

Module: Introduction**Page: F0. Introduction****F0.1****Please give a general description and introduction to your organization**

JBS SA is a food Company with 63 years of tradition and global leader in animal protein processing. Operating in more than 20 countries, the Company serves a base of more than 300,000 customers in over 150 countries through a diverse portfolio of products and brands.

Headquartered in Brazil, JBS has approximately 235,000 employees – from factories to sales offices. The structure involves processing units of cattle, pigs, sheep, poultry, leather, and confinement of cattle and sheep. JBS is present in five continents with factories and offices in Brazil, United States, Australia, Canada, Italy, Argentina, Uruguay, Paraguay, Mexico, China, UK and others operating in the segments of beef, pork, lamb and chicken, production and marketing of leather, pet products, hygiene and cleanliness, cans, collagen, biodiesel, transportation and vegetables.

Also incorporated into its business management is the pursuit for modernization, quality of products and raw materials, as well as the establishment of better relationships with partners, customers, employees and society, the satisfaction of its shareholders and the commitment to social and environmental responsibility issues.

The Company's main customers are retail chains, wholesale clubs and companies in the food service industry - restaurants, hotels, food service distributors and further processors. With an annual net revenue of BRL 170.4 billion, JBS is positioned as the largest animal protein Company in the world/ beef producer, with a strong presence in the most competitive production regions on earth.

In 2016, the company's businesses were divided into six units: Seara, JBS Mercosul, JBS USA Beef, JBS USA Pork, JBS USA Chicken (Pilgrim's Pride) and JBS Europe.

More information can be found in the official JBS site (<http://www.jbs.com.br>) and in the JBS 2016 Annual and Sustainability Report (<http://jbss.infoinvest.com.br/enu/4070/JBS%20RAS%202016%20EN%20170502%20Final.pdf>).

F0.2

Please select the stages of the value chain which best represent your organization's area of operation pertaining to forest risk commodities. If your organization is diversified or vertically integrated, please select all that apply

Processing
 Manufacturing
 Retailing

F0.3

Are there any parts of your direct operations that are excluded from this disclosure?

Yes

F0.3a

Please identify the parts of your direct operations that are excluded from your disclosure

Exclusion	Description of exclusion	Potential for deforestation risk	Please explain
Source/ country/ geographical area	Operations that are not located in Brazil are not part of this disclosure due to lower deforestation risks associated to commodities.	No potential	The company's approach to prevent the use of commodities from deforested areas has a focus on Brazilian operations, which offer a higher level of risk in this issue. The country's agricultural frontier expansion to the north leads to a pressure on areas of the Amazon ecosystem to become economically exploited. In other countries where JBS have large businesses, cattle breeding is predominantly in an intensive handling culture (confinement) or the type of biome prevailing is different from forest. Even so, aiming to identifying and mitigating any risk associated with deforestation, JBS has been increasingly improving the mapping approach of its international operations.

F0.4

Are there any parts of your supply chain that are excluded from this disclosure?

Yes

F0.4a

Please identify the parts of your supply chain that are excluded from your disclosure

Exclusion	Description of exclusion	Potential for deforestation risk	Please explain
Source/ country/ geographical area	Operations that are not located in Brazil are not part of this disclosure due to lower deforestation risks associated to commodities.	No potential	The company's approach to prevent the use of commodities from deforested areas has a focus on Brazilian operations, which offer a higher level of risk in this issue. The country's agricultural frontier expansion to the north leads to a pressure on areas of the Amazon ecosystem to become economically exploited. In other countries where JBS have large businesses, cattle breeding is predominantly in an intensive handling culture (confinement) or the type of biome prevailing is different from forest. Even so, JBS constantly monitors the deforestation risks associated with its international operations through questionnaires' applications

F0.5

Do you produce or use materials that contain any of the forest risk commodities? Please complete the table

Forest risk commodity	Produce/use forest risk commodity	Explanation if not disclosing but produce/use the commodity
Timber	Yes	
Palm Oil	Yes	The company has a few business units that produce hygiene and cleaning products with Palm Oil imported from Malaysia and Indonesia and its suppliers are part of Round Table of Sustainable Palm Oil – RSPO, which has developed a set of environmental and social criteria, which companies must comply with in order to produce Certified Sustainable Palm Oil (CSPO). When they are properly applied, these criteria can help to minimize the negative impact of palm oil cultivation on the environment and communities in palm oil-producing regions. It means that RSPO members have committed just to produce, source and/or use sustainable palm oil certified by the RSPO. This raw material is used in the soap basic dough, which is made from vegetable oils and animal fat. However, the purchased volume of palm oil is not representative within the company's operations. Additionally, in partnership with Espaço ECO Foundation (BASF), JBS completed a life cycle analysis study palm oil-based soaps. The study analysed the environmental, social and economic performance of soap of animal and vegetal origin. As a result, the study allowed JBS to make an inventory of processes, to know the main environmental and social impacts of the productive chain and to identify opportunities for improvement, with a focus on continuous improvement.
Cattle Products	Yes	

Forest risk commodity	Produce/use forest risk commodity	Explanation if not disclosing but produce/use the commodity
Soy	Yes	
Other		

F0.6

Please confirm which commodities you will be disclosing on

Timber
Cattle Products
Soy

F0.7

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

Reporting year
Fri 01 Jan 2016 - Sat 31 Dec 2016

Further Information

Module: Current State

Page: F1. Context

F1.1

How does your organization use your selected commodities? Please provide details on the form and source of the commodities you use or produce

Forest risk commodity	Activity	Form of commodity	Source	Country of origin	% of procurement spend	Comment
Timber	Input into manufacturing process (e.g. power generation)	Hardwood logs Sawn timber, veneer, chips Paper Secondary packaging Wood-based bioenergy	Own concessions Smallholders Multiple contracted producers Trader/ broker/ commodity market Contracted suppliers (processors) Contracted suppliers (manufacturers)	Brazil	1-5%	
Cattle Products	Crushing	Cattle Other: Tallow, Beef, By-products (e.g. glycerin, gelatine) and Hides/leather	Smallholders Multiple contracted producers Trader/ broker/ commodity market	Brazil	81-90%	
Soy	Other: Feeding pork and chicken (in animal diets)	Whole soy beans Soy bean meal	Trader/ broker/ commodity market Contracted suppliers (processors) Contracted suppliers (manufacturers)	Brazil	11-20%	Seara uses soy to manufacture animal feed, which is used in farms of poultry and pork (own operations and third parties).

F1.2

Please indicate the percentage of your organization's revenue that was dependent on each of your selected forest risk commodities in the reporting year

Forest risk commodity	% of revenue dependent on commodity in the reporting year	Comment
Timber	21-30%	This range of percentage considers only JBS operations that are dependent of timber - in relation to JBS's global revenue.
Cattle Products	51-60%	This range of percentage considers only JBS operations that are dependent of cattle from areas with potential deforestation risk - in relation to JBS's global revenue.
Soy	81-90%	This range of percentage considers only JBS operations that are dependent of soy from areas with potential deforestation risk - in relation to JBS's global revenue.

F1.3

Has your organization experienced impacts related to forest risk commodities that have generated a substantive change in your business operations, revenue or expenditure in the reporting year?

Yes

F1.3a

Please identify the impacts related to forest risk commodities that have generated a substantive change in your business operations, revenue or expenditure in the reporting year

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
Timber	Physical: Change in precipitation extremes and droughts	Higher operating costs Supply chain disruption Transport	Longer periods without rains can also affect the operation due to the lack of biomass or higher purchase costs, as well as excessive rains and floods can impact on the transportation of essential raw material	Medium	Increased investment in new technology	JBS develops projects, which aims to reuse industrial waste as alternative fuel, for example reusing the bovine rumen content (25kg generated for each animal processed) is possible to generate thermal and steam-based energy. JBS Seara also reuse poultry fat to generate heat energy to partially replace fuel like timber. This change

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
		disruption				reduces the consumption of biomass and fossil fuels for the boilers and reduces GHG emissions.
Timber	Regulatory: Product regulations and standards	Transport disruption	JBS has established environmental and social criteria – slave labor and deforestation - for biomass purchase (used as boiler fuel). If there aren't local suppliers following these criteria, the purchase will have to be made from more distant suppliers, resulting in higher transportation costs	Medium	Engagement with suppliers Tighter supplier performance standards	JBS informs and guides its suppliers regarding its social and environmental criteria and tries to diversify its supply chain. To mitigate the risk of purchasing timber from suppliers involved in deforestation, JBS established a Normative Instruction of Biomass Purchasing, stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with the company.
Cattle Products	Physical: Change in precipitation extremes and droughts	Higher operating costs Supply chain disruption Transport disruption	Long scarce rain periods can also affect the operation because of the lack of raw material or higher purchase costs, as well as excessive rains and floods can affect the transportation of essential raw material. Higher costs of raw material may affect the entire cattle production chain, creating an indirect impact in the expansion of operations and in some cases may even result in the closure of units.	High	Engagement with suppliers Establishment of site-specific targets Supplier diversification	Diversification of suppliers, due to lower supply of cattle, and availability of confined animals. Production planning can be changed to units located in less favourable regions to water stress. JBS has been working with a chain of suppliers to enable producers to improve production through production management, called Connection Program. The initiative provides livestock breeders with commercial Training. Through a platform, the program intend to build a stronger relationship between the producer and the value chain by providing information on meat processing, marketing and sales.
Cattle Products	Regulatory: Product regulations and standards	Transport disruption	Because of Non-Governmental Organization Greenpeace study results, JBS has made a public commitment to not purchase cattle from ranches responsible for deforestation in the Amazon Biome region	High	Engagement with customers Engagement with public policy makers Engagement with suppliers Tighter supplier	Greater engagement with customers are made to meet specific demands, for example demand for sustainable beef, which cause the new product development process and market expansion. JBS informs and guides its suppliers regarding its social and environmental criteria, such as, not purchasing raw material from deforested lands or suppliers involved in slave labour. In this sense, the

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
			<p>after October 2009, as well as those that use labour analogous to slavery or trespass indigenous lands or environmental protected areas delimitation. The public agreement that establishes criteria for cattle purchases from properties located in the Amazon Biome region is also known by Zero Deforestation Commitment and its requirements are under the document "Minimum criteria for industrial scale operations with cattle and beef products in the Amazon". Additionally, the lack of environmental compliance of the cattle suppliers can go against the JBS social and environmental commitment and other agreements made by the company, for instance: One resource to establish traceability by JBS is the Amazon TAC (Conduct Adjustment Term), which was signed in 2009 and renovated in 2013. This new agreement standardizes the obligations to be met by all JBS refrigeration units in the Amazon region, renewing the commitment of one of the</p>		<p>performance standards Greater due diligence Increased capital expenditure New product development and/or market expansion</p>	<p>monitoring provided by Social and Environmental Monitoring System through geo-referenced maps is mandatory for all farms located in the Amazon Biome Region. Additionally, JBS has implemented an internal audit system in 100% of cattle purchases. Every year the Environmental Monitoring System is verified by independent audit. The New Field Program (Programa Novo Campo), which promotes more sustainable production techniques at husbandry farms in the Amazon region, thus contributing to the development of differentiated bonus protocols, to the opening of markets for products with social and environmental attributes, as well as to support training, earnings disclosure and fundraising for ongoing efforts.</p>

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
			largest processors of animal protein in the world in requiring their suppliers to comply with legal and socio-environmental criteria as a prerequisite for the purchase of animals for slaughtering.			
Cattle Products	Reputational: Negative media coverage	Brand damage Decrease in shareholder value	The Non-Governmental Organization Greenpeace has been studying the behaviour of the production chain for cattle raising in the Amazon region since 2007. In 2009, after a long investigation, the organization published its report "Slaughtering the Amazon", which highlighted the relationship between the processing companies and their cattle suppliers involved with forest clearance and slave labour, and the products offered for sale in the market. JBS was one of the processing companies that were on the list. In fact, it brought negative impacts for JBS' image as well as with its customers.	High	Engagement with other stakeholders Engagement with suppliers	Due to the Greenpeace study results, JBS has made a public commitment to not purchase cattle from ranches responsible for deforestation in the Amazon Biome region after October 2009, as well as those that use labour analogous to slavery or trespass indigenous lands or environmental protected areas delimitation. In 2010 JBS began to develop a social and environmental monitoring system for the farms that supply livestock to the company. By geographic coordinates and geo-referenced maps of the farms areas the system identify deforested areas published by the National Institute of Space Research (INPE) and official maps of indigenous lands and environmental conservation units. JBS's geospatial monitoring system currently analyses an area of approximately 62 million hectares. To remain in Compliance with the responsible purchasing commitment, an independently audit on the Social and Environmental monitoring system is annually provided. According to the 2014, 2015 and 2016 independent audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (http://www.jbs.com.br) in second half of 2017. Moreover, a significant result regarding its public commitment with zero deforestation, JBS was positively mentioned in a recently study prepared for Greenpeace (2015),

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
						available in (http://carneaomolhomadeira.org.br/). The study mentioned JBS as one of the three biggest Brazilian frigorific company which has been complying with the public commitment, reporting independent audit results regarding its purchase monitoring system and how its actions has been changing the market in a positive way. Additionally JBS has: 1)New Field Program, that permits a strong approach on enhancing productivity through the diversification of income sources, cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes positively to the main environmental issue in the Amazon region, as it indirectly eliminates the need for more deforestation as it intensifies production in the same dimension of area. 2) Legal Supplier Program, which helps JBS suppliers to regularize their Rural Environmental Registry (CAR –CadastroAmbiental Rural). Through this program, JBS hires specialized consultants to advise its suppliers on the regularization process.
Soy	Physical: Change in precipitation extremes and droughts	Supply chain disruption	Longer periods without rains also can affect the operation because of the lack of soy or higher purchase costs, as well as excessive rains and floods can affect the transportation of essential raw material. Higher costs of soy may affect the entire poultry and pork production chain, creating an indirect impact in the expansion of operations and in some	High	Increased investment in new technology	Seara constantly monitors meteorological maps, reports of crops changes, supply and global demand images/graphics, prices, curves and economic scenarios, identifying, monitoring and creating strategies to mitigate risks that company are exposed and reduce its possible effects on JBS operations. The Grain Purchasing Directory is responsible for this monitoring process and for developing the medium and long term strategic planning of commodities acquisition. Commodity markets are characterized by high volatility due to external factors such as climate, supply, transport costs, agricultural policies, storage costs, among others. The Risk Control Board is responsible for

Forest risk commodity	Impact driver	Impact	Description of impact	Estimated financial impact	Response strategy	Description of response strategy
			cases may even result in the closure of units.			mapping the Company's commodity price exposures and proposing to the Risk Management Committee strategies to mitigate such exposures
Soy	Regulatory: Voluntary agreements	Closure of operations Supply chain disruption	Despite of the fact that in 2016 the soy moratorium was renovated for undetermined period, in 2015 it was renovated just for one year, creating a risk exposure scenario for JBS.	High	Tighter supplier performance standards	The end of Soy Moratorium could represent significant risks to the company once would be not possible to guarantee free deforestation of soy purchase.

