBS invests in projects for the supply chain to disseminate good practice in sustainability. In recent years, the company has taken important steps in improving the procedures of Cattle Purchase Program. The program aims to establish a set of criteria for the registration of farms, which include non-conviction for forced labor / child labor, illegal logging, and do not have livestock on Conservation Areas and Indigenous Areas. In order to guarantee the origin of our raw material, and that our products are not related to deforestation in the Amazon Biome, process changes in land use major generator of greenhouse gases. Currently, 100% of the company's suppliers properties, that supply the cattle in Brazil, are georeferenced and monitored by satellite image. From the geographical coordinates, data is collected and entered in the database of suppliers of raw materials. JBS sends the information to a specialized company that analyzes and overlap the coordinates on the base map prepared using satellite images and reports PRODES (Program for Calculation of Deforestation in the Amazon) and DETER (Deforestation Detection in Real Time), both issued by the National Institute for Space Research - INPE. With the information obtained in the process described, the irregular suppliers will be suspended or excluded from JBS's suppliers list.

The objectives of monitoring Amazon's Biome are: Contribute to the reduction of deforestation in the Amazon biome, contribute to reduce GHG emissions through mitigation of deforestation, and to avoid buying cattle from illegally deforested, Environmental Protected, indigenous and conservation units areas. Another action taken by JBS in partnership with EMBRAPA is the Good Agricultural Practices Program. Through a specialized technical team, JBS suppliers receive technical assistance and training, free of charge, in the implementation of good agricultural practices and social, environmental and land management. The main objective is to promote practices that emphasize the efficient use of pastures, increasing productivity and minimizing the pressure for new grazing areas, and promoting social and environmental regularization of rural property.

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

Currently we have no set goals, because we are evaluating internally the data obtained over the years to establish targets to reduce emissions, defining the best indicators / metrics that represent the different sectors the company operates. In 2011 GHG Emissions Inventory provided greater familiarity with their improved knowledge regarding the GHG emission sources and organizational boundary. Some improvements were also made in 2012, with the inclusion of new emissions sources, which is very satisfactory from the management's point of view. The JBS has plans to expand its production, therefore the next five years should increase absolute emissions. However, due to the company's investments in new technologies indicators of GHG emissions per unit of output should decrease in 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)

(i) Through the use of its biodiesel production facility, JBS contributed to reducing emissions from third parties regarding the use of fossil fuels. In 2011, JBS produced approximately 73,980 tonnes of biodiesel from animal and plant oils.
(ii) and (iii) In 2012, with the production of biodiesel, it is estimated that were avoided the emission of around 243,319tCO₂, that would be emitted if diesel were employed. The estimations were performed considering the amount of energy that would be generated by biodiesel (amount of biodiesel x net calorific value of biodiesel – 73,980 tonnes x 37.7 TJ/ton = 3,283.67 TJ), that could result in emissions from diesel (3,283.67 TJ x 74.1 tCO₂/TJ = 243,319 tCO₂). The emission factor of diesel available in 2006 IPCC Guidelines for National Greenhouse Gas Inventories (74.1 tCO₂/TJ) were employed. The net calorific value was obtained from Brazilian National Energy Balance (37.7 TJ/ton).
iii) JBS is not considering to generate carbon credits.
iv) JBS supports the sustainable growth of Brazilian Stockbreeding through its Sustainable Stockbreeding Program, created with the main objective of aiding the agriculturalist to accomplish the adequate use of land, allowing them to operate their business without neglecting the social-environmental issues implied and optimize their production, so as to attend the demands from consumer markets. By means of a specialized Technical Team, the JBS S.A. suppliers receive free guidance on how to implement good stockbreeding, agricultural, and management practices. The idea is to disseminate a Good Practices Program prioritizing a more efficient use of resources, increasing productivity and decreasing the pressure for new areapasture areas. The program also guides the agriculturalist as to the sanitary issues and Animal Well Being, so as to prepare the chain for the sector's competitiveness, with improvements in quality control and zootechnical herd control.
The Brazilian cattle industry has negative reviews related to extensive livestock system, which is the main means of production system in the country, reinforced by the lack of maintenance of grasslands, and also for occupy green areas and promote deforestation. Although there are many variables that require appropriate solution, our role is to face the challenge of sustainability in livestock.
Besides the reduction of age for the slaughtering, the company has encouraged the improvement of management and management of the property, such as land reclamation, choice of forage species that is better adapted to climatic and environmental conditions, adequate pasture, use of rotational grazing and pasture growth control, as well as the availability of forage to meet the demand of the stocking rate.
Therefore, we promote an increase in productivity rates from our suppliers, increasing the cattle herd, without the need for expansion of new land areas.

