Suzano Papel & Celulose - Climate Change 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Suzano is a Brazilian renewable-based company committed to be a global reference in the sustainable use of renewable resources. The Company is the world's leader in the manufacture of eucalyptus pulp and one of the largest paper manufacturers in Latin America, with a forest base of approximately 2.3 million hectares, which includes eucalyptus plantations and one of Brazilian's largest protected private native forest areas (approximately 960 thousand hectares in 2020). Together, native forests and eucalyptus plantations contribute directly to removing and storing CO2 from the atmosphere. The company does not practice deforestation of native forest, instead, all the new areas for eucalyptus plantations have their previous use made by other human activities. By occupying these areas, Suzano carry out specific interventions for ensuring soil recovery. Also, Suzano is committed to the Principles and Criteria of the FSC® and NBR 14,789 CERFLOR Forest Management, with the purpose of providing the sustainability of its business in the long term, the continuous improvement of its activities and performance, as well as the adoption of environmentally friendly and socially responsible practices. As a material issue, Suzano seeks to incorporate climate change aspects in all operations, continuing to improve through climate change scenarios, enhancing research, implementing new technologies, innovating process, in order to mitigate risks, by adopting strategies to reduce emissions in its value chain, to increase the carbon removals in its plantations and native forests and to be better positioned in regard to economic opportunities related climate change. It also has a business model centered on eco-efficient operations and new, renewable, forest product development that replaces non-renewables characterized by high GHG intensity. This is all connected to Suzano's Strategic Vision, which focuses on continuing to be a reference in efficiency, profitability and sustainability, becoming a transformational agent in the expansion of new markets and a reference in sustainable and innovative solutions for the bioeconomy and environmental services. Also, more than 88,4% of Suzano's energy consumption comes from renewable sources, and the Company exports renewable energy for the Brazilian energy grid. The Company have a higher volume of carbon capture compared to emissions, reaching negative net emissions (going beyond the neutralization and compensation to removing additional amounts of carbon from the atmosphere). In 2020 we had a removals of 18,983,839.64 tCO2e and emissions of 3,783,528.03 tCO2e, reaching negative net emissions of 15,2 million tCO2e. Suzano is attentive in identifying and managing the risks that climate change imposes on its business. Climate change-related risks, such as those related to physiological disturbances, pests and diseases, are priority risks on its Corporate Risk Matrix. As such, climate change risk management is integrated into the overall risk management process. The Board of Directors directly oversees climate change opportunities and risks by monitoring the Company's strategy, which includes two long-term targets related with climate change, one intensity target for reducing 15% of its directly emissions from Scopes 1 and 2, and one absolute target for remove 40 million of CO2e from atmosphere, both until 2030. Suzano pledges to implement the TCFD Recommendations, not only as a reference for reporting on climate-related financial impacts, but also as a framework for reviewing its existing risk and opportunity management practices and identifying opportunities for improving its processes and operations. In order to better address and communicate on company progress regarding performance on TCFD Recommendations, Suzano has created a TCFD-dedicated page in its Indicators Center. This initiative was recognized by TCFD Hub as a case study to share Suzano experience and provide peer-to-peer learning on how to integrate climate-related information within existing reporting practices.

Externally, Suzano strengthens its dialogue and partnerships with governments, companies, NGOs, associations and academy, actively participating in forums and working groups, especially on advocating opportunities for the Brazilian forestry industry, such as carbon markets and strategies to implement a low-carbon economy. In addition, to further strengthen Suzano's relationship with its suppliers and encourage them to make joint commitments to reduce emissions, we have joint CDP Supply Chain, where we invite 100 critical suppliers mapped in the socio-environmental risk matrix. The program will help to expand knowledge on the subject within the value chain, resulting in the maturation of emission management by suppliers. For more information please check our Indicator Center: https://centraldeindicadores.suzano.com.br/en/

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2020	December 31 2020	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Austria
Brazil
Canada
China
Israel
Switzerland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

BRL

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-AC0.6/C-FB0.6/C-PF0.6

(C-AC0.6/C-FB0.6/C-PF0.6) Are emissions from agricultural/forestry, processing/manufacturing, distribution activities or emissions from the consumption of your products – whether in your direct operations or in other parts of your value chain – relevant to your current CDP climate change disclosure?

	Relevance
Agriculture/Forestry	Both own land and elsewhere in the value chain [Agriculture/Forestry only]
Processing/Manufacturing	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Distribution	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Consumption	No

C-AC0.6g/C-FB0.6g/C-PF0.6g

(C-AC0.6g/C-FB0.6g/C-PF0.6g) Why are emissions from the consumption of your products not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Analysis in progress

Please explain

Since most of the production is aimed at customers who process our products, the operational process control and the emissions of manufacturing transformation (pulp and paper) is controlled by our customers in their scopes 1 and 3, and we are still trying to find proper ways to calculate these emissions.

C-AC0.7/C-FB0.7/C-PF0.7

(C-AC0.7/C-FB0.7/C-PF0.7) Which agricultural commodity(ies) that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodity

Timber

% of revenue dependent on this agricultural commodity

More than 80%

Produced or sourced

Both

Please explain

With more than 90 years of experience, we operate mainly in the pulp (paper grade and fluff) and paper (paperboard, printing and writing and tissue) segments. We believe that we are one of the largest vertically integrated producers of pulp and paper in Latin America and, according to Hawkins Wright, we were the largest producer of eucalypt pulp in the world and virgin market pulp in the world in 2020. Suzano has an installed capacity of 10.9 million metric tons of eucalyptus pulp per year and a broad and diversified forest base. Also, the company owns 1,3 million hectares that are dedicated to Eucalyptus plantation and 1 million for forestry reserves, ensuring compliance with Brazilian law that determines the percentage of area required for legal and permanent preservation reserves, located mainly along the rivers. As a policy, our plantations are exclusively estabilished in areas previously anthropized by other uses, whose conversion has not occurred under its direct or indirect responsibility, committing itself to a zero deforestation policy. Likewise, the company also undertakes to buy wood from plantations established exclusively in areas that were previously anthropized and also develops continuous actions to raise awareness and encourage its wood suppliers to certify their plantations and/or apply FSC and PEFC standards in their forest operations. By 2020, Suzano's net sales were R$30,460.3 million, coming from forest based products, where eucalyptus pulp sales totaled R$25,578.3 million and paper and packaging (both produced mainly from eucalyptus) totaled R$4,882 million.

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	We have a Sustainability Committee that helps the Board to improve the performance of the company on this subject. Climate change issues are debated by the Board of Directors' Sustainability Committee, which is coordinated by the Chairman of the Board and composed of eight members (six external members).The sustainability committee advise the Board of Directors upon review and recommendation on the inclusion of the sustainability dimension and climate change in the Company's strategic positioning as well as the risks, opportunities and measures related to issues that may have a material impact on the business in the short, medium and long term. Nonetheless, the economic, environmental, and social aspects are a responsibility of all company directors. All of them report to the CEO, who, in turn, reports to the Board of Directors.The Board of Directors is responsible for guiding strategy and setting commitments in regards to cliamte change strategy. The long-term goals announced in the 2020 Annual Report include targets that are directly related to climate change such as: (1) reducing specific emissions scopes 1 and 2, (2) being more climate positive and increasing net carbon capture by 40 million tons, (3) increasing renewable energy generation, (4) reducing waste sent to landfill, (5) increasing water availability in critical watershed ands (6) reducing water consumption in the mills. These goals were deliberated and set by the Board of Directors.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Sporadic - as important matters arise	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures	<Not Applicable>	Sustainability Committee is responsible for defining the strategy for managing the issue; Systematic Sustainability Assessment Committee: is responsible for analysis and monitoring the implementation of defined objectives, tactical indicators, and targets reached. Climate change issues are debated by the Board of Directors' Sustainability Committee, which is coordinated by the Chairman of the Board and composed of eight members (six external members) and has also the Sustainability Executive Officer. The Sustainability Committee is responsible for establishing and monitoring long-term strategies, structuring guidelines related to sustainability issues and inserting the sustainability dimension into Company's strategy. In other words, the sustainability committee advise the Board of Directors upon review and recommendation on the inclusion of the sustainability dimension and climate change in the Company's strategic positioning as well as the risks, opportunities and measures related to issues that may have a material impact on the business in the short, medium and long term. The Sustainability Committee is also responsible for analyzing and making recommendations on the long-term sustainability goals, periodically review the strategies, actions and projects related to sustainability of the Company and evaluate the actions and the quality of relationships with stakeholders. The execution of the strategies is responsibility of a team tasked with overseeing forestry and another team tasked with overseeing industrial operations. The first is responsible for forestry related aspects such as natural areas recovery and greenhouse gas balance reporting, the second is responsible for industrial environment performance, ecoefficiency and management. Nonetheless, the economic, environmental, and social aspects are a responsibility of all company directors. All of them report to the CEO, who, in turn, reports to the Board of Directors.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Annually
Sustainability committee	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	As important matters arise
Other, please specify (Risk and Compliance Executive Manager)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Annually
Other, please specify (Statutory Audit Committee)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	As important matters arise
Other, please specify (Executive Manager Forest Technology)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Chief Innovation Officer)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Annually

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Economic, environmental and social aspects are a responsability of all company executives, which report to the CEO, who in turn, reports to the Board of Directors.

The Company also has a CSO which oversees and recommends strategic guidelintes to embed Sustainability into Business Strategy. Nonetheless, environmental performance and associated risks are monthly discussed by operational executive officers and environmental managers. In addition the Company has a Crisis Committee composed of multidisciplinary team that convenes quarterly to disucss the unit's main issues with potencial for criss. During the discussions, the areas present to the committee the indicators and ongoing action plans to mititaget the associated risks, as well as the evolution of Business Conitnuity Plans established for the year.

The Systematic Sustainability Assessment Committee is responsible for monitoring progress and challenges, make analysis and monitoring the implementation of defined objectives, tactical indicators, and targets reached. The group is made up of two officers (Forestry Operations and Sustainability), as well as executives from different areas (sustainability, forest operations, forestry environment, industrial environment, supply chain, strategic planning, management system and communication).

Climate change is directly associated to our business, given that Suzano is a forestry company. Among the main initiatives geared toward carbon are the creation and application of a shadow price, the inventory of emissions and sequestration and the identification of risks and opportunities generated by the inclusion of this aspect in the Capex processes**, as well as the long-term goals previously discussed in C1.1b. These activities are overseen by the CSO as well as other managers from relevant department such as forestry, environment and operations.

Nonetheless, the economic, environmental, and social aspects are a responsibility of all company directors. All of them report to the CEO, who, in turn, reports to the Board of Directors.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Goals contracted and deployed since the president This goal is an offshoot of the long-term ones as disclosed on the suzano website

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Company performance against a climate-related sustainability index	Suzano seeks to incorporate climate change aspects in all operations, continuing to improve through climate change scenarios, enhancing research, implementing new technologies, innovating process, in order to mitigate risks, by adopting strategies to reduce emissions in its value chain, to increase the carbon removals in its plantations and native forests and to be better positioned in regard to economic opportunities related climate change. In this context, in the search for the efficiency of our processes, we have already managed to considerably reduce the emissions linked to our production in recent years. However, we know that we can do more and, therefore, we remain focused on developing solutions that will lead us to better results in the search for a low carbon economy. Thus, he has a performance indicator related to this issue, which impact his variable remuneration: Net removals (removals - emissions) of tons of carbon dioxide equivalent (tCO2eq): it represents 4% of the total performance score and justifies the selection of the items "Emissions reduction target" and "Company performance against a climate-related sustainability index"
Chief Operating Officer (COO)	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Efficiency project Company performance against a climate-related sustainability index	The Chief Operating Officer for the Pulp Business seeks to improve practices and processes at the mill in order to ensure eco-efficiency. Thus, he has a performance indicator related to this issue, which impact his variable remuneration: 1. Energy efficiency - qualitative assessment of energy management proposals and actions: it represents 6% of the total performance score and justifies the selection of the items "Energy reduction project" and "Efficiency project" He is also tasked with overseeing, monitoring and accompanying the evolution of the inspirational and long-term goals regarding pulp mills. In addition, each mill is tasked with a environmental team that looks at eco-efficiency regarding water, waste and energy, as well as compliance to legislation.
Energy manager	Monetary reward	Energy reduction project Efficiency project	The Energy manager seeks to improve practices and processes at the mill in order to ensure energy efficiency, as well as the otimization in the purchase and sale of energy. In this context, he has a performance indicator related to this issue, which impact his variable remuneration: 1. Net result of purchase and sale of energy - Achieve a net result related to the purchase and sale of energy for all Suzano plants, whether result effect or cash effect for Suzano, according to the price baseline defined in EBITDA Day 2021, in order to reduce exposure to PLD: it represents 12.0% of the total performance score and justifies the selection of the items "Energy reduction project" and "Efficiency project".
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction target Efficiency project Behavior change related indicator Company performance against a climate-related sustainability index	Suzano seeks to incorporate climate change aspects in all operations, continuing to improve through climate change scenarios, enhancing research, implementing new technologies, innovating process, in order to mitigate risks, by adopting strategies to reduce emissions in its value chain, to increase the carbon removals in its plantations and native forests and to be better positioned in regard to economic opportunities related climate change. In this context, in the search for the efficiency of our processes, we have already managed to considerably reduce the emissions linked to our production in recent years. However, we know that we can do more and, therefore, we remain focused on developing solutions that will lead us to better results in the search for a low carbon economy. Thus, the Chief Sustainability Officer (CSO) has three performance indicators related to this issue, which impact her variable remuneration: 1. Evolution of Suzano's employees' understanding and sustainability practices: it represents 20% of the total performance score and justifies the selection of the item "Behavior change related indicator" 2. Evolution of the perception of external stakeholders in relation to Suzano's socio-environmental practices: it represents 20% of the total performance score and justifies the selection of the item "Company performance against a climate-related sustainability index" 3. Implementation of inspirational and long-term goals: it represents 20% of the total score and among these goals, there are five related directly or indirectly to climate issues: a) reducing specific emissions scopes 1 and 2 b) being more climate positive and increasing net carbon capture by 40 million tons c) increasing renewable energy generation d) reducing waste sent to landfill e) increasing water availability in 100% of critical watersheds
Environment/Sustainability manager	Monetary reward	Emissions reduction target Behavior change related indicator Company performance against a climate-related sustainability index	The Environment / Sustainability manager seeks to monitor the progress of sustainability targets and goals, managing the processes and improving solutions in order to ensure sustainable forest and industrial management. In this context, he has two performance indicators related to climate issue, which impact his variable remuneration: 1. Climate Change - Strategy structuring and execution of an action plan on the climate change fronts: it represents 6.0% of the total performance score and justifies the selection of the items "Behavior change related indicator "Company performance against a climate-related sustainability index" 2. Governance of Long-Term Goals - Ensure that long-term goals are implemented, monitored and disseminated annually through the creation and maintenance of structured governance: it represents 12.0% of the total performance score and justifies the selection of the item "Emissions reduction target"

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	1	5	Suzano units have 17 must-win battles and close to 100 initiatives (third level of the strategy) that will be implemented in two phases —over the next five years and over the five years after that. As an example of initiatives we could mention implementation of industrial energy efficiency projects that are aligned and part of our long term goals. Short and long-term metrics and goals complement the work and are fundamental in the analysis of advances and eventual adjustments to the routes. Actions to communication and mobilize the internal audience to learn about the strategic vision, ambitions, battles and initiatives are already taking place since 2020.
Medium-term	5	10	Based on the unique long-term vision, senior management was responsible for breaking it down into five main medium term ambitions (e.g Play a leading role in sustainability), intended to guide Suzano's path over the medium-term. These are the steps that will need to be followed to ensure the company's success.
Long-term	10	15	On a first level is our long-term strategic vision. Prepared together with the members of the Executive Board, Strategy and Innovation Committee and the Board of Directors, this vision shows where Suzano wants to be 15 years from now. This time horizon is highly connected with Megatrends (e.g climate change) and then we believe that there are opportunities to be addressed by Suzano such as plastic substitution, renewable materials supply and carbon capture. Also, our long term goals (e.g remove an additional 40 million tons of carbon from the atmosphere - carbon capture - scopes 1, 2 and 3 emissions) are part of our business strategy.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Based on Suzano's integrated risk management policy, a combination between impact and probability indicates which risks are considered substantial, both strategic and financial. Based on that, we classify impacts' risk in minor, moderate, major and extreme, being the rules and definition of percentages applied to the calculation of Materiality of Risks consist of use of EBITDA percentages (Earnings Before Interest, Taxes, Depreciation and amortization), following the curve:

1. Extreme: Above R$600M during risk time-horizon

2. Major: From R$200M to R$600M during risk time-horizon

3. Moderate: From R$40M to R$200M during risk time-horizon

4. Minor - Lower than R$40M during risk time-horizon

Otherwise, probability of ocurrence follow these classes: remote, possible, likely and very likely.

Impact must be anayzed in the following categories: financial, health and safety, environmental, social/cultural, reputational, organizational and legal.

Therefore, the combination between impact and probability generates our Risk Matrix, and those risks with major or extreme impact and likely or very likely probability are classified as substantial for Suzano's business.

The management of climate change related risks is integrated into our overall risk management, which follows the guidelines defined in our

integrated risk management policy with respect to the process of communicating, prioritizing, treating, monitoring and analyzing risks. Priority risks associated with climate change are managed by certain internal departments in charge of monitoring the risk and are periodically monitored by our risk management department through an integrated multi-disciplinary ERM (Enterprise Risk Management) process.

In addition, Suzano is a supporter of the Climate Related Financial Disclosures Task Force (TCFD) and was the first company in the pulp and paper sector to be the protagonist of a case study published in the TCFD Knowledge Hub.