F1.4

Please describe why you do not know if your organization experienced any impacts related to forest risk commodities that have generated a substantive change in your business operations, revenue or expenditure in the reporting year

Primary reason for being unaware of impacts	Comment

Further Information

Module: Risk Assessment

Page: F2. Risk assessment

F2.1

Please select the option that best describes your procedures with regard to assessing deforestation risks and opportunities

Forest risk commodity	Deforestation risk assessment procedure	Operational coverage	Please explain
Timber	Integrated into a comprehensive, company-wide risk assessment process	Direct operations Supply chain	<p>JBS globally manages the risk factors that may have a negative impact on its financial performance and, consequently, on its share price. The main risks identified by the company were: 1The acquisition of raw material from suppliers involved in the deforestation of native forests; 2The invasion of protected areas, such as indigenous lands or environmental conservation units; 3The use of child or compulsory labour or products that might present health risks to its consumers. The Sustainability Department is directly responsible for the management of the deforestation risk associated to essential commodities. Therefore, when a critical and specific case of deforestation risk is identified by the Sustainability Department, it is sent to the Sustainability Committee, which is responsible for dealing with and connecting all topics related to the company's business in an overall perspective. This role includes the identification, addressing and treatment of critical issues that result in risks or business impact, monitoring and implementation of policies, strategies and specific initiatives, as well as the evaluation of proposals of investments in sustainability. As the Sustainability Committee is composed of six members from the company's top management, including the CEO and vice-president of the Board of Directors, a comprehensive analysis can be performed as part of the deforestation risk assessment procedures. Operationally, to mitigate the risk of purchasing timber from suppliers involved in deforestation, JBS established a Normative Instruction of Biomass Purchasing, stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with the company..Seara has also developed its own planted forest for internal thermic energy generation partial to ensure the sustainable origin of its materials.</p>
Cattle Products	Integrated into a comprehensive, company-wide risk assessment process	Direct operations	<p>JBS globally manages risk factors that may have a negative impact on its financial performance and, consequently, on its share price. The main risks identified were: 1 The acquisition of raw material from suppliers involved in the deforestation of native forests; 2 The invasion of protected areas, such as indigenous lands or environmental conservation units; 3 The use of child or compulsory labour or products that might present health risks to its consumers. The Sustainability Department is directly responsible for the management of the deforestation risk associated to essential commodities. When a critical case of deforestation risk is identified, it is sent to the Sustainability Committee, which is responsible for dealing with and connecting all topics related to the company's business in a global perspective. As it is composed of six members from the company's top management, including the CEO and vice-president of the Board of Directors, a comprehensive analysis can be performed as part of the deforestation risk assessment procedures. To mitigate the risk of deforestation associated to the purchase of cattle, JBS assumed the commitment to ensure the responsible origin of its raw materials. JBS developed a social and environmental monitoring system, which currently monitors and analyses an area of approximately 59 million hectares, which represent 5% less if compared with 2015. This reduction can be</p>

Forest risk commodity	Deforestation risk assessment procedure	Operational coverage	Please explain
			<p>explained once the number of hectares was estimated for those farms that still do not have the accurate geospatial information. Thus, the total amount of hectares analysed by JBS has been fixing as long as farms improve the quality of their geospatial data. Although the number of monitored hectares decreased, the total number of monitored farms suppliers increased 10% in 2016 compared with 2015. These positive results, even the geospatial data quality improvement by farms, or the increase of total suppliers monitored, were possible due JBS effort to engage its suppliers through program like "Legal Supplier", as well as, Brazilian government initiative that aims rural properties regulation by the Rural Environmental Registry - CAR (Cadastro Ambiental Rural).</p>
Soy	Integrated into a comprehensive, company-wide risk assessment process	Direct operations	<p>JBS constantly monitors meteorological maps, reports of crops changes, supply and global demand images/graphics, prices, curves and economic scenarios, identifying, monitoring and creating strategies to mitigate the risks to which the company is exposed to and reduce its possible effects on JBS operations. The Grain Purchasing Directory (Seara) is responsible for this monitoring process and for developing the medium and long term strategic planning of commodities acquisition. When a critical case of risk deforestation is identified, it is sent to the Sustainability Committee, which is responsible for dealing with and connecting all topics related to the company's business in an overall perspective. This role includes the identification, approach and treatment of critical issues that result in risks or business impact, monitoring and implementation of policies, strategies and specific initiatives, as well as the evaluation of proposals of investments in sustainability. Due to its composition of six members from the company's top management, including the CEO and vice-president of the Board of Directors, a comprehensive analysis can be performed as part of the deforestation risk assessment procedures. To mitigate the risk associated to the purchase of animal feed raw material from deforested areas, JBS only purchases soybeans from suppliers that are signatories to the Soybean Moratorium to ensure that no soybeans come from illegal deforestation regions in the Amazon Biome.</p>

F2.1a

Please provide further details on your risk assessment procedures with regard to deforestation risks and opportunities

Forest risk commodity	Frequency of monitoring	To whom are results reported?	Scale of risk assessment	How far into the future are risks considered?	Please explain
Timber	Six-monthly or more frequently	Senior manager/officer	Country level	1-3 years	The verification of the supplier's compliance to the company's environmental and social criteria occurs in every purchase process. Besides, JBS established a partnership with the Brazilian NGO Instituto Centro de Vida (ICV) on the New Field Program (Programa Novo Campo). The program promotes more sustainable production techniques at husbandry farms in the Amazon region to enhance productivity. It fosters the diversification of income sources through cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes positively to the main issue in the Amazon region, as it indirectly reduces the need for more deforestation. With this production model adoption, there is the possibility to purchase wood derivatives from more sustainable producers.
Cattle Products	Six-monthly or more frequently	Senior manager/officer	Country level	>6 years	JBS has made a public social commitment to not purchase cattle from farms responsible for deforestation in the Amazon Biome region after October 2009. To ensure compliance with this commitment, in 2010 JBS developed a social and environmental monitoring system for farms that supply livestock to JBS. It works in an integrated way. The first one works on a daily download of public agencies IBAMA and MTE dirty lists and a crosschecking of suppliers taxpayer numbers database against them. The second process analyses cattle farms in the Brazilian Legal Amazon based on geographical information. It performs by daily geo monitoring through the digital overlay of georeferenced maps of cattle supplier properties and deforestation maps published by National Space Research Institute (INPE) combined with official data from National Indigenous Foundation (FUNAI) and National Conservation Units System (SNUC). The suppliers, which aren't in comply with one or both process, are automatically blocked in the Enterprise Resource Planning System (ERP) and no purchasing operations are made. An independent audit on the Social and Environmental monitoring system is annually provided. According to the 2014, 2015 and 2016 audit results, the compliance level was 99.75%, 99.97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (http://www.jbs.com.br) in second half of 2017. The Sustainability Committee meets quarterly and is responsible for the management of risks and critical issues, as well as business opportunities for the company that can generate a high negative or positive impact on JBS' operations over the short, medium and long terms. The committee's job includes implementation of policies, strategies and specific actions, and evaluation of sustainability investment proposals. The Committee monitors results of the

Forest risk commodity	Frequency of monitoring	To whom are results reported?	Scale of risk assessment	How far into the future are risks considered?	Please explain
					Monitoring System including indicators of the total active suppliers on the system's registration, percentage of suppliers from the Legal Amazon, how many already have the digital map, number of eligible and blocked suppliers. In case of acquisition opportunities or opening new plants in Amazon Biome area, JBS performs an analysis of the potential suppliers of raw materials regarding their environmental compliance. This analysis allows JBS to evaluate the feasibility of operating in a specific region.
Soy	Six-monthly or more frequently	Senior manager/officer	Country level	1-3 years	The verification of the supplier's compliance in relation to the company's environmental and social criteria occurs in every purchase process. JBS Foods has the Grains and Agricultural Feedstock Purchasing Directory that follows on climate issues that directly affect the cost of soybeans and consequently the cost of production. This Directory constantly monitors meteorological maps, reports of crops changes, supply and global demand images/graphics, prices, curves and economic scenarios, identifying, monitoring and creating strategies to mitigate the risks to which company is exposed to and reduce its possible effects on JBS operations. When soybean has a profitable price, it's made the option of buying large quantities for storage and later use. The Grains and Agricultural Feedstock Purchasing Directory is responsible for this monitoring process and for developing the medium and long term strategic planning of the commodities purchasing.

F2.1b

Please identify which of the following criteria are factored into your organization's deforestation risk assessments

Criteria	Timeframe	Relevance	Please explain
Changes in availability and quality of forest risk commodities	Current	Relevant, included	The criteria "Changes in availability and quality of forest risk commodities" is important to JBS business because if there isn't enough cattle in compliance with the company's environmental criteria near the slaughterhouse, there will be an increase in operational costs. To manage the risk of cattle purchase from suppliers involved in native forests deforestation, protected areas invasion or child and compulsory labour use, JBS established restrictive procurement procedures performed by a social and environmental

Criteria	Timeframe	Relevance	Please explain
			<p>monitoring system, composed of two mechanisms of analysis, which work in an integrated manner. The first verifies the existence of the farm or livestock supplier in the lists published by the Ministry of Labour and Employment (MTE) – Registry of Employers Fined for Compulsory Labour and the list of areas embargoed due to illegal deforestation published by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA). The second mechanism of analysis uses a geographic information system (GIS) for the geo-spatial monitoring of farms supplying the company with livestock located in the Legal Amazon region, in order to identify suppliers involved in the deforestation of native forests after October 2009, the invasion of indigenous lands or environmental conservation units.. It is constantly performed a monitoring of the circle radius of cattle purchasing for each plant. To make a deal feasible, the supplier farm should be at the maximum of 200 km far away from the slaughterhouse. Moving the plant for lower deforestation risk areas is also very costly.</p>
Impact of activity on the status of ecosystems and habitats	Current	Relevant, included	<p>JBS is committed to ensure the responsible origin of all the raw materials used in its processes, through the establishment of social and environmental criteria applied to all of its suppliers. In order to guarantee the provenance of all of the products that it offers, JBS has a close relationship with its suppliers to monitor and guide all the stages prior to the arrival of the animals at the Company's processing facilities. In addition, for the beef operation, JBS has a technological system for the social and environmental monitoring of farms to ensure that none of its suppliers is involved in the deforestation of native forests, the invasion of protected areas, such as indigenous lands or protected areas, or with the use of slave labour. Through the adoption of social and environmental criteria for raw material procurement process, JBS has a strong influence in the supply chain by creating a culture of intolerance to deforestation. As a positive result of these actions, JBS mitigates and prevents the impacts that could occur in habitats and ecosystems due its activities.</p>
Regulation	Current	Relevant, included	<p>The Company's operations are increasingly subjected to strict laws and regulations, in all level of government, relating to environmental protection. The inability to meet these requirements or any other potential environmental international agreement could result in serious consequences for JBS, including criminal, civil and administrative penalties. As environmental laws become stricter in the markets in which JBS operates, the future costs required to maintain compliance with regulations may adversely affect the availability of funds for capital expenditures and even lower profits. For example, in 2009, the Bertin and its shareholders signed a Conduct Adjustment Agreement ("TAC") with the Federal Public Ministry, in Pará State, in order to curb the purchase of cattle from farms that are listed, by the Ministry of Labour and Employment, as having compulsory labour and appear on the list of embargoed areas, released by the Brazilian Institute of Environment and Renewable Natural Resources. In 2013, JBS signed a new TAC with the Federal Public Prosecution Office (MPF) in Acre and Mato Grosso to set standards for the facilities located in the Legal Amazon. This new TAC replaced the previously signed in both States, renewing the commitment to buy cattle from farms that comply with social, environmental and labour rules. To manage the risk of cattle purchase from suppliers involved in native forests deforestation, protected areas invasion or child and compulsory labour use, JBS assumed the commitment to ensure the responsible origin of its raw materials and implemented a monitoring system to stay in comply with</p>