3.3

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

Yes

3.3a

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

Stage of development	Number of projects	Total estimated annual CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation	9	57968
To be implemented*		
Implementation commenced*	14	71351
Implemented*	9	126330
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 (metric tonnes CO ₂ e)	Annual monetary savings (unit currency - as specified in Q0.4)	Investment required (unit currency - as specified in Q0.4)	Payback period
Other	Process emissions reductions - The project's main objectives are to improve wastewater treatment system, to reduce greenhouse gases (GHG) emissions and to improve the living conditions of employees and the surrounding communities. The project activity is comprised of a processing system through physicochemical flotation with the diffusion of air, characterized by removing the effluents organic matter without generation of methane (CH ₄). This new technology was deployed to replace an anaerobic treatment system commonly used to treat wastewater generated in beef slaughter and cold storage industries for an aerobic system. Voluntary. CDM to be discussed.	73066	50000	7800000	1-3 years
Other	Reforestation (Implementation commenced): Reforestation of degraded land.			155978	
Other	Wastewater treatment (Implementation commenced): Improvement on efficiency treatment. Voluntary initiative.			13436126	1-3 years
Other	Residues (Implementation commenced): Implementation of recycling centres. Voluntary initiative.			1834369	

3.3c

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

Method	Comment
Dedicated budget for other emissions reduction activities	The Company has two CDM projects in Brazil, registered in UNFCCC (United Nations Convention), aimed at the avoidance of methane by means of waste water treatment.
Other	Other investments are drive in accordance to the Guidelines of Sustainability and Environment Policy of the Company.

Further Information

With research, initiated for two years, the company conducted a comprehensive environmental assessment to identify opportunities for improvement of the environmental indicators of beef processing plants in Brazil and developed an investment plan that includes more than 270 projects with total investment of around R\$ 48 million. The projects are related to wastewater treatment (58%), waste management (19%), emissions (4%) and other topics (19%), such as installation of monitoring equipment for water and wastewater improvements and operational.

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 places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Attach the document
In voluntary communications (complete)	Pages 74-91	https://www.cdproject.net/sites/2013/30/9730/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/1-JBS Annual sustainability report-74-91.pdf
In voluntary communications (complete)	Pages 1-2	https://www.cdproject.net/sites/2013/30/9730/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/2-JBS USA Water and Energy Conservation.pdf
In voluntary communications (complete)	Pages 1-3	https://www.cdproject.net/sites/2013/30/9730/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/3-JBS Australia Pty Limited - 2012 Public EEO report.pdf
In voluntary communications (complete)	Pages 23-27	https://www.cdproject.net/sites/2013/30/9730/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/4-JBS USA Pilgrims Sustainability Report.pdf

Further Information

JBS has applied for membership of the Brazilian GHG Protocol Program, an initiative that provides support on international quality standards for accounting of emissions inventories, as well as tools for developing inventories and its publication. The Emissions Inventory of Greenhouse Gases, base year 2012, will be available on the website of the Public Registry of Emissions by August. (www.registropublicodeemissoes.com.br.)

Module: Risks and Opportunities [Investor]

Page: 5. Climate Change Risks

5.1

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

- Risks driven by changes in regulation
- Risks driven by changes in physical climate parameters
- Risks driven by changes in other climate-related developments

5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Lack of regulation	As JBS is present in many different countries worldwide, it faces different regulatory risks according to its location. In the medium and long term we expect more strict legislation regarding GHG emissions reduction as an approach to mitigate climate change. Therefore, there is a risk that our business will have to comply by changing operation processes and investing on new mandatory technologies. In December 2010, the Brazilian government published Decree 7390, which regulates the National Policy on Climate Change (2008). The National Plan on Climate Change is established through two plans: the Prevention and Control Action Plans of deforestation in the biomes, and the Department of Mitigation and Adaptation. The decree states that the sector plans will be prepared and shall include emission reduction targets for 2020. Although there are no reduction targets for each sector separately, the decree emphasizes the voluntary commitment to reduce national emissions by 36.1% to 38.9% by 2020. Therefore, JBS is preparing, through its Sustainability Committee, and identifying opportunities and investments needed to be developed with a focus on mitigation of reductions of greenhouse gases.	Increased operational cost	1-5 years	Direct	Very likely	Medium
2	Cap and trade schemes	USA: The situation in the United States has quickly evolved over the past few months and the probability to create a national cap and trade market for GHG emissions is high within the next years. Our units in the United States are currently seeking strategic positioning and studying how it might adapt to emission targets. The west coast of the United States is developing several climate change initiatives, especially the State of California, which has developed a cap and trade scheme. The Environmental Protection Agency has released in April 2009 new mandatory GHG reporting guidelines that is being enforced since the beginning of 2011 in different sectors, including the Food Processing and Manure Management. JBS is currently implementing emission inventory mechanisms for all American Units, following the established	Increased operational cost	1-5 years	Direct	Very likely	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		guidelines. Italy: Of all our operations, Inalca JBS located in Italy is the only to be affected by the European Union Emission Trading Scheme. It currently has emissions targets and it finds itself with a surplus of allocated allowances. The regulations are unlikely to go beyond those established by the EU ETS.					
3	Carbon taxes	Australia has introduced the Clean Energy Future Act and as such a carbon tax is being imposed on all operation effective 1st July 2012. JBS Australia have selected key project to implement to mitigate the effect of this cost to operations.	Increased operational cost	Current	Direct	Virtually certain	High

