



Module: Introduction

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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.

Enter the period that will be disclosed.
Sun 01 Jan 2012 - Mon 31 Dec 2012

0.3 Reporting Boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported.

Companies, entities or groups over which operational control is exercised

0.4 Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

No

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1.1 Does your company have a water policy, strategy or management plan?

Yes

1.1a Please describe your policy, strategy or plan, including the highest level of responsibility for it within your company and its geographical reach.

Country or region	Description of policy, strategy or plan	Position of responsible person
Brazil	With the establishment of strategies aiming a production more sustainable, JBS initiated research two years ago, performing a wide environmental assessment to identify opportunities for improvement of the environmental indicators of beef processing units in Brazil and developed an investment plan that includes more than 270 projects with total investment of around U.S. \$ 48 million. The projects are related to wastewater treatment, waste management, air emissions and other issues such as improving efficiency in water use, installation of monitoring equipment for water and wastewater and operational improvements. Through the initial diagnosis and implementation of the projects of the investment plan that allowed monitoring of consumption of key environmental indicators by the technical teams of the production units, including the volume of water consumed by production volume, and identify the profile of water consumption each unit and its performance. JBS has adopted targets for water consumption in all units as part of its policy in the pursuit of efficient use of natural resources. In relation to water consumption, the company adopted physical and behavioral measures to optimize the consumption of their units, as investments in optimization of industrial processes and lectures and trainings for employees' awareness on good practices and environmental impacts.	Officer/manager reporting directly to the board
Australia	In Australia, each site tracks, monitors and reports at least Monthly its water usage against a target for absolute usage (KL) and efficiency (eg, KL / tHSCW). The Australian Group Environment Manager is responsible for the review and communication to senior management (Board).	

1.1b Does the water policy, strategy or plan specify water-related targets or goals?

Yes

1.1c Please describe these water-related targets or goals and the progress your company has made against them.

Country or region	Category of target or goal type	Description of target or goal	Progress against target or goal
Brazil	Direct operations		

Country or region	Category of target or goal type	Description of target or goal	Progress against target or goal
		JBS has adopted targets for water consumption in all of the refrigeration units in Brazil, as part of its policy in the pursuit of efficient use of natural resources.	As result, in 2012, JBS reduced by about 6% water consumption only in the refrigeration units in Brazil, equivalent to 1.836.724,18 m³.
Australia	Direct operations	Each site reports water usage at least monthly - by KL, KL / THSCW, KL / Head, KL / Total Production (includes Rendering activities). Northern and Southern Operations are currently reviewing data to set operational group targets which will then feed into setting the overall Australian BU targets.	ON target.

1.2

Do you wish to report any actions outside your water policy, strategy or management plan that your company has taken to manage water resources or engage stakeholders in water-related issues?

Country or region	Category of action	Description of action and outcome
Brazil	Direct operations	JBS has the efficient use of natural resources as a central point of its environmental policy, through corporate guidelines industrial units have conducted several actions aiming at the sustainable use of water in industrial processes and other uses. Isolated initiatives (actions taken by the technical team of the unit) has also been highlighted, and in some cases become models of projects that will be implemented in other units.
Australia	Public policy	New South Wales - Murrumbidgee Irrigation water review, Victoria - 2013 Essential Services Commission price policy review.

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2.1

Are any of your operations located in water-stressed regions?

Yes

2.1a

Please specify the method(s) you use to characterize water-stressed regions (you may choose more than one method).

Method used to define water stress	Please add any comments here:
WRI Aqueduct	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region.

2.1b

Please list the water-stressed regions where you have operations and the proportion of your total operations in that area.

Country or region	River basin	Proportion of operations located in this region (%)	Further comments
Brazil	Amazon	41 – 50	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region.
Brazil	Other: East Atlantic	1 – 10	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region.
Brazil	Other: Paraguay	11 – 20	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region.
Australia	Parana	31 – 40	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region.
	Other: Murrumbidgee	1 – 10	

2.2

Are there other indicators (besides water stress) which you wish to report that help you to identify which of your operations are located in regions subject to water-related risk?

Yes

2.2a

Please list the regions at risk where you have operations, the relevant risk indicator and proportion of your total operations in that area.