Criteria	Timeframe	Relevance	Please explain
			the criteria. It is expected a new environmental control instrument called Rural Environmental Registry (CAR). This electronic registration is mandatory for all rural properties and will contribute to develop a strategic database to control, monitor and fight deforestation in Brazil, as well as environmental and economic planning of rural properties. CAR will also permits access to most accurate geographic information suppliers of raw materials (cattle). The registration will be mandatory from December 2017 and exposes JBS to the risk of lower purchasing capability and significant increases in logistics costs, if a substantial portion of the suppliers do not meet the deadline established by the CAR.
Tariffs or price increases	Not applicable		Not applicable
Loss of markets	Current	Relevant, included	JBS assumed the commitment to ensure the responsible origin of its raw materials, not purchasing cattle from suppliers involved with native woodlands deforestation, environmental conservation units and indigenous lands invasion, rural violence and agrarian conflicts, or with the use of compulsory and child labour. The company implemented a social and environmental monitoring system, composed of two mechanisms of analysis to monitor cattle suppliers and guarantee none purchases in disagreement with the criteria. A system failure that could provoke a non-compliant purchase would have a damaging effect on the company's brand reflected in loss of revenue due to contracts termination and markets recession.
Stakeholder conflicts concerning forest risk commodities	Current	Relevant, included	As a global leader of beef production JBS is on the spotlight of NGO's protests and media coverage, especially in a hypothetical system failure that could lead to a purchase not compliant to its commitment against deforestation. JBS assumed the commitment to ensure the responsible origin of its raw materials, not purchasing cattle from suppliers involved with native woodlands deforestation, environmental conservation units and indigenous lands invasion, rural violence and agrarian conflicts, or with the use of compulsory and child labour. The company implemented a social and environmental monitoring system, composed of two mechanisms of analysis to monitor cattle suppliers and ensure none purchases in disagreement with the criteria. The company has improved its Monitoring System in a joint effort with the Departments of Sustainability, Cattle Sourcing and Information Technology, and with the support of a specialized consulting firm, considering the magnitude of transactions that occur on a daily basis, representing automated analysis of more than 70 thousand supplier farms throughout Brazil. The company also performs continuous gap analysis and daily internal audit process. This was a long path to accomplish a formal recognition that the system is effective.
Brand damage related to forest risk commodities	Current	Relevant, included	The company is exposed to reputational risks due to a potential system failure that could provoke a non-compliant purchase. As a global leader of beef production, JBS is on the spotlight of NGO's protests and media coverage and any collapse of its social and environmental monitoring system would represent a large damage with other effects such as revenue and profits decrease, loss of markets and termination of contracts JBS assumed the commitment to ensure the responsible origin of its raw materials, not purchasing cattle from suppliers involved with native woodlands deforestation, environmental conservation units and indigenous lands invasion, rural violence and agrarian conflicts, or with the use of compulsory and child labour. The company implemented a social and environmental monitoring system,

Criteria	Timeframe	Relevance	Please explain
			composed of two mechanisms of analysis to monitor cattle suppliers and guarantee none purchases in disagreement with the criteria.
Corruption	Current	Relevant, included	JBS has an Ethics and Conduct Manual, which provides specifics chapters regarding anti-corruption practices and relationships with government bodies. Additionally, JBS also has an internal policy - Normative Instruction that provides specifics instructions to purchase raw material (cattle) from JBS employs in order to mitigate conflict of interest risks.
Other	Current	Relevant, included	After developing procurement procedures to prevent deforestation, the company is also exposed to the lack of enough raw materials in compliance with the requirements it has set. To mitigate the risk of acquiring raw materials from suppliers involved in the deforestation of native forests, the invasion of protect areas, such indigenous land or environmental conservation units and the use of child or compulsory labour, JBS has adopted a sustainability policy and established social and environmental criteria for purchasing commodities that could be from deforestation risk areas. – Establishment of social and environmental criteria - sustainability policy.

F2.1c

Please provide any additional information about your approach to assessing deforestation risks here

On December 31, 2016, approximately 74,500 farms were registered on the company's commercial system in Brazil, 11% more than the preceding year. This is a testament to the success of the JBS Sourcing area, which has created closer relationships with producers. As a result of the analyses carried out by the Social and Environmental Monitoring System, 5,799 suppliers were blocked in 2016, of which:

3,767 were barred because of deforestation involving native forest (since October 2009)and/or invasion of indigenous lands or environmental conservation areas;

1,951 were blocked because they were included on Ibama's List of Embargoed Areas;

81 were suspended because they were listed as being involved with forced labor.

F2.1d

If you have conducted a partial risk assessment, please identify any exclusions in the following table

Forest risk commodity	Exclusion	Please explain
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F2.2

Please explain why you do not have a process in place for assessing and managing deforestation risks, and whether you plan to introduce such a process in the future

Forest risk commodity	Primary reason for not having a process	Do you plan to introduce a process?	Timeframe	Comment
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Further Information

Module: Implications

Page: F3. Risks

F3.1

Have you identified any inherent risks related to producing, marketing or sourcing forest risk commodities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Please select all that apply

Forest risk commodity	Risk
Timber	Operational risks driven by changes in physical

Forest risk commodity	Risk
	parameters Risks driven by changes in regulation Reputational risks
Cattle Products	Operational risks driven by changes in physical parameters Risks driven by changes in regulation Reputational risks
Soy	Operational risks driven by changes in physical parameters Risks driven by changes in regulation Reputational risks

F3.1a

For your selected forest risk commodities, please describe any inherent operational risks in your direct operations or supply chain driven by changes in physical parameters that have the potential to generate a substantive change in business operations, revenue or expenditure

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
Timber	Availability of certified	Country	Timber is an essential input to the company's	Increased operational cost	1-3 years	Direct operations	Likely	Medium-high	To ensure the sustainable origin of its timber used

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
	sustainable material		operations for processes of combustion in boilers, heating, and packaging. Biomass for industrial boilers usually comes from by-products such as chips, briquettes, sugarcane bagasse and industrial waste or from planted forests (firewood, sawdust). In some locations, JBS has difficulties in obtaining timber from reforested areas. Lack of availability can result in higher operational costs due to increased logistics expenses to bring raw material from distant areas.	Reduction/ disruption in production capacity Reduction/ disruption of supply Reduction in capital availability Reduced stock price (market valuation)					thermic energy generation Seara has invested in an own planted forest for internal supply. To mitigate the risk of purchasing timber from suppliers involved in deforestation, JBS established a Normative Instruction of Biomass Purchasing, stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with the company. Regarding the timeframe information, medium term forecasts are becoming increasingly inaccurate. In this way, JBS has been investing in short term assessment, once the company has expanded its operations through acquisitions in

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									regions not previously evaluated.
Cattle Products	Change in herd sizes	Country	To manage the risk of cattle purchase from suppliers involved in native forests deforestation, protected areas invasion or child and compulsory labour use, JBS established restrictive procurement procedures performed by a social and environmental monitoring system, composed of two mechanisms of analysis, which work in an integrated manner. If there isn't enough cattle in compliance with the company's environmental and social criteria near the slaughterhouse, there will be an increase in	Increased capital cost Reduced demand for goods/service Reduction/ disruption in production capacity Reduction/ disruption of supply Reduced stock price (market valuation)	1-3 years	Direct operations	Likely	Medium-high	One of the JBS's effort to ensure sustainable sourced cattle is the Social and Environmental Monitoring System, which verifies if farms are in the "Registry of Employers Fined for Compulsory labour" published by the Ministry of labour & Employment and in the list of embargoed areas due to illegal deforestation issued by IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources), monitoring farms located in the Legal Amazon region. In 2015, JBS created The Legal Supplier Program in order to device its cattle supply chain in Brazil on how to suit

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			<p>operational costs. It's constantly performed a monitoring of the circle radius of cattle purchasing for each plant. To make a deal feasible, the supplier farm should be at the maximum of 200 km far away from the slaughterhouse. If necessary to move plants to regions with higher availability of cattle in compliance, the company will face even higher capital expenditures.</p>						<p>legislation changes in Brazil in the last years. JBS selected specialized consulting companies in environmental regulation to support its cattle suppliers with the CAR regulation process. JBS has also bargained better prices conditions regarding the consultant services for its suppliers. JBS used its communications channels, mainly the Giro do Boi Show at the Rural channel, to guide farmers on how to regularize their operations and implement the CAR. In 2016, the communication through the Giro do Boi Show channel was intensified. Another management method to foster the availability of sustainable sourced</p>

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									<p>cattle is the New Field Program, which was inspired by a 2013 previous version called Integrated Low Carbon Husbandry that supported a pilot group of 14 farms. In addition to the program's incentive to income and productivity increase, it includes other goals, such as local economy strengthening, reducing deforestation, and natural resources preservation. JBS contributes to the development of the breeders providing access to training/guidance focused on best livestock practices, bonus protocols and preparation to social and environmental oriented consumer markets. Regarding the timeframe information, medium term forecasts are</p>

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									becoming increasingly inaccurate. In this way, JBS has been investing in short term assessment, once company has expanded its operations through acquisitions in regions not previously evaluated.
Soy	Change in precipitation extremes and droughts	Country	One of the major operational risks already faced by JBS Food is the Volatility in commodity prices, such as grains, soy meal and corn. These fluctuation on market rates could be strongly influenced by physical changes in climate that can lead to precipitation extremes and droughts resulting in lower availability of supply and higher costs. These commodities represent the	Reduction/ disruption of supply Reduced stock price (market valuation) Inability to do business	1-3 years	Supply chain	Likely	Medium-high	The Company believes that it can play an important role in preventing deforestation through responsible procurement. As part of this effort, it only purchases soybeans from suppliers that are signatories to the Soybean Moratorium, an initiative that works to ensure no soybeans come from illegal deforestation regions in the Amazon Biome. The Grains and Agricultural

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			largest individual components of the company's Production costs.						Feedstock Purchasing Directory is responsible for this monitoring process and for developing the medium and long term strategic planning of commodities purchasing. It constantly monitors the meteorological maps, reports of crop changes, supply and global demand image/graphics, prices, curves and economic scenarios, identifying, monitoring and creating strategies to mitigate risks, which the company is exposed and reduce its possible effects on JBS operations. Regarding the timeframe information, medium term forecasts are becoming increasingly inaccurate. In this way, JBS has been

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									investing in short term assessment, once company has expanded its operations through acquisitions in regions not previously evaluated.

F3.1b

For your selected forest risk commodities, please describe any inherent risks in your direct operations or supply chain driven by changes in regulation that have the potential to generate a substantive change in business operations, revenue or expenditure

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
Timber	Other: Lack of compliance to regulations	Country	Timber is an essential input to the company's operations for processes of combustion in boilers, heating, and packaging. Biomass for industrial boilers usually comes from	Increased operational cost Increased capital cost Reduced demand for goods/service Reduction/ disruption in production	1-3 years	Direct operations and supply chain	Likely	Medium-high	JBS is attentive to the release of new state and federal regulation and closely follows up the actual legislation. To mitigate the risk of purchasing timber from suppliers involved in deforestation, JBS established a

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			by-products such as chips, briquettes, sugarcane bagasse and industrial waste or from planted forests (firewood, sawdust). In some locations, JBS has difficulties in obtaining timber from reforested areas. Lack of availability can result in higher operational costs due to increased logistics expenses to bring raw material from distant areas.	capacity Reduction/ disruption of supply Reduced stock price (market valuation) Inability to do business					Normative Instruction of Biomass Purchasing, stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with the company. Firewood, saw wood and tree log sourced from native species must be accompanied by a Forest Origin Document, issued by the Brazilian Institute of the Environment - IBAMA, agency from the governmental Environmental Ministry. The document is a mandatory license for the control of native forestry product and sub product transportation and commercialization. Seara has also developed its own planted forest for internal supply for thermic energy generation to ensure

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									the sustainable origin of its materials.
Cattle Products	Other: Lack of compliance to regulations	Country	JBS is exposed to regulatory risks due to any potential failure on the Social and Environmental system, which was developed to prevent purchases of cattle from suppliers involved with native woodlands deforestation, environmental conservation units and indigenous lands invasion, rural violence and agrarian conflicts, or with the use of compulsory and child labour. A breakage of the criteria established in the company's commitment could lead to a prosecution from the Public Ministry and, consequently, a judicial process opened against the	Increased operational cost Reduced demand for goods/service Reduction/ disruption in production capacity Reduction/ disruption of supply Reduction in capital availability Reduced stock price (market valuation) Inability to do business	1-3 years	Direct operations and supply chain	Likely	High	JBS is attentive to the release of new state and federal regulation and closely follows up the actual legislation. To manage the risk of cattle purchase from suppliers involved in native forests deforestation, protected areas invasion or child/compulsory labour use, JBS established restrictive procurement procedures performed by a social and environmental monitoring system, composed of two mechanisms of analysis. The first one verifies the existence of the farm or livestock supplier in the lists published by the Ministry of Labour and Employment (MTE) – Registry of Employers Fined for Compulsory Labour and the list of areas

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			<p>company due to not complying with the Conduct Adjustment Term signed before. There are also new requirements of new Brazilian Forest Code (2012) and Rural Environmental Registry – CAR, which JBS` suppliers must implement until December 2017. After this deadline JBS will only be allowed to deal with regularized suppliers.</p>						<p>embargoed due to illegal deforestation published by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA). The second mechanism uses a geographic information system (GIS) for the geo-spatial monitoring of cattle farms located in the Legal Amazon region, in order to identify suppliers involved in the deforestation of native forests after October 2009 and with the invasion of protected areas. Besides the continuous progress in its procurement procedures to block farmers not in compliance, JBS is also committed to engagement practices. In 2014, JBS used its communications channels, mainly the Giro do Boi Show at</p>

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									<p>the Rural channel, to guide farmers on how to regularize their operations and implement the CAR through the Legal Supplier Program. JBS also launched Easy Map, a tool developed to help cattle farmers in the Legal Amazon area to digitally map their properties. Using this tool, it is possible to easily and quickly obtain a free map of the property, detailing the farm boundaries. Another management method to foster the availability of sustainable sourced cattle is the New Field Program, which will have its scope increased to serve 300 farms in the Alta Floresta (MT) region. In addition to the program's incentive to income and productivity increase, it includes other goals, such as local economy</p>

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									strengthening, reduced deforestation, and natural resources preservation. JBS contributes to the development of the breeders providing access to training/guidance focused on best livestock practices, bonus protocols and preparation to social and environmental oriented consumer markets.
Soy	Other: Lack of compliance to regulations	Country	The new Brazilian Forest Code demands that all rural properties, of the national territory, have to hold a CAR (Rural Environmental Registry) until December/2017 . After this deadline. JBS could be forced to buy soy from other regions in case of the establishment of a new regulation that bans crops in	Increased operational cost Increased capital cost Reduced demand for goods/service Reduction/ disruption in production capacity Reduction/ disruption of supply Reduction in capital availability	1-3 years	Direct operations and supply chain	Likely	High	JBS is attentive to the release of new state and federal regulation and closely follows up the actual legislation. JBS has a policy of only buying soy products from companies that are signatories of the Soy Moratorium. There is a requirement that suppliers must undertake social and environmental commitments, such as adopting the code of ethics and

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			determined areas of the country, resulting in the increase of production costs. Uncertainties related to the future of the Soy Moratorium are also a risk to the company's operations.	Reduced stock price (market valuation) Inability to do business					incorporating social and environmental principles in contracts. For every contract, the supplier has to sign a commitment, expressed as contract clauses or terms & conditions, to not have practices of deforestation, illegal occupation of lands and forced/slave and child labour.