5.1b

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

Risk 1

(i) The risks presented by this type of regulation translate into higher production and energy costs, as well as a possible effect on market competitiveness. While the agriculture and livestock sectors of these economies are expected to be left out of most regulatory measures, it is likely that the production operations will be included.

(ii) JBS believes that the inclusion of sustainability principles in all operations allows innovation and continuous development of its business, therefore could anticipate future obligations. This commitment, expressed in the Environmental Policy, is the basis for the Environmental Management System (SGA) certified by ISO 14001 standard.

The company has a Sustainability Department, created in 2012 to deal with economic, environmental and social aspects in an integrated, strategic manner aimed at sustainable development of business.

Adoption of good governance practices and socio-environmental management has provided success in the development of initiatives which add value to products and shareholders of the company. Activities are carried out with the responsible use of natural resources, food safety, promotion of animal welfare, observance of internal policies, resulting in the strengthening of partnerships.

These responsible activities are the result of a uniform management model which prioritizes sustainable development of business based on international sustainability standards and criteria, such as the Dow Jones Sustainability Index (DJSI), the Business Sustainability Index (ISE), the Global Reporting Initiative (GRI) and the United Nations Global Compact.

Sustainability Committee: this committee identifies and deals with critical matters which represent risks or may have a relevant impact on the company in the sustainability sphere. It also has the remit to recommend and monitor implementation of business sustainability policies and strategies.

(iii) To monitor and deal with risks, the costs can be described as expenses in the area of sustainability, where in 2012 approximately \$ 3 million were spent.

Risk 2:

(i) Increase of operational costs. May incur increased energy costs, environmental costs and other, and investments to comply with existing or new restrictions GHG emissions.

(ii) The Company is subject to laws and regulations related to climate change, and compliance with related standards can be difficult and costly. Stakeholders in countries, which we operate, such as government agencies, legislators and regulators, shareholders and non-governmental organizations as well as companies operating in many sectors, are considering ways to reduce GHG emissions. In the United States, for example, many states have announced or adopted programs to stabilize and reduce GHG emissions, and federal legislation has been proposed in Congress, including the creation of a system of cap and trade. The EPA regulates emissions of greenhouse gases through the Clean Air Act. A number of the Company's facilities are already required to monitor and report emissions of greenhouse gases, according to reports from the EPA.

Risk 3:

The Australian federal government has proposed a cap and trade system for greenhouse gases, while several states are also considering implementing regulations may be more stringent than those at the federal level. In addition, the Australian federal government recently approved the "Clean Energy Future" legislative package of laws that substantially reform the rules on environmental regulation. Among other provisions, the legislative package "Clean Energy Future" provides a mechanism to price carbon for waste, which establishes an automatic limit of liability for emissions greater than 25,000 tons of CO₂, a greenhouse gas in a given year. During a fixed price (2012-2015), will be required for operators of any type of industry, such as the Company's facilities, purchase and deliver carbon units sufficient to cover their waste emissions that are in excess of the limit. The Company anticipates that it will incur additional costs as a result of (1) additional investments that will bear to comply with new regulations and (2) the price of carbon which may need to pay as a result of their level of carbon emissions.

5.1c

Please describe your risks that are driven by change in physical climate parameters