Country or region	River basin	Risk Indicator	Proportion of operations located in this region (%)	Further comments
Brazil	Parana	Poor water quality	31-40	JBS holds its own collection and treatment of water, according to environmental legislation and regulatory standards. In cases of superficial withdrawals, the water quality is low due to others discharges of effluents upstream the capture of JBS. The municipality itself often has no treatment plant wastewater. This factor brings costs to the water treatment, either by purchase of equipment or chemicals.
Brazil	Other: Paraguay	Other: Drought	11-20	Slaughterhouse units located in Brazil has been affected by the amplitude and variability of dry periods in the Amazon region, because they discharge industrial wastewater treated in water courses. In periods of long droughts, these watercourses drastically reduce their flow, affecting the clearance of effluents. Due to this situation, JBS evaluated alternative techniques for effluent discharge on the ground, such as fertigation.
Brazil	Amazon	Other: Drought	41-50	Slaughterhouse units located in Brazil has been affected by the amplitude and variability of dry periods in the Amazon region, because they discharge industrial wastewater treated in water courses. In periods of long droughts, these watercourses drastically reduce their flow, affecting the clearance of effluents. Due to this situation, JBS evaluated alternative techniques for effluent discharge on the ground, such as fertigation.
Brazil	Other: East Atlantic	Poor water quality	1-10	JBS holds its own collection and treatment of water, according to environmental legislation and regulatory standards. In cases of superficial withdrawals, the water quality is low due

Country or region	River basin	Risk Indicator	Proportion of operations located in this region (%)	Further comments
				to others discharges of effluents upstream the capture of JBS. The municipality itself often has no treatment plant wastewater. This factor brings costs to the water treatment, either by purchase of equipment or chemicals.

2.3

Please specify the total proportion of your operations that are located in the regions at risk which you identified in questions 2.1 and/or 2.2.

16.4%

2.4

Please specify the basis you use to calculate the proportions used for questions 2.1 and/or 2.2.

Basis used to determine proportions	Please add any comments here
Production volumes	Through the map WRI Aqueduct, a diagnosis was performed to locate the production units of the company and its relationship with drought risk areas. Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region. In the future, JBS intends to conduct a large study of the environmental impacts of their suppliers (emissions, water, deforestation and other).

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2.5

Do any of your key inputs or raw materials (excluding water) come from regions subject to water-related risk?

Yes

2.5a

Please state or estimate the proportion of your key inputs or raw materials that come from regions subject to water-related risk.

Country or region	River basin	Input or material	Proportion of key input or raw material that comes from region at risk (%)	Unit used for calculating percentage	Further comments
Brazil	Amazon	Cattle	41 – 50	Volume or weight of material purchased	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region. In the future, JBS intends to conduct a large study of the environmental impacts of their suppliers (emissions, water, deforestation and other).
Brazil	Other: East Atlantic	Cattle	1 – 10	Volume or weight of material purchased	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region. In the future, JBS intends to conduct a large study of the environmental impacts of their suppliers (emissions, water, deforestation and other).
Brazil	Other: Paraguay	Cattle	11 – 20	Volume or weight of material purchased	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region. In the future, JBS intends to conduct a large study of the environmental impacts of their suppliers (emissions, water, deforestation and other).
Brazil	Parana	Cattle	31 – 40	Volume or weight of material purchased	Considering the location of JBS production units (slaughter and beef production), the supply chain of cattle are located in a radius of approximately 150-250 km, being variable by region. In the future, JBS intends to conduct a large study of the environmental impacts of their suppliers (emissions, water, deforestation and other).
Australia	Other: Murrumbidgee	Cattle	1 – 10	Volume or weight of material purchased	
Uruguay	Other: Arroyo Canelones Chico	Cattle	91 – 100	Volume or weight of material purchased	

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3.1

Is your company exposed to water-related risks (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes

3.1a

Please describe (i) the current and/or future risks to your operations, (ii) the ways in which these risks affect or could affect your operations before taking action, (iii) the estimated timescale of these risks, and (iv) your current or proposed strategies for managing them.