The climate related risks are priority for Suzano, so in February 2020, we launched two public targets focused on climate change. First, we expect to remove 40 million tons of GHG from the atmosphere between 2020 and 2030. This number considers the net difference between carbon removal from eucalyptus plantations and native forests and

emissions scopes 1, 2 and 3. Second, we plan to reduce by 15% our emission intensity (tCO2e/adt) including scopes 1 and 2 (baseline 2015). Both targets

require systemic improvements and technological investments along our production chain and are necessary to ensure the Paris Agreement.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Suzano is attentive to identifying and managing the risks imposed by climate change. Considering that it may affect the results of our business, which is based on the use of natural resources. Climate-related risks are incorporated into the Company's Enterprise Risk Management (ERM). It follows the guidelines established in Suzano's Integrated Risk Management Policy regarding the process of communicating, prioritizing, treating, consultation, monitoring and analysis related to risk management. As part of the continuously evaluation process, we have developed a climate risk action plan with a focus on identifying and mitigating the short- and long-term impacts of Climate Change. Throughout 2020, the Risk Management area the risk assessment process was carried out from June to December, which involved more than 400 employees (including Executive Directors, Functional Directors, Advisors), more than 150 meetings and 290 risks identified. We have incorporated Climate-related risks into the Company's Enterprise Risk Management (ERM). As part of the continuously evaluation process, climate risks are identified as critical and strategic in the Corporate Risk Matrix. Then, we have developed a climate risk action plan with a focus on identifying and mitigating the short- and long-term impacts of Climate Change. We have risk mitigation actions planned to occur until the year 2025. Climate events (e.g. El Niño and La Niña) have become more intense by the climate change influence and analyses are made to monitor their impacts during the year. We are working from several Suzano's teams such as R&D, Forestry Planning, Risks, Strategy. Efforts have been dedicated to this, since it can affect our wood supply planning, Silviculture operations, as well as strategic directions of innovation projects. We are vigilant in identifying and managing climate change risks. These risks have varying levels of relevance to the business, classified according to their probability of occurrence and potential impact. For instance, last year our unit in Mato Grosso do Sul went through an intense period of water deficit, and a consequent reduction in productivity. As an example, the 1% loss of productivity can create a purchase demand proportional to about 3,500 hectares of forest. As a consequence, these results increase liabilities and capital expenditures, which impact our business and results of operations. For us, understanding the impacts and proposing innovative solutions to manage and mitigate the risks imposed by climate change is a priority. Climate scenarios and impacts: We mapped our areas at highest risk of suffering the impacts of climate change by the year 2050. We forecast wood productivity considering the effects of the IPCC climate change scenarios. Long-term goals (until 2030): Our long-term goals to mitigate the effects of climate change are fundamental to expanding our roles in the value chain and in society. Water resource management in forestry and mills, and reduction of greenhouse gas (GHG) emissions are our main targets. Strategic operational projects: Improve our energy efficiency in the mills, including the new plant named "Ribas do Rio Pardo", which will be Fossil Fuel Free and have the capacity to export approximately 180 MW. Strategic R&D projects: Our research portfolio has expanded to deliver a forest more adapted to environmental stresses. In-house projects have been initiated (i.e. "Tetrys", "Fenomics") by the R&D team, and strategic external partnerships are already in effect until 2025. Moreover, we have Risk and Business Continuity Commissions covering all of our operations in Brazil. The role of these commissions is to map the main risks in the locations where Suzano operated and to define action plans, in addition to preparing business continuity plans that address crisis episodes, should they occur. This methodology covers all areas and Units of Suzano that, directly or indirectly, participate in the Risk Management process. Furthermore, we have been implementing the TCFD (Task Force on Climate Related Financial Disclosure) recommendations to improve the management, integration and disclosure of climate risks with advancement in the part of the financial calculation of the impacts of climate risks. In order to better address and communicate on company progress regarding performance related to TCFD Recommendations, Suzano has created a TCFD-dedicated page in its Indicators Center, a transparency platform designed to offer readers quantitative and qualitative corporate information. From a risk exposure perspective, we monitor a series of indicators, to assess the exposure of the forestry operations to climate risks (as well as other environmental dimensions). We mapped our areas at highest risk of suffering the impacts of climate change by the year 2050 and forecast wood productivity considering the effects of the IPCC climate change scenarios. Strategic R&D projects have expanded to deliver to mitigate risks to environmental stresses. In-house projects have been initiated (i.e. "Tetrys", "Fenomics") by the R&D team, and strategic external partnerships are already in effect until 2025. One example is monitoring critical watersheds where we have operations to assess the exposure to water risks. Data gathered from this work is used to calibrate planning models for the harvesting and new planting periods and already has yielded specific plans to respond to supply physical risks. Furthermore, Suzano actively manage its transitional risks from climate change, such as policy constraints on emissions, imposition of carbon tax, water restrictions, land use restrictions or incentives, market demand and reputation. Strategic projects have expanded to deliver to mitigate risks to environmental stresses. In-house projects have been initiated by the R&D team, and strategic external partnerships are already in effect. One example is our "Landscape Planning Project" that addresses the water supply as a physical risk of climate change. Based on climate scenarios, we identified that part of our areas tends to suffer impacts from reduced rainfall, especially those concentrated in our units in Bahia and Espírito Santo. Thus, we are expanding water management throughout our value chain, prioritizing actions directed to the most critical units. Data gathered from this work is used to calibrate planning models for the harvesting and new planting periods and already has yielded specific plans to respond to supply risks. We are already promoting a series of water management actions in addition to long-term commitments to increase the water management of our plants and forestry bases. By 2030, we are targeting to increase water availability by up to 100% in those watersheds mapped as under critical risks, as well as to reduce water withdrawal from the mills by 15%.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	As a regulatory risk, regulation about fossil fuel consumption, transportation, and energy acquisition and the relation between that and GHG emission limits are considered they may result in increased liabilities and increased capital expenditures, which could have a material adverse effect on our business. This risk is controlled and monitored by different areas at Suzano. The regulatory/legal team follow the discussion agendas in the federal government and with associations to international regulations. The Logistic, Forestry and Industrial team also follow the discussion with regulatory team, and they are looking for alternatives and performing the calculations of impacts and feasibility of mitigation and adaptation actions. In other way, Suzano is actively in the discussions, working groups, workshops related analysis and discussion about worldwide current regulations that can affect the Brazilian's operation, mainly in the discussions with the associations that we are part of, such as WBCSD Brazilian Chapter, Sectorial and Industrial Association (IBA and CNI), among others. Also, Suzano has a long term target to reduce the intensity of direct fossil emissions by 15% until 2030, and the directly strategy related to this target is reduce fossil fuel consumption.

	Relevance & inclusion	Please explain
Emerging regulation	Relevant, always included	The Brazilian NDC specifically states the increment of biofuels and other renewables in the national energy mix, zero illegal deforestation, reforestation, forest restoration and native forest management enhancement as national actions to fight the climate change. In this context, Suzano has been recognizing the risk of new laws and regulations relating to climate change, such as tax, and changes in existing regulation. Even the intensity of emissions is already lower, Suzano understand that any new regulations related to emissions limits will be relevant since on the industrial and logistic operations. For this risk, we expect that there will be increased regulation related to greenhouse gases and climate change that may materially affect un, directly through increased capital expenditures and investment to comply with such laws, and indirectly, by affecting prices for transportation, energy and other inputs. Annually Suzano monitoring international and local regulatory initiatives with government and with associations and working with many stakeholders to include forests as a viable economic, environmental and social solution for carbon fixation, and solution to compensate emissions. In other hand, Suzano has several researches, and viability analysis of new technologies that can reduce the emissions and this is in line with the efficiency drive and the commitment to reduce the intensity of direct fossil emissions by 15% until 2030.
Technology	Relevant, always included	Climate change (CC) risks are identified as critical and strategic in the Company's Enterprise Risk Management (ERM). For support this risk, we have developed a climate risk action plan with a focus on identifying and mitigating the short- and long-term impacts of CC. The prioritized actions were determined considering reducing carbon emissions and increasing the efficiency of natural resource use. Thus, our R&D portfolio has been expanding to deliver a forest more adapted to environmental stresses and seeking the development of new products and applications, both in the pulp, paper and biorefinery. We are dedicated to updating and classifying our areas based on climate anomalies. Thus, we increase our agility for decision making and planning of compensatory measures (e.g., repositioning of forest areas). Our genetic program has strategies for the selection of plastic clones and tolerant to adverse conditions, as well as for the implementation of risk mitigation strategies (e.g., clonal compound). In 2020, the company has developed a new tool named "Tetrys" to optimize the allocation of its clones through the best interaction between genotypes and climate zones, based on artificial intelligence. Another new technological platform, named FenomicS, we expected to produce large-scale phenotyping for pests, diseases and climate effects that affect forest productivity. The recent investments in FenomicS was around R$ 1,5MM. Also, we have a private web platform ("Euclima") for climate forecasting that assists in the decision-making of forestry operations by optimizing activities and their logistics. When developing a new product or application, Suzano makes use of its pilot and industrial units to evaluate all environmental impacts, such as energy and chemicals consumption, waste generation and carbon footprint. Thus, Suzano has taken the risk of investing in technology and in large-scale production units of new bio-businesses from forest resources. Some of the bio-businesses are still under development and will allow a smaller footprint to the chain by reducing the use of fossil-based materials. In the Q4 of 2020, Suzano started the operations of the first industrial plant in the world to produce Eucalyptus Kraft Lignin, an investment of more than 100 MM and an important initiative to sustainable chemicals and materials. The company also invested in the first industrial plant for the production of nanocellulose, whose project should start still in 2021.
Legal	Relevant, always included	Suzano has been recognizing the risk of new legal requirements relating to climate change and changes in existing regulation could result in increased liabilities and capital expenditures, all of which could have a material adverse effect on our business and results of operations, and indirectly, by affecting prices for transportation, energy and other inputs. Even if Suzano agrees with the need to establish a carbon market in Brazil, it is understood that it depends on its specificities, it can generate benefits or impacts for Suzano's operations. If the model considers taking into consideration pulp and paper production processes and inbound and outbound transportation, Suzano may affect with increased liabilities and capital expenditures The Company participated an follow the discussions about future regulations nationality and internationality with the Brazilian Tree Industry (IBÁ), the Brazilian World Business Council for Sustainable Development (CEBDS), and the Brazil Climate, Forest, and Agriculture Coalition. As a company from the forestry industry and protect native areas in Brazil, Suzano works with these institutions to include forests as a viable economic, environmental and social solution for carbon fixation, which is aligned with Brazilian NDC and article 6 from Paris Agreement. In this way, Suzano recognizes also an opportunity in future regulations that include forestation, reforestation and restauration as an alternative to compensate emissions and contribute with the targets and agreements. Regarding climate litigation, it is expected that this is not an imminent risk for Suzano as we are climate positive and we publicly disclose all climate data in the Indicators Center.
Market	Relevant, always included	Suzano's market leadership is based on the sustainability of our forestry operations (reinforced by the shorter harvest cycle in Brazil as compared to other countries), state-of-the-art technology (including modern facilities and advanced cloning methods), high productivity, operational efficiency in mills, strong customer base and long-term relationships with our customers and stakeholders. Market risk are related to Reduced demand for single-use paper and cellulose products; Given their essentially renewable origin and great versatility, and supported by our Bioproducts Strategy, we develop forest renewable products, such as microfibrillated celulose, biocomposites, lignin and biopetroleum, that could replace other non-renewable products with higher carbon footprint. They have the potential to stimulate the development of a lower-carbon economy, which is instrumental to combat the climate crisis and pressure on natural resources. In order to boost forward its biostrategy and portfolio expansion of sustainable solutions in different market niches, in 2020, Suzano announced its 2030 sustainability journey, which includes a long-term target to offer 10 million tons of new, renewable products that can replace plastics and other petroleum derivatives. Regarding to products development, Suzano recently launched EucaStrong® and High Tensile Pulp, and keeps investing in products with the same appeal which allow customers to reduce their energy consumption. In the biorefineries context, the application of Suzano's nanocellulose for producing textile fibers with Spinnova, where the process allows it to be classified as the most sustainable textile fiber on the market. Another example is the joint venture between Suzano and Ensyn Corporation for the production of biocrude from wood. Bio-oil is being studied for producing bio-fuels and a series of chemicals, which brings to this initiative the potential for increasingly consistent replacement of products derived from petroleum. Another focus is applying cellulosic fibers as partial replacement for fossil polyolefins. In the paper segment, we have several projects related to low carbon economies that are focused on recyclable and biodegradable materials, we can mention the paper straw and paper cup that are already on the market and the flexible packaging project that aims to replace plastics films by paper, with biodegradable and recyclable barriers.
Reputation	Relevant, always included	Suzano is subject to reputational risks arising from the effects of climate change related to changing perceptions of customers and society in general in relation to an organization's positive or negative contribution to a low carbon economy. Among these risks are those related to the negative perception of customers, communities and investors regarding the consumption of water in forest and industrial production, in water stress scenarios; as well as the potential for negative perception of customers and investors about paper and pulp products. The risk of having Suzano's performance results in aspects related to climate change (emissions, removals, adaptation process, loss of forest) interpreted inappropriately, compared to other products on the market, that can generate a negative image and results on loss of investment. As an example, if the investors automatic analysis system does not consider correctly the methodology and the data about emissions, removals, water withdraw, deforestation politics, and restoration and conservative strategies, they can divest on Suzano in a wrong way. Suzano has a several agenda with investors and an Internal working group focused on improve the Suzano reputation as a leader company. Also, Suzano has FSC, ISO 14001 certification and a online and public Indicator Central that was recognized was even recognized as a benchmarking on TCFD Knowledge Hub and includes several Climate Change quantitative and qualitative indicators that helps our stakeholders understand our operation (https://www.tcfdhub.org/case-study/tcfd-disclosure-on-suzanos-indicators-center/). Also, to accompany the latest good practices at the international level and have a positive influence on the private sector's progress in the area, Suzano has been involved historically in voluntary market initiatives on the matter. Such initiatives include participating in the Brazilian Coalition on Climate, Forests and Agriculture Technical Working Groups of the Brazilian Business Council on Sustainable Development (CEBDS), leadership in the Working Groups of Brazil's Forestry Industry Association (Ibá) and adhering since their creation to the GHG Protocol Program and to the Business for the Climate Platform Emissions Trading System (EPC ETS), jointly with FGV (Fundação Getúlio Vargas).
Acute physical	Relevant, always included	Acute risks come from extreme weather events (e.g. waterspouts, floods, intense droughts), with increased intensity and frequency. Physical risks directly affecting our activities and, at times, those of our suppliers and customers, such as: (i) partial interruption in industrial and forestry operations due to a shortage of water resources during drought periods; (ii) loss of forest assets due to fires during droughts periods; (iii) interruption of logistics for product distribution due the occurrence of storms. For this reason, we have assessed our vulnerability to climate change from the point of view of the entire value chain and adopted a precautionary approach in industrial and forestry management and operations activities. Our main prevention measures concerning the risks are: the control and monitoring of production; the monitoring of mill's water withdrawal and water availability; mapping areas with potential water usage overlapping; projects related to improving energy efficiency and recovery, water reuse and the stability of the industrial process; the exploration of different transport modes; conservation practices in soil management; restoration and conservation of natural areas around springs and other water resources; the monitoring climate regulations and support or participation in associations engaged with climate related public policies. Some regions of Brazil are currently experiencing drought conditions, resulting in acute shortage of water and the implementation of rationing to control usage. Although we believe that not all of our operations will be affected by these conditions, certain of our units are located in the affected areas. Although our units are already very efficient is water use, and we have defined a contingency plans for all the possible affected units, if required. Environment impacts, such as 2015's environmental catastrophe affecting the Rio Doce, and regulatory actions to limit access to water, could have a significant and adverse effect on our business operations. At these time, our mills in Mucuri and Aracruz Units were required to suspend its use of water from that river for its operations for a short period. No impact was recorded at Aracruz Unit, because this Unit has a reservoir sufficient to sustain it for up to five months, which had at the time of the accident at least 90 days of water supply.
Chronic physical	Relevant, always included	Chronic risks come from long-term changes in climate patterns, which may result in, for example, rising sea levels or constant heat waves, may result in reduction in forest productivity due to the lower availability of water resources; physiological disturbances; pests outbreaks and tree diseases. For this reason, we have assessed our vulnerability to climate change from the point of view of the entire value chain and adopted a precautionary approach in industrial and forestry management and operations activities. Our main prevention measures concerning the risks above are: (i) IPCC (Intergovernamental Panel on Climate Change) scenarios analysis integrated with our tree growth models to productivity forecast. (ii) studies into the genetic improvement of eucalyptus in order to identify those varieties most adaptable to different climate conditions; (iii) the monitoring of water consumption in forest areas; (vi) IPM (Integrated Pest Management)with monitoring of all our plantations; The combination of silviculture and genetic improvement are essential to ensure sustainable production and the health of the ecosystems in the long term, which represents an extra challenge due to climate and economic uncertainties. The development of adapted genotypes along with the improvement obtained via silvicultural practices is critical for the sustaining of the environmental services provided by the forests. Thanks to our continuous progress in forest productivity, the land currently used to supply our pulp mills is half the area that would be required 40 years ago.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Upstream

Risk type & Primary climate-related risk driver

Chronic physical	Rising mean temperatures

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
For Suzano, changes in climate patterns are one of the main current concerns, as they affect several factors linked to the protection of our plantations and, even more directly, forest productivity. Thus, it is very important to understand what the future climate will be like, as well as if there is a way to make it more predictable, so that mitigating measures can be taken in time. Most of the wood used in our production processes is supplied by our own forestry operations, 64% by 2020, and our strategy aims to reduce our exposure to third-party wood to only 23% by 2024, which include planted forest areas located in close proximity to our production facilities. The wood market in Brazil is very regional and limited in wood availability, as most pulp and paper producers are integrated and utilize wood grown in their own planted forests to meet their wood requirements. Our planted forests are subject to natural threats, such as drought, fire, pests and diseases, which may reduce our supply of wood or increase the price of wood we acquire. Our planted areas are also subject to other threats, considering their wide territorial coverage and proximity to a significant number of neighbours and local communities, including loss of possession due to social unrest or squatter invasion, land title disputes, wood theft, or arson, which may result in real damage to our planting and transit areas and may adversely affect our results. As example of direct risk, loss of forest assets due to physiological disorders, enhanced by climatic events such as La niña and El niño, may adversely affect our business operations. We input scenarios of changing global climate conditions, in our long-term forest planning analyses, based on Woodstock Remsoft tool, to measure productivity (physical supply) and financial impacts (economic effect). According to our model, Suzano's pulp mills located in Espirito Santo, Bahia and Maranhao may be more impacted, comparing to those located in Sao Paulo and Mato Grosso do Sul. Therefore, in order to continue our operations, third-party wood is assumed to be alternative to mitigate production impact.

Time horizon
Long-term

Likelihood
More likely than not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1958420000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In order to estimate the financial impacts from extreme weather events like droughts and floods, we calculate the cost of buying wood on the market due to the drop in forest productivity, resulting in R$1.7, 1.9 and 2.3 billion - to be diluted over the years - for three sensitivity scenarios for losses: moderate, acid and extreme. This estimation is based on different level of potentially productivity's lost for already planted forest, mainly for our mills located in Brazilian Northeast but also considers mills located in Sao Paulo and Mato Grosso do Sul (Southeast area).Therefore, it considers actual wood spot market in these regions multiplied by required additional volume in order to fit forest productivity loses.