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
3	Induced changes in natural resources	The physical risks identified by the Company are global and divided physical assets, supply chain and business structure. The productivity of livestock and crops/pasture may be severely affected by increasing temperatures, CO ₂ concentration in the atmosphere, changes in annual rain patterns and future increase in disease, pests and weeds that affect livestock and plants alike. The studies regarding these variables have been developed for several years, however the effects are still fairly uncertain. Livestock: From an animal physiology perspective, an increase in overall temperatures to which the animals are exposed could have severe effects on the animal. If average temperatures reach a level above the animals upper critical limit in its thermal neutral zone, studies have shown that the animal will suffer from heat stress and will require a higher energy and water intake, affecting the animal's weight gain and its ability to reproduce. In the long run this may affect cattle prices as well as its supply as farmers may prefer to raise other livestock that reacts better to higher temperatures. Feed: Considering that part of the Company's livestock supply is raised in feedlots, there is a natural worry about the supply and cost of feed. The precise effects of climate change in soybean and maize yields are yet uncertain, due to the complexity of the models required to make such estimates. While numerous studies expect the crop yields to increase due to higher CO ₂ concentrations in the atmosphere (Drake and Gonzalez- Meler, 1997), it is also widely accepted that due to the controlled nature of these studies their results cannot be considered conclusive due to the uncertainties regarding the interactions with water availability, soil nutrients, pests, weeds and other variables. While the Company identifies feed availability as a risk, it is still uncertain about its magnitude. Pasture: As mentioned before, the effects of climate change are still uncertain regarding plants. Pastures can be considered a specific case, since there are known differences in the response to climate change between plants with different metabolic carbon fixations such as pastures (Ainsworth EA and Long SP, 2005). Changes in the pasture growth and availability	Reduction/disruption in production capacity	Unknown	Indirect (Supply chain)	Unknown	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		could be risky for the supply of livestock, especially in Brazil and Argentina.					

5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

(i) the potential financial implications of the risk before taking action is related to the increase in operating costs.

(ii) A significant change in climate patterns could affect the supply of food ingredients as well as the ability of both industry and the JBS Pilgrim's Pride Corporate (PPC) to get the food ingredients, raise chickens or deliver products.

The price of corn and soybean meal, the main food ingredients of Pilgrim's Pride, increased significantly from August 2006 to July 2008. The market price of food ingredients decreased throughout 2009 and the first six months of 2010, but increased again significantly in late 2010 and remained at high levels throughout 2011. As of mid-2012, the price of corn and soybeans increased due to bad weather in North America. However, PPC and chicken market in the United States were able to pass on the rise in grain prices to the consumers.

There is no guarantee that the price of corn bran or soybean meal will not continue to rise due to, among other things, the growing demand for these products worldwide and the alternative uses of these products, such as for the production of ethanol and biodiesel.

High prices of food ingredients may continue to have an adverse effect on the Company's operating results. Pilgrim's Pride seeks, wherever possible, to assume advance purchase or financial derivative contracts for the purchase of food ingredients in order to manage their costs with food ingredients. Use of these instruments may not be successful.

(iii) With the intention to keep track of these risks, the investment in 2012 was \$ 4 million for the sustainability team.

5.1e

Please describe your risks that are driven by changes in other climate-related developments

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
4	Reputation	JBS is exposed to risks that indirectly affect its operations and ability to operate in the international market. As the topic of climate change becomes a concern to consumers all over the world, the Company is aware of its responsibility. JBS is working to create tools and control mechanisms that allows it to mitigate its exposure to reputational and image risks regarding the effect of its activities in climate change. The image risks that could affect JBS is related to food security and the supply chain, that may cause deforestation to create new pastures.	Reduced demand for goods/services	Current	Direct	Very unlikely	High

5.1f

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

(i) The potential financial implication is decrease of income due to the risk of reputation.

(ii) The aforementioned risk also affects the Company's demand for its beef and beef products in markets all around the world. Its intention is to proceed with measures that will secure those markets by fulfilling its needs for information disclosure and product stewardship and traceability.

In 2008, a key public commitment of the group is its engagement in tackling deforestation, formalized through the adoption of the Livestock Pact of the São Paulo -Amazonia Sustainable Connections Initiative, (Ethos Institute) and effective participation in the Sustainable Livestock Working Group, the Global Roundtable for Sustainable Beef, among others. The company has been monitoring its 30,000 livestock suppliers in Legal Amazon, since 2010. JBS is committed to ensuring the origin of its raw material and therefore does not acquire cattle suppliers involved in deforestation, invasion of indigenous lands and protected areas, rural violence and land conflicts and the use of slave labor. Such control is achieved through use of information from sector agencies, satellite images and geo-referenced cartographic information.

The Company follows closely a list continuously audited by IBAMA (Brazilian Environmental Institute) that points out farms that are not in accordance with national regulation, immediately interrupting commercial relationships with those suppliers, which guarantees the provenance of all cattle shipped, and not about their activities with the change in land use.

The Company also recognizes that there are farms in the Amazon region that are legal in all aspects. The Company intends to further enforce its controls to not buying cattle from areas responsible for the deforestation of the Amazon by supporting initiatives that have as the ultimate goal a full chain of custody certification of the cattle. While there are numerous difficulties to this process the Company believes it is an efficient way at proving the cattle's origin.

The environmental monitoring system of cattle purchase also seeks the fulfillment of agreements signed by JBS with the Federal Public Ministry (MPF) since 2009 and has recently been renovated by the company with the signing of the TAC Amazon on 20 March in 2013.