Country or region	River basin	Risk type	Potential business impact	Estimated timescale (years)	Risk management strategies
Brazil	Other: Full Brazil	01. Physical: Declining water quality	Capital cost of the installation of equipment necessary to purify water to meet food quality standards.	Current	Setting goals for water consumption per animal slaughtered, subsidized by an investment plan for the acquisition of equipment or physical and process changes,

Country or region	River basin	Risk type	Potential business impact	Estimated timescale (years)	Risk management strategies
					allowing more efficient use of the natural resource.
Brazil	Other: Full Brazil	03. Physical: Increased water stress or scarcity	Implementation of business interruptions plans due to temporary facility shut down	Current	Development of projects for reuse of water for less noble purposes, regulatory rules to prevent the use of recycled water in food industries. Other sources of water such as deep wells.
Brazil	Other: Full Brazil	09. Regulatory: Regulation of discharge quality/volumes leading to higher compliance costs	Slaughterhouse units located in Brazil has been affected by the amplitude and variability of dry periods in the Amazon region, because they discharge industrial wastewater treated in water courses. In periods of long droughts, these watercourses drastically reduce their flow, affecting the clearance of effluents. Due to this situation, JBS evaluated alternative techniques for effluent discharge on the ground, such as fertigation.	Current	Reduce the amount of water used in the production, development of projects by identifying other sources of discharge of effluents treated as fertigation.
Australia	Other: Esk River	01. Physical: Declining water quality	Pollutant load.	Unknown	Basic treatment.
Australia	Other: Municipal Water (Melbourne)	06. Regulatory: Higher water prices	50% increased.	Current	Water reduction initiatives
Australia	Other: Murrumbidgee	07. Regulatory: Increased difficulty in obtaining operations permit	Decreased efficiency.	Unknown	Best practice farming
Brazil	Other: Full Brazil	Other: Climate Change	Potential risks to agriculture in certain regions due to changes in water availability.	6 – 10	Environmental Monitoring System of cattle suppliers, which assists in combating deforestation. Partnership projects with suppliers to develop integrated production (farming, forestry and livestock).
Uruguay	Other: Arroyo Canelones Chico	03. Physical: Increased water stress or scarcity	Fines and investment in wastewater treatment plant.	1 – 5	Engineering design and costs estimation.

3.2

What methodology and what geographical scale (e.g. country, region, watershed, business unit, facility) do you use to analyze water-related risk across your operations?

Risk methodology	Country or geographical scale
The River Basin and the Business Unit are considered, analyzing the water risk of the region where the unit is located, and what kind of activity is developed, because the volumes of water required for production differs according to the product produced.	River basin

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3.3

Do you require your key suppliers to report on their water use, risks and management?

No

3.4

Is your supply chain exposed to water-related risks (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes

3.4a

Please describe (i) the current and/or future risks to your supply chain, (ii) the ways in which these risks affect or could affect your operations before taking action, (iii) the estimated timescale of these risks and, (iv) your current or proposed strategies for managing them.

Country or region	River basin	Risk type (to supplier)	Potential business impact (to responding company)	Estimate timescale (years)	Risk management strategies (by responding company)
Brazil	Other: Full Brazil	Other: Climate Change	Potential risks to agriculture in certain regions due to changes in water availability.	6 – 10	Environmental Monitoring System of cattle suppliers, which assists in combating deforestation. Partnership projects with investors to develop integrated production (farming, forestry and livestock).

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4.1

Has your business experienced any detrimental impacts related to water in the past five years?

No

Page: [Water-5-Opportunities](#)

5.1

Do water-related issues present opportunities (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes

5.1a

Please describe (i) the current and/or future opportunities, (ii) the ways in which these opportunities affect or could affect your operations (iii) the estimated timescale and (iv) your current or proposed strategies for exploiting them.

Country or region	Opportunity type	Potential business impact	Estimated timescale	Strategy to exploit opportunity
Brazil	Cost savings	Reduction of the volume of water used in industrial processes, reducing costs of water treatment and effluent treatment (electricity, chemicals, and other inputs).	1 – 5	A diagnosis of all operations was carried through a corporate action plan, identifying areas of higher water consumption and opportunities for improvements in production processes. A plan for investment in eco-efficiency projects was prepared (R\$ 48 million), with the initial focus on the acquisition and installation of monitoring equipment, which allowed obtaining historical data and setting goals for environmental indicators, such as water consumption for production. Several projects were implemented to optimize the use of water in industrial processes and other uses, and water reuse. Lectures are also held periodically for all employees on the responsible use of water and other natural resources.
Brazil	Increased brand value	Access to new markets / new trends of more sustainable products (with lower environmental impacts).	1 – 5	JBS has developed specific projects for the establishment of partnerships with customers, with methodologies to transform products leading reference in sustainability, with the aim of reducing environmental impacts and encourage continuous improvement. The volume of water used in industrial processes is one of the environmental indicators evaluated. Cases with good performance are replicated to other units of the company.
Uruguay	Increased brand value	Less amount of water consumption.	1 – 5	Investigate options in production.