Cost of response to risk
163400000

Description of response and explanation of cost calculation
Our goal is to continue improving our planted forest productivity and quality in a sustainable manner. With this purpose, our research group is selecting new eucalyptus clones based on growth, cellulose content and wood quality, making use of state of art techniques like genetic recombination through controlled pollination, use of genomic tools in the selection of new clones, extensive field evaluation (700 ongoing experiments) and laboratory analysis. In 2020, our Forestry Breeding and Digital teams developed a system – called Tetrys – to help the silviculture team allocate the clones more precisely in available areas for planting. Tetrys allowed the robust elaboration of plantation program for 2021, with more than 90 thousand hectares, and it helped the planning of our operational nurseries and the maximization of productivity. In addition, Suzano maintains 83 weather stations distributed among its forest base, watersheds, land use, occupation, and evapotranspiration monitoring ("open-air laboratories"). This physical structure, as an example, costs R$ 1,28 million (yearly) and allows us to measure with elevated accuracy the impacts of the prediction models in the climate change scenarios arising from the events of El Niño and La Niña in the last 102 years. Considering all investment done for Research&Development&Innovation, Suzano invested R$163.4M by 2020, as indicated in our Sustainability Annual Report. Part of that investment was done in forest R&D&I initiatives such as more resistant eucalyptus clones' development and digital tools development in order to reduce impact in forest productivity,

Comment
Annual opex spent on R&D&I (R$163.4M) is partially dedicated for forest technology and innovation

Identifier
Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
One of the risks mapped in the context of climate change for Suzano, classified as regulatory, is that arising from regulatory changes that encourage the transition to a low-carbon economy, through the carbon market economy, which, as a consequence, we assume as emissions (Scope 1, for example, of 2.155.102,69 tonnes in 2020), would be taxed. Despite this, and the disbursement, Suzano is a company that absorbs more CO2 than it emits, and would soon have, as a company, a positive net in carbon absorption due to its forests. Suzano believes that one of the main incentives for the recovery and conservation of native forests is the creation of a regulated, global, coordinated, and large-scale carbon market. Brazil can take a leading role in environmental debates for a low-carbon economy. We believe that, in order to achieve a new role in global geopolitics, the country needs, as a nation, to demonstrate its commitment to zero illegal deforestation. This is essential for advancement in the process of creating a global carbon market, an effective instrument for protection against deforestation and a source of resources that could be converted into benefits for the population and the Brazilian territory as a whole. Suzano continues to dialogue with the production sector, civil society, the Ministry of Economy, and Itamaraty (Foreign Affairs) with the expectation of forming an internal commission and developing a legal framework for the Brazilian carbon market to move forward in 2021. The company also intensified communication with international authorities, looking to support the process until a balance is found in final discussions on the Paris Agreement. We are working on all these fronts and hope that the alignment between countries will materialize in November 2021 at the United Nations Conference on Climate Change (COP 26) in Glasgow, Scotland.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
107755135

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In order to estimate the financial risk from carbon regulation, we assume as annual impact our directly emission from scope 1 (base year 2020) of 2.155.102,69 tonnes. Therefore, we assume a carbon price of US$10/tCO2e (assumption) (1US$=5R$), resulting in R$108 million yearly impact, considering that emissions are constant.

Cost of response to risk
7747310

Description of response and explanation of cost calculation
Since 2008, Suzano began a partnership with FGV as one of the founding members of the Brazilian GHG Protocol program, which aims to identify and account for emissions from the production process considering the direct emissions from our operational control sources (scope 1), indirect emissions from electricity consumption (scope 2) and indirect emissions associated with the production chain that are not directly controlled by us (scope 3). This tool is designed in accordance with the World Resource Initiative's GHG Protocol methodology. In 2010, we were the first pulp and paper company in Brazil to calculate our carbon footprint by measuring the emissions throughout our products' entire life cycle, from raw materials production and distribution through their sale, use and disposal, which has a broader scope than the GHG inventory undertaken since 2003. And in February 2020, we launched two public targets focused on climate change. In 2020 Suzano invested at least R$ 7.7 million in projects that reduced direct emissions. One of the projects, as an example, aims to increase the steam production capacity in one of our paper mills located in Sao Paulo. Also, the company continues to constantly invest in the reduction of the intensity of its emissions, which is a company long-term target while reducing our regulatory risk. In the industrial units, the company seeks to reduce emissions in retrofits of old machinery and increase efficiency, increasing the generation of renewable energy (based on biomass and black liquor) and with a gradual changing from strongly emitting fuels (such as heavy oil) for less emitting fuels (such as natural gas, or even black liquor), among others. We have a plan to invest ij our modernization projects pipeline, which will result in emission, among others, in CO2 reduction. An example is the Energy Efficiency Master Plan from Jacarei Mill that is included on our modernization pipeline. However, all further investments require management Capex approval.

Comment
Suzano supports and seeks to lead the discussion on the regulation of the carbon market in Brazil. It is important to mentioned that we are already carbon positive, in other words, the company's CO2 removals are greater than its emissions, which is an opportunity from which Suzano can benefit from capturing CO2 and offer carbon credits, generating revenue from this practice. Also, the company continues to constantly invest in the reduction of the intensity of its emissions, which is a company long-term target while reducing our regulatory risk. In the industrial units, the company seeks to reduce emissions in retrofits of old machinery and increase efficiency, increasing the generation of renewable energy (based on biomass and black liquor) and with a gradual changing from strongly emitting fuels (such as heavy oil) for less emitting fuels (such as natural gas, or even black liquor), among others. We have a plan to invest in our modernization projects pipeline, which will result in emission, among others, in CO2 reduction. An example is the Energy Efficiency Master Plan from Jacarei Mill that is included on our modernization pipeline. However, all further investments require management Capex approval.

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
At the Mucuri mill, Suzano collects water through the Mucuri river (52.004.819,52 m³ of water withdraw by 2020 as indicated in Suzano's indicators center). The river originates in the northeast of Minas Gerais, one of the poorest regions in the state, and flows into southern Bahia, covering a total of 446 kilometers in an area of approximately 15,400 square kilometers with a population of 537,000. In which the conditions of use of water resources from the publication of Resolution No. 1,098 / 2017, of National Water Agency. During 2015, the worst historical scenario was seen, 67 days without rain (between October and December), and an annual average of 552mm, which represents an average of 55% of the last 5 years. Considering a catastrophic scenario, a sensitivity analysis indicates that Suzano would have less water available to supply its water reservoirs, which directly supply water for industrial operation. Therefore, such impact could occasionate a reduction of 8-12% of annual production (and sales volume).

Time horizon
Medium-term

Likelihood
Unlikely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
353328000

Potential financial impact figure – maximum (currency)
529992000

Explanation of financial impact figure
Considering a potential impact of disruption and requirement of stop our Mucuri mill during 10% of its yearly structural production capacity (1.7 million tonnes) and an average price of R$2,598/ton, based on net price for LTM 1Q 2021. Or 170 thousand tonnes multiplied by R$2,598. Sensitivity analysis simulate a range of +20% and -20% (or 8-12% of total production) of such production losses.

Cost of response to risk
153500000

Description of response and explanation of cost calculation
Until this time, Mucuri mill has already invested to new effluent treatment station, built with technology from Veolia Water Technologies, a world leader in the provision of services related to the treatment of water and effluents, has the capacity to treat 2,900 m³ / h and has improved the process of returning water to the Mucuri River. The Mucuri mill new effluent treatment plant has been used in parallel with the old plant. After 13 months of construction, the plant was started up in July 2017, with an inoculation phase, a period of preparation of the system for full operation (R$100M investment). In addition, Mucuri small hydropower plant is already part of Suzano's strategy for providing sustainable energy and also guarantee production in its pulp mill. Sum of both investments account for R$153.5M already invested. In additional of that, we have in our pipeline projects that contribute for long-term goal of reduce by 70% of water specific consumption at industril process that may require incremental Capex for implementation.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Moving ahead with our long-term strategy through our strategic avenue of maintain relevance in Pulp, Suzano announced Cerrado Project (a new pulp mill located in Ribas do Rio Pardo, Mato Grosso do Sul, Brazil), with capacity of 2.3 million tonnes of hardwood market pulp, in a market that is expected to growth 4.6 million tonnes by 2025. By this project, Suzano will improve competitiveness with the lowest cash cost, provide attractive returns even in more adverse scenarios, advance in economies of scale, increase leadership position in the pulp market, supply long-term demand increase and highlight for contributing to company's sustainability goals.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
5975400000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Considering Cerrado's Project announced capacity of 2.3 million tonnes of hardwood pulp by year and based on LTM 1Q 2021 net average price for Suzano of R$2,598/tonne, multipling production capacity and revenue by ton (historical assumption), the annual revenue in actual basis for Cerrado production is up to R$5,9 billion.

Cost to realize opportunity
14700000000

Strategy to realize opportunity and explanation of cost calculation
Cerrado Project brings many benefits aligned with our business strategy and our long-term goals for climate. Providing more pulp, Suzano not only supplies growth in market demand but also contribute for single-use plastic substitution. Some examples of benefits for this increase in capacity from a new project: renewable energy generation of approximately 180MW and considered in the industry as free from fossil fuel - a new milestone for Suzano in eco-efficiency that shows its commitment to society and the planet. In additional, due to structural average radius of only 60 km, inbound logistics will be provided mainly by hexatrem - innovation launched in 2019 by Suzano —the world's first trailer truck with six semitrailers that is able to transport up to 200 tons of wood in one haul. This innovation only can be used in internal roads. Hexatrem consumption in litters of diesel per m³ transported is 21.5% lower than the traditional tritrem model. This means that, for every 1 million m³ transported, there is a reduction in emission of approximately 600 tons of CO2 equivalent (greenhouse gas reflection standard). Our announced estimated capex (including industrial, infrastructure and indirect costs) is R$14.7 billion (R$1.0 billion being invested in 2021) of which shall be distributed between the years of 2021 and 2024. The Company estimates that the new plant will start operating in the first quarter of 2024. It means ~USD 2.8 billion using an exchange rate of USD/BRL 5.25.

Comment
The approval and the effective execution of the Cerrado Project are subject to (i) the Company's commitment to financial discipline, maintaining compliance with the parameters established in the Suzano's Debt Management Policy; and (ii) the conclusion of the negotiation of the acquisition of the equipment and services necessary to carry out the Project, under satisfactory conditions, to be subsequently evaluated and resolved by the Board of Directors. The Project shall be financed by the Company's cash position and cash generation from current businesses, which can be complemented by financing, provided that the conditions are attractive in terms of cost and term.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Primary potential financial impact
Reduced direct costs

Company-specific description
Suzano's energy matrix is mainly supported by renewable sources. We use eucalyptus biomass, such as bark and wood waste, as our own source for energy generation. In some production units there is surplus production, which is made available to the National Interconnected System (SIN), contributing to the expansion of the renewability level of the Brazilian electric energy matrix. Our teams are developing projects and initiatives to reduce consumption, maximize generation of renewable energy, and increase the energy efficiency of the production units. Increase In 2020, Suzano exported, on average, 193 MWe of energy from renewable sources to the grid, approximately 10% more than in 2019 (including 50% of the energy exported by Veracel, a joint venture between Suzano and Stora Enso). With this, the company advances in its goal of increasing the export of renewable energy by 50% by 2030, contributing to the expansion of the Brazilian renewable energy mix.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
80000000

Potential financial impact figure – maximum (currency)
120000000

Explanation of financial impact figure
Rationale considers all potential projects benefits of cost savings and increase in energy sales based on energy efficiency and renewable energy generation projects in our 11 mills (excluding Cerrado project), connected to our long-term goal (2030) to increase renewable energy exports by 50%. Suzano has already been moving towards reducing energy consumption and self-sufficiency, reaching 100% self-sufficiency in the Company's consolidated (the consolidated level considers that some units such as Aracruz, Imperatriz, Mucuri and Três Lagoas even generate surplus energy for export, while other units such as Facepa Matriz, Facepa Filial and Rio Verde do not produce energy). The increase in energy self-sufficiency is also obtained from the efficiency and generation of renewable energy in industrial plants, which includes projects (efficiencies and energy generation) in all pulp mills that Suzano operates.

Cost to realize opportunity
500000000

Strategy to realize opportunity and explanation of cost calculation
The electric energy generated in Suzano's mills is produced from renewable sources, enabling surplus that can supply the national energy system. Thus, through investments in efficiency, research, and innovation, we want to increase our contribution to making clean and renewable energy available throughout the country. In 2020, despite the generation losses we had, we supplied 193 MWm of renewable energy to the national system. We also implemented projects to increase the efficiency of steam generation and optimize energy efficiency using data science. Two projects related to increased energy exports stood out in 2020. The first, Thor, is a tool that recommends, through algorithms and in real time, the best allocation of steam available for each turbine, optimizing energy generation. The project was jointly developed with the Digital team for the Três Lagoas mill and subsequently replicated in other Suzano plants. Once fully operational, the project should generate a gain of 7.75 MW of average power in 2021. The second project was developed to increase the specific production of steam by the boilers in the industrial units per amount of fuel consumed, enabling higher generation of electric energy. The opportunities found and the gains captured vary according to each facility, i.e., they are specific to each unit. In order to achieve or 2030 goal of increase renewable energy exports by 50% (versus 2018 baseline), the opportunity rationale considers all potential projects to increase energy efficiency and renewable energy generation in our 8 mills (excluding Cerrado project), aligned with Suzano's strategy to be "best-in-class" in the total pulp cost vision. By that we aim to reduce TOD (total operational disbursement) in R$46/tonne by 2024. Therefore, the cost of R$500 million include a high-level estimative of all modernization projects that have impact, not limited to, but most of them focused in energy efficiency.

Comment
However, most of the projects depend on CAPEX approval.

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Other, please specify (Increased diversification of financial assets (e.g sustainability-linked bonds))

Primary potential financial impact
Increased diversification of financial assets

Company-specific description
In 2020, we also continued to expand and strengthen our operations in the area of sustainable finance. For the first time, Suzano issued a Sustainability-Linked Bond (SLB) in the capital market, becoming a pioneer in the Latin American market and in the pulp & paper sector. According to the principles of this instrument, the company associated the use of these financial resources to achieving the goal of reducing the intensity of greenhouse gas emissions by 15% by 2030. The total amount raised funds for the implementation of the company's strategy, allowing us to strengthen our operations in the constant and growing creation of shared value.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1250000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Issuance of Sustainability-Linked Bond U$1.25 billion raised in the market.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
In 2020, Suzano released its Long-Term Goals and took them a step further: Suzano became the second company in the world, and the first in the Americas, to link one of its public commitments to the company's debt management. In a record 3-week time period, the company put together the issuance of its first Sustainability-Linked Bond (SLB), a security in which the cost of financial resources is tied to one (or more) environmental and/or social goals. In the case of Suzano, the issuance of the security was linked to the goal of reducing the intensity of greenhouse gas emissions (GHGs) by 15% by 2030, which is equivalent to 0.181 tCO2e/t of product. To materialize its SLB, however, the company needed to set an intermediate target: 0.190 tCO2e/t of product (pulp and paper, -10.9%) by 2025, when the company will be halfway toward achieving the original goal, with the debt maturing on January 15, 2031. Suzano went to the market twice: on September 10, when it raised US$750 million, and on

November 16, when it reopened negotiations and raised another US$500 million. In both instances, it obtained the lowest interest rates in its history in foreign loans of 3.95% and 3.1%, respectively, and a current coupon rate of 3.75%. In practice, this means that the sustainability component has reduced Suzano's cost of money. Combined with the fact that there was a demand of US$7 billion in the first funding, equivalent to nine times the offering, and US$2 billion in the second funding, equivalent to four times the offering, these are signs of the soundness and credibility achieved by the company over the years. If the company fails to reach the intermediate target, the interest rate will increase 25 base points as of the second half of 2025, which will raise the total rate to 4% per year. The average intensity of emission obtained in 2024 and 2025 will indicate whether the company has reached its target and, therefore, whether it will be financially penalized in this transaction.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	Yes	