This new agreement standardizes the obligations to be met by all refrigeration units JBS in the Amazon region, renewing the commitment of one of the largest processors of animal protein in the world require their suppliers to comply with the criteria of legality and social environment as a prerequisite for the purchase of animals for slaughter.

In respect of food safety and application of good operational practices, JBS has a specific department which monitors all industrial processes and JBS is responsible for product quality assurance. This commitment is extended to the production chain through a number of initiatives. Suppliers receive guidance from the Animal Well-Being team for handling of animals and their transportation to the abattoir in accordance with company regulations.

In 2012, the company refined the purchase process with the inclusion of socio-environmental criteria in selection of biomass producers. The Sustainable Livestock Farming Program was linked to the JBS Sustainability Department until August 2012, when its action was modified. The creation of the Sustainability Department enabled implementation of more strategic activities within the scope of the Program, and some operational activities carried out until then by the Sustainable Livestock Farming team became the responsibility of the Quality Assurance department. The Program, which until then dealt with suppliers individually, redirected its focus to provide guidance to livestock purchasers, being the contact between the company and the supplier on a daily basis. In this way, messages and guidance reach livestock farmers more easily.

Buyers have the opportunity to participate in training on social, environmental and land-management regularization organized by the Sustainability department. In 2012, 15 training sessions were delivered to 450 people on animal welfare and nutrition, sanitary management and sustainability criteria of JBS for purchase of livestock, among other topics. This new structure enabled the Sustainability department to conduct individual studies with livestock buyers to evaluate their awareness of company commitments. The initiative provided a channel for engagement with this group, receiving opinions, criticism and suggestions. The next step will be to deliver specific training on socio-environmental themes to livestock buyers.

(iii) Aproximately R\$ 1.000.000 (one million of reais) are spent per year with the social and environmental monitoring sistem.

Page: 6. Climate Change Opportunities

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

Opportunities driven by changes in regulation
Opportunities driven by changes in other climate-related developments

6.1a

Please describe your opportunities that are driven by changes in regulation

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1				Current	Direct		Low-medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
	Cap and trade schemes	The Company has developed five CDM projects in Brazil, which can generate revenue through the sale of carbon credits. The scope of the project is avoidance of methane through wastewater treatment. The projects were implemented in five units: Bar Herons (Mato Grosso), Vilhena (Rondônia), Goiânia (Goiás), Campo Grande (Mato Grosso do Sul) and Andradina (São Paulo). Two of them are already registered with the UNFCCC (United Nations Framework Convention on Climate Change) and the other projects are under validation. The feasibility of reducing emissions of other projects in Brazil and Argentina is currently being evaluated by JBS and its partners. Society monitors the development of new regulatory systems in order to identify other opportunities for development and implementation of projects. The company sees the development of emission reduction projects as vital to mitigate its impact on climate change, as well as a gateway to broader issues of sustainability, as well as cogeneration and waste and water management.	Premium price opportunities			Virtually certain	
2	Other regulatory drivers	Other regulatory drivers Biodiesel – In 2008 the Brazilian government, through the National Program of Biodiesel Production and Use (PNPB) forced the mix of pure biodiesel (B100) in diesel oil used in the country in order to reduce GHG emissions. Between January and June 2008, the blend of biodiesel in diesel oil was 2% (B2) and today has been established a 5% blend (B5), which advanced the goal of the PNPB in three years. From this new market, in 2012 JBS produced 73.980.	New products/business services	Current	Direct	Virtually certain	Low-medium

6.1b

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

ID 1:

- (i) The development of project activities to reduce emissions, such as CDM trading scheme within others, can generate revenue through the sales of carbon credits. According to the PDDs from JBS CDM projects, about 73066 tCO₂e would be generated per year. As currently the credit amount is low (about R\$ 1.50), the potential financial impact will not be significant (about R \$ 110,000). Thus, JBS is waiting for a better time to verifying the monitoring of these projects.
- (ii) JBS intends to continuously monitor studies regarding the regulatory requirements related to climate change in the variables mentioned above as well as ways of enhancing them in the long-short, medium and long term. The Company has developed five CDM projects in Brazil, which can generate revenue through the sale of carbon credits. The scope of the project is avoidance of methane through wastewater treatment. The projects were implemented in five units: Bar Herons (Mato Grosso), Vilhena (Rondônia State), Goiânia (GO), Campo Grande (Mato Grosso do Sul) and Andradina (São Paulo). Two of them are already registered with the UNFCCC (United Nations Framework Convention on Climate Change) and the other projects are under validation. The feasibility of reducing emissions of other projects in Brazil and Argentina is currently being evaluated by JBS and its partners. Society monitors the development of new regulatory systems in order to identify other opportunities for development and implementation of projects. The company sees the development of emission reduction projects as vital to mitigate its impact on climate change, as well as a gateway to broader issues of sustainability, as well as cogeneration and waste and water management.
- (iii) The development of these projects have associated costs. JBS has already spent about \$ 9147838 in CDM projects.