F3.1c

For your selected forest risk commodities, please describe any inherent reputational risks in your direct operations or supply chain that have the potential to generate a substantive change in business operations, revenue or expenditure

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
Timber	Negative media coverage	Global	JBS is exposed to Reputational risks in a potential situation of purchasing	Increased operational cost Reduced demand for	1-3 years	Direct operations and supply chain	Likely	Medium-high	To ensure the sustainable origin of the timber used in packaging and thermic energy generation, Seara has invested on its own

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			timber from areas with illegal deforestation of native species that could adversely affect the company's image, with a large damage to its brand resulting in loss of markets, trade embargo and termination of contracts, especially in exportations to Europe and other particular markets. The side effects of these events would be a consequent revenue and profits decrease.	goods/service Reduction/ disruption in production capacity Reduction/ disruption of supply Reduction in capital availability Reduced stock price (market valuation) Inability to do business					planted forest for internal supply. To mitigate the risk of purchasing timber from suppliers involved in deforestation, JBS established a Normative Instruction of Biomass Purchasing, stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with the company. Firewood, saw wood and tree log sourced from native species must be accompanied by a Forest Origin Document, issued by the Brazilian Institute of the Environment - IBAMA, agency from the governmental Environmental Ministry. The document is a mandatory license for the control of native forestry product and sub product transportation and commercialization.
Cattle Products	Negative media coverage	Global	JBS is exposed to reputational risks due to any potential failure on its Social and	Increased operational cost Reduced demand for	1-3 years	Direct operations and supply chain	Likely	High	One of the company's effort to ensure sustainable sourced cattle - free from deforested areas origination and in

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			Environmental system, which was developed to prevent purchases of cattle from suppliers involved with native woodlands deforestation, environmental conservation units and indigenous lands invasion, rural violence and agrarian conflicts, or with the use of compulsory and child labour. A potential breakage of the commitments assumed could adversely affect the company's image, with a large damage to its brand resulting in loss of markets, trade embargo and termination of contracts, especially in	goods/service Reduction/ disruption of supply Reduction in capital availability Reduced stock price (market valuation) Inability to do business					compliance with its commitment of Zero Deforestation - was the development of the Social and Environmental Monitoring System, which is composed of two analysis mechanisms. The first verifies if farms are in the "Registry of Employers Fined for Compulsory Labour" published by the Ministry of Labour & Employment and in the list of embargoed areas due to illegal deforestation issued by IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources). The other mechanism is a geographic information system (GIS) for geo-spatial monitoring of farms located in the Legal Amazon region. It creates and overlaps digital layers of the farms geographic coordinates/geo-referenced maps (provided by the ranch manager or from the Rural Environmental Registry – CAR) and

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			<p>exportations to Europe and other particular markets. The side effects of these events would be a consequent revenue and profits decrease.</p>						<p>deforestation satellite images or geo-referenced maps from public agencies such as INPE (National Institute of Space Research). To maintain compliance with the responsible purchasing commitment, an independently audit on the Social and Environmental monitoring system is annually provided. According to the 2014, 2015 and 2016 independent audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (http://www.jbs.com.br) in second half of 2017. The company has improved its Monitoring System in a joint effort with the Departments of Sustainability, Cattle Sourcing and Information Technology, and with the support of a specialized consulting firm, considering the magnitude of transactions that occur on a daily</p>

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
									basis, representing automated analysis of more than 70 thousand supplier farms throughout Brazil. The company also performs continuous gap analysis and daily internal audit process. This was a long path to accomplish a formal recognition that the system is effective, considering that the company has experienced effects of brand damage resulting in loss of markets after the launch of the report "Slaughtering the Amazon". The report, highlighted the relationship between the processing companies and cattle suppliers involved with forest clearance and slave labour; JBS was one of the processing companies that were on the list.
Soy	Negative media coverage	Global	JBS is exposed to reputational risks in a potential situation of purchasing soy from areas with illegal	Increased operational cost Reduced demand for goods/service Reduction/	1-3 years	Direct operations and supply chain	Likely	High	There is a requirement that suppliers must undertake social and environmental commitments, such as adopting the code of ethics and incorporating

Forest risk commodity	Risk driver	Geographical scale	Description of risk	Potential impact	Timeframe	Direct operations/ supply chain	Likelihood	Magnitude of impact	Management methods
			deforestation of native species that could adversely affect the company's image, with a large damage to its brand resulting in loss of markets, trade embargo and termination of contracts, especially in exportations to Europe and other particular markets. The side effects of these events would be a consequent revenue and profits decrease.	disruption in production capacity Reduction/ disruption of supply Reduced stock price (market valuation) Inability to do business					social and environmental principles in contracts.

F3.2

If you indicated in question F3.1 that you do not consider your organization to be exposed to operational risks related to producing, marketing or sourcing any of your selected commodities, please explain why in the table below

Forest risk commodity	Primary reason for not identifying risks	Please explain
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F3.3

If you indicated in question F3.1 that you do not consider your organization to be exposed to risks related to producing, marketing or sourcing any of your selected commodities driven by changes in regulation, please explain why in the table below

Forest risk commodity	Primary reason for not identifying risks	Please explain
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F3.4

If you indicated in question F3.1 that you do not consider your organization to be exposed to reputational risks related to producing, marketing or sourcing any of your selected commodities, please explain why in the table below

Forest risk commodity	Primary reason for not identifying risks	Please explain
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Further Information

Page: F4. Opportunities

F4.1

Have you identified any opportunities related to producing, marketing or sourcing these commodities sustainably that have the potential to benefit your organization?

Forest risk commodity	Opportunities?
Timber	Yes
Cattle Products	Yes
Soy	Yes

F4.1a

Please describe the opportunities related to producing, marketing or sourcing these commodities sustainably, and your organization’s strategy to capitalize on them

Forest risk commodity	Opportunity	Scale of opportunity	Strategy to realize opportunity	Timeframe	Comment
Timber	Increased brand value	The verification of the supplier's compliance to the company's environmental and social criteria occurs in every purchase process. Besides, JBS established a partnership with the Brazilian NGO Instituto Centro de Vida (ICV) on the New Field Program (Programa Novo Campo). The program promotes more sustainable production techniques at husbandry farms in the Amazon region to enhance productivity. It fosters the diversification of income sources through cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes positively to the main issue in the Amazon region, as it indirectly reduces the need for more deforestation. With this production model adoption, there is the possibility to purchase wood derivatives from more sustainable producers.	JBS established a partnership with Instituto Centro de Vida (ICV) to develop the New Field Program. It has a strong approach on enhancing productivity through the diversification of income sources, cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes positively to the main environmental issue in the Amazon region, as it indirectly eliminates the need for more deforestation as it intensifies production in the same dimension of area. With the adherence to this production model, there is the possibility to purchase cattle and biomass from the same farm that should be more conscious of environmental and social issues through guidance provided by technicians. It started with a group of 14 farms and the goal is to have its scope increased to 300 farms. Other opportunities are focused on the reduction of timber consumption, so the company can be less exposed to this commodity deforestation risk. Packages that previously were manufactured with two pieces – the bottom and top of the box started to be made with a single piece. A result of this initiative was a reduction of 41% on the use of cardboard, what accounts for	Last 1-3 years	

Forest risk commodity	Opportunity	Scale of opportunity	Strategy to realize opportunity	Timeframe	Comment
			<p>more than 130 tonnes or 344,641 m² of the material. The company has developed a Logistics Reverse project to recover and reuse of PBR pallets used in the transport and storage of finished product. In 2011, JBS began collecting the pallets from major wholesale chains for reuse. In 2012, the company's logistics area began to restore the recovered pallets and, in 2013, the company was reusing them approximately six times. In 2016 700,000 units of pallets was restored, which is equivalent to 21,000 tonnes of reused wood. Additionally, in 2015, JBS developed a project to reduce 2 cm in the length and width pallets, remaining its support capacity. As results, there were a reduction on the timber use and an increase of products transport efficiency. JBS has also developed a project of energy reuse from bovine rumen contents generated in the slaughter of cattle, thereby reducing the need for biomass (firewood) to burn in industrial boilers.</p>		
Cattle Products	Increased brand value	<p>JBS Beef Brazil. Through the New Field Program JBS promotes more sustainable production techniques at husbandry farms in the Amazon region. It has a strong approach on enhancing productivity through the diversification of income sources, cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes positively to the main environmental issue in the Amazon region, as it indirectly eliminates the need for more deforestation as it intensifies production in the same dimension of area. It started with a group of 14 farms and the goal is to increase its scope to 300 farms. As a 2015 consolidate result of the program, there were 32 farmers and 40 farms engaged by the program, which have a complete diagnosis and project; 20 farms are</p>	<p>The New Field Program promotes more sustainable production techniques at husbandry farms in the Amazon region. It has a strong approach on enhancing productivity through the diversification of income sources, cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes to the environmental issue in the Amazon region, as it indirectly eliminates the need for more deforestation as it intensifies production in the same area. It started with a group of 14 farms and the goal is to increase its scope to 300 farms. Results in 2014:</p> <ul style="list-style-type: none"> • Intensification of the production area and an increase in productivity (through pasture reform and management); • Reduction of about 20% in the production cycle of cattle; • Increase in productivity from 4.7@ to more than 10@/hectare/ year; • Improvement in the quality of the beef; and • 	Last 1-3 years	

Forest risk commodity	Opportunity	Scale of opportunity	Strategy to realize opportunity	Timeframe	Comment
		<p>implementing the project since June/2012 or February/2015 and 20 farms are in the beginning of implementation. Production indicators are being used to measure the affectivity of the program. The follow numbers represent an average results of 6 pilot farms in the first year after GAP implementation. Results refer to the whole farm, where one 32 hectare module of intensification was installed, representing 5-10% of the total area of pastures: Reduction of methane emissions (from 353 to 180 gCH₄/KgLVW); Reduction of slaughtering age (from 44 to 34 for males and from 34 to 24 months for females); Increase in stocking density (from 1.22 to 1.61 animal units/ha); Increase in productivity (from 70 to 160 KgCW/ha/yr); Increase in gross margin (from 0-100 to 680 R\$/ha/yr).</p>	<p>Increase in income for producers. Results in 2015, in the first year after gap implementation. Results refer to the whole farm, where one 32 hectare module of intensification was installed, representing 5-10% of the total area of pastures: • Reduction of methane emissions (from 353 to 180 gCH₄/KgLVW); • Reduction of slaughtering age (from 44 to 34 for males and from 34 to 24 months for females); • Increase in stocking density (from 1.22 to 1.61 animal units/ha); • Increase in productivity (from 70 to 160 KgCW/ha/yr); • Increase in gross margin (from 0-100 to 680 R\$/ha/yr). A study of the New Field Program conducted by the Institute of Agricultural and Forest Management and Certification (Imaflora) in 2016, showed that under better conditions, the pasture offers the animal more quantity and quality of feed, The results showed that, with the program, the slaughter time decrease 30% and 20% between males and females, respectively, while meat production increased by almost 3% among males and 4% among females. Finally, it was verified that intensification techniques reduced GHG emissions by 20%, even with the additional GHG emissions through the application of pasture improvement inputs, which are offset by the reduction of enteric fermentation emissions of the animal, due to the reduction of the time of slaughter and nutritional quality. ICV webpage: http://www.icv.org.br. Audit were not performed yet, but there is a system under construction to be audit in the future'.</p>		
Soy	Increased transparency	<p>Access to new markets Quality and availability of raw material improvement Reputation Optimization of operational.</p>	<p>The Company believes that it can play an important role in preventing deforestation through responsible procurement. As part of this effort, it only purchases soybeans from suppliers that are signatories to the Soybean Moratorium, an initiative that works to</p>	Last 1-3 years	

Forest risk commodity	Opportunity	Scale of opportunity	Strategy to realize opportunity	Timeframe	Comment
			ensure no soybeans come from illegal deforestation regions in the Amazon Biome.		