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 8.5	We are aware of the climate risks in Suzano's operations. Our research attempts to understand, how Climate Change affects our mills, eucalyptus productivity and the areas under evaluation for expansion. Risk analysis uses climate scenarios, which were selected after reviewing existing models and downscaling techniques, most of them from IPCC. Aiming at the better understanding of these effects, Suzano started evaluating – in 2006 – the increase of CO2 in most of its planted genotypes, throughout the measure of several physiological variables. In 2009, Suzano investigated the climate changes using three global models (HAD, CSIRO, and PCM), which were based on the IPCC scenarios (A1, B1, A2, and B2). Recently, researchers from Suzano evaluated and identified risks in both scenarios (RCP 2.6 and RCP 8.5). These RCP scenarios were selected after a literature review of existing models (CSIRO Mk3.6.0 NCAR CCSM4, MIROC 5, HadGEM 2, MRI-CGCM 3). All the analysis provided projections up to the year 2050. Analysis of impact on forest productivity was performed by the 3-PG model. This is a scientific recognized tool calibrated to our environmental conditions to understand Climate Change effects on forest productivity. Considering the current scientific updates of global carbon emissions in the globe, we have chosen to use the pessimistic scenario (RCP 8.5) during our insight's recommendations for business. These scenario results were considered in Suzano's long-term forest supply strategic planning, being used in our Woodstock Remsoft planning tool to evaluate the productivity effect in terms of supply impact. Based on evaluation for each of our pulp mills, the pessimistic scenario indicates a potential financial impact of R$2.2 billion, considering the planted forest. Assuming that Suzano will not reduce any of its operations and there is available forest in the market to supply any productivity loses. As a result of that, the analysis indicated that mills located in Espirito Santo, Bahia and Maranhao have a higher potential of impact and it has lower expected effect in other Suzano's forest areas. This study allowed Suzano to incorporate new strategies on the search for clones with higher fitness. For each of the pessimistic and optimistic scenarios, we considered the potential impact on the planted forests, and identified areas under potential climate extremes. Then, we were capable of sharpening the best recommendations of planting, in order to mitigate potential yield loss and optimize forest productivity. Additionally, we could evaluate specific sites and measure the effects of varying growing conditions and management actions. All of the aforementioned actions were performed by different organizational areas of Suzano: Technology and Innovation, Forest Planning and Silviculture. Also, long-term forest planning is integrated in Suzano's business strategy and the results of our expectations are considered in order to define which are the Must-Win Battles for the next years, specially in forest business unit. In addition, when we look for our strategic investment portfolio, Suzano incorporate these studies as lens for new investment, such as establishment of new pulp plant (Cerrado Project) and Spinnova JV, developing fibre that can be considered the most sustainable textile fibre, being produced with minimal CO2 emissions (60% lower when comparing to cotton or viscose).
Other, please specify (Open-air Laboratories for climate change monitoring)	To improve the understanding of climate change in risk scenarios, Suzano has been invested in technologies that are capable of detecting and monitoring these effects, as well as of anticipating the creation of mechanisms to mitigate the potential impacts. These monitoring technologies are called "Open-air Laboratories" (i.e. Meteorological Stations Net and Eddy-Covariance Flux Tower Net), which provide continuous record of meteorological variables and carbon exchange between the atmosphere and eucalyptus plantations, allowing us a better understanding of climate change effects. The Eddy-covariance Flux Tower is a method that monitors forest and measures a continuous record of net ecosystem CO2 exchange, evaporation, and energy flux between the atmosphere and Eucalyptus plantations, at hourly time resolution. This new methodology allowed the daily monitoring of how a plantation grows according to the climate and provided a more agile and efficient process of decision making, which reduces the risks of low productivity. Currently, Suzano has six towers installed monitoring three Eucalyptus plantations, pasture and Savanna. Recently, Suzano has expanded its meteorological stations net, totaling 83 stations. These stations record meteorological variables (i.e. rain, temperature, radiation, wind, relative humidity) with configurable sensors for monitoring atmospheric conditions. All of those data are part of a robust time series, allowing the establishment of optimistic and pessimistic scenarios to predict future impacts on the production and for forecasting planning of forest supply. In this way, Suzano adopted the precautionary principle in the management and operation of its forestry and industrial activities.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	With more than 90 years of experience, we operate mainly in the pulp (paper grade and fluff) and paper (paperboard, printing and writing and tissue) segments. Our renewable eucalyptus pulp production satisfies 100% of our requirements for paper production, and we sell the remaining production as market pulp. Our actual portfolio is highly sustainable and when we look for our business strategy, "be a transformational agent in the expansion into new markets for our biomass" and "be reference in sustainable and innovative solutions for the bioeconomy and environmental services, based on planted trees" are part of our vision (15 years' time-horizon). Suzano announced "Cerrado Project", as part of our ambition to "maintain relevance in pulp, through good projects" (5 to 10-years' time-horizon) that will allow us to provide 20% plus of market pulp due to a highly competitive and eco-efficient project. Also, in our ambition "expand boldly into new segments" (5 to 10-years' time-horizon) we already have in place several partnerships with end users in order to codevelop solutions to address plastic solutions. Suzano announced a joint-venture in the textile market with Spinnova, a material innovation company from Finland. By that, Suzano will make an estimated 22 million euro investment to build the first commercial scale of Spinnova production in Finland and it will ensure supply of sustainably produced micro-fibrillated cellulose (MFC) obtained from eucalyptus planted in Brazil. With a process that uses no harmful chemicals and from 54 to 100% of water saving, the SPINNOVA® fibre can be considered the most sustainable textile fibre there is. Fibre produced this way creates minimal CO2 emissions (60% lower when comparing to cotton or viscose), is quickly biodegradable and contains no microplastics. The fact that these fibres can be recycled into a new fibre again and again makes the SPINNOVA® fibre disruptively circular. Cerrado Project, Partnerships to substitute single-use plastic and partnership with Spinnova are some relevant examples of opportunities being captured for Suzano aligned with our view of Megatrends and their related implications for Suzano's business.
Supply chain and/or value chain	Yes	We operate throughout our chain to ensure efficiency of resources, reduction of waste and environmental impacts—from eucalyptus seedlings to the end product. But we go beyond: we seek dialog and a sustainability vision in the relationship with our employees and customers, partnership with suppliers, and financial processes. Suzano has a structured supplier management and qualification process based on its Culture Drivers as well. This management includes a series of activities to guarantee not only the supply of products and services, but also a relationship based on ethics and integrity with these fundamental links of our value chain. In our supplier performance evaluation process, which is audited internally and externally, Technical Quality, Safety, Environment and Social requirements are applied to 100% of critical suppliers. Our comprehensive policies consist of, for example, our Wood Supply Policy, including our FSC® Controlled Wood Management Procedure, which establishes an internal procedure for wood sourcing and a program to ensure that our wood suppliers comply with the standards FSC-STD-40-005 and Cerflor (NBR 14790). In addition, there is a designated department with a rigorous and regular due diligence process that is responsible for ensuring that certified wood purchases follow the necessary guidelines not only to ensure sustainable forest management, but also to ensure chain of custody. All of that is highly connected with Suzano's business strategy vision of "Continue being a benchmark in the sector in efficiency, profitability and sustainability, from the forest to the client" (15-years' time-horizon).
Investment in R&D	Yes	Our research, development and innovation ("R&D&I") efforts are strategically organized under a Chief Technology and Innovation Officer. This initiative aims to increase synergy between areas, accelerating innovation that generates gains throughout the entire value chain. The integration is extended to all of our industrial and forestry areas in close collaboration with production, marketing and sales personnel. By attempting to improve our processes to develop innovative and higher quality products in a sustainable way, our research and development activities are highly connected with our vision (15 years), ambition (5-10 years) and must-win battles (up to 5 years). Some examples of that are initiatives to increase forestry productivity, reducing the operational costs and optimizing industrial processes, making our production more efficient and developing new products through (i) forest management with optimization of natural resources and costs; (ii) robust eucalyptus breeding program; (iii) improving the use of eucalyptus fiber in the manufacture of pulp, paper and paperboard; (iv) developing new applications for eucalyptus fiber including nanomaterials; and (v) developing a eucalyptus bio refinery to obtain renewable base chemicals. With respect to forest technology and innovation, our efforts are targeted to eucalyptus breeding, biotechnology, forest management, soil nutrition and forest protection. Our goal is to continue improving our planted forest productivity and quality in a sustainable manner. With this purpose, our research group is selecting new eucalyptus clones based on growth, cellulose content and wood quality, making use of state of art techniques like genetic recombination through controlled pollination, use of genomic tools in the selection of new clones, extensive field evaluation (700 ongoing experiments) and laboratory analysis
Operations	Yes	Numerous measures are adopted throughout our production chain, related to processes to adapt to and mitigate climate change. In terms of adaptation, we continue to invest in the use of biotechnology to select more resilient seedlings, in the use of modelling based on climate scenarios (RCP), as well as monitoring, research, and primary data analysis to prepare recommendations for prospecting new sites, fertilization, irrigation and management. In addition, our "Cerrado project", expected to start-up by 2024, will be benchmark for operation competitiveness and eco-efficiency due to energy usage, logistics climate positive model and also considered in the industry as free from fossil fuel - a new milestone for Suzano in eco-efficiency that shows its commitment to society and the planet. All initiatives are connected to our strategic vision of "Continue being a benchmark in the sector in efficiency, profitability and sustainability, from the forest to the client" (15-years' time-horizon)

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets Liabilities	As already mentioned at c2.4 opportunity for a new project (Cerrado) - a highly competitive and eco-efficient project - has potential to increase significantly Suzano's revenue by next years, considering that this projects is expected to increase our renewable market pulp production by 20%. Also, for this specific project (investment expected of R$14.7 billion) and for the other already mapped during strategic planning, a partnership among sustainability, financial planning and strategy areas added a sustainable approach to evaluate our portfolio. Therefore, all relevant projects are being evaluated and compared using a sustainable lens. By M&A moves, our investment in a joint-venture operations with Spinnova in order to build a commercial plant in Finland to make a sustainable textile fibre from wood reinforces our compromise to "Be a transformational agent in the expansion into new markets for our biomass". For access to capital, Suzano Suzano concludes a 750 million USD issuance of debt instruments on the international market with yield of 3.950% per annum, with a coupon of 3.750%, to be paid semi-annually and maturing on January 15th, 2031. In November, the company reopened the offering, selling an additional 500 million USD with yield of 3.100%, the lowest for a Brazilian Corporation in a 10-year operation. The Notes are characterized as Sustainability-Linked Bonds (SLB), according to the principles promulgated by the International Capital Markets Association (ICMA), and are associated with environmental performance indicators (KPIs) regarding reduction of GHG emissions intensity. In this issuance the company commits to an intermediary Sustainability Performance Target (SPT) in 2025 of 0.190 tonCO2 e/ton produced. This value includes Suzano's direct emissions from its operations, entitled scope 1, and those resulting from the purchase of energy from the national power grid, or scope 2, as well as Suzano's pulp and paper production. This initiative is in line with the 2030 Long-term Goal of 15% emissions intensity reduction.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

In line with the priority given to climate risks, the company considers the effects of climate change as risk factors relevant to its business, which are revisited, reviewed and reported annually in the Reference Form and in its 20-F Report.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2020

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (location-based)

Intensity metric
Metric tons CO2e per metric ton of product

Base year
2015

Intensity figure in base year (metric tons CO2e per unit of activity)
0.2133

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2030

Targeted reduction from base year (%)
15

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
0.181305

% change anticipated in absolute Scope 1+2 emissions
63.9

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year (metric tons CO2e per unit of activity)
0.1929

% of target achieved [auto-calculated]
63.7599624941397

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, but it has not been approved by the Science Based Targets initiative

Target ambition
Well-below 2°C aligned

Please explain (including target coverage)
This goal encompasses the specific emission intensity goal is based on the company's production volume and emissions inventory. Emissions of Scope 1 (direct) and Scope 2 (electricity acquisition) will be considered as a numerator of the indicator, sum of pulp and finished paper produced as the denominator (tCO2e/ton produced). The Suzano goal are in line with bellow 2 degrees scenarios as published by Transtition Pathway Initiative https://www.transitionpathwayinitiative.org/sectors/paper

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production
Net-zero target(s)
Other climate-related target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number
Low 1

Year target was set
2020

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: energy carrier
Electricity

Target type: activity
Production

Target type: energy source
Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)
MWh

Target denominator (intensity targets only)
<Not Applicable>

Base year
2018

Figure or percentage in base year
214

Target year
2030

Figure or percentage in target year
321

Figure or percentage in reporting year
240

% of target achieved [auto-calculated]
24.2990654205607

Target status in reporting year
New

Is this target part of an emissions target?
The target is Increase the exportation of energy, witch means go beyond produce low carbon energy. Not necessarily, but as tthis target is related to produce and export reneawble energy, this target helps on the long term targets to remove over 40 million tons of CO2 and to Reduce specific emissions (Scopes 1 and 2) by 15%, until 2030 since it is part of the strategy to expand the renewable base of energy generation

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
The target is Increase the exportation of energy, witch means go beyond produce low carbon energy. Suzano has already been moving towards reducing energy consumption and self-sufficiency, reaching 100% self-sufficiency in the company's consolidated (the consolidated level considers that some units such as Aracruz, Imperatriz, Mucuri and Três Lagoas even generate surplus energy for export, while other units such as Limeira, Suzano, Facepa Matriz, Facepa Filial and Rio Verde do not produce energy). The long term target is specific to exportation, but to achieve this goal, the company be commited to reduce energy eletricity imports and increase efficiency in internal consumption. Suzano has an Energy Working Group that periodically analyzes structuring projects and short-term actions to be implemented, aiming to improve generation of renewable energy in industrial plants, which contributes to increase overall energy self-sufficiency is also obtained from the efficiency.

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2020

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (tCO2e)

Target denominator (intensity targets only)
<Not Applicable>

Base year
2020

Figure or percentage in base year
0

Target year
2030

Figure or percentage in target year
40000000

Figure or percentage in reporting year
15200311.61

% of target achieved [auto-calculated]
38.000779025

Target status in reporting year
Underway

Is this target part of an emissions target?
This is an emission target, that include the removals in the same target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
Suzano it is already Carbon negative company. As we are a forest basis Company, with approximately 2.2 million hectares of trees that are constantly removing carbon from atmosphere, we understand our role in combating the climate crisis. For this reason, we are committed to going beyond the neutralization of our direct emissions and the emissions of our chain, also working for an additional and significant removal of carbon from the atmosphere. This goal encompasses emissions from Scope 1 (direct), Scope 2 (of electricity acquisition), Scope 3 (indirect emissions) and carbon removal from planted and native forest. Suzano is a company with a positive emissions balance for removals, that is, it captures more carbon than it emits, and its intensity of emissions is a benchmark in the sector, the company is committed to maximizing its contribution to mitigate the increase in temperature worldwide reducing greenhouse gas emissions in its forestry, industrial, logistics and value chain processes and contributing to society beyond the commitments of the Paris Agreement. This targets are in line with the level of decarbonization necessary to keep the global temperature rise below 2 ° C, as described in the 5th IPPC Report and decided in the Paris Agreement. Suzano's goal is 100% consistent with science. In 2020, we reached the balance of 15,200,311.6ton CO_2e removed from the atmosphere in 2020, which represents an achievement of 38% of the target, were achieved through the increase of planted and native forest areas plus inventoried areas in the calculation of removals, also Suzano has revised the native forest removal factors to be more consistent with new recognized academic studies, as well as an improvement productivity in our eucalyptus plantations. For emissions, the results were similar to those of 2019 due to general efficiency gains in our operations. It is expected that in the first years we will have the highest volumes of tCO_2 removal and considering that the expansion of our forest area and conservation areas should also occur during this period. The trend is that there will be a deceleration in the volume of removals in the second half of the target execution period, but we will continue to accumulate the results to fully achieve the commitment to remove 40 million tCO_2e.

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Int1

Target year for achieving net zero
2020

Is this a science-based target?
Yes, and we have committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain (including target coverage)
Suzano is already Carbon negative company, and we understand our role in combating the climate crisis. For this reason, we are committed to going beyond the neutralization of our direct emissions and the emissions of our chain, also working for an additional and significant removal of carbon from the atmosphere. This goal encompasses emissions from Scope 1 (direct), Scope 2 (of electricity acquisition), Scope 3 (indirect emissions) and carbon removal by planted and native forest. Suzano is a company with a positive emissions balance for removals, that is, it captures more carbon than it emits, and its intensity of emissions is a benchmark in the sector acording to TPI (Transition Pathway Initiative). This targets are in line with the level of decarbonization necessary to keep the global temperature rise below 2 ° C (WB2D), as described in the 5th IPPC Report and decided in the Paris Agreement. Suzano's goal is 100% consistent with science. Observation: The method used to estimate carbon sequestration is in accordance with the "stock change method" for planted areas, and "gain-loss" method for native areas, as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapter 4: Forest land. The methodology and data of this target was verified by third party. The target related to this challenge is being more climate positive and increasing net carbon capture by 40 million tons until 2030. As this target is related to absolute reduction emissions, beyong carbon capture, to achieve a benchmark intensity KPI in the sector (tCO2/t) recognized as WB2D, it is considered a "net-zero target".

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	6	300195.82
To be implemented*	2	134056.56
Implementation commenced*	3	25122.15
Implemented*	6	80776.97
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes	Fuel switch

Estimated annual CO2e savings (metric tonnes CO2e)
55314.11

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
28400000

Investment required (unit currency – as specified in C0.4)
49800000

Payback period
1-3 years

Estimated lifetime of the initiative
>30 years

Comment

At Suzano Mill we increased the steam production capacity with the modernization of the Zanini boiler. This also resulted in the replacement of the energy matrix with a reduction in natural gas consumption due to the increased use of biomass.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
14609.62

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
7375418

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
At the Jacareí unit we have the Energy Efficiency 2.0 project in progress. The project encompasses different work fronts to reduce the consumption of cogeneration natural gas, such as increasing the specific generation of recovery boilers and reducing the plant's steam consumption.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
3740.4

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
1774023

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
At the Mucuri mill, a lime kiln combustion optimization project was implemented, which consists of reducing the consumption of natural gas through OPP (Optimization of Process Performance) controls for Natural Gas and CaCO3.

Initiative category & Initiative type

Energy efficiency in production processes	Fuel switch

Estimated annual CO2e savings (metric tonnes CO2e)
2297.67

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
1582137

Investment required (unit currency – as specified in C0.4)
30000

Payback period
<1 year

Estimated lifetime of the initiative

>30 years

Comment
At the Mucuri mill, we also increased the burning of methanol in the lime kilns by replacing the set of methanol sprinkler lances and nozzles, as well as the necessary operational adjustments to provide such increased burning, thus reducing the consumption of natural gas in the kilns .

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
2917.51

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
1800000

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
At the Limeira mill, we continued in 2020 some process changes started in 2019, which led to savings in natural gas consumption, as follows a brief description of the project: • Work was carried out on the fuel supply logic in the lime kiln. In order to reduce specific consumption of natural gas. The logical change worked based on the Set Point of the total energy demand needed to produce 1 ton of lime. The flow rate for natural gas is a function of the difference between the total calculated energy demand and the energy supplied by methanol, a by-product. There was a 4,7% reduction in the consumption of natural gas at the Limeira mill, compared to consumption in 2019.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
1899.11

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
1900000

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
At the Três Lagoas mill, we optimized the consumption of natural gasin the lime kiln. The lime kiln is part of the chemical recovery process and its objective is to recover the CaO used in the causticizing process by burning the CaCo3 resulting from the reaction. It was identified that the technological development with the potential to increase by 1.4% the dry content of the sludge.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	Suzano has an Energy Working Group that periodically reviews structural projects and short-term actions to be implemented. This group is multidisciplinary and analyzes and prioritizes projects, including them in a project pipeline. Regarding the order of magnitude of the resources needed to carry out the contemplated initiatives, there are essentially two modalities: (i) CAPEX-free nature, in which case internal resources and funds are used to carry out the projects (ii) Initiatives that involve CAPEX, in which case the proposed actions are integrated into the project engineering pipeline, following the evaluation and approval flow contemplated in the governance structure of corporate project engineering.
Other (Dedicated budget for modernization)	Suzano has an investment type through CAPEX intended exclusively for modernization projects. Modernization projects include fuel efficiency, energy use, purchase of more efficient equipment and use of cleaner fuels, among others.
Dedicated budget for low-carbon product R&D	In 2020 Suzano engaged on a big project to develop pulp for paper packaging production. The growth of e-commerce associated to the COVID-19 and the regulatory changes banning plastics supports the strategy of replacing plastic not only with the paper produced by Suzano, but also suppling certified pulp for customers all over the world. In partnership with the biggest packaging suppliers, Suzano is developing eucalyptus pulp solutions reducing energy consumption or improving papermaking performance in packaging production. Suzano's Bio Strategy is fully aligned with world trends and demands for renewable solutions for a low carbon economy and to meet it's own goals to reduce single use plastics. The prioritized areas are: i. lignin, ii. Bio-petroleum; iii. Nanocellulose; and iv. Biocomposites. These areas represent opportunities to maximize the forest assets usage. Both R&D&I and New Business teams are working on developing value chains and processes that are sustainable, energy optimizes, in synergy with the current assets and with minimal environmental impact. Suzano also invest in partnerships to accelerate it's developments accessing innovations hubs and partnering up with start ups in disruptive projects like kraft pulp as raw material for textile production in a joint venture with Spinnova.
Other (BNDES)	During the last years, Suzano raised capital with the BNDES (Banco Nacional de Desenvolvimento Econômico e Social) with the intention to support projects and reforestation investiments. The capital raised with the BNDES is in compliance with a series of rules from the institution, which establishes that all the investment need to result in a social improvement or a sustainable matter. The eligible projects are 80% funded by the institution and the remain amount, 20%, it's the company obligation. One of the main investments in this context is "Restoration of Native Forests and Conservation of Biodiversity: planting native Brazilian seedlings in degraded land", closely related to climate change issues.
Other (Sustainable Linked Bond)	In 2019, Suzano issued the first bond linked with a KPI (target) for reduction of GHG emission in the total amount of UDS 1.250 MM. this transaction stablish that the company has to reduce his GHG emission intensity to equal to or less than 0.190 tCO2e/ton produced calculated as the average of years ended 2024 and 2025, which is equivalent to an estimated reduction of 10.9% from the 2015 baseline. If the company is not able to meet the KPI the transaction will have an increase in cost of 0,25%, representing approximately USD 12.500.000,00 in interest. Reducing GHG emissions intensity is a key strategy for Suzano to mitigate climate change and address the climate crisis. In the search for the efficiency of our processes, we have already managed to considerably reduce the emissions associated with our production. However, we know that we can do more. Thus, we remain focused on developing solutions that lead us to better results.
Internal incentives/recognition programs	i9 is Suzano's intrapreneurship program which opens space for employees to contribute with constructive solutions for continuous improvement on a daily basis and also solving challenges of our company, transforming ideas in results. The employees are recognize for the engagement, proactive and intrapreneurial profile, colaborative work and also for the innovative solutions. i9 has to ways go: i9 Livre is the modality to receive innovative ideas to improve our day-by-day operation. The recognition is financial, for ideas with quantitative gains, the prize is proportional to this gain, and for qualitative ideas, the prize is a fixed value. The other way to give ideas is for solving Suzano's estrategic challenges that are launched as a Campain so every employee can contribute to solve it. This modality is called i9 Foco, and the recognition is softmoney, which is a combination of gamification, positive exposure and awards in the form of experiences. It is worth mentioning that in both modalities, positive exposure is a strong pillar, putting the proponents in the spotlight in Internal comunication channels and also with their leader's recognition in team meetings. Also, in i9 Livre, employees can give innovative ideas in many areas to improve quantitative and qualitative results, such as sustainable gains.