ID 2:

- (i) Thanks to regulations, today the biodiesel production also generates revenue for JBS.
- (ii) In 2012, 73.980 tons of biodiesel were produced from different animal and plant oils in the plant located in Brazil. Today there is great expectation for this new division of JBS, due to greater demand for renewable fuels in the country.
- (iii) Based on research which began 2 years ago, the company conducted an extensive environmental diagnosis to identify improvement opportunities for environmental indicators of beef processing units in Brazil, formulating an investment plan encompassing more than 270 projects, with a total investment of R\$48 million. Projects are related to waste water treatment (58%), waste management (19%), atmospheric emissions (4%) and other issues (19%) such as installation of water and waste water monitoring equipment and operational improvements.

6.1e

Please describe the opportunities that are driven by changes in other climate-related developments

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Reputation	JBS has the opportunity to support initiatives that promote the benefits for mitigating climate change of the chain of custody of the livestock. The Company has a distinct opportunity to become a market leader regarding environmental practices and climate change management in its operations worldwide. JBS intends to continue its pioneering initiatives regarding carbon markets as well as a special care for product stewardship. The Company is conscious of its responsibilities regarding stakeholder engagement, especially cattle ranchers. The Sustainable Livestock program offers advisory for cattle ranchers for pasture management, pointing out the best practices available for sustainable ranching. This program promotes several indirect benefits for mitigating climate change, such as more sustainable and intensive use of the land, avoiding expansion of pasture areas, contributing substantially to the reduction of deforestation and, consequently, emissions related to changes in land use in Brazil.	Wider social benefits	Current	Indirect (Supply chain)	Virtually certain	Medium-high
2	Other drivers	Opportunity for improvement - Internal Management of Greenhouse Gas Emissions: The Company is studying the feasibility of creating a global mechanism for internal management of its GHG emissions. The Company has several operations spread throughout the world. Each country has its own system of regulation and where applicable, emission targets. This mechanism is a way to manage and develop individual goals for emissions reduction projects in different countries and ways to use international offsets to supplement the allowances allocated where appropriate. The feasibility of such an engine tends to increase as the rules and regulations of an American market are better drawn.	Increase in capital availability	1-5 years	Direct	Likely	Low-medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		Currently, the Company does not intend to establish internal voluntary emissions targets, but this mechanism could serve as starting platform.					

6.1f

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

- (i) The financial implications are not measurable but is estimated to result in increased income for JBS.
- (ii) JBS is developing mechanisms to support initiatives that promote the certification of chain of custody of the livestock. JBS supports the sustainable growth of the Brazilian livestock sector with the Sustainable Livestock Program. The program raises awareness and trains suppliers on social and environmental issues, food safety and animal welfare. To facilitate these trainings, JBS signed a partnership with EMBRAPA. The Sustainable Livestock Program offers free technical support and assistance to providers of JBS through a specialized technical team. According to internal company information in 2012, 15 (fifteen) lectures, with about 450 (four hundred and fifty) participants, were conducted in order to inform the participants about animal welfare, feeding, training of employees, verification of medicines (read the package insert for the drug), preservation of vaccines and medicines, health management, JBS requirements for purchase of cattle, among others.
- (iii) JBS invest approximately R\$ 1 million during the execution of the sustainable livestock program in 2012.

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

There are no relevant opportunity related to physical climate parameters for JBS. This is because any change in the climate pattern, would require an adaptation to JBS process. Furthermore, in case of a favorable climate condition for cropping, it is not expected that the price of feed for animals would significantly decrease once the price is also regulated by market mechanisms. The ongoing research conducted by the JBS suggest for Brazil, in the next 5 years, that physical changes resulting from climate changes should constitute more of a risk than an opportunity for JBS since operating techniques may change with time, which increases costs.