F4.2

Please explain why you do not consider there to be any opportunities for your organization associated with producing, marketing or sourcing these commodities sustainably

Forest risk commodity	Primary reason for not identifying opportunities	Please explain

F4.3

Please explain why you don't know if there are any opportunities for your organization associated with producing, marketing or sourcing these commodities sustainably

Forest risk commodity	Primary reason for not knowing if there are opportunities	Please explain

Further Information

Module: Measure & Monitor

Page: F5. Measurement

F5.1

Do you own or manage land used for the production of any of your selected commodities? Please complete the table

Forest risk commodity	Own and/or manage land?	Size (Hectares)	Type of control	System in place to monitor deforestation?	Recent infractions?	Please explain
Timber	Own and manage land	1,000-5,000	Operational	Yes	No	JBS has areas of planted forests – 225 hectares - managed in accordance with good farming practices, to supply its industrial boilers. Moreover, periodic verifications are performed in planted areas and environmental protected areas (APP – Permanent Preservation Áreas and Legal Reserves)
Cattle Products	Don't own or manage land	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Soy	Don't own or manage land	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

F5.2

Does your organization collect production and/or consumption data for your selected commodities?

Forest risk commodity	Production and/or consumption data available?
Timber	Consumption data available, disclosing
Cattle Products	Consumption data available, disclosing
Soy	Consumption data available, disclosing

F5.2a

Please disclose your production and/or consumption data using the table below

Forest risk commodity	Production/ consumption data	Volume	Metric	Full/Partial data?	If partial data, please explain
Timber	Consumption data	16386450	Other: Giga Joule (GJ)	Full commodity production/consumption	
Cattle Products	Consumption data	17.3	Other: million heads of cattle	Full commodity production/consumption	
Soy	Consumption data	1711543	Other: tons of soy bran, soybean and whole grain soy	Full commodity production/consumption	

F5.3

Please explain why your organization is not disclosing production and/or consumption data for your selected commodities

Forest risk commodity	Primary reason for not disclosing production/consumption data	Please explain

F5.4

Please explain why production and/or consumption data is not available for your selected commodities

Forest risk commodity	Primary reason for not having production/consumption data	Please explain

Further Information

Page: F6. Traceability

F6.1

Do you have a system in place to track and monitor the origin of raw materials for your selected commodities?

Forest risk commodity	System to track and monitor origin of raw materials?
Timber	Yes
Cattle Products	Yes
Soy	Yes

F6.1a

Please describe the system you have in place to track and monitor the origin of raw materials for your selected commodities

Forest risk commodity	System	System coverage	If partial, % of total production/consumption tracked/monitored	Please explain
Timber	<p>100% of timber suppliers have to present the Forest Origin Document, which is a mandatory license established by the Ministry of the Environment (MMA) for the control of native forestry product and sub product transportation and commercialization. It presents information on the origin, destiny, quantity and purpose of transportation. When biomass is sourced from native species, a Forest Origin Document must accompany as well. Furthermore, before conducting the registration of biomass supplier, an environmental and social analysis must be performed based on IBAMA (Brazilian Environment and Natural Resources Institute) and MTE (Ministry of Labour) public dirty lists that shows respectively, legal persons and entities with embargoed areas due to illegal deforestation/inappropriate land use and that are involved in slave labour. Normative Instruction of Biomass Purchasing, which defines criteria and responsibilities for the purchase of fuel and biomass. Establishing that JBS only acquire biomass legalized by competent environmental authorities as IBAMA and other state. According to Internal Normative Instruction, there are some mechanisms to guarantee traceability and monitoring of biomass purchases, for example: - The purchase request must be made only through ERP (Enterprise Resource Planning) System; - Before providing any goods, all suppliers must be registered in the ERP; - To request the supplier register, the unit must check its social and environmental situation in the IBAMA and MTE public dirty lists; - Only biomass registered in the ERP must be received. Thus, JBS will not get biomass suppliers that use child labour, slave labour or, subcontracted workers</p>	Full		

Forest risk commodity	System	System coverage	If partial, % of total production/consumption tracked/monitored	Please explain
Cattle Products	<p>JBS has a system for social and environmental monitoring of cattle suppliers, which is composed of 2 analysis processes that work in an integrated way. One works on a daily download of public agencies IBAMA and MTE dirty lists and a crosschecking of suppliers taxpayer numbers database against them. Suppliers that appear on the lists are automatically blocked in the Enterprise Resource Planning System (ERP) and no purchasing operations can be completed. The second process is run by a system that analyses cattle farms in the Brazilian Legal Amazon based on geographical information. It performs by daily geo monitoring through the digital overlay of georeferenced maps of cattle supplier properties and deforestation maps published by National Space Research Institute (INPE) combined with official data from National Indigenous Foundation (FUNAI) and National Conservation Units System (SNUC). To stay in comply with the responsible purchasing commitment, an independently audit on the Social and Environmental monitoring system is annually provided, and the results are published on JBS's website, ensuring the total transparency of its actions. According to the 2014, 2015 and 2016 independent audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (http://www.jbs.com.br) in second half of 2017. Animal Transportation Form (GTA) is the official governmental document for animal transportation in Brazil that contains information on the origin, destiny, breed, quantity, gender, age, sanitary conditions and the transportation purpose. When a supplier delivers its cattle to a beef facility, the invoice must be submitted with the GTA. Both documents must be analysed by the monitoring system and contain the same data of cattle origin. In case of any inconsistency, the operation and payment won't be concluded and the cattle will be returned, what ensures that the purchased herds are not related to deforesting practices; QR-Code System, which allows consumers to know the origin of the product consumed from the farm supplier to the processing facility. This program is called "Trust since the origin" and enables consumers go to a supermarket, select any piece from JBS's fresh beef line and use a smartphone to look up data regarding the origin of the product.</p>	Full		
Soy	<p>JBS only purchases soy from suppliers that follows/meets the Soy Moratorium. The purchase from large suppliers that are part of the Brazilian Association of Vegetable Oils Industries (ABIOVE) and Brazilian National Association of Cereal Exporters (ANEC) guarantees that the commodity complies with the criteria established in the Soy Moratorium. In 2016, the Soy Moratorium was renovated for undetermined period.</p>	Full		

Please explain why you do not have a system in place to track and monitor the origin of raw materials for your selected commodities

Forest risk commodity	Primary reason for not having a system in place	Please explain
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F6.3

Please provide details on the level of traceability your organization has for your selected commodities

Forest risk commodity	% of total production/consumption traceable	Traceability system	Point to which traceable	Exclusions	Exclusion description, if applicable	Comment
Timber	100%	JBS has information of its commodities supply chain location. This information can be generated by the company's ERP (Enterprise Resource Planning System), which has the records of all suppliers including legal person/entity taxpayer's numbers and location. All procurement invoices come with information of the product origin.	Region	Not applicable		
Cattle Products	100%	JBS has information of its cattle suppliers in the company's ERP (Enterprise Resource Planning System), which has the records of all suppliers including legal person/entity tax payer's numbers and location. Another traceability mechanism is the System for Social and Environmental Monitoring of Cattle Suppliers. This system uses satellite images, farms georeferenced maps, deforestation data from the National Institute for Space Research (INPE) and official public agencies dirty lists of embargoed areas and person/entities involved in slave labor to identify and block supplier farms showing any non-compliance related to deforesting or slave labor. To perform geospatial analysis of Amazon biome cattle suppliers and identify if they are using deforested lands after 2009, JBS has a database of the farms maps that are transposed to a technological system based on geographic information (GIS). The system performs daily monitoring through overlaying of farms georeferenced maps against maps of deforestation areas trends published by INPE. In addition, official maps of indigenous lands and protected areas in the Legal Amazon region are also used.	Farm	Not applicable		

Forest risk commodity	% of total production/ consumption traceable	Traceability system	Point to which traceable	Exclusions	Exclusion description, if applicable	Comment
Soy	100%	JBS has information of its commodities supply chain location. This information can be generated by the company's ERP (Enterprise Resource Planning System), which has the records of all suppliers including legal person/entity tax payer's numbers and location. All procurement invoices come with information of the product origin.	Region	Not applicable		

F6.3a

Please describe your organization's approach to establishing traceability

Timber: As for other materials and suppliers, the company works with a formal procurement process for all regions, in which 100% of purchased materials are registered, as well as the respective suppliers' database, such as taxpayer number and location of the product's origin. Additionally the suppliers' names are checked against information from the public lists of embargoed areas by IBAMA - by illegal deforestation – and employers who used work practices that are degrading or analogous to slavery, according the Ministry of labor (MTE).

Cattle Products: To guarantee sustainable sources for raw material used in production, JBS relies on a System for Social and Environmental Monitoring of Cattle Suppliers. The system uses satellite images, farms georeferenced maps and deforestation data from the National Space Research Institute (INPE) to identify any suppliers' farms that appear in deforested areas. It also compares suppliers' database against official public agencies dirty lists (embargoed areas and slave labour involved person/entities) to block non-compliant farms. Currently there is full traceability of direct cattle suppliers, as shown by the Third Party Audit on JBS' cattle purchase procedures and data, which is conducted annually. As described in the Audit Report, the engagement included the evaluation of the compliance to deforesting, slave work, indigenous and protected areas invasion criteria established in the Greenpeace Commitment. The audit reports have been conducted since 2009 and have been released to JBS stakeholders annually since 2014.. According to the 2014, 2015 and 2016 independent audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (<http://www.jbs.com.br>) in second half of 2017.

Despite this high level of compliance, the company remains committed to continuously improve performance.

For the indirect cattle suppliers, the company do not have full traceability since the company does not have access to the Animal Transit Form (GTA) for its indirect suppliers - which is only made available to the government. The government alone is responsible for controlling animal transportation.

Moreover, JBS is involved in a partnership with the Federal Public Prosecution Office (MPF) and the Ministry of Agriculture (MAPA) for the implementation of a new mandatory procedure for the issuance of a Green Animal Transit Form (GTA) by MAPA. The company also has a system for identifying QR-Code on all labels of fresh beef, which allows consumers to know the origin of the product consumed - from the farm supplier of cattle to the processing facility. This program is called "Trust since the origin" and in first instance was created due to quality and sanitary requirements. More information about the System for Social and Environmental Monitoring of Cattle Suppliers and the audit report can be found at: http://www.jbs.com.br/en/media_center/press_releases/audit-confirms-jbs-commitment-reducing-amazon-deforestation.

Another resource to establish traceability by JBS is the TAC Amazon, which was signed in 2009 and renovated in 2013 by the company. This agreement standardizes the obligations to be met by all JBS refrigeration units in the Amazon region, renewing the commitment of one of the largest processors of animal

protein in the world in requiring their suppliers to comply with legal and socio-environmental criteria as a prerequisite for the purchase of animals for slaughter.

Soy: JBS only acquire soy from companies which are signatory of the Soy Moratorium, an initiative launched by ABIOVE (Brazilian Association of Vegetable Oil Industries) and ANEC (Brazilian Nacional Association of Cereal Exporters), operationalized by the GTS (Soy Working Group), entity formed by rural producers and national and international NGOs. By this agreement, participants commit not to purchase soy produced in land deforested after 2006, including direct and indirect soy suppliers.

Further Information

Module: Response

Page: F7. Governance and strategy

F7.1

Please indicate where the highest level of direct responsibility for deforestation risk lies within your organization and detail the frequency and nature of engagement on the issue

Highest level of responsibility	Name/position of individual or name of committee	Frequency of briefing	Nature of engagement
Board or individual/sub-set of the Board or committee appointed by the Board	Board of Directors; - Sustainability Committee	Bi-annually	JBS has five multidisciplinary non-statutory committees working with the company's management in order to support the Board of Directors and make the company's processes more robust. One of these committees is the Sustainability Committee, responsible for dealing with and connecting all topics related to the company's business in a global perspective. This role include the identification, addressing and treatment of critical issues that result in risks or business impact; monitoring and implementation of policies, strategies and specific initiatives; and evaluation of proposals of investments in sustainability. It is composed by six members from the company's top management, including the CEO and vice-president of the Board of Directors : -President: João Carlos Ferraz -Members: Wesley Mendonça Batista; Francisco de Assis e Silva; Renato Mauro de Menezes Costa,Miguel Gularte; e Eneas Pestana. Among the responsibilities of the Sustainability Committee, there is the monitoring of the results of the procurement system. The Board of Directors is composed by the following members from the company's top management: -Chairman of the Board: Joesley Mendonça Batista; -Vice Chairman of the Board: Wesley Mendonça

Highest level of responsibility	Name/position of individual or name of committee	Frequency of briefing	Nature of engagement
			Batista; -Board Members: José Batista Sobrinho, Humberto Junqueira de Farias, João Carlos Ferraz, and Tarek Mohamed Noshy Nasr Mohamed Farahat. -Independent Board Members: Carlos Alberto Caser; and Marcio Percival Alves Pinto. It is informed the composition of the Board of Directors and Sustainability Committee in force on December 31, 2017.

F7.2

Have you evaluated how the availability or quality of forest risk commodities could affect your organization's growth strategy?

Yes, evaluated over the next 5 years

F7.2a

Please explain how you evaluated the effects of the availability or quality of forest risk commodities on the success (viability, constraints) of your organization's growth strategy

The Quality Beacon is a virtual tool for monitoring the quality of the raw materials provided by suppliers. This tool is made available to cattle suppliers with an individual login and password that allows them to access the tool through the company's website. It aims to strengthen the relationship and provide transparency, and the result of the Quality Beacon is a simple feedback report about the quality of the raw materials provided, and the parameters to be met. In Brazil, 100% of the animals processed are classified based on their gender, maturity, weight and fat content. Using these parameters, JBS has built a template linking each beef carcass profile to the colors green, yellow and red, corresponding to a quality spotlight.

This feedback aims to stimulate better controls over the quality of the raw material produced by suppliers, orienting the producer so that they can aim for ongoing improvements, thereby improving the quality of the products offered by JBS to its clients.