Page: Water-6-tradeoffs

6.1

Has your company identified any linkages or trade-offs between water and carbon emissions in its operations or supply chain?

Yes

6.1a

Please describe the linkages or trade-offs and the related management policy or action.

Linkage or trade-off	Policy or action
Trade-off	Brazil. 1. Replacement of the sprinkler system in the corrals to maintain thermal comfort of animals before slaughter, and get a better efficiency in animal welfare, the system reduced the consumed volume of 700 L / h to 40 L / h (per piece.) 2. Sprinkler installation in industrial sinks, obtaining a 69% reduction in water consumption in operation. 3. Withdrawal of rumen dry: in the industrial sector (Bucharía) that concentrates a major consumption of industry, previously removal of the stomach contents of cattle was accomplished only with the aid of water. Equipment was installed and made appropriate changes in operating procedure for this cleaning consume a smaller volume of water. 4. Automation of industrial equipments. 5. Water reuse in external operations for non-nobles uses. 6. Awareness of employees for the efficient use of water in production processes. 7. A lower volume of waste generated and the installation of equipment for primary treatment more efficient contribute to a greater volume of emissions from treatment plants are avoided.
Linkage	Australia. Most water usage is linked to energy inputs (boiler) or pumping / distribution (electricity) and or chemical (Cleaning).
Linkage	Uruguay. Less amount of water consumption.

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Page: Water-7-Withdrawals

7.1

Are you able to provide data, whether measured or estimated, on water withdrawals within your operations?

Yes

7.1a

Please report the water withdrawals within your operations for the reporting year.

Country or region	River basin	Withdrawal type	Quantity (megaliters/year)	Proportion of data that has been verified (%)	Comments
Brazil	Other: Full Brazil	Surface	1194	0	The following actions were taken: Replacement of the sprinkler system in the corrals and installation of new sprinklers in industrial sinks, withdrawal of rumen dry, Automation of industrial equipments, Water reuse in external operations for non-nobles uses, Awareness of employees for the efficient use of water in production processes and a lower volume of waste generated and the installation of equipment for primary treatment more efficient contribute to a greater volume of emissions from treatment plants are avoided.
Brazil	Other: Full Brazil	Groundwater	643	0	The following actions were taken: Replacement of the sprinkler system in the corrals and installation of new sprinklers in industrial sinks, withdrawal of rumen dry, Automation of industrial equipments, Water reuse in external operations for non-nobles uses, Awareness of employees for the efficient use of water in production processes and a lower volume of waste generated and the installation of equipment for primary treatment more efficient contribute to a greater volume of emissions from treatment plants are avoided.

7.2

Are you able to provide data, whether measured or estimated, on water recycling/reuse within your operations?

Yes

7.2a

Please report the water recycling/reuse within your operations for the reporting year.

Country or region	River basin	Quantity (megaliters/year)	Proportion of data that has been verified (%)	Comments
Brazil	Other: Full Brazil	45.92	0	JBS is a company of food industry. Due to regulatory impediments, the water reuse is performed in external operations for non-nobles, such as cleaning of outdoor patios and corrals, and watering gardens as well.

7.3

Please use this space to describe the methodologies used for questions 7.1 and 7.2 or to report withdrawals or recycling/reuse in a different format to that set out above.

The data presented are monitored daily by Environmental analysts of each industrial unit and the monitoring is carried out through the Environmental Management Program (EMP), which is one of the tools of the Environmental Management System implemented in the units, based on ISO 14001:2004. The information is accompanied by the corporate management of the company. Thus JBS ensures the uniformity of the data monitored by their technical team.

7.4

Are any water sources significantly affected by your company's withdrawal of water?

Yes

7.4a

Please list any water sources significantly affected by your company's withdrawal of water.