C-AC4.4/C-FB4.4/C-PF4.4

(C-AC4.4/C-FB4.4/C-PF4.4) Do you implement agriculture or forest management practices on your own land with a climate change mitigation and/or adaption benefit?

Yes

C-AC4.4a/C-FB4.4a/C-PF4.4a

(C-AC4.4a/C-FB4.4a/C-PF4.4a) Specify the agricultural or forest management practice(s) implemented on your own land with climate change mitigation and/or adaptation benefits and provide a corresponding emissions figure, if known.

Management practice reference number

MP1

Management practice

Afforestation

Description of management practice

Suzano is a Brazilian company that seeks the growing global demand of products from planted forests in a sustainable way. It is the world's leader in the production of hardwood eucalyptus pulp – raw material, owing 2,4 million hectares distributed in the sites of the company, which in total 1,3 million hectares are composed by Eucalyptus planted forests and 960 thousand hectares are composed by preservation and conservation areas. The main Eucalyptus planting activities are: cleaning the area manually, chemically or mechanically, preparing the soil manually or mechanically, soil fertilization, planting seedlings manually or semimechanically, irrigation and replanting. In order to ensure the forest is productive and grows well, after planting, the subsequent phase is the maintenance of the forest. This phase consists of a set of activities and lasts until the harvest phase (5 to 7 years). The main activities are: fertilizing the soil, weeding chemically or mechanically, fertilization, reducing sprouting, fighting ants, and protecting against fires. Since it grows rapidly, eucalyptus helps to absorb carbon dioxide from the atmosphere, returning pure oxygen to nature. The role of eucalyptus forests is pivotal for humanity's efforts to neutralize the greenhouse gases responsible for global warming.

Primary climate change-related benefit

Increase carbon sink (mitigation)

Estimated CO2e savings (metric tons CO2e)

15205266.1

Please explain

The method used to estimate carbon sequestration is in line with international methodologies, based on IPCC guidance (2003 and 2006). The calculation of carbon removals was performed in accordance with the "stock change method", as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapther 4: Forest Land. Suzano uses primary data from its Forest Inventory to calculate wood volume and default factors from IPCC (2006) to convert wood volume to carbon stocks. Aftewords the GHG removals is calculated by stock change method according to IPCC (2006) guidance.

Management practice reference number

MP2

Management practice

Other, please specify (Conservation of Natural Areas)

Description of management practice
Suzano maintains approximately 40% of its total area, or approximately 960 thousand hectares, for the conservation of biodiversity. This significant volume of conservation areas includes 58 thousand hectares of high conservation value areas, considered globally and nationally important for the biodiversity and voluntarily established by the company. These areas have important social and environmental attributes, such as the presence of endangered, rare and endemic species; extension of well-preserved forest fragments and rare/endangered ecosystems; and areas that provide environmental services, among others (including sociocultural characteristics). The protection of conservation areas, which represent different types of ecosystems and are located along rivers and among eucalytptus plantations, forming a mosaic landscape, reinforces our commitment to reducing adverse environmental impacts and improving the quality of the environment. Our forestry activities follow the Forest Management Plans, which describe forestry operations, available resources, practices and procedures adopted to sustainably achieve management objectives in the short, medium and long terms. Since 2019, Suzano established an internal working group to address the topic of conservation and biodiversity, in order to define integrated strategies, optimize and expand the sharing of practices and knowledge, in addition to enabling partnerships with NGOs and other institutions. Monitoring of biodiversity within our areas totals more than 2,700 records of plant, bird and mammalian species, including new and other endangered species. Wildlife and flora are frequently controlled in partnership with NGOs and universities, in order to learn about, identify and monitor the development of biodiversity in the regions where the company operates. In a view of the intensification of greenhouse gas emissions, forest formations play an important role in fixing carbon dioxide (CO2) from the atmosphere. The immobilization of CO2 by natural conservation areas corresponds to an alternative of payments for environmental services projects, contributing for the maintenance of these areas and conservation of its biodiversity.

Primary climate change-related benefit
Increasing resilience to climate change (adaptation)

Estimated CO2e savings (metric tons CO2e)
3815755.12

Please explain
We maintain approximately 960 thousand hectares of preserved areas, which account for almost 40% of the company's forest area and contribute to carbon sequestration and stock, preservation of biodiversity and regulation of the hydrological cycle, among other benefits. We contribute to the restoration of native forests, including headwater areas. For native areas the removals we are using the "gain-loss" method to acout the carbon removals, also recommended by the IPCC Guidelines, where data from Suzano's forest register are used combined with carbon stock factors by phytophysiognomy and biome, as well as increase of biomass by Biome and by successional stage (forest maturity level – initial, medium and advance stage). All of these factors come from the most consolidated and recognized bibliographic references in Brazil and from IPCC.

Management practice reference number
MP3

Management practice
Restoration of degraded lands and cultivated organic soils

Description of management practice
Currently, the areas under restoration maintained by the company are located within three critical biomes in Brazil —Atlantic Rainforest, Cerrado and Amazon— and total 33,017 hectares in 2020, with 10.43 million seedlings planted in in different areas.The program aims to restore the ecological processes responsible for the formation of a functional and sustainable forest. These actions are predominantly applied in the Permanent Preserves and Legal Protection Areas in order to comply with the legislation. The company also controls invasive tree species in areas that already have vegetation cover, aiming at reducing the threats of biological invasions to the regional biodiversity. For the future, it is estimated that after 30 years, Suzano's areas under restoration will contribute to the removal of approximately 22 million tCO2e (~ 709.29 TonCO2e / ha) from the atmosphere. With a perspective of increase, as the company will continue the initiative in other areas under its management. Our restoration activities also help generate various environmental services, such as improvements in water quality and availability, soil conservation, control of pests and diseases, and increase in wildlife and flora biodiversity.

Primary climate change-related benefit
Increase carbon sink (mitigation)

Estimated CO2e savings (metric tons CO2e)
131782.4

Please explain
For native areas and restoration, the removals we are using the "gain-loss" method to acout the carbon removals, also recommended by the IPCC Guidelines, where data from Suzano's forest register are used combined with carbon stock factors by phytophysiognomy and biome, as well as increase of biomass by Biome and by successional stage (forest maturity level – initial, medium and advance stage). All of these factors come from the most consolidated and recognized bibliographic references in Brazil and from IPCC. The number of restoration process CO2 savings are included in the conservation of natural area CO2 savings. The numbers should not be added.

Management practice reference number
MP4

Management practice
Fertilizer management

Description of management practice
Suzano has a nutritional monitoring system for eucalytptus plantations that analyzes the stock of nutrients available in the soil. This information, when compared to the required nutrient demand for the entire eucalyptus cycle, allows us to recommend the amount of fertilizers required, per forest block, in order to achieve productivity goals while ensuring the sustainability of our soils in the short, medium and long terms.

Primary climate change-related benefit
Reduced demand for fertilizers (adaptation)

Estimated CO2e savings (metric tons CO2e)
9724.33

Please explain
We observed a reduction in the use of fertilizers at Suzano comparing the scope 1 emission values in the agricultural category. We had a 10% reduction in greenhouse gas emissions, considering the base expansion.

Management practice reference number
MP5

Management practice
Replacing fossil fuels by renewable energy sources

Description of management practice

In Suzano's forestry operations, a large portion of the activities are carried out utilizing utility vehicles, and in Brazil, a large part of these vehicles operates through ethanol or gasoline, they are called flex vehicles. At the company, we are always looking to use less and fewer fossil fuels, replacing them with renewable sources, such as ethanol. In this way, we encourage the use of ethanol instead of gasoline, and thus we observe a reduction in gasoline emissions due to ethanol

Primary climate change-related benefit
Increasing resilience to climate change (adaptation)

Estimated CO2e savings (metric tons CO2e)
787.03

Please explain
A comparison was made between the emission values of forestry operating units, considering gasoline and ethanol emission sources, which are the most representative of this change. This is due to flex vehicles. We note that from 2019 to 2020 there was an increase in emissions related to ethanol and a reduction in gasoline emissions, by approximately 16%.

Management practice reference number
MP6

Management practice
Low tillage and residue management

Description of management practice
When preparing the soil, Suzano performs the minimum tillage technique in all its sites, which consists in preparing the soil in bands in the planting line. In the rest of the area, which accounts for approximately 70% of the land, the soil remains unchanged, which helps preserve the native soil characteristics, avoiding erosion and loss of organic matter. In conventional planting, with plowing, vegetable residues are crushed and incorporated into the soil, where they undergo decomposition, generating a large amount of carbon oxide. On the other hand, in the minimum tillage, we have the least amount of soil turning. The straw stays where it is and undergoes slow and gradual biological activity. The microorganisms that already have in the soil and that consume these plant residues transform this into carbon that will stay in the soil and elevate the organic matter. Besides with minimum tillage, there is a reduction in the consumption of diesel oil, which reduces costs and also contributes to the reduction of the production of greenhouse gases.

Primary climate change-related benefit
Emission reductions (mitigation)

Estimated CO2e savings (metric tons CO2e)
34957027.68

Please explain
When preparing the soil, Suzano performs the minimum tillage technique in all its sites, which consists in preparing the soil in bands in the planting line. In the rest of the area, which accounts for approximately 70% of the land, the soil remains unchanged, which helps preserve the native soil characteristics, avoiding erosion and loss of organic matter. In conventional planting, with plowing, vegetable residues are crushed and incorporated into the soil, where they undergo decomposition, generating a large amount of carbon oxide. On the other hand, in the minimum tillage, we have the least amount of soil turning. The straw stays where it is and undergoes slow and gradual biological activity. The microorganisms that already have in the soil and that consume these plant residues transform this into carbon that will stay in the soil and elevate the organic matter. Besides with minimum tillage, there is a reduction in the consumption of diesel oil, which reduces costs and also contributes to the reduction of the production of greenhouse gases.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Company-wide

Description of product/Group of products
Certified bleached kraft pulp; certified paper and paper products (as straw paper and disposable cups) and certified consumer goods – all from planted eucalyptus

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (GHG Inventory / GHG Protocol Brazilian Program; Lifecycle Assessment / ISO 14040)

% revenue from low carbon product(s) in the reporting year
100

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
Suzano's total area of over 2 million hectares is composed of eucalyptus plantations and native forests that together absorb CO2 from the atmosphere. The Company does not convert areas or practice deforestation. It occupies degraded pasturelands, promoting carbon sequestration and increment of carbon stock. With our production model, from a balance standpoint, we have a higher volume of carbon capture compared to emissions, reaching negative net emissions (going beyond the neutralization to removing additional amounts). In 2020, we launched a long-term goal to be even more climate positive by 2030 (direct and indirect emissions). Furthermore, our products (or new products) are all from rewable sources and, some of them, have applications that replace fossil materials

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Level of aggregation
Company-wide

Description of product/Group of products
Surplus renewable energy generated in our mills, derived from biomass, available to the Brazilian national public electric system (SIN)

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (GHG Inventory / GHG Protocol Brazilian Program; Lifecycle Assessment / ISO 14040)

% revenue from low carbon product(s) in the reporting year
0

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
"Round 87% of our energy mix comes from renewable sources. We have a higher volume of carbon capture compared to emissions, reaching negative net emissions (going beyond the neutralization to removing additional amounts). We generate electric energy in our mills, produced from renewable sources (biomass), enabling a surplus that can supply the national energy system. In 2020, Suzano exported, on average, 193 MWh of renewable energy to the grid (approximately 12,9% more than in 2019). With this, the company advances in its goal of increasing the export of renewable energy by 50% by 2030 (through investments in efficiency, research and innovation), contributing to the expansion of the Brazilian renewable energy mix. OBS. In this case, we don't consider the sells to the SIN as revenue. It integrates our accounting as a cash cost abatement"

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
2155102.689

Comment

Scope 2 (location-based)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
59531.901

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Brazil GHG Protocol Programme
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
Other, please specify (ABNT NBR ISO 14064-1 and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005))

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The ABNT NBR ISO 14064-1, GHG Protocol, GHG Protocol Scope 2 Guidance, Brazil GHG Protocol Programme tool and IPCC (2006) were used as reference for the Scope 1, 2 and 3 emissions and removals. The NCASI (2005) were used as referenfe to estimate Scope 1 emissions and Scope 1 biogenic emissions from industry process.

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
2155102.689

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
The 2020 is the second year of Suzano's emissions report, after the merge between Suzano Pupl & Paper and Fibria.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment
Suzano has self consumption of eletricity generated by the pulp mills and ofen exports eletricity to the national grid. The company is improving its GHG calculations to incorporate this benefit generated by the company.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
59531.901

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
The 2020 is the second year of Suzano´s emissions report, after the merge between Suzano Pulp & Paper and Fibria.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
163026.007

Emissions calculation methodology
The inventory was developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
12.74

Please explain
The main raw material, wood, comes from company's lands and outsourced forestry suppliers provide declarations of fuel consumption. These activities are reported in our GHG Emissions and Removals Inventory. Furthermore, we have conducted a LCA (Life Cycle Assessment) considering the goods and services purchased for industry activities.

Capital goods

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
108637.165

Emissions calculation methodology
The inventory was developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company); and transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company). In 2020, the calculation of greenhouse gas emissions in this category was made based on data obtained by the internal SAP system, by pointing out the ordinances and distance from suppliers to Suzano units.

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
19102.091

Emissions calculation methodology
The inventory is developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Disposal and treatment of waste generated in the company's operations in 2020 (in facilities not owned or controlled by the company).

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1492.75

Emissions calculation methodology
"The inventory was developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP. "

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Transportation of employees for business-related activities in 2020 (in vehicles not owned or operated by the company).

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
8368.343

Emissions calculation methodology
The inventory is developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
"Transportation of employees between their homes and their worksites in 2020 (in vehicles not owned or operated by the company). "

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Category not calculated in 2020 greenhouse gas emissions. This type of emissions was not representative in 2020 in relation to the other related categories.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1245917.505

Emissions calculation methodology
The inventory was developed in according to worldwide recognized protocols, i.e. GHG Protocol (The Greenhouse Gas Protocol - a Corporate Accounting and Reporting Standard – Revised Edition), Brazilian GHG Protocol Program, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, WRI & WBCSD (2004) , and IPCC (2006 IPCC Guidelines for National Greenhouse Gas Inventories; Good Practice Guidance for Land Use, Land-Use Change and Forestry) and Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, NCASI (2005). For scope 3, the information was collected with suppliers, controls of internal areas responsible for managing supplier activities and on internal systems such as SAP.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company’s operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company). This category is the most relevant to the scope 3 where represent the worldwide producti distribution to clients by road, rail and vessels.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Use of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
These emissions can be related to the use of paper. Therefore, we understand that the use of paper itself does not result in significant emissions, as the possible end uses (eg packaging, printing paper and tissue paper) do not result in energy or fuel consumption.

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
It is not applied to Suzano, as the company does not have franchises for its operations.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
This category is not considered relevant in Suzano's greenhouse gas inventory. Scope information 1,2 and 3 were verified by a third party.

C-AC6.6/C-FB6.6/C-PF6.6

(C-AC6.6/C-FB6.6/C-PF6.6) Can you break down your Scope 3 emissions by relevant business activity area?
Yes

C-AC6.6a/C-FB6.6a/C-PF6.6a

(C-AC6.6a/C-FB6.6a/C-PF6.6a) Disclose your Scope 3 emissions for each of your relevant business activity areas.

Activity
Processing/Manufacturing

Scope 3 category
Purchased goods and services

Emissions (metric tons CO2e)
3917.736

Please explain
Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data (example: kilommeters driven by vehicle type).

Activity
Agriculture/Forestry

Scope 3 category
Purchased goods and services

Emissions (metric tons CO2e)
159108.272

Please explain
"Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data (example: kilommeters driven by vehicle type). "

Activity
Distribution

Scope 3 category
Upstream transportation and distribution

Emissions (metric tons CO2e)
10333.908

Please explain
"Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data (example: kilommeters driven by vehicle type). Note: This value refers to the upstream distribution related to Processing/Manufacturing activities."

Activity
Distribution

Scope 3 category
Upstream transportation and distribution

Emissions (metric tons CO2e)
98303.257

Please explain
"Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data(example: kilommeters driven by vehicle type). Note: This value refers to the upstream distribution related to Agriculture/Forestry activities."

Activity
Distribution

Scope 3 category
Downstream transportation and distribution

Emissions (metric tons CO2e)
1245917.505

Please explain
"Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data (example: kilommeters driven by vehicle type). Note: This value refers to the downstream distribution related to Processing/Manufacturing activities."

Activity
Distribution

Scope 3 category
Downstream transportation and distribution

Emissions (metric tons CO2e)
325.658

Please explain
"Suzano uses GHG Protocol Scope 3 Guidance to evaluate the relevant GHG emissions. To calculate the GHG emissions Suzano adoped an hybrid method of calculation that considering the fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). When necessary some fuel consumption information was estimated based on supplier data(example: kilommeters driven by vehicle type). Note: This value refers to the upstream distribution related to Agriculture/Forestry activities."

C-AC6.8/C-FB6.8/C-PF6.8

(C-AC6.8/C-FB6.8/C-PF6.8) Is biogenic carbon pertaining to your direct operations relevant to your current CDP climate change disclosure?
Yes

C-AC6.8a/C-FB6.8a/C-PF6.8a

(C-AC6.8a/C-FB6.8a/C-PF6.8a) Account for biogenic carbon data pertaining to your direct operations and identify any exclusions.