For social and environmental criteria JBS has a detailed historical for approved and blocked suppliers, for each location (industrial unit).

This data allows JBS to monitor feedstock quality and social/environmental risk assigned, as well as to estimate future projection for determined country areas.

F7.3

Please explain why you have not evaluated how the availability or quality of forest risk commodities could affect the success (viability, constraints) of your organization's growth strategy

Primary reason for not evaluating potential impact on growth strategy	Please explain
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Further Information

Page: F8. Policies

F8.1

Does your organization have a policy that recognizes the role of reducing deforestation for climate change mitigation and sets out clear goals and guidelines for action?

Policy	Please explain
Other: Mechanisms and actions	<p>The following mechanisms are not considered policies, but, they are important JBS's actions to reduce deforestation: JBS has made a public social commitment to not purchase cattle from ranches responsible for deforestation in the Amazon Biome region after October 2009, use labour analogous to slavery, trespass indigenous lands or environmental conservation areas limits. The public agreement that establishes criteria for cattle purchases from properties located in the Amazon Biome region is available for public consulting at http://www.jbsglobal.com/media_center/press_releases/audit-confirms-jbs-commitment-reducing-amazon-deforestation. To ensure that raw materials are sourced by responsible suppliers, JBS has developed a system for social and environmental monitoring of cattle suppliers. The monitoring system is comprised of two analysis procedures, which work together. The first involves geospatial monitoring of the suppliers properties in the Legal Amazon area. The second performs the intersection of the registration data of the Company's cattle suppliers with the information from the public lists of areas embargoed by IBAMA - by illegal deforestation – and employers who used work practices that are degrading or analogous to slavery, according the Ministry of Labour (MTE), covering the entire Brazilian territory. At December 31, 2016, there were about 74,500 farms supply of cattle registered in the trading system of JBS in Brazil. As result of social and environmental system analyses, 5,799 suppliers were blocked: • 3,767 for native deforestation from October 2009, invasion of indigenous lands or environmental conservation units. • 1,951 for be included in the embargoed Areas of IBAMA list; • 81 for be included in the analogous to slavery list. As a good practice example JBS was positively mentioned in a recently study prepared for Greenpeace, available in (http://carneaomolhomadeira.org.br/). The study mentioned JBS as one of the three biggest Brazilian frigorific companies which has been complying with the public commitment, reporting independent audit results regarding its purchase monitoring system and how its actions has been changing the market in a positive way. JBS was recognized by the Consumer Goods Forum for it progress and Sustainability performance in the last year, mainly for the results regarding social and environmental suppliers.</p>

F8.2

Has your organization made a commitment to reduce or remove deforestation and forest degradation from your direct operations and/or supply chain?

Yes

F8.2a

Please identify which of the following criteria are specifically stated in your organization’s commitment to reduce or remove deforestation and forest degradation from your direct operations and/or supply chain

Criteria	Commodity coverage	Operational coverage	% of total production/ consumption covered by commitment	Commitment timeframe	Please explain
Zero deforestation and forest degradation Avoidance of land area under conservation Other: IBAMA (Brazilian Environment and Natural Resources Institute); Slave labor, Invasion of indigenous lands and soy moratorium	Cattle Products Soy	Supply chain	100%	2016	In 2009, JBS made a public commitment to not purchase cattle from ranches responsible for deforestation of the Amazon Biome region after Oct 2009. To ensure compliance, in 2010 JBS began to develop a social and environmental monitoring system for the farms that supply livestock to the company. JBS's social and environmental monitoring system for cattle suppliers is composed of 2 integrated mechanisms of analysis. The first verifies the existence of the farm or livestock supplier in the lists published by the Ministry of Labour and Employment (MTE) – Registry of Employers Fined for Compulsory Labour and the list of areas embargoed due to illegal deforestation published by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA). The second one uses a geographic information system (GIS) for the geo-spatial monitoring of farms supplying the company with livestock located in the Legal Amazon region, in order to identify suppliers involved in the deforestation of native forests after Oct 2009, the invasion of indigenous lands or environmental conservation units. To comply with the commitment, the System for livestock supplier farms is audited annually, and

Criteria	Commodity coverage	Operational coverage	% of total production/ consumption covered by commitment	Commitment timeframe	Please explain
					<p>the results are published on JBS's website. JBS has improved its Monitoring System in a joint effort with the Departments of Sustainability, Cattle Sourcing and Information Technology, and with the support of a specialized consulting firm, considering the magnitude of transactions that occur on a daily basis, representing automated analysis of more than 70.000 farms. In Brazil. JBS only purchases soy from suppliers that follows the Soy Moratorium. In July 2006, the Brazilian Association of Vegetable Oils Industries - ABIOVE and the Brazilian Association of Cereal Exporters - ANEC pledged not to market or finance the soybeans produced in areas that were deforested in the Amazon Biome after that date. The Moratorium responded to the questioning of environmental groups and clients from Brazil abroad that started to promote arrangements to generate new sustainable rules for the cultivation and commercialization of soybeans. The monitoring of the Soy Moratorium produced evidence that the soy have a negligible participation in the deforestation that occurred after July 2006 and that the expansion of the Brazilian soybean is not an important vector of deforestation in the Amazon Biome.</p>

F8.3

Please explain why your organization has not made a commitment to reduce or remove deforestation and forest degradation from your direct operations and/or supply chain, and whether you plan to do this in the future

Primary reason for not having made a commitment	Do you plan to introduce a commitment?	Please explain

Do you have commodity specific sustainability policies?

Forest risk commodity	Commodity specific sustainability policies?	Criteria	Cut-off date, if applicable	Please explain
Timber	No	Avoidance of land area under conservation Other: IBAMA (Brazilian Environment and Natural Resources Institute); Slave labour; Invasion of indigenous lands	2009	The company has a Normative Instruction of Biomass Purchasing stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with JBS. Moreover, before conducting the registration of biomass supplier, an environmental and social analysis must be performed based on IBAMA (Brazilian Environment and Natural Resources Institute) and MTE (Ministry of Labour) public dirty lists that shows respectively, legal persons and entities with embargoed areas due to illegal deforestation/inappropriate land use and that are involved in slave labour.
Cattle Products	No	Zero deforestation and forest degradation Avoidance of land area under conservation Other: IBAMA (Brazilian Environment and Natural Resources Institute); Slave labor; Invasion of indigenous lands.	2009	Social and environmental criteria have been established for cattle purchase. Thus, the JBS has made public commitments of livestock operations to not purchase cattle from ranches responsible for deforestation in the Amazon Biome region after October 2009, as well as those that use labour analogous to slavery or that trespass indigenous lands or environmental conservation areas limits. The public agreement that establishes criteria for cattle purchases from properties located in the Amazon Biome region is available for public consulting at http://www.jbsglobal.com/media_center/press_releases/audit-confirms-jbs-commitment-reducing-amazon-deforestation . To ensure that raw materials are sourced by responsible suppliers, JBS has developed a system for social and environmental monitoring of cattle suppliers. The monitoring system is comprised of two analysis procedures, which work together. The first involves geospatial monitoring of the suppliers properties in the Legal Amazon area. The second performs the intersection of the registration data of the Company's cattle suppliers with the information from the public lists of areas embargoed by IBAMA - by illegal deforestation – and employers who used work practices that are degrading or analogous to slavery, according to the Ministry of Labour (MTE), covering the entire Brazilian territory. At December 31, 2016, there were about 74,500 farms supply of cattle registered in the trading system of JBS in Brazil. As result of social and environmental system analyses, 5,799 suppliers were blocked: • 3,767 for native deforestation from October 2009, invasion of indigenous lands or environmental conservation units. • 1,951 for be included in the embargoed Areas of IBAMA list; • 81 for be included in the analogous to

Forest risk commodity	Commodity specific sustainability policies?	Criteria	Cut-off date, if applicable	Please explain
				slavery list.As a good practice example, JBS was positively mentioned in a recently study prepared for Greenpeace, available in (http://carneaomolhomadeira.org.br/).The study mentioned JBS as one of the three biggest Brazilian frigorific companies which has been complying with the public commitment, reporting independent audit results regarding its purchase monitoring system and how its actions has been changing the market in a positive way.JBS was recognized by the Consumer Goods Forum for it progress and Sustainability performance in the last year, mainly for the results regarding social and environmental suppliers
Soy	No	Zero deforestation and forest degradation Avoidance of land area under conservation Other: IBAMA (Brazilian Environment and Natural Resources Institute); Slave labor; Invasion of indigenous lands	2006	JBS only purchases soy from suppliers that follows/meets the Soy Moratorium. The purchase from large suppliers that are part of the Brazilian Association of Vegetable Oils Industries (ABIOVE) and Brazilian National Association of Cereal Exporters (ANEC) guarantees that the commodity complies with the criteria established in the Soy Moratorium. This criterion ensure that no soybeans come from illegal deforestation regions in the Amazon Biome. In 2016, the commitment was again extended for undetermined period or, as the renewal term, until it is no longer needed.

Further Information

Page: F9. Standards and targets

F9.1

Do you have any environmental standards for the production of raw materials for your selected commodities, other than third party certification schemes?

Forest risk commodity	Production standards in place?	Please describe your production standards	Comment
Timber	Yes	The company has a Normative Instruction of Biomass Purchasing stating that only suppliers legalized by the competent environmental authorities are able to negotiate materials with JBS – 100% of the JBS timber suppliers are in comply with environmental standards. Moreover, before conducting the registration of biomass supplier, an environmental and social analysis must be performed based on IBAMA (Brazilian Environment and Natural Resources Institute) and MTE (Ministry of Labour) public dirty lists that show respectively, legal persons and entities with embargoed areas due to illegal deforestation/inappropriate land use and that are involved in slave labour. All environmental management of the biomass purchasing process is a responsibility of the environmental department of each operational unit. This includes management of the requirements Native Forest Consumer Registration and Forest Origin Document or other specific state requirement. JBS is one of the largest consumers of paper/cardboard in Brazil, as it uses the material to produce the packaging for its products. 100% of the paper/cardboard acquired has FSC certification, which is part of the selection criteria for suppliers of this material.	
Cattle Products	Yes	According to JBS sustainability pillar of responsible purchase, Cattle suppliers included on the dirty lists published by the Ministry of Labour and IBAMA, and those whose land overlaps deforested areas, indigenous land or protected areas will be suspended by the company procurement system until they have remedied this situation. JBS Standards of cattle purchasing are expressed in the document “Minimum Criteria for Industrial – Scale Operations with Cattle and Beef Products in the Amazon Biome”, which states that the company must not acquire cattle from areas with illegal deforestation, cleared after 2009 in the Amazon Biome and located within protected areas. To make sure that suppliers are complying with these standards, there is a System for Social and Environmental Monitoring of Cattle Suppliers that works on geospatial analysis based on satellite images, farms georeferenced maps and deforestation data from the National Space Research Institute for -INPE. To ensure compliance with the JBS’s commitments, an independent party annually audits the System. According to the 2014, 2015 and 2016 independent audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS’s official website (http://www.jbs.com.br) in second half of 2017. Along the supply chain, JBS supports projects such as the New Field Program, which promotes sustainable practices to increase the productivity of farms in the Amazon region in order to develop a new operating model that preserves natural resources and that brings financial benefits to the ranchers in the region. The goal of the program is to increase its scope to serve 300 farms in the Alta Floresta (MT) region. Note that in addition to the ongoing encouragement of increases in income and productivity, this includes other objectives, such as the strengthening of the local economy, reduced deforestation, and the recovery and preservation of natural resources. JBS has been contributing to the development of differentiated bonus protocols, the opening of markets for products with social and environmental attributes, as well as support for training, earnings disclosure and fundraising for ongoing efforts.	
Soy	Yes	The company only purchases soy from suppliers that signed the Soy Moratorium. Thus, 100% of JBS soy suppliers are in compliance with Soy Moratorium criteria.	

Does your organization enforce any procurement standards that impact your sourcing of forest risk commodities?

Forest risk commodity	Procurement standards in place?	Monitor compliance?	Impact on sourcing activities	Please explain
Timber	Yes	Yes	Factored into supplier selection process	An important requirement from JBS to its suppliers is the Forest Origin Document, which is a mandatory license for the control of native forestry product and sub product transportation and commercialization. It presents information on the origin, destiny, quantity and purpose of transportation. When biomass is sourced from native species, it must be accompanied by a Forest Origin Document. Furthermore, before conducting the registration of biomass supplier, an environmental and social analysis must be performed based on IBAMA and Ministry of labor (MTE) public dirty lists that shows respectively, legal persons and entities with embargoed areas due to illegal deforestation/inappropriate land use and that are involved in slave labor. Thus, 100% purchase suppliers and criteria are evaluated according to normative Instruction for buying biomass.
Cattle Products	Yes	Yes	Factored into supplier selection process Impact on supplier engagement strategy	JBS has made a public and social commitment to not purchase cattle from ranches that are responsible for deforestation inside the Amazon Biome region after Oct 2009, as well as those that use labour analogous to slavery or that are located in indigenous lands or environmental conservation areas. The public agreement that establishes criteria for cattle purchases from properties located in the Amazon Biome region is entitled “Minimum Criteria for Industrial-Scale Operations with Cattle and Beef Products in the Amazon Biome” To comply with the commitment, JBS has developed a monitoring system, which is comprised of 2 analysis procedures. One involves a geospatial monitoring that performs the digital overlay of georeferenced cattle farms maps across official data of deforestation, including protected areas maps, such environmental conservation units and indigenous lands. The second performs the intersection of the registration data of the Company's cattle suppliers with the information from the public lists of areas embargoed by IBAMA - by illegal deforestation – and employers who used work practices that are degrading or analogous to slavery, according the Ministry of labour (MTE). An Independent audit is annually provided on the system basis, the results are available on JBS's website. According to the 2014, 2015 and 2016 audit results, the compliance level was 99.75%, 99, 97% and 99.97% respectively. The 2017 audit results will be available on the JBS's official website (http://www.jbs.com.br) in second half of 2017. In addition, JBS has at least one pair of geographic coordinates of the supplier properties with which the company negotiated in 2014. It is important to mention that the JBS has made every effort to increase the number of suppliers that have digital maps of their properties. A highlight of these efforts is the Company's recent initiative called “Easy Map”, a tool developed by JBS, which will give every cattle supplier of the Company that does not have a digital map of the property, the opportunity to develop one, free of charge, at any of the JBS slaughterhouse units in the Brazilian Legal Amazon region. JBS also manage the Legal

Forest risk commodity	Procurement standards in place?	Monitor compliance?	Impact on sourcing activities	Please explain
				Supplier Program, which helps JBS suppliers to regularize their CAR (Rural Environmental Registry). Through this program, JBS hires specialized consultants to advise its suppliers on the regularization process.
Soy	Yes	Yes	Factored into supplier selection process	JBS only purchases soy from suppliers that are signatories of the Soybean Moratorium, an initiative that works to ensure that no soybeans come from illegal deforestation regions in the Amazon Biome. Thus, 100% purchase suppliers and criteria are evaluated according to Soy Moratorium criteria.