Country or geographical reach	River basin	Water source	Impact	Company action and outcomes
Brazil	Other: Full Brazil	65% surface / 35% groundwater	Water stress Effluent Dilution	A diagnosis of all operations was carried through a corporate action plan, identifying areas of higher water consumption and opportunities for improvements in production processes. A plan for investment in eco-efficiency projects was prepared (R\$ 48 million), with the initial focus on the acquisition and installation of monitoring equipment, which allowed obtaining historical data and setting goals for environmental indicators, such as water consumption for production. Several projects were implemented to optimize the use of water in industrial processes and other uses, and water reuse. Lectures are also held periodically for all employees on the responsible use of water and other natural resources. JBS has developed specific projects for the establishment of partnerships with customers, with methodologies to transform products leading reference in sustainability, with the aim of reducing environmental impacts and encourage continuous improvement. The volume of water used in industrial processes is one of the environmental indicators evaluated. Cases with good performance are replicated to other units of the company. Also, the following actions were taken: Replacement of the sprinkler system in the corrals and installation of new sprinklers in industrial sinks, withdrawal of rumen dry, Automation of industrial equipments, Water reuse in external operations for non-nobles uses, Awareness of employees for the efficient use of water in production processes and a lower volume of waste generated and the installation of equipment for primary treatment more efficient contribute to a greater volume of emissions from treatment plants to be avoided.

Page: Water-8-Discharges

8.1

Are you able to identify discharges of water from your operations by destination, by treatment method and by quantity and quality using standard effluent parameters?

Yes

8.2

Did your company pay any penalties or fines for significant breaches of discharge agreements or regulations in the reporting period?

Yes

8.2a

Please describe the location and impact of the discharge that was the subject of the significant breach(es), the associated fines and any actions taken to minimise the risk of future non-compliance.

Country or region	River basin	Impact	Fines and penalties	Company action and outcomes
Brazil	Other: Full Brazil	Effluent discharge above the maximum standard allowed.	R\$1,213,139.4	With the establishment of strategies to more sustainable production, JBS initiated research for two years, performing a wide environmental assessment to identify opportunities for improvement of the environmental indicators of beef processing units in Brazil and developed an investment plan that includes more 270 projects with total investment of around R\$ 48 million. The projects are related to wastewater treatment, optimizing the efficient use of water, installation of monitoring equipment for water and wastewater and operational improvements. Remaining shares were quoted on issues 5.1ae 6.1a.

8.3

Are any water bodies and related habitats significantly affected by discharges of water or runoff from your operations?

No

8.3b

You may explain here why your company's discharge of water does not significantly affect any water bodies or associated habitats.

The discharges of treated water and stormwater run-off are well-treated and contain few if any constituents that could be expected to cause significant effects to water bodies or associated habitats, as a result of routine monitoring for and compliance with regulatory requirements.

Page: Water-9-Intensity

9.1

Please provide any available financial intensity values for your company's water use across its operations.

Country or region	River basin	Financial metric	Water use type (megaliters)	Currency	Financial intensity (Currency/mega-liter)	Please provide any contextual details that you consider relevant to understand the units or figures you have provided.
Brazil	Other: Full Brazil	Revenue	Withdrawals	BRL(R\$)	454807.81	Considered the extracted data to JBS Annual Report and JBS Sustainability Report 2012.
Australia	Other: Full Australia	Other: Water In Cost per KL	Water use in operations	AUD (\$)	13.52	All site cost per KL.
Australia	Other: Full Australia	Other: Wastewater disposal cost per KL	Other: Wastewater disposal	AUD (\$)	9.89	All site cost per KL.
Australia	Other: Full Australia	Other: Total Water cost per KL	Other: Total Water (water + wastewater)	AUD (\$)	23.4	All site cost per KL.

9.2

Please provide any available water intensity values for your company's products or services across its operations.

Country or region	River basin	Product	Product unit	Water unit	Water intensity (Water unit/product unit)	Water use type	Please provide any contextual details that you consider relevant to understand the units or figures you have provided.
Brazil	Other: Full Brazil	Beef Brazil	tonne	megaliters	0.0098	Withdrawals	Considered the extracted data to JBS Annual Report and JBS Sustainability Report 2012. The volume of water taken not only refers to the units of slaughter cattle in Brazil, because some units have attached plant by-products, beef jerky, wraps and industrialized, which interferes with the volume ratio of water withdrawal.
Australia	Other: Full Australia	Water In	Other: KL / tHSCW (Hot Standard Carcass Weight)	liters	10.65	Water use in operations	All sites (town, river, bore supply).
Australia	Other: Full Australia	Wastewater out	Other: KL / tHSCW (Hot Standard Carcass Weight)	liters	6.94	Other: Wastewater disposal	Trade waste costs.
Uruguay	Other: Arroyo Canelones Chico	Boneless	tonne	megaliters	0.015	Water use in operations	

Module: Sign Off

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

Marcio Nappo - Director of Sustainability

CDP