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 CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Sun 01 Jan 2012 - Mon 31 Dec 2012	6107495.70	1274401.38

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
Brazil GHG Protocol Programme
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

7.2a

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

7.3

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

Gas	Reference
CO2	IPCC Second Assessment Report (SAR - 100 year)
CH4	IPCC Second Assessment Report (SAR - 100 year)
N2O	IPCC Second Assessment Report (SAR - 100 year)
Other: R-404 A	IPCC Second Assessment Report (SAR - 100 year)
Other: HFC-134	IPCC Second Assessment Report (SAR - 100 year)
Other: HCFC-22	IPCC Second Assessment Report (SAR - 100 year)

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

Further Information

7.4 Attachments - emissions factors

Attachments

[https://www.cdproject.net/sites/2013/30/9730/Investor%20CDP%202013/Shared Documents/Attachments/InvestorCDP2013/7_EmissionsMethodology/Q7.4_Emissions factors.xlsx](https://www.cdproject.net/sites/2013/30/9730/Investor%20CDP%202013/Shared%20Documents/Attachments/InvestorCDP2013/7_EmissionsMethodology/Q7.4_Emissions%20factors.xlsx)

Page: 8. Emissions Data - (1 Jan 2012 - 31 Dec 2012)

8.1

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

Operational control

8.2

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

6107495.71

8.3

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

1274401.38

8.4

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

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Fuel consumption of the helicopters	Scope 1	Incomplete information for the period in question.

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions 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%	Other: Published Emissions Factors Data Management	In general, the IPCC factors have an uncertainty of 5% for carbon dioxide (GHG most representative). It was not possible to associate uncertainties related to the parameters quantification, because the data was collected aggregately in each unit by independent systems of information management.	More than 2% but less than or equal to 5%	Other: Published Emissions Factors Data Management	The emission factor was estimated based on the energy generation and fuel consumption available. However, the National Operator System (Brazilian Institution) has a strict control of the power plants, therefore we consider that the uncertainty is relatively low.

8.6

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

No third party verification or assurance

8.7

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

No third party verification or assurance

8.8

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

8.8a

Please provide the emissions in metric tonnes CO2

1250188.73

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)

9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

9.1a

Please complete the table below

Country/Region	Scope 1 metric tonnes CO2e
Brazil	455458.72
United States of America	5361801.75
Australia	274352.54
Argentina	9205.83
Uruguay	3972.88
China	1515.43
Paraguay	1188.56

9.2

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

By business division
By GHG type
By activity

9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)
Beef Division - Brazil	262152.11
Leather Division - Brazil	28274.57
Chicken Division - Brazil	24565.71
New Business - Brazil	140466.32
Beef, Porks and Carrier Division - USA	4640984.64
Fiver Rivers - USA	56095.74
Beef, Porks and Lamb - Australia	274352.53
Mercosul (Argentina, Uruguay e Paraguay)	14367.27
China	1515.43

9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	5495727.75
CH4	545597.74
N2O	63535.58
HFCs	2634.63

9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Direct stationary combustion	733008.09
Direct mobile combustion	4805521.60
Wastewater treatment and Sludge Disposal	527580.36
Agricultural activities	38704.59
Fugitive emissions	2681.06

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)

10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

10.1a

Please complete the table below

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling (MWh)
United States of America	1046456.88	2001937.00	
Argentina	4904.84	93292.00	
Paraguay			
Uruguay	1181.51	14586.51	
Australia	166671.4	198182.40	
China	4168.57	5442000.00	
Brazil	51018.18	591186.51	323281.25

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 emissions (metric tonnes CO2e)
Beef Division - Brazil	34045.15
Leather Division - Brazil	4641.39
Chicken Division - Brazil	6839.36
New Business - Brazil	5344.24
Beef, Porks and Carriers Division - USA	387887.93
Chicken Division - USA	637576.51
Fiver Rivers - USA	21140.48
Beef, Porks and Lam - Australia	166671.40
Mercosul (Argentina, Paraguay, Uruguay)	6086.35
China	4168.57

Page: 11. Energy

11.1

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

More than 5% but less than or equal to 10%

11.2

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

Energy type	MWh
Fuel	8967042.76
Electricity	2785851.68

Energy type	MWh
Heat	
Steam	
Cooling	

11.3

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

Fuels	MWh
Wood or wood waste	2290852.62
Diesel/Gas oil	945448.43
Natural gas	4509178.46
Other: Sugar cane bagasse	850796.32
Other: Vegetable wastes	91408.77
Liquefied petroleum gas (LPG)	114645.66
Residual fuel oil	65531.88
Other: Coal	99180.61

11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comments
Grid connected low carbon electricity generation owned by company, instruments created and retired by company	3275503.06	Wood or Wood waste; Sugar cane bagasse; Residual biomass wastes; Biodiesel.

Page: 12. Emissions Performance

12.1

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

Increased

12.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities			
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary	130	Increase	The increase in emissions due to consumption of diesel Carriers Division - JBS USA, not contemplated in 2011.
Change in physical operating conditions			
Unidentified			
Other			

12.2

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
0.0000975	metric tonnes CO2e	unit total revenue	88	Increase	The increase in emissions due to consumption of diesel Carriers Division - JBS USA, not contemplated in 2011.