F9.3

Are you involved in any multi-partnership or stakeholder initiatives relating to the sustainability of these commodities? Please describe your role

Forest risk commodity	Involved in initiatives?	Initiatives	Please explain
Timber	Yes	Other: Best of sustainable suppliers – Mc Donald's; KFC	In 2017, JBS joined the CDP Supply Chain Forests pilot project, in which the company is a founding member of the initiative in Brazil. Through the SC Forests questionnaire, it will be possible to engage suppliers to share their initiatives and to encourage the establishment of new policies. Moreover, JBS has identified and developed projects that aim to minimize environmental impacts and thus offer more sustainable products to its customers and consumers. Examples of these projects are cases awarded, as the "Best of Sustainable Supply 2014 - Mc Donald's". JBS was the big winner in two categories of "Best of Sustainable Supply 2014", a global award from the McDonald's chain for suppliers who apply standout sustainability solutions as part of their production processes. The company won the "Climate Change and Energy" category, presenting a case study of bovine rumen content reused as fuel in industrial boilers. This is a type of waste that is generated by cattle processing units and with its use for energy generation, the demand for timber and fossil fuels will decrease, with positive impacts on both deforestation and greenhouse gas emissions reduction. This initiative generated major production process efficiency gains in Brazil, helping to

Forest risk commodity	Involved in initiatives?	Initiatives	Please explain
			<p>further increase sustainability of the company's products. Additionally Seara reuses the poultry fat waste separated by its wastewater treatment process to generate energy. By burning this waste in boilers, it substitutes the use of timber and fossil fuels, reducing the risk of acquiring deforestation risk commodities, cutting down the consumption of natural resources and declining the disposal of the fat as waste, while also reducing by 98% its greenhouse gas emissions associated with steam generation. For this initiative, the Company received the International Sustainability Award from the U.S. restaurant chain KFC, which recognizes its suppliers around the world that have implemented innovative sustainability projects.</p>
Cattle Products	Yes	<p>Leather Working Group (LWG) Global Roundtable for Sustainable Beef (GRSB) Brazilian Roundtable on Sustainable Livestock (GTPS) Other: IBAMA Working Group; ANUGA Fair Public Ministry of Pará; GHG Protocol Agriculture Contance; JBS' purchase process audit - Audit processes to evaluate public commitments to responsible cattle purchases in the Amazon biome (Greenpeace).</p>	<p>JBS is a founding member and acts on the Board of Directors and Executive Committee of the Global Roundtable for Sustainable Beef (GRSB), a multi-stakeholder initiative for sustainable beef production. It is also a member of the Working Group (WG) on Sustainable Beef (GTPS) and of the Leather WG and Technical Sub-Group and Trader WG. JBS works through ABIEC - Brazilian Beef Exporters Association, the sector of grains (ABIOVE) in the IBAMA WG (Brazilian Institute of the Environment) to improve the public list of illegal deforestation and embargoed areas. A project in partnership with the ABIEC, the Ministry of Agriculture (MAPA) and with the Public Prosecution Office aims to implement a new mandatory procedure for the issuance of a Green Animal Transit Form (GTA) by MAPA. The proposal is block the issuance of the GTA if the farm is in the public list of areas embargoed by IBAMA preventing the entry of animals from farms that have deforested in the national cattle trading market. The company reports GHG emissions data and information on climate change management strategy, such as the GHG Protocol Brazil, CDP Climate Change, and the Carbon Efficient Index (ICO2) of BM&FBOVESPA. Besides JBS has participated in the Scope 3 Technical WG of the Brazilian GHG Protocol Program, and in the WG of the Agriculture GHG Protocol. JBS's participation in the CDP comprises Forest, Climate Change, Water and Supply Chain modules, In 2016, JBS joined the Applied Life Cycle (CiViA) initiative of the Getúlio Vargas Foundation's Center for Sustainability Studies (FGV), with the objective of quantify and manage the environmental impacts of products and services through the life cycle. 2 pilot projects were developed, considering the carbon emissions and water consumption of all stages of production until the use and disposal of the final consumer. These projects have allowed the company a new look at the product, identifying the most representative</p>

Forest risk commodity	Involved in initiatives?	Initiatives	Please explain
			production phases of environmental impacts and the related opportunities. In 2017, JBS joined the CDP Supply Chain Forests pilot project, in which the company is a founding member of the initiative in Brazil. Through the SC Forests questionnaire, it will be possible to engage suppliers to share their initiatives and to encourage the establishment of new policies.
Soy	Yes	Other: Working Group IBAMA	JBS worked with IBAMA (Brazilian Institute of the Environment), and ABIOVE (Brazilian Association of Vegetable Oil Industries) to improve IBAMA's public list of illegal deforestation and embargoed areas. The GT-IBAMA (IBAMA Working Group) was created, in order to propose solutions to operational improvements related to IBAMA's public list of areas embargoed areas. This partnership of the productive sector and IBAMA technicians has led to continuous improvement of the embargoed areas list as a query tool for companies that establish environmental criteria for their suppliers.

F9.4

Do you specify any third party certification schemes for your selected commodities? Please indicate the percentage of total production and/or consumption currently certified

Forest Risk Commodity	Specify third party certification schemes?	% of total production/ consumption certified	Certification scheme breakdown	Please explain
Timber	FSC	100%	FSC Chain of Custody	JBS purchase cardboard (used in packaging) and paper in general (office use) only from certified suppliers by FSC (Forest Stewardship Council) in the form Chain of Custody. The use of cardboard in JBS operations is significant, since the products are stored and sold in secondary packaging made of it. JBS purchase pallets PBR (Brazilian pallet pattern) certified by ABRAS (Brazilian Association of Supermarkets).
Cattle Products	Other: Leather Working Group (LWG)	91-99%	Other: Leather Working Group (LWG) Silver	The company has 17 certified units, 15 of them with gold medals and two with silver medals, all with "A" marks in traceability. The production of these certified units represent 95% of the JBS leather.

Forest Risk Commodity	Specify third party certification schemes?	% of total production/ consumption/ certified	Certification scheme breakdown	Please explain
			standard	
Soy	Other: Soy Moratorium FGV/GVces	100%	RTRS Chain of Custody	The company only purchases soy from suppliers that signed the Soy Moratorium. In 2016, JBS joined the Applied Life Cycle (CiViA) initiative of the Getúlio Vargas Foundation's Center for Sustainability Studies (FGV), with the objective of incorporating the quantification and management of the environmental impacts of products and services through the life cycle. Two pilot projects were developed (PicanhaMaturattaFriboi and chicken from Seara), considering the carbon emissions and water consumption of all stages of production until the use and disposal of the final consumer. These projects have allowed the company a new look at the product, identifying the most representative production phases of environmental impacts and the related opportunities. Deforestation may be directly related to the carbon footprint of the products, since deforestation for livestock production or soybean production (cattle and poultry feed) may represent a large share of the emissions from land use change.

F9.5

Do you have any quantified targets for third party certified materials in your direct operations and/or supply chains?

Forest risk commodity	Quantified targets for third party certification?	Certification scheme breakdown	Baseline year	Target year	Coverage	% of materials third party certified in target year	Please explain
Timber	FSC	FSC Chain of Custody	2015	2016	Supply chain	100%	JBS is one of the largest consumers of paper/cardboard in Brazil, as it uses the material to produce the packaging for its products. 100% of the paper/cardboard acquired has FSC certification,

Forest risk commodity	Quantified targets for third party certification?	Certification scheme breakdown	Baseline year	Target year	Coverage	% of materials third party certified in target year	Please explain
							which is part of the selection criteria for suppliers of this material.
Cattle Products	Other: Leather Working Group (LWG)	Other: Leather Working Group (LWG) Gold standard	2014	2016	Direct operations	91-99%	The company has 17 certified units, 15 of them with gold medals and two with silver medals, all with "A" marks in traceability. The production of these certified units represent 95% of the JBS leather.
Soy	Other: Soy Moratorium	Other: Soy Moratorium	2014	2016	Supply chain	100%	The company only purchases soy from suppliers that signed the Soy Moratorium.

F9.6

Do you have any quantified targets for sustainable production and/or procurement, other than third party certification?

Forest risk commodity	Quantified targets for sustainable production/ procurement?	Type of target	Baseline year	Target year	Coverage	% of materials to meet requirements in target year	Please explain
Timber	Yes	Sustainable procurement	2015	2016	Supply chain	100%	JBS has a target to 100% of timber purchases comply with the criteria established in JBS Environmental Policy.
Cattle Products	Yes	Sustainable production	2015	2016	Direct operations	100%	JBS has a target to 100% of cattle products purchases comply with the criteria established in JBS Environmental Policy. Additionally, JBS has made a public social commitment to not purchase cattle from farms responsible for deforestation in the Amazon Biome region after October 2009. To ensure compliance with this commitment, in 2010

Forest risk commodity	Quantified targets for sustainable production/ procurement?	Type of target	Baseline year	Target year	Coverage	% of materials to meet requirements in target year	Please explain
							JBS developed a social and environmental monitoring system for farms that supply livestock to JBS. It works in an integrated way. The first one works on a daily download of public agencies IBAMA and MTE dirty lists and a crosschecking of suppliers taxpayer numbers database against them. The second process analyses cattle farms in the Brazilian Legal Amazon based on geographical information. It performs by daily geo monitoring through the digital overlay of georeferenced maps of cattle supplier properties and deforestation maps published by National Space Research Institute (INPE) combined with official data from National Indigenous Foundation (FUNAI) and National Conservation Units System (SNUC). The suppliers, which aren't in comply with one or both process, are automatically blocked in the Enterprise Resource Planning System (ERP) and no purchasing operations are made.
Soy	Yes	Sustainable production	2015	2016	Supply chain	100%	JBS has a target to 100% of soybean purchases comply with the criteria established in JBS Environmental Policy. Additionally, JBS only purchases soybeans from suppliers that are signatories to the Soybean Moratorium to ensure that no soybeans come from illegal deforestation regions in the Amazon Biome.

Further Information

Page: F10. Engagement

F10.1

Have you identified sufficient sources of sustainable materials to meet your operational needs? Please explain what you are doing to ensure security/continuity of supply

Forest risk commodity	Current demand	Future demand	Actions to ensure security/ continuity of supply	Please explain
Timber	Yes	Yes	Supplier improvement plans to increase capacity of supply Engaging in capacity building activities in the value chain	Seara has developed its own planted forest for internal supply to ensure the sustainable origin of its materials. Regarding its supply chain, JBS has established a partnership with the Brazilian NGO Instituto Centro de Vida on the New Field Program. The program promotes more sustainable production techniques at husbandry farms in the Amazon region to enhance productivity. It fosters the diversification of income sources through cultures rotation, pasture reform and practicing of integrated agriculture, livestock and forestry. The Program contributes to the main issue in the Amazon region, as it indirectly reduces the need for more deforestation. With this production model adoption, there is the possibility to purchase wood derivatives from more sustainable producers. Currently, JBS has developed initiatives aiming to generate energy by reusing waste from industrial process as alternative fuels, what decreases the commodity risks for the company. For instance: As a waste generated from the pig slaughter industrial process, the pig hair is extracted from the pig skin - approximately 400 tons per year, which had previously been sent to landfills – is reused to generate thermal and steam-based energy; and Reusing the bovine rumen content (25kg generated for each animal processed) is possible to generate thermal and steam-based energy. This change reduces the consumption of biomass and fossil fuels for the boilers and reduces GHG emissions. Additionally, JBS' R&D area developed an improvement project to change the design of some of the packaging, which became a single piece, instead of two - the bottom and top of the box, thereby reducing the use of cardboard raw materials used in the process by 41%. JBS is one of the largest consumers of paper/cardboard in Brazil, as it uses the material to produce the packaging for its products. Although, 100% of the paper/cardboard acquired has FSC certification, which is part of the selection criteria for suppliers of this material. JBS has implemented a recovery project of wooden pallets used for transportation. Before this project, pallets were used only once and disposed after cargo transport. Through the reverse logistic practice, currently is possible to reuse the same pallets on average for 4 times.
Cattle Products	Yes	Yes	Supplier improvement plans to increase capacity of supply Engaging in capacity building activities in the value chain	The New Field Program aims to increase productivity of husbandry farms in the Amazon region and fosters the adoption of more sustainable techniques through cultures rotation, pasture reform and integrated agriculture, livestock and forestry. It contributes to the main issue in the Amazon region, indirectly reducing deforestation. As a result, in 2015 there were 32 farmers and 40 farms engaged by the program, which have a complete diagnosis and project; 20 farms are implementing the project and 20 farms are in the beginning phase. Production indicators are used to measure program affectivity. The follow numbers represent the results of 6 pilot farms in the 1st year after GAP implementation. Results refer to the whole farm, where one 32 hectare module of intensification was installed, representing 5-10% of the pastures: - Reduction of CH4 emissions