CO2 emissions from land use management

Emissions (metric tons CO2)
33026244.854

Methodology
Region-specific emissions factors

Please explain
"The biogenic emissions from land use management was calculated according to NBR ISO 14.064-1 and GHG Protocol Corporate Accounting. Is in line with international methodologies, based on IPCC guidance (2003 and 2006). The calculation of carbon removals was performed in accordance with the ""stock change method", as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapther 4: Forest Land. Suzano uses primary data from its Forest Inventory to calculate wood volume and default factors from IPCC (2006) to convert wood volume to carbon stocks. Aftewords the GHG removals is calculated by stock change method according to IPCC (2006) guidance. "

CO2 removals from land use management

Emissions (metric tons CO2)
52047266.077

Methodology
Field measurements

Please explain
"The method used to estimate carbon sequestration is in line with international methodologies, based on IPCC guidance (2003 and 2006). The calculation of carbon removals was performed in accordance with the ""stock change method", as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapther 4: Forest Land. Suzano uses primary data from its Forest Inventory to calculate wood volume and default factors from IPCC (2006) to convert wood volume to carbon stocks. Aftewords the GHG removals is calculated by stock change method according to IPCC (2006) guidance. "

Sequestration during land use change

Emissions (metric tons CO2)
315791621.047

Methodology
Field measurements

Please explain
"The method used to estimate carbon sequestration is in line with international methodologies, based on IPCC guidance (2003 and 2006). The calculation of carbon removals was performed in accordance with the ""stock change method", as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapther 4: Forest Land. Suzano uses primary data from its Forest Inventory to calculate wood volume and default factors from IPCC (2006) to convert wood volume to carbon stocks. Aftewords the GHG removals is calculated by stock change method according to IPCC (2006) guidance. "

CO2 emissions from biofuel combustion (land machinery)

Emissions (metric tons CO2)
62676.095

Methodology
Region-specific emissions factors

Please explain
"The biogenic emissions from biofuel combustion was calculated according to NBR ISO 14.064-1 and GHG Protocol Corporate Accounting. Suzano uses data of fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). "

CO2 emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO2)
20241584.986

Methodology
Region-specific emissions factors

Please explain
"The biogenic emissions from biofuel combustion was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses data of fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). "

CO2 emissions from biofuel combustion (other)

Emissions (metric tons CO2)
46621.063

Methodology
Default emissions factors

Please explain
"Biogenic emissions of 46,621.063 t CO2e for Scope 3 (Transportation and distribution - upstream-, Transport and distribution -downstream, purchase goods and services and and displacement of employees). The biogenic emissions from biofuel combustion was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses data of fuel consumption from the equipment (collected with suppliers or internal control) multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). "

C-AC6.9/C-FB6.9/C-PF6.9

(C-AC6.9/C-FB6.9/C-PF6.9) Do you collect or calculate greenhouse gas emissions for each commodity reported as significant to your business in C-AC0.7/FB0.7/PF0.7?

Agricultural commodities
Timber

Do you collect or calculate GHG emissions for this commodity?
Yes

Please explain
As a forest based company, Suzano has its operation on sustainable forest manegment as an important part of its bussines. The forestry operations include emissions from scope 1, 2 and 3 and include operation by nusuries, silviculture, harvesting, purchasing good and services, inbound wood transportation, waste, fertilizers, and employees transportation. The forest emissions are covered in the 2020 Greenhouse Gas Emissions, that also include the biogenic emissions and the carbon removals. The forest operatins has 699,950.537 ton CO2e of emissions 48,231,510.958 ton CO2e of carbon removals from eucalyptus and 3,815,755.120 tonCO2e of carbon removals from navive area and 164,799,325.927 ton CO2e of carbon stock from eucalyptus area, and 150,992,295.119 ton CO2e of carbon stock from native areas. The method used to estimate eucalyptus carbon sequestration is in line with international methodologies, based on IPCC guidance (2003 and 2006). The calculation of carbon removals was performed in accordance with the "stock change method", as per the IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4: Agriculture, Forestry and Other Land Use; Chapther 4: Forest Land. Suzano uses primary data from its Forest Inventory to calculate wood volume and default factors from IPCC (2006) to convert wood volume to carbon stocks. Aftewords the GHG removals is calculated by stock change method according to IPCC (2006) guidance.

C-AC6.9a/C-FB6.9a/C-PF6.9a

(C-AC6.9a/C-FB6.9a/C-PF6.9a) Report your greenhouse gas emissions figure(s) for your disclosing commodity(ies), explain your methodology, and include any exclusions.

Timber

Reporting emissions by
Unit of production

Emissions (metric tons CO2e)
699950.536843232

Denominator: unit of production
Unit of product

Change from last reporting year
Lower

Please explain
As a forest based company, Suzano has its operation on sustainable forest management as an important part of its businnes. The forestry operations include emissions from scope 1, 2 and 3 and include operation by nusuries, silviculture, harvesting, purchasing good and services, inbound wood transportation, waste, fertilizers and employees transportation. The forest emissions are covered in the 2020 Greenhouse Gas Emissions, that also include the biogenic emissions and the carbon removals. The forestry operations has 699,950.537 tons CO2e of emissions , 48,321,510.958 tons CO2e of carbon removals from eucalyptus and 3,815,755.120 tons CO2e of carbon removals from navive area and 164,799,325.927 tons CO2e of carbon stock from eucalyptus area, and 150,992,295.119 tons of carbon stock from native areas. The Greenhouse Gas Inventory was based on several recognized methodologies: the ABNT NBR ISO 14064-1, GHG Protocol, GHG Protocol Scope 2 Guidance, Brazil GHG Protocol Programme tool and IPCC (2006) were used as reference for the Scope 1, 2 and 3 emissions and removals.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.0000727063

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
2214634.59

Metric denominator
unit total revenue

Metric denominator: Unit total
30460000000

Scope 2 figure used
Location-based

% change from previous year
14.56

Direction of change
Decreased

Reason for change
In line of the strategy and commitment to be part of solution for the future, Suzano ran several projects and initiatives to increase your efficiency and reduce the consumption of higher carbon intenstity materials. The projects and initiatives describe along this report show this commitment in line of our climate change strategy and long term targets. Besides that, 2020 was a year in which production was higher, which provides industrial units with the possibility of using by-products in energy production. The reduction in the electricity purchase factor contributed to the reduction of scope 2 emissions.

Intensity figure
0.1928700061

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
2214634.59

Metric denominator
unit of production

Metric denominator: Unit total
11482524.6

Scope 2 figure used
Location-based

% change from previous year
3.66

Direction of change
Decreased

Reason for change
In line of the strategy and commitment to be part of solution for the future, Suzano ran several projects and initiatives to increase your efficiency and reduce the consumption of higher carbon intenstity materials. The projects and initiatives describe along this report show this commitment in line of our climate change strategy and long term targets. Besides that, 2020 was a year in which production was higher, which provides industrial units with the possibility of using by-products in energy production. The reduction in the electricity purchase factor contributed to the reduction of scope 2 emissions.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	1864863.865	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	72004.512	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	203841.372	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	2024.994	IPCC Fourth Assessment Report (AR4 - 100 year)
Other, please specify (HCFCs)	6102.896	IPCC Fourth Assessment Report (AR4 - 100 year)
Other, please specify (Blends of HFCs and PFCs gases)	6265.05	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Brazil	2155102.689
Americas	0
Europe	0
Asia Pacific (or JAPA)	0

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Paper: 11% of total scope 1 emissions. Proportional data of emissions in relation to total production (paper and cellulose - 100%). Does not reflect the accuracy of emissions from the papermaking process.	237694.976
Pulp: 89% of total scope 1 emissions. Proportional data of emissions in relation to total production (paper and cellulose - 100%). Does not reflect the accuracy of emissions from the papermaking process.	1917407.714

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Head Office / logistic operations and support operations	5855.4	-23.34	-46.41
UNF BA (Forestry Unit - Bahia state)	99468.1	-18.2	-39.55
UNF ES (Forestry Unit - Espírito Santo state)	79709.2	-19.5	-40.4
UNF MA (Forestry Unit - Maranhão state)	46171.9	-5.24	-47.33
UNF MS (Forestry Unit - Mato Grosso do Sul state)	103562.1	-21	-51.47
UNF SP (Forestry Unit - São Paulo state)	87298.4	-23.22	-46.1
Industrial Unit (UNI) - Aracruz	247490.9	-19.5	-40.4
Industrial Unit (UNI) - Facepa	12838.9	-1.24	-48.28
Industrial Unit (UNI) - Imperatriz	194689.7	-5.24	-47.33
Industrial Unit (UNI) - Jacareí	309355.3	-23.22	-46.1
Industrial Unit (UNI) - Limeira	128609.7	-22.42	-47.19
Industrial Unit (UNI) - Mucuri	215746.3	-18.2	-39.55
Industrial Unit (UNI) - Rio Verde	20589.2	-23.29	-46.19
Industrial Unit (UNI) - Suzano	185774.3	-23.32	-46.16
Industrial Unit (UNI) - Três Lagoas	417943.1	-21	-51.47

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Industry: Stationary Sources	1707975.9
Industry: Internal Transportation	16302.367
Forestry: Fertilizers and Lime	86970.039
Industry: Waste and Wastewater Management	67847.137
Industry: Cooling Gases	14392.941
Forestry: Harvesting and Wood Logistics (road and barges)	328889.04
Forestry: Waste Management	350.658

Activity	Scope 1 emissions (metric tons CO2e)

C-AC7.4/C-FB7.4/C-PF7.4

(C-AC7.4/C-FB7.4/C-PF7.4) Do you include emissions pertaining to your business activity(ies) in your direct operations as part of your global gross Scope 1 figure?

Yes

C-AC7.4a/C-FB7.4a/C-PF7.4a

(C-AC7.4a/C-FB7.4a/C-PF7.4a) Select the form(s) in which you are reporting your agricultural/forestry emissions.

Emissions disaggregated by category (advised by the GHG Protocol)

C-AC7.4b/C-FB7.4b/C-PF7.4b

(C-AC7.4b/C-FB7.4b/C-PF7.4b) Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.

Activity
Agriculture/Forestry

Emissions category
Non-mechanical

Emissions (metric tons CO2e)
87320.697

Methodology
Region-specific emissions factors

Please explain
The non-mechanical emissions was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses primary data of consumption and monitoring values obtained by its own intern sistems (for example: amount of fertilizers applied, waste generation in process, amount of gases replaced in refrigeration equipments) multiplied by emissions factor available on Brazil GHG Protocol Programme tool and IPCC (2006), that present specific emission factors and GWP values.

Activity
Agriculture/Forestry

Emissions category
Mechanical

Emissions (metric tons CO2e)
328889.04

Methodology
Region-specific emissions factors

Please explain
"The mechanical emissions was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses primary data of fuel consumption from the equipment multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). "

Activity
Processing/Manufacturing

Emissions category
Non-mechanical

Emissions (metric tons CO2e)
82240.077

Methodology
Region-specific emissions factors

Please explain
"The non-mechanical emissions was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses primary data of consumption and monitoring values obtained by its own intern sistems (for example: amount of fertilizers applied, waste generation in process, amount of gases replaced in refrigeration equipments) multiplied by emissions factor available on Brazil GHG Protocol Programme tool and IPCC (2006), that present specific emission factors and GWP values. "

Activity
Processing/Manufacturing

Emissions category
Mechanical

Emissions (metric tons CO2e)
1724278.241

Methodology
Region-specific emissions factors

Please explain
"The mechanical emissions was calculated according to NBR ISO 14.064-I and GHG Protocol Corporate Accounting. Suzano uses primary data of fuel consumption from the equipment multiplied by emissions factor available on Brazil GHG Protocol Programme tool, that present specific emission factors by fuel (for example: gasoline, ethanol and diesel in Brazil). "

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Europe	29.304	0	9.6	
Americas	59478.605	0	952665	
Asia Pacific (or JAPA)	23.992	0	24.6	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

By activity

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Head Office / logistic operations and support operations	803.1	
UNF BA (Forestry Unit - Bahia state)	15.1	
UNF ES (Forestry Unit - Espírito Santo state)	17.2	
UNF MA (Forestry Unit - Maranhão state)	98.4	
UNF MS (Forestry Unit - Mato Grosso do Sul state)	6.6	
UNF SP (Forestry Unit - São Paulo state)	65.3	
Industrial Unit (UNI) - Aracruz	2953.6	
Industrial Unit (UNI) - Facepa	2289.7	
Industrial Unit (UNI) - Imperatriz	1100.6	
Industrial Unit (UNI) - Jacareí	6484.1	
Industrial Unit (UNI) - Limeira	20872.1	
Industrial Unit (UNI) - Mucuri	392.3	
Industrial Unit (UNI) - Rio Verde	1740.3	
Industrial Unit (UNI) - Suzano	21725.6	
Industrial Unit (UNI) - Três Lagoas	967.9	

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Forestry Operations	202.7	
Industrial Operations	58526.1	
Head Office / logistic operations and support operations	803.1	

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Remained the same overall

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	33239.4	Decreased	16.79	In 2020, 87.28% of Suzano's energy mix came from renewable sources and we expanded exports of surplus renewable energy by approximately 6% to the National GRID. Projects to replace the energy generated by burning fossil fuels with renewable energy using black liquor generated in our production process contributed directly to this percentage. Between 2019 and 2020 we reduce in 27.18% (-1255.69 tCO2e) the consumption of gasoline and 3.57% (-48163,7 tCO2e) of the Natural Gas. At the same time, we increase the consumption of black liquor in 13.96% (16179.93 tCO2e). In the balance, we reduce our emissions in 16.79% (-33239,4 tCO2e). 2019 energy consumption emissions was 197971,4 tCO2. Rationale: (33,239.4 tCO2 / 197,971.4 tCO2)*100 = 16.79% reduction. Suzano has a CAPEX line exclusively for modernization projects, which include efficiency in the use of fuel, reduction in consumption of fossil fuels, reduction in the use of energy, and purchase of more efficient equipment, among others. In addition, Suzano has been working to obtain funds to improve performance in social and environmental projects, such as those that allow for increasing the use of renewable energy, optimizing the efficiency of the biomass boilers, restoring native forests, and conserving biodiversity. These projects are closely related to climate and can be funded in whole or in part by net revenues from the sale of the notes. The company has multidisciplinary working groups (WGs) that develop projects focused on finding more efficient and less emitting forms of production, as is the case of the Recovery and Utilities WG and the Energy WG, among others. For more information, please check our Indicator Center: https://centraldeindicadores.suzano.com.br/en/
Other emissions reduction activities	11693.67	Decreased	17.73	Suzano's indirect emissions from the acquisition of energy (scope 2) result from the purchase of electricity from the National Interconnected System (SIN), Brazil's electricity production and transmission system. These emissions are more representative in industrial units, mainly for paper machines, which require a continuous supply of electricity. Since Suzano self-generates a large portion of its energy consumption, Scope 2 emissions are not very representative in the global inventory. Suzano's reduction of Scope 2 emissions in 2020 followed the 17.73% reduction in the average emission factor for electricity supplied in the National Interconnected System provided by the Brazilian Ministry of Science, Technology and Innovations (MCTIC). Rationale: (11,693.67 tCO2e / 71,225.59 tCO2e)*100 = 17.73% reduction
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 10% but less than or equal to 15%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	55571975.45	6408399.49	61980374.94
Consumption of purchased or acquired electricity	<Not Applicable>	971889.72	0	971889.72
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	56543865.17	6408399.49	62952264.66

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Black Liquor

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
51972237.61

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
51972237.61

Emission factor
0.00067

Unit
metric tons CO2e per GJ

Emissions factor source
BEN 2020 -The national energy balance is the main statistical source on the production and consumption of energy in Brazil, presents the flows of all the forms of energy used in Brazilian society converted into tons of oil equivalent - toe, a not very orthodox unit used for historical reasons int the international statistics

Comment
"The reported black liquor consumption data - collected by Suzano in an automated way - were converted into energy consumption based on the lower basic density and

calorific value of the fuel. Black liquor is a lignin-rich waste byproduct of kraft pulp production, which is burned in boiler/steam turbine cogeneration systems to provide heat and power for onsite use, being the surplus energy exported to the Grid. As heat is produced in the pulp and paper making process, it is used to generate electricity in combined heat and power (CHP) installations."

Fuels (excluding feedstocks)
Other, please specify (Biomass)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3026611.51

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
3026611.52

Emission factor
0.00194

Unit
metric tons CO2e per GJ

Emissions factor source
"Suzano controls the energy factor (Gj / ton) of the internal biomass, as it is an important factor for the production of cellulose. For the emission factor (CO2, N2O and CH4), the IPCC 2006 reference was used. "

Comment
The wood chipping process, as well as the effluent treatment, generates residues (wood waste and sludge) which are incinerated in biomass boilers in Kraft-cellulose plants in order to minimize the waste generated for landfilling and has a positive effect on the steam/electricity matrix, contributing for the achievement of a most environmentally friendly level of production

Fuels (excluding feedstocks)
Biodiesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
135443.24

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
135443.24

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0.00025

Unit
metric tons CO2e per GJ

Emissions factor source
ANP 2021- The Oil, Natural Gas, and Biofuels Statistical Brazilian Yearbook 2020 consolidates data on the performance of the oil, natural gas and biofuels industry and the national supply system in 2020.

Comment
The use of biodiesel is predominantly associated with maintenance activities that require the complementary use of generators, compressors and pumps.

Fuels (excluding feedstocks)
Other, please specify (Renewable Methanol)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
437683.08

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
311863.11

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
125819.97

Emission factor
0

Unit
metric tons CO2e per GJ

Emissions factor source
DMA 2011 - Average of upper and lower values for "Danish Methanol Association, Denmark (2011)"

Comment
Methanol is a byproduct resultant from condensate treatment in pulp mills. It´s considered to be a waste of the pulping process that needs to be disposed, either through the effluent treatment system or by incinerating the stripper off gases. It´s often burned using the lime kiln as the incineration point, and it can aswell be incinerated on power/recovery boilers, contributing to the cogeneration matrix.

Fuels (excluding feedstocks)
Compressed Natural Gas (CNG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
5627380.45

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
4215567.37

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
1411813.09

Emission factor
0.06425

Unit
metric tons CO2e per GJ

Emissions factor source
BEN 2021 -The national energy balance is the main statistical source on the production and consumption of energy in Brazil, presents the flows of all the forms of energy used in Brazilian society converted into tons of oil equivalent - toe, a not very orthodox unit used for historical reasons int the international statistics.

Comment
The major consumption of NG is within lime kiln process, which uses heat to convert lime mud (a byproduct waste) to lime, or in chemical terms, calcium carbonate to calcium oxide. This process is referred to as "calcining". On recovery boilers or auxiliary boilers, the use of gas is strictly associated with the maintainance of vapor balance of the plants and / or for occasional use in transient regimes (starts, stops, trips, instability events) . Thus, electricity generation is secondary in this process, in addition to the fact that the trade offs between fossil fuel based electricity and revenue generation with sale is predominantly disadvantageous

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Fuels (excluding feedstocks)
Fuel Oil Number 1

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
781019.04

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
397400.98

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
383618.06

Emission factor
0.07765

Unit
metric tons CO2e per GJ

Emissions factor source
BEN 2020 -The national energy balance is the main statistical source on the production and consumption of energy in Brazil, presents the flows of all the forms of energy used in Brazilian society converted into tons of oil equivalent - toe, a not very orthodox unit used for historical reasons int the international statistics.

Comment
The major consumption of fuel oil is within lime kiln process, which uses heat to convert lime mud (a byproduct waste) to lime, or in chemical terms, calcium carbonate to calcium oxide. This process is referred to as "calcining". On recovery boilers or auxiliary boilers, the use of fuel oil is strictly associated with the maintainance of vapor balance of the plants and / or for occasional use in transient regimes (starts, stops, trips, instability events) . Thus, electricity generation is secondary in this process, in addition to the fact that the trade offs between fossil fuel based electricity and revenue generation with sale is predominantly disadvantageous.

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	7817715.51	6249305.01	7628561.13	6060150.63
Heat	0	0	0	0
Steam	39666013.45	37588205.81	38268150.45	36502903.52
Cooling	0	0	0	0

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Other, please specify (tCO2e removals by native forest)

Metric value
3815755.12

Metric numerator
tCO2 sequestration

Metric denominator (intensity metric only)

% change from previous year
12.31

Direction of change
Increased

Please explain
"The company does not remove native vegetation. Our raw material comes exclusively from commercial eucalyptus plantations (planted and harvested for this purpose), developed on our own or third parties' farms. Our expansion of cultivation always occurs in areas that have already suffered human interference. Our forest base, of approximately 1,3 million hectares of planted areas, is supported by best management and cultivation practices, and we maintain approximately 960,000 hectares of preserved areas, which account for almost 40% of the company's forest area and contribute to carbon sequestration and stock, preservation of biodiversity and regulation of the hydrological cycle, among other benefits. Considering the forest asset base alone, for each hectare planted, we have approximately 0.70 hectares set aside for conservation."

Description
Other, please specify (Native forest restoration - Size of area undergoing restoration process)

Metric value
33017.45

Metric numerator
Hectare

Metric denominator (intensity metric only)

% change from previous year
1.51

Direction of change
Increased

Please explain
"Suzano has a significant Environmental Restoration Program to regenerate degraded areas and recover native forests. Currently, the areas under restoration maintained by the company are located within three critical biomes in Brazil - Atlantic Rainforest, Cerrado and Amazon - and total 33,017 hectares, with almost 11 million seedlings planted in different areas. By 2050, these areas are expected to sequester close to 10,07 million tCO2e from the atmosphere, thereby contributing to restore the planet's climate balance. Our restoration activities also help generate various environmental services, such as improvements in water quality and availability, soil conservation, control of pests and diseases, and increase in wildlife and flora biodiversity. See more in our Indicators Center: https://centraldeindicadores.suzano.com.br/gri/304-3/#numero-total-de-areas-em-processo-de-restauracao"

Description
Other, please specify (Carbon Balance)

Metric value
15200311.61

Metric numerator
tCO2e

Metric denominator (intensity metric only)

% change from previous year
22.69

Direction of change
Increased

Please explain
Suzano's total absolute emissions (scopes 1, 2 and 3) totaled 3.78 million tCO2e and forest base net removal1 of 15.205 million tCO2e, of which 3.815 million tCO2e were from native areas. Thus, from a balance standpoint, we had a higher volume of removals compared to emissions, reaching negative net emissions of 15.200 million tCO2e.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/ section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf, page 19 for level of assurance (Section "7. CONCLUSION AND RECOMMENDATION"), and page 14 Section for scope 1 emissions ("5.3.1 Direct emissions – Scope 1")

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/ section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf, page 19 for level of assurance (Section "7. CONCLUSION AND RECOMMENDATION"), and pages 11 and 12 Section for scope 2 emissions ("5.3.2 Indirect emissions – Scope 2")

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance

Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Purchased goods and services" see "Category 1 - Purchased Goods and Services;", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Upstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Transportation and Distribution (upstream)" see "Category 4 - Transportation and Distribution (upstream)", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Waste generated in operations

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Wastes Generated in Operations" see "Category 5 - Wastes Generated in Operations", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Business travel

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference

Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Business Travels" see "Category 6 - Business Travels", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Employee commuting

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Employees Commuting" see "Category 7 - Employees Commuting (home-work)", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Downstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

Page/section reference
Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf: for level of assurance and scope 3 emissions, see pages 17 and 18 (Section "7. CONCLUSION AND RECOMMENDATION"), and for "Scope 3: Transportations and Distribution (downstream)" see "Category 9 - Transportation and Distribution (downstream)", Page 13, Section "5.3.3 Other indirect emissions – Scope 3"

Relevant standard
Other, please specify (NBR ISO 14.064-3)

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C7. Emissions breakdown	Year on year change in emissions (Scope 1)	NBR ISO 14.064-3 and/or Brazil GHG Protocol Programme	Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf:page 39 "ANEXO 3: TABLE OF EMISSIONS AND REMOVAL BY SCOPE AND GREENHOUSE GAS" Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Suzano Indicators Center 2020: https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#direct-scope-1-ghg-emissions The verification process encompass Scopes 1, 2 and 3 and its emission breakdown by business unit and emission categories. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf
C6. Emissions data	Other, please specify (CO2e biogenic removals)	NBR ISO 14.064-3 and/or Brazil GHG Protocol Programme	Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf:page 39 "ANEXO 3: TABLE OF EMISSIONS AND REMOVAL BY SCOPE AND GREENHOUSE GAS" and page 13 "5.3.4 Biomass emissions" Suzano Indicators Center 2020: https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#biogenic-emissions-of-co2-scope-1 The verification process encompass Scopes 1, 2 and 3, including biogenic emissions and its emission breakdown by business unit and emission categories. The greenhouse gas emissions covered by 100% of Suzano's operational control, with reasonable assurance. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	NBR ISO 14.064-3 and/or Brazil GHG Protocol Programme	Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf:page 39 "ANEXO 3: TABLE OF EMISSIONS AND REMOVAL BY SCOPE AND GREENHOUSE GAS" Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Suzano Indicators Center 2020: https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#direct-scope-1-ghg-emissions; https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#energy-indirect-scope-2-ghg-emissions; https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#intensity-of-greenhouse-gas-emissions-scopes-1-and-2-by-tonne-of-product The verification process encompass Scopes 1, 2 and 3 and its emission breakdown by business unit and emission categories. The greenhouse gas emissions covered by 100% of Suzano's operational control, with reasonable assurance. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf
C6. Emissions data	Year on year change in emissions (Scope 3)	NBR ISO 14.064-3 and/or Brazil GHG Protocol Programme	Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf:page 39 "ANEXO 3: TABLE OF EMISSIONS AND REMOVAL BY SCOPE AND GREENHOUSE GAS" Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Suzano Indicators Center 2020: https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#other-indirect-scope-3-ghg-emissions; https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#intensity-of-greenhouse-gas-emissions-scopes-1-2-and-3-by-tonne-of-product The verification process encompass Scopes 1, 2 and 3 and its emission breakdown by business unit and emission categories. The greenhouse gas emissions covered by 100% of Suzano's operational control, with reasonable assurance. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf
C7. Emissions breakdown	Year on year change in emissions (Scope 3)	NBR ISO 14.064-3 and/or Brazil GHG Protocol Programme	Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf:page 39 "ANEXO 3: TABLE OF EMISSIONS AND REMOVAL BY SCOPE AND GREENHOUSE GAS" Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020 - first page. Suzano Indicators Center 2020: https://centraldeindicadores.suzano.com.br/en/mudancas/ghg-emissions/#other-indirect-scope-3-ghg-emissions The verification process encompass Scopes 1, 2 and 3 and its emission breakdown by business unit and emission categories. The greenhouse gas emissions covered by 100% of Suzano's operational control, with reasonable assurance. Relatório-de-Verificação-ISO-14064_Rev.0_SUZANO_2020_ENG.pdf Verification Statement Template (reasonable level) - ENG - Rev.0_SUZANO_2020.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Suzano expects a regulation of a carbon pricing system in Brazil to be implemented in the next three years. The company has been following governmental discussions on the topic such as the PMR Brasil Project, developed under the coordination of the Ministry of the Economy and the World Bank and concluded in 2020, its following stage, PMI (Project for Market Implementation), scheduled to start in 2021, as well as other proposals to regulate a national carbon market. While this market is not established, Suzano uses a internal carbon price to estimate its potential impacts.

The average price of carbon in Latin American countries where a pricing system was implemented was USD 4.50 in 2020. Although currently there is no official emissions trading or carbon tax implemented in Brazil, the initial price of USD 10.00 was suggested by Brazil PMR and was considered to assess the impact of a carbon regulation on the company's emissions. To estimate the financial risk from a future carbon tax, we multiply our stationary emissions from Scope 1 (base year 2020= 1,707,975.87 tCO2e) by US$10/tCO2e (1US$=5R$), resulting in R$ 85.398.793. In 2020 Suzano invested more than R $ 7.7 million in projects that reduced direct emissions (e.g boiler retrofit, increase steam production capacity, etc.).

Despite the risk, Suzano supports the creation of a carbon market in Brazil and recognizes an opportunity in future regulations that include forestation, reforestation and restauration as an alternative for offsetting emission. We aim to lead the discussion about carbon regulations nationality and internationality addressing the theme with the Brazilian Tree Industry (IBÁ), the Brazilian World Business Council for Sustainable Development (CEBDS), and the Brazil Climate, Forest, and Agriculture Coalition. We also monitor trends and engage in initiatives on this matter like the development of a EU Carbon Border Adjustment Mechanism and the Taskforce on Scaling Voluntary Carbon Markets.

A carbon price starting at USD 10.00 is being used by our New Business department to seize opportunities of forest carbon removal projects considering international carbon markets. Suzano can benefit by capturing CO2 by its eucalyptus and native forests. Our forest base currently has a total of 1,346,153.00 ha of planted areas and 960,858.00 ha of native areas and provided a total net removal (Removals - E1, E2 and E3 Emissions) of 15,200,311.61 tCO2e from the atmosphere in 2020. Since we continue to expand our forest base, carbon credit projects are currently under development and in carbon market scenarios, the Company can offer these credits, generating revenue from this initiative.

Currently, Suzano is also updating its implicit carbon price through the MACC curve developed in 2020 based on the mapping of modernization, fuel efficiency, reduction in fossil fuel consumption and reduction of energy use projects to meet its long term goal of reducing its Scopes 1 and 2 intensity per ton of production by 15% 2030. In parallel, Suzano has been working and evolving in a project across different departments to expand the use of internal carbon pricing internally for forest, industrial and logistic projects and use it as a criterion for decision making in the approval process for new projects in 2021.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Navigate GHG regulations
Change internal behavior
Identify and seize low-carbon opportunities

GHG Scope
Scope 1

Application
In order to assess the risks of a mandatory carbon pricing scenario in the future, we apply the price of USD 10/tCO2e (1US$=5R$) on stationary greenhouse gas emissions from all of our industrial units (Aracruz, Belém, Fortaleza, Imperatriz, Jacareí, Limeira, Mucuri, Rio Verde, Suzano and Três Lagoas).

Actual price(s) used (Currency /metric ton)
50

Variance of price(s) used
± BRL 5.0

Type of internal carbon price
Shadow price
Offsets

Impact & implication
1 - Shadow Price: Considering the future regulation of a carbon pricing system in Brazil, whether ETS or carbon tax, Suzano uses a shadow price to measure the potential financial impact on its revenue and EBITDA. We multiply the overall stationary greenhouse gas emissions from all our industrial units by the price suggested by the PMR Brasil Project of US$10/tCO2e (1US$=5R$), resulting in R$ 85.398.793 in 2020. Suzano has been reviewing and mapping the different prices applied in regulated and voluntary markets, as well as price projections and studies for new pricing mechanisms to validate the price. The average price of carbon in Latin American countries where a pricing system was implemented was USD 4.50 in 2020. 2- Offsets: A carbon price starting at USD 10.00 is being used by our New Business department to seize opportunities of forest carbon removal projects considering international carbon markets. Suzano can benefit by capturing CO2 by its eucalyptus and native forests. Our forest base currently has a total of 1,346,153.00 ha of planted areas and 960,858.00 ha of native areas and provided a total net removal (Removals - E1, E2 and E3 Emissions) of 15,200,311.61 tCO2e from the atmosphere in 2020. Since we continue to expand our forest base, carbon credit projects are currently under development and in carbon market scenarios, the Company can offer these credits, generating revenue from this initiative.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
1

% total procurement spend (direct and indirect)
32

% of supplier-related Scope 3 emissions as reported in C6.5
57

Rationale for the coverage of your engagement
Suzano made an expressive progress to strength its relationship with suppliers by voluntary joining the CDP Supply Chain Plataform. In the Suzano's Climate Change program, we had invited 100 critical suppliers mapped in the socio-environmental risk matrix with higher GHG emissions and encourage them to make joint commitments to reduce their emissions. As a first approach, currently the program encompasses 1% of our suppliers (total 11000) but they represents 32% of the total procurement spend direct and idirect, showing the ambission and relevance of the program. Suzano's Climate Change program aims to engage and assist our suppliers in measurements, data transparency, goal setting, as well as in the assessment of risks and opportunities related to climate change. The 57% was calculated as the media between representativeness in spend of shipping and logistics suppliers which was invited to the Program, and represents the majority of Scope 3 emissions. This innitiative will help us to expand our knowledge on the subject within the value chain, sulting in the maturation of emission management by suppliers.

Impact of engagement, including measures of success
To further strengthen Suzano's relationship with its suppliers and encourage them to make joint commitments to reduce emissions, we became members of CDP Supply Chain Initiative. The first stage of the program is the engagement of partners to access the CDP Platform and report their data related to climate. The mapping of this information is essential so that companies can measure the impact of their activities and, subsequently, establish goals to improve their performance. Suzano have already engaged 54% of our invited suppliers, which have confirmed their participation in the Program. Suzanos is following up their acceptance in CDP Supply Chain Platform in order to engage them to assess and report their data regarding Climate Change while continuing to improve its engament with others suppliers to increase the number of companies involved in the Suzano's Climate Change program. After the fisrt cicle of this Program, Suzano intend to make an event to recognize its partners wich had the best scores in CDP. Also, we will engage with suppliers that did not respond the questionaire or wich responded unsatisfactorily, in order to reinforce the importance of creating a Climate Change strategy and engage them for the 2022 cycle. In order to measure its program's success, Suzano is following up the number of suppliers who effectively answered the questionnaire and hope to engaje at least 50% in this first cycle. For subsequent years, we will draw engagement goals based on the results of this first cycle. Measuring our suppliers GHG emissions allow the company to stablish joint goals with its partners in order to reduce Suzano's Scope 3 emissions. This reduction directly impact Suzano's long term goal "Net removal of 40 million tons of carbon from the atmosphere until 2030" as is it the balance between removals (planted + native trees) and emissions (Scope 1 + Scope 2 + Scope 3). Therefore, our supplier engagement in the program is essencial for Suzano's Climate Change strategy.

Comment
We are in the development phase of Suzano’s Sustainable Purschasing Policy, which will describle premises and drivers for integrating susntainability into procurement process. Suzano understands as an indispensable requierement the evaluation of sustainability practices of its supplier partners, with this, after the first year of application of the CDP Supply Chain program we will recognize and reward suppliers who stood out in climate related practices.

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
1

% total procurement spend (direct and indirect)
7.8

% of supplier-related Scope 3 emissions as reported in C6.5
98.5

Rationale for the coverage of your engagement
In order to prepare its own inventory of greenhouse gas emissions, Suzano annualy collects primary climate-related data from part of its suppliers increasing the engagement about the theme. The 1% was calculated by the quantity of suppliers we did an face to face aproach to collect data per the total amount of suppliers in Suzano. The 7,8% represents their spend direct and indirect. It is important to mention that the majority of our suppliers data is collected automatcally in the Suzano's internal system, so they are not considered in this number despite been included in the Scope 3 emissions in the GHG Inventory. The 98,5% is the representativeness of the Scope 3 emissions in categories majority composed by suppliers emissions: (i) transport and distribution (ii) purchased goods ans services (iii) employee commuting (iv) waste and (v) business air travel.

Impact of engagement, including measures of success
Every year, Suzano carries out a survey and analysis of the carbon emissions and removals that come from its operations. Through internally established procedures, recognized methodologies and independent verification by a third party, Suzano's inventory is published annually and serves as the basis for a series of exercises and internal analyzes (in efficiency and mitigation projects and programs) and for monitoring and definition of emission reduction strategies, in addition to the management of Long Term Goals. Measuring our suppliers GHG emissions allow the company to stablish joint goals with its partners in order to reduce Suzano's Scope 3 emissions. This reduction directly impact Suzano's long term goal ""Net removal of 40 million tons of carbon from the atmosphere until 2030"" as is it the balance between removals (planted + native trees) and emissions (Scope 1 + Scope 2 + Scope 3). Therefore, our supplier engagement in the program is essencial for Suzano's Climate Change strategy.

Comment

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Suzano has an important technical partnership for the development of R&D projects and a close and transparent engagement with market analysts and investors.

Suzano addresses its performance in climate change in its Annual Sustainability Report, at the Indicators Center and makes its GHG inventory publicly available. Currently, the company uses TCFD, SASB and the metrics of Stakeholder Capitalism (World Economic Forum) as data reporting mechanisms. It is worth mentioning that the topic is addressed on a recurring basis with market analysts and investors during the earnings releases and webcasts, being even more recurrent after the launch of the long-term goals related to emissions and carbon capture in 2020. It is important to note that Suzano's engagement with its investors and the market in relation to climate change allowed the company to launch a sustainability-linked bond in 2020 with a commitment to reducing GHG emissions by 15% until 2030. It was not only the first in the Americas, emerging markets and the pulp and paper sector, but was also the first globally to attain a voluntary second party opinion. The company initially issued $750 million in September last year, which was 8x oversubscribed, and then 2 months later issued a further $500 million, which achieved the lowest yield ever, at 3.1%, for a 10-year bond issued by a Brazilian company. The successful launch of this bond was only possible due to Suzano's close and transparent engagement with market analysts and investors.

Regarding R&D projects, Suzano has many years of research partnership with the Brazilian Forestry Science Research Institute (IPEF). Alongside IPEF, Suzano established several technical programs aiming at: i) improving the understanding on how the main climate stresses in the Eucalyptus second rotation and coppice management interact with genetics (PCoppice Program); ii) expanding the monitoring of H2O and CO2 balance in eucalyptus forests (Eucflux Program); iii) improving Productivity by Modeling climate effects in Eucalyptus Plantation (ModProd Program).

Suzano also has advanced tools to monitor climate effects on water availability in partnership with both Universidade de São Paulo (USP) and IPEF. The global results have allowed us to execute hydrological analyses to identify similarities, trends and behaviors of the relationships between the management of planted forests and water. In this theme, we have also developed projects in partnership with the Australian institute CSIRO (Commonwealth Scientific and Industrial Research Organization).

We have recently started a partnership with CIRAD (French Agricultural Research Centre for International Development), seeking to develop new technologies to monitor the impact of climate and management effects on forest productivity by remote sensing. Our goal is to expand forest monitoring to enable decision making.

Regarding to products development, Suzano recently launched EucaStrong® and High Tensile Pulp, and keeps investing in products with the same appeal which allow costumers to reduce their energy consumption by requiring milder refining conditions. In the biorefineries context, the application of Suzano's nanocellulose for producing textile fibers with Spinnova, where the process allows it to be classified as the most sustainable textile fiber on the market. These fibers coming 100% from planted forests will allow the engagement of the chain with the growing change in the consumption profile, bringing to society biodegradable textiles and with considerable reduction in the environmental footprint.

C-AC12.2/C-FB12.2/C-PF12.2

(C-AC12.2/C-FB12.2/C-PF12.2) Do you encourage your suppliers to undertake any agricultural or forest management practices with climate change mitigation and/or adaptation benefits?

Yes

C-AC12.2a/C-FB12.2a/C-PF12.2a

(C-AC12.2a/C-FB12.2a/C-PF12.2a) Specify which agricultural or forest management practices with climate change mitigation and/or adaptation benefits you encourage your suppliers to undertake and describe your role in the implementation of each practice.

Management practice reference number

MP1

Management practice

Other, please specify (Silvopasture)

Description of management practice

"Suzano strengthened the rural producer through various types of contracts, where we can mention forestry development program (“Fomento”, in Portuguese). Such practice aims to disseminate the eucalyptus culture in the region, in areas with aptitude for the production of wood for the manufacture of cellulose, firewood and others, as a way of diversifying the activities of these owners. In particular, among the “Fomento” modalities, Suzano encourages the introduction of the forestry component as a way of supporting rural producers that have livestock activities to mitigate their emission of GHGs, by making them carbon positive since the number of trees planted exceeds the bovine emissions. In addition, the techniques used in Eucalyptus planting is made respecting the most advanced technology related to soil cultivation combining the best practices of natural resources conservation and high productivity planting."

Your role in the implementation

Knowledge sharing
Operational
Procurement

Explanation of how you encourage implementation

This production model opens up the prospect of sustained business for rural producers, who receive planting incentives from the first year they enter the program, through the supplying of eucalyptus seedlings for reforesting, technical assistance, support for the selling of the wood and environmental education. The program encourages the generating of income, preservation of the environment and sustainability in the countryside, by harmonizing forest use ith food production and animal husbandry. As a result, it is possible to implement our forest base with minimum soil interference maintaining microorganisms and protection of the ecosystem.

Climate change related benefit

Emissions reductions (mitigation)
Increasing resilience to climate change (adaptation)

Increase carbon sink (mitigation)

Comment
In the state of Maranhão, 24% of the forestry development program uses the Cattle Livestock and Forest Integration model (CLFi). In the state of Mato Grosso, Suzano has 3200 hectares planted with partial use of this modality. In addition, scientific experiments are underway to identify the productive potential of this model. Also, for 2021 the adoption of this technology (Silvopasture) for contractual lease modality is being tested. The objective is to get to know the technology to expand the company's participation with measures that can contribute to mitigate GHGs in the company's areas of influence, expanding the environmental, social and economic benefits for the communities.

Management practice reference number
MP2

Management practice
Fire control

Description of management practice
The area of Patrimonial Intelligence and Proflor, responsible for the protection of the forests of the Suzano company, have teams for Fighting forest fires, which add up to approximately 770 trained professionals and specific firefighting vehicles, which aim to guarantee the quality and integrity of eucalyptus plantation forests and preservation of the company, neighbors and partners. Suzano has monitoring centers and towers equipped with high-resolution cameras, which monitor a range of 15 kilometers of coverage at 360º. The exchanges operate 24 hours a day, 7 days a week. The company has Brigadier Vigilantes, who are qualified and trained professionals to carry out patrimonial surveillance and forest fire fighting activities, with the premise of acting preventively in the monitoring of forests and a prompt response to occurrences of forest fires. We have partnership with some public agencies as the Military Fire Brigade, our suppliers and forestry-based partner companies, so the company makes its structure available to help fight fires near its forest bases and surrounding communities.

Your role in the implementation
Knowledge sharing
Operational

Explanation of how you encourage implementation
In the event of a fire, Suzano assists in fighting the fire outbreak. The company also shares best management practices to minimize the risk of forest fires. Suzano has the Floresta Viva program, which aims to raise awareness among employees (own and third parties), partners and surrounding communities about the impacts and dangers of a fire, what to do to avoid them and how to proceed when detecting any outbreak. Suzano invests in raising awareness, distributing informational materials, such as educational folders, dealing with the danger of burning and forest fires. These works include environmental monitoring, asset surveillance and educational actions to preserve the environment with schools and communities that surround our forests. Channel 0800 771 1418.

Climate change related benefit
Emissions reductions (mitigation)

Comment
No more comments

Management practice reference number
MP3

Management practice
Restoration

Description of management practice
Suzano donates native seedlings to encourage forest restoration in partner areas. In this way, program earnings are more than just business results for Suzano and partners. In addition to maintaining preserved and restored areas, all properties of the participants must be legally registered and in compliance with the Brazilian Forestry Code and state laws. Suzano provides technical assistance for sustainable management of the land and instructs producers to plant eucalyptus only in lots that were previously intended for other crops. These conditions and benefits discourage the cutting of native forests for agricultural use — a long-term environmental gain.

Your role in the implementation
Knowledge sharing
Operational

Explanation of how you encourage implementation
If we also consider the increase in family income and the guarantee of future income that the program extends to producers, we have a set of social and environmental results capable of concretely realizing the idea of shared value between Suzano and neighboring communities. This concept — which we seek to achieve in our daily routine — expresses the understanding that there is a critical connection between the success of the company and the prosperity and well-being of the communities where it operates.

Climate change related benefit
Increasing resilience to climate change (adaptation)
Increase carbon sink (mitigation)

Comment
No more comments

Management practice reference number
MP4

Management practice
Land use change

Description of management practice
Suzano strengthened the rural producer through various types of contracts, where we can mention forestry development program. Such practice aims to disseminate the eucalyptus culture in the region, in areas with aptitude for the production of wood for the manufacture of cellulose, firewood and others, as a way of diversifying the activities of these owners. Eucalyptus planting is made respecting the most advanced technology related to soil cultivation combining the best practices of natural resources conservation and high productivity planting. One of the benefits of the program is that it allows the plantation of eucalyptus in idle, degraded or underutilized areas, which also allows for the recovery of degraded areas and soil conservation. Eucalyptus plantations are only carried out on previously anthropozed lands, that is, that are not derived from conversion of native forests. The farmers also need to comply with national laws on land use and forest conservation, that is, Suzano does not partner with companies that are not regular and comply with environmental laws.

Your role in the implementation
Knowledge sharing

Operational
Procurement

Explanation of how you encourage implementation
100% of wood supply areas are monitored, based on environmental, social and legal requirements. Part of these areas are certified (FSC and/or CERFLOR), in which assessments are made by the certifying body, in accordance with forest management standards. For non-certified areas (Controlled/Controlled Sources), Suzano institutes and applies the Due Diligence System, based on the Standard for Controlled Wood (FSC-STD-40-005), on the National Risk Assessment for Brazil (FSC-NRA-BR V1-0), and ABNT-NBR 14790 standard,ensuring: compliance with all applicable legislation, respect for the right to property, ownership and land use, the non-commitment of areas of high conservation value and the non-conversion of native areas into commercial timber plantations. Suzano assists the landowners to use their land responsibly, encouraging the recovery of remnants of native forest; forestry with responsible methods, reduce rural exodus, helping to improve the quality of life and improve regional forest development. The promotion programs are aimed at small and medium-sized regional producers and, varying according to each modality, include: Technical guidance and monitoring of the forest throughout the cycle; Incentives for seedlings and inputs; Financial advances. The ultimate goal is to form productive forests that convert into a later purchase of this wood, always following the best available silvicultural practices and the quality and safety standards required by Suzano. These principles are observed in the contracted area, from the formalization of the contract, covering the operations of harvesting and transporting the wood, and contributes with climate change mitigation.

Climate change related benefit
Emissions reductions (mitigation)

Comment
No more comments

C-AC12.2b/C-FB12.2b/C-PF12.2b

(C-AC12.2b/C-FB12.2b/C-PF12.2b) Do you collect information from your suppliers about the outcomes of any implemented agricultural/forest management practices you have encouraged?
Yes

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Trade associations
Other

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?
Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
Brazilian Tree Industry (Ibá)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The Brazilian Tree Industry (Ibá) is an association responsible for institutionally representing the planted tree production chain, from the field to the industry with its main stakeholders. Advocates on behalf of the industry's, interests aiming at adding value to products obtained from planted pine and eucalyptus trees, as well as other species used for industrial purposes with officials and governmental agencies, entities of the planted trees production chain and important sectors of the economy, social and environmental organizations, universities, schools, consumers and the press—domestically and internationally. Particularly relating to climate change issues, the association seeks to align and engage the forest based industry into actions to promote low carbon economy. Additionally, it conducts actions with institutional organizations, dialogue platforms, parliament and NGOs, providing technical and political basis for articulation on GHG inventory, carbon pricing, regulations and so on, in order to avoid risks, increase opportunities to boost low carbon economy in Brazil and worldwide. Among the association's position, it stands out the implementation of MRV process and ETS Market in Brazil and the work for forest carbon removals to be considered in Paris Agreement - Article 6.

How have you influenced, or are you attempting to influence their position?
Suzano participates in the thematic committees on climate change, biodiversity, bioenergy and water, and in 2020 it was coordinator in Climate Change Work Committee, that works in line with the Suzano position on: - Technical subsidy aligned with agriculture and industry entities to the government in preparation for COP 25 (this is an every-year job of the association) - Participation in public consultation on GHG national report that is under study at Ministry of Economy (PNR-POMUC) - Participation in parliament audience in regards to National Policy on Climate Change that is under review providing inputs and views from private sector - Contribution on carbon pricing studies that are being conducted at Ministry of Economy (PMR Brazil) and at National Confederation of Industry - Articulation with voluntary mechanisms and disclosure platforms regarding the importance of considering carbon removal besides emissions - Promotion of a Workshop together with the Ministry of Energy to discuss about the challenges and opportunities that forest biomass can bring to national energy matrix making it even more renewable, considering social, environmental and economic benefits. Almost 90 people from public, private and NGOs have participated - Promotion of two workshops for capacity building and to level knowledge on climate change agenda. 70 people from 23 forest-based companies have been impacted.

Trade association
CEBDS - Brazilian Chapter of World Business Council for Sustainable Development

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Implementation of compulsory carbon market in Brazil, Increase the dialogue between the public and private sectors in the construction of a common agenda on climate change and discussion about paris Agreement Article 6 - that contains eight guiding principles for the creation of financial mechanisms for carbon trading. Among the points, the establishment of clear and objective rules that do not create unnecessary transaction costs, foster the acceptance and demand for the reduction credits generated by the country and the compliance with the measurement and disclosure recommendations of the TCFD. Dialogues and commitments about no deforestation and Brazilian Business Commitment to Biodiversity

How have you influenced, or are you attempting to influence their position?
Suzano is in line with CEBEDS positions and participated, as a member in the meetings and calls with the Climate and Energy and Climate Change Thematic Chamber and Biodiversity and Biotechnology Thematic Chamber.

Trade association
Brazilian Coalition on Climate, Forests and Agriculture

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The Brazilian Coalition on Climate, Forests and Agriculture is a multi-sector movement that was established with the goal of proposing actions and influencing public policies that would lead to the development of a low carbon economy, with the creation of quality jobs, stimulus to innovation and Brazilian global competitiveness, and generation and distribution of wealth for the whole society. The main role of the Brazilian Coalition is to articulate and facilitate actions for the country to promote a new economic development model based on low-carbon economy and, consequently, respond to the challenges of climate change. Work in Forest code, initiatives which incentivize forest conservation and sustainable use, as well as, reforestation and restoration through a clear and effective program of forests' environmental services valuation. It is also crucial to mobilize additional financial resources to complement the existent resources, such as, resources from international carbon markets, as predicted in the Paris Agreement (Article 6), in CORSIA/ICAO, and in the REDD+ systems. The Brazilian Coalition defends structuring results-based payments systems and carbon markets based on four pillars: Carbon markets should promote the additionality of the efforts to reduce GHG emissions, implamatation of national systems of monitoring, reporting and verification (MRV) in order to participate in international carbon markets. The supply and demand for emissions reduction in international carbon markets should be managed in a way that they won't abruptly affect the price of other mitigation options, and Investments deriving from results-based payments and international carbon markets regarding the forest sector should be invested in integrated rural development.

How have you influenced, or are you attempting to influence their position?
Suzano's CEO participates on Strategic Group (GE): responsible for the guidelines, the central themes and the cohesion of the movement. In addition, it is also responsible for the final approval of the Coalition public statements Executive Group (GX): acts closer to the Executive Coordination and addresses the implementation of GE decisions at the operational level, as well as approval of Coalition materials, except for public statements See more in the Coalition's website at: http://www.coalizaobr.com.br/home/index.php/en/sobre-a-coalizao-2/governance

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C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

The Forest Dialogue is a platform and a process for multi-stakeholder discussion and collaboration on the most pressing local and global issues facing forests and people. The purpose of the TFD is to contribute to sustainable land and resource use, the conservation and sustainable management of forests, and improved livelihoods by helping people engage and explore difficult issues, find collaborative solutions, and make positive changes. And to pursue the purpose, through constructive dialogue processes among all key stakeholders, based on mutual trust, enhanced understanding and commitment to change. Suzano is signatory to this multistakeholder platform where actively participates to the dialogue on the water, restoration, conservation, landuse, life on land, all themes related with the future climate change challenges.

The Mucuri Springs project, idealized by Suzano with the participation of several relevant organizations such as The Nature Conservancy (TNC), together with other multi-leaders from the private sector, NGOs, government agencies. The Mucuri Springs project counts on the partnership and individuals from local communities to stimulate the restoration and culture preservation of the Mucuri Basin, in favor of the perpetuity of the river. More than 500 springs are being recovered, about 50 thousand seedlings have been planted, 11,152 people have been mobilized and 1,288 properties have been visited. For more information, please check de website: https://www.nascentesdomucuri.com.br/.

Suzano strengthened the rural producer through various types of contracts, where we can mention forestry development program (“Fomento”, in Portuguese). Such practice aims to disseminate the eucalyptus culture in the region, in areas with aptitude for the production of wood for the manufacture of cellulose, firewood and others, as a way of diversifying the activities of these owners. In particular, among the “Fomento” modalities, Suzano encourages the introduction of the forestry component as a way of supporting rural producers that have livestock activities to mitigate their emission of GHGs, by making them carbon positive since the number of trees planted exceeds the bovine emissions. In addition, the techniques used in Eucalyptus planting is made respecting the most advanced technology related to soil cultivation combining the best practices of natural resources conservation and high productivity planting.

Universities - example: Suzano has a research partnership with USP / ESALQ – São Paulo University in the Tropical Silviculture Laboratory, which participates in Environmental Adequacy Program and in the Ecology and Forest Restoration Laboratory, which is involved with projects focused on evaluating the Silviculture models of native species for the economic feasibility of forest restoration in the extreme south of Bahia and Espirito Santo. The results for the initiative include the definition of new and more committed consumer markets, non-recurrence in environmental crimes (through fines or assessments by inspection agencies), better zoning of productive activities and assistance in the training of qualified professionals. for the management of natural resources. Add to that the gradual restoration of natural processes in areas under restoration or in fragments of conserved native vegetation, contributing to the conservation of nature and the continuity of its natural evolution (http://lerf.eco.br/capa.asp?j=2).

We are part of the IPEF Cooperative Program on Environmental Monitoring in Hydrographic Basins (PROMAB). The first experiment was initiated in 1987, in two targeted experimental watersheds located in the Suzano areas. Over the years, other companies have joined the program and gradually increased the number of experimental watersheds. With this broad research partnership, we have been able to improve our understanding about water and climate, as well as participating in technical forums, scientific congresses, and more recently in the "technical lives", which is open to the general public via social media.

https://www.ipef.br/promab/relatorio_anual_2019-promab.pdf

Suzano also has socio-environmental development programs that promote engagement with communities, increasing the resilience of these communities to reduce their climate risks. Some examples are the Rural Territorial Development Program (PDRT) which promotes the territorial development of neighboring rural communities through constant dialogue and the strengthening of their organizations and networks, based on agroecology principles, in 30 municipalities, benefiting 3,931 families. The “Colmeias” Program promotes the strengthening of the beekeeping chain in the regions where the company operates, improving the quality of life of the communities involved, as well as to the preservation of the environment. The program benefits 1,014 families.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Suzano has its climate change strategy and position publicized on TCFD chapter on its Indicators Center, avaliable at: http://centraldeindicadores.suzano.com.br/en/tcfd/

Suzano pledges to implement the TCFD Recommendations, not only as a reference for reporting on climate-related financial impacts, but also as a framework for reviewing its existing risk and opportunity management practices and identifying opportunities to improve its processes and operations.

In this context, each risk and opportunity for Suzano were qualified in accordance with TCFD taxonomy, dimensions of the value chain involved, financial factors potentially affected, and time horizons for materializing.

Climate-related risks are incorporated as priority to Company's Enterprise Risk Management (ERM). It follows the guidelines established in Suzano's Integrated Risk Management Policy, wherein specific procedures have been defined to respond to these priority risks, along with implementation and monitoring of Action Plans. Such initiative is led by Risk Department, in addition to contribution of other related areas.

Suzano has evaluated changing regulation as policy and legal risk, especially considering increasing liabilities and capital expenditures due to incidence of carbon pricing or taxation on industrial emissions, and on domestic and international transportation by road, rail and marine modes.

On the other hand, Suzano aims to revert industry's potential risks into business opportunities that can benefit by capturing CO2 from eucalyptus plantations and native forests under its protection.

Additionally, Suzano has potential of become a relevant player in carbon market by offering credits and generating revenue by its activities.

For the purpose of following up the latest international good practices and developing positive influence on the private sector's, for a long period of time Suzano has adhered to voluntary market initiatives, which include (i) association to Brazilian Coalition on Climate, Forests and Agriculture Technical; (ii) participation on Working Groups of Brazilian Business Council on Sustainable Development (CEBDS); (iii) leadership in Working Groups of Brazil's Forestry Industry Association (Ibá) and (iv) since start adhering to GHG Protocol Program and to Business for the Climate Platform Emissions Trading System (EPC ETS), jointly with FGV (Fundação Getúlio Vargas).

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports

Status
Complete

Attach the document
SuzanoReport2020-2.pdf

Page/Section reference
Climate change permeates the entire report on various topics such as Governance, Strategy, Risks and Opportunities, among others. In addition, there is a specific climate section between pages 98 and 101.

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
The Suzano 2020 Report brings together our main financial, social, environmental and governance results. The publication was divided according to the stakeholders that most impact and are impacted by the company, in order to demonstrate how the relationship and the generation of value between the company and these audiences take place. As a material issue, Suzano seeks to incorporate climate change aspects in all operations, continuing to improve through climate change scenarios, enhancing research, implementing new technologies, innovating process, in order to mitigate risks, by adopting strategies to reduce emissions in its value chain, to increase the carbon removals in its plantations and native forests and to be better positioned in regard to economic opportunities related climate change. It also has a business model centered on eco-efficient operations and new, renewable, forest product development that replaces non-renewables characterized by high GHG intensity. This is all connected to Suzano's Strategic Vision, which focuses on continuing to be a reference in efficiency, profitability and sustainability, becoming a transformational agent in the expansion of new markets and a reference in sustainable and innovative solutions for the bioeconomy and environmental services.

Publication
Other, please specify (Indicator Center)

Status
Complete

Attach the document
Climate Change - Central de Indicadores Suzano.pdf

Page/Section reference
In the Indicadors Center there is a dedicated page about climate change, which is our main source for publicity our KPIs, long-tem targets, climate change stategy, governance, GHG Inventory, TCFD, among others themes. The climate change page in the Indicator Center can be accessed in the following link: https://centraldeindicadores.suzano.com.br/en/climate-change/

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
"The transparency of issues related to Suzano's strategy on climate change brings intangible values to the company, which becomes a benchmark for good performance among its customers. Suzano advances in disclosing its data and is now reporting more than 430 indicators, in