12.3

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
52.12	metric tonnes CO2e	FTE employee	102	Increase	The increase in emissions due to consumption of diesel Carriers Division - JBS USA, not contemplated in 2011.

12.4

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
0.061412	metric tonnes CO2e	unit of production	15.87	Increase	The increase in emissions mainly due to the increase in the electricity brazilian emissions factor when compared with 2011.

Page: 13. Emissions Trading

13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

13.2

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

Yes

13.2a

Please complete the table

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e); Risk adjusted volume	Credits retired	Purpose, e.g. compliance
Credit Origination	Methane avoidance	Project 2610 : Project JBS S/A – Slaughterhouse Wastewater Aerobic Treatment – Vilhena Unit http://cdm.unfccc.int/Projects/DB/TUEVSUED1243507454.91/view	CDM (Clean Development Mechanism)	204673		No	Not applicable
Credit Origination	Methane avoidance	Project 2609 : Project JBS S/A – Slaughterhouse Wastewater Aerobic Treatment – Barra do Garças Unit http://cdm.unfccc.int/Projects/DB/TUEVSUED1243498760.08/view	CDM (Clean Development Mechanism)	302079		No	Not applicable

Page: 14. Scope 3 Emissions

14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services					
Capital goods					
Fuel-and-energy-related activities (not included in Scope 1 or 2)					
Upstream transportation and distribution	Relevant, calculated	6534693.3	GHG Protocol		The upstream emissions refer to the transport of products (goods and services) purchased or acquired by the company. It's also related to the distribution of finished product and transportation to waste disposal. Are included the road and rail transports contracted by the JBS.
Waste generated in operations	Relevant, calculated	125548.71	GHG Protocol		
Business travel	Relevant, calculated	5209.89	The methodology applied is the 2020 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting.		The emissions described refer to the air travels of JBS staff.
Employee commuting					
Upstream leased assets					
Investments					
Downstream transportation and distribution	Relevant, calculated	21637.23	GHG Protocol		
Processing of sold products					
Use of sold products					
End of life treatment of sold products					
Downstream leased assets					
Franchises					
Other (upstream)					
Other (downstream)					

14.2

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

No third party verification or assurance

14.3

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

Yes

14.3a

Please complete the table

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
			Increase	

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Upstream transportation & distribution	Change in boundary			1157%. In 2012 an extension was conducted to collect data for Scope 3.
Waste generated in operations	Change in boundary			
Business travel		12	Decrease	
Downstream leased assets	Change in boundary			

14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers

14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

JBS is a founding member of the Committee and the Executive Council of the Global Roundtable for Sustainable Beef in the United States - and currently responsible for the Presidency of the organ - and a board member of the Working Group of Sustainable Livestock (GTPS) in Brazil. Through these institutions, maintains frequent dialogue with non-governmental organizations such as the World Wildlife Fund (WWF), Solidaridad, the National Wildlife Federation (NWF) and The Nature Conservancy (TNC). JBS also joined the Livestock Compact of the Initiative Sustainable Connections São Paulo-Amazon, from Ethos Institute. Moreover, one of the group's public commitments is the engagement in combating deforestation. Therefore environmental criteria are applied to selection of suppliers and, since 2010, JBS monitors its 30,000 cattle suppliers located in the Amazon. This control is accomplished through information from sector agencies, satellite imagery and georeferenced cartographic databases.

JBS also participates in the Brazilian GHG Protocol Program, a platform that provides tools and international quality standards for emissions accounting and publication of Emissions Inventories of Greenhouse Gases. In addition, JBS also attends to Working Groups (articulated by GHG Protocol and WRI) to discuss issues of specific sectors, such as cattle, in order to establish a consistent framework for understanding the sources of emissions that should be included in the inventory, at the corporate level and suppliers.

Once completed the development phase of the project, specific guidelines can be applied to companies in the agricultural sector, which affects production practices by various vendors to demonstrate their usefulness. The project will provide technical assistance to these companies for the use of technical resources and the development of emission reduction strategies that can be incorporated into practices.

14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
30000		Following the strategy of the company in reducing the risk of deforestation by its suppliers, JBS joined to the Livestock Pact of the São Paulo-Amazonia Sustainable Connections Initiative, Sustainable Livestock Working Group, and the Global Roundtable for Sustainable Beef. Due to these initiatives, the company has been monitoring its 30,000 livestock suppliers in Legal Amazon, since 2010.

14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Use in supplier scorecards	The Company follows closely a list continuously audited by IBAMA (Brazilian Environmental Institute) that points out farms that are not in accordance with national regulation, immediately interrupting commercial relationships with those suppliers, which guarantees the provenance of all cattle shipped.

Module: Sign Off

Page: Sign Off

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

Marcio Nappo - Director of Sustainability

CDP