Forest risk commodity	Current demand	Future demand	Actions to ensure security/ continuity of supply	Please explain
				(from 353 to 180 gCH4/KgLW); - Reduction of slaughtering age (from 44 to 34 for males and from 34 to 24 months for females); - Increase in stocking density (from 1.22 to 1.61 animal units/ha); - Increase in productivity (from 70 to 160 KgCW/ha/yr); Increase in gross margin (from 0-100 to 680 R\$/ha/yr. Additionally, to ensure security and continuity of supply, JBS has made a public and social commitment to not purchase cattle from ranches responsible for deforestation in the Amazon Biome region after October 2009 as well as those that use labour analogous to slavery or that trespasses limits of indigenous lands or environmental conservation areas. To stay in comply with the commitment, JBS developed a monitoring system, which is comprised of 2 analysis procedures. The first involves geospatial monitoring and the second performs the intersection of the registration data of the cattle suppliers with the data from the public lists of areas embargoed by IBAMA - by illegal deforestation – and employers who used work practices that are degrading or analogous to slavery, according the Ministry of labour (MTE). Moreover, one of JBS's initiative is the Legal Supplier Program, which helps JBS suppliers to regularize their CAR (Rural Environmental Registry).
Soy	Yes	Yes	Other: Soy Moratorium	100% of soy purchases comes from Soy Moratorium Signatories suppliers. The soy Moratorium gives security that the raw material supplied came from a legal source, thus minimizing the risk of supply failure by illegal suppliers .

F10.2

Are you working with smallholders to encourage and support sustainable forest management practices?

Forest risk commodity	Working with smallholders?	Please explain
Timber	Working with smallholders	Regarding its supply chain, JBS has made significant environmental progress. One of the highlights was the partnership established under the New Field Program, which is coordinated by Brazilian NGO Instituto Centro de Vida (ICV). The program promotes more sustainable production techniques at husbandry farms in the Amazon region proposing a crop-livestock-forest integration, as alternative source of income. In this sense one of the program's objectives is to promote the diversification of income sources, through the planting of trees with commercial value.
Cattle Products	Working with smallholders	The New Field has the objective to increase its scope to serve 300 farms in the Alta Floresta (MT) region. In addition, the project includes other objectives, such as the strengthening of the local economy, reduce deforestation, and the recovery and

Forest risk commodity	Working with smallholders?	Please explain
		<p>preservation of natural resources. JBS has been contributing to the development of differentiated bonus protocols, the opening of markets for products with social and environmental attributes, as well as support for training, earnings disclosure and fundraising for ongoing efforts. The participating breeders have access to a series of opportunities, such as: preparation and privileged positioning for access to markets that value social and environmental attributes connected to production; updated guidance and technical data and training courses focused on best livestock practices. Moreover, JBS develops and participates in several initiatives aimed at engaging with smallholders, as follows: - ConexãoGestão:JBS has been working with a chain of suppliers to enable producers to improve production through production management. The initiative, called Connection Program, provides livestock breeders with commercial training, helping to increase the efficiency of the beef chain. In partnership with the InstitutoInttegra and through a platform, the program intended to build a stronger relationship between the producer and the value chain by providing information on meat processing, marketing and sales. - Social Fuel Label:The social fuel label is a certification given to biodiesel producers that buy raw material (Oleaginous and cattle) from small farmers. Since 2007, by joining the Social Fuel Label Program, JBS Biodiesel has already benefited more than 4,600 small grain producers through the acquisition of soybean sacks. - Participations in fair and events:Since 2012, JBS has developed and implemented several actions in order to improve the relationship between the industry and the cattle rancher. In 2016, the company participated in the BeefExpo and in the Agribusiness Outlook Seminar. - Canal Rural –Girodo Boi:A daily TV program for cattle breeders broadcast on the Rural Channel. The main highlight is the Brazil Tour, with information on daily prices JBS practices throughout the country. In 2016, 43% of JPS livestock suppliers followed the program.</p>
Soy	Working with smallholders	<p>Seara has a dedicated technical team to monitor poultry and pork producers, providing technical assistance for responsible production and guidance regarding Good Practices. In order to guide about management of production, Seara has a team of more than 300 extension agents, who accompany the producers with frequent visits in production offering assistance for responsible productionconsidering the required quality standards and the principles of Animal Welfare. These extensionists also verify the environmental practices adopted in the farms and breeding sites provided in contracts, in order to ensure that they are in line with the guidelines given by Seara, which include, for example, the use of cisterns to collect rainwater, biodigesters and Composting. The visits also include orientations to increase productivity using fewer resources. So on, JBS seeks to produce animal feed with a better nutritional balance so that the producer can gain efficiency with less soy use, what decreases the commodity risks for the company.</p>

F10.3

Are you working with your direct suppliers to support and improve their capacity to supply sustainable materials?

Forest risk commodity	Working with direct suppliers?	Supplier engagement strategy	Please explain
Timber	Yes	Other: Customer engagement	To assist in the transportation of its products, JBS uses – on average – 70 thousand pallet units per month, which ends up generating an environmental impact due to the waste produced and the demand for certified wood. To decrease the environmental impact of its operation, JBS created a reverse logistics project for PBR Pallets, which are produced in Brazil. In 2011, JBS began collecting the pallets from major wholesale chains, bringing them to its units and reusing them. In 2012, the company's logistics department began to restore the recovered pallets and, in 2013, they were being reused approximately six times by the company. The next step for the project is to identify the inventories at the factories to have greater control and further increase the number of reutilized pallets.
Cattle Products		Developing or distributing supply chain mapping tool Workshops and training Contractual agreements Joint projects	JBS has several initiatives to develop and encourage a more sustainable chain of suppliers. In this sense, there are: 1)New Field Program (Programa Novo Campo) , which promotes more sustainable production techniques at husbandry farms in the Amazon region, such as: Orientation regarding soil and water conservation, compliance with environmental and labour legislation, good practices about management and animal welfare, increase of productivity and quality techniques and other issues; 2)Legal Supplier Programa (Fornecedor Legal) Was created in 2015 to advise JBS's cattle supply chain in Brazil on how to suit legislation changes in Brazil in the last years. JBS selected regionals specialized consulting companies in environmental regulation to support its cattle suppliers with the CAR regulation process. JBS also has bargained better prices conditions regarding the consultant services for its suppliers. JBS's communications channels, mainly the Giro do Boi Show at the Rural channel, were used to guide farmers on how to regularize their operations and implement the CAR. The communication plan was intensified in 2015 due government dead line for regularization; 3)Green Light Pact (PactoSinal Verde), an initiative created in 2015, which aims to classify 100% of carcass originated from Mato Grosso do Sul region, one of the most important production centers in Brazil. This Goal was achieved by JBS in January 2016; 4)JBS Connexion Program (ProgramaConexão JBS) is a direct communication platform with JBS suppliers in Brazil, focused in commercial education. It aims to approach cattle breeder to supply chain through information regarding beef industrialization, market and sales. It is directed to sixty thousands JBS's cattle suppliers in Brazil; 5)Giro do Boi, which is a daily television program by Rural Channel that provides relevant information to cattle breeder; 6)Cattle Breeder Portal (Portal do Pecuarista), whereby the breeders have free access to the complete cattle slaughter of each one of their farms, the standard photographic classes finishing with academic validation of associations and experts to the classification of carcasses is transparent and auditable; 7)Quality Light (Farol da Qualidade) – This tool lists the technics parameters of carcass in green light (default desirable), yellow light (tolerable standard) and lighthouse red (undesirable pattern)
Soy	Yes	Contractual agreements	JBS produces and distributes animal feed to its integrated poultry and pork producers. Taking into account that JBS only buys soy products from the Soy Moratorium big signatory companies, the company can ensure that the soy used for animal feed is not associated with deforestation, so on guaranteeing that the animals' feed has a sustainable origin.

F10.4

Are you working beyond the first tier of your supply chain to manage and mitigate risk?

Forest risk commodity	Work beyond first tier of supply chain?	Please explain
Timber	Yes	Regarding the purchase of cardboard for packaging, JBS only buys cardboard with FSC certification in chain of custody form, which covers the entire chain. Considering that 100% of cardboard bought by JBS is certified, all cardboard chain is covered.
Cattle Products	Yes	The New Field Program (Programa Novo Campo) aims to spread sustainable productive practices in the bovine livestock in Mato Grosso State north region and predicts beyond other goals to develop an indirect supplier monitoring system to ensure the sustainable origin of the animals produced in participating properties.
Soy	Yes	Considering that JBS only works with suppliers that meet the Soy Moratorium, it is understood that the entire chain is covered.

F10.5

Do you engage in activities that could either directly or indirectly influence the market for sustainable forest risk commodities?

Activity	Please explain
Increasing demand for sustainable materials Increasing awareness of sustainable materials Raising awareness of the issue of deforestation	JBS is committed to ensure the responsible origin of all the raw materials used in its processes, through the establishment of social and environmental criteria applied to all of its suppliers. The company believes that, because of its size and representativeness, its actions could represent good practice and have a big impact in smaller business which end up influencing the market in dealing with sustainable forest risk commodities issues. In order to guarantee the provenance of all of the products that it offers, JBS has a close relationship with its suppliers to monitor and guide all the stages prior to the arrival of the animals at the Company's processing facilities. In addition, for the beef operation, JBS has a technological system for the social and environmental monitoring of farms to ensure that none of its suppliers is involved in the deforestation of native forests, the invasion of protected areas, such as indigenous lands or environmental conservation units, or the use of slave labour. Along the supply chain, the Company supports projects such as the New Field Program, which promotes sustainable practices to increase the productivity of farms in the Amazon region in order to develop a new operating model that preserves natural resources and that brings financial benefits to the ranchers in the region. JBS

Activity	Please explain
	<p>has been contributing to the development of differentiated bonus protocols, the opening of markets for products with social and environmental attributes, as well as support for training, earnings disclosure and fundraising for ongoing efforts. The participating breeders have access to a series of opportunities, such as:</p> <ul style="list-style-type: none"> • Preparation and privileged positioning for access to markets that value social and environmental attributes connected to production • Updated guidance and technical information and training courses focused on best livestock practices. <p>In addition, the Program contributed positively to the main environmental issue in the Amazon region, as it indirectly eliminates the need for more deforestation by intensifying production in the same area. Another direct contribution is the conservation of riparian forests by installing drinking stations in the pastures to prevent animals from accessing permanent preservation areas. The animals are able to access water without degrading the areas surrounding rivers, springs and lakes.</p>

Further Information

Module: Challenges

Page: F11. Barriers and challenges

F11.1

Please describe any key barriers or challenges to achieving deforestation free direct operations and supply chains

In general, it is possible to see efforts that JBS has been making to ensure sustainable origin of its products and a supply chain free of deforestation and other social and environmental requirements, through its Social and Environmental Monitoring System of Suppliers.

However, we believe that government agencies cooperation in the periodic provision of farms' information regarding land and environmental compliance in the country is a key factor in struggling deforestation practices of the supply chain. The results of the Zero Deforestation initiative are closely linked to the availability of data, since this information needs to be in an operational form, up-to-date and sufficient for companies to carry out their supply chain management.

After the approval of Brazilian Forest Code new version, in 2012, and the regulation of the Rural Environmental Registry - CAR (2014), it is expected in the coming years a large movement of environmental regulation in the country, which should result in a consolidation of environmental legislation and a massive movement for the reforestation of degraded areas, which should facilitate companies' mechanisms to obtain information from their supply chain.

Other very important issue that probably will be discussed along the environmental regularization of rural properties is the adoption of best agricultural practices, aiming to increase productivity and reach a production model more responsible.

Regarding to the commitments made by JBS such zero deforestation and agreements with Federal Public Prosecution Office (MPF), is important and required that

other companies also make these commitments, ensuring that whole cattle supply chain stay in compliance with social and environmental criteria established.

To achieve the control regarding indirect cattle supply, it is necessary an evolving discussion with government agencies to develop public mechanisms or platforms with sufficient and accessible information, which allows the animal traceability. In this way, large supermarkets are joining the Public Livestock commitment in order to ensure that their customers are getting beef that meet social and environmental production criteria. This is a very important moment because the retail / wholesale are great negotiators and relate directly to consumers. Before that, these large supermarkets failed to prove the origin of free beef deforestation.

Another relevant point is that sustainability can be noticed as a differential factor, since only frigorific companies that are committed to deforestation-free production will be enabled in this market.

F11.2

Please describe any measures that would improve your organization's ability to manage deforestation risk

With new Brazilian Forest Code approval and Rural Environmental Registry (CAR - georeferenced map of rural property that contains its geographical boundaries and definition of land uses - productive area and preservation) regulation, will be created a rich database of farms in Brazil. With the availability of this information, companies can have a better management of supply chains monitoring in the country, particularly for soybeans and cattle.

Further Information

Module: Sign Off

Page: F12. Sign off

F12.1

Please provide the following information for the person that has signed off (approved) your CDP forests response

Name	Job title	Corresponding job category
Marcio Nappo	Sustainability Director	Director on board

Further Information

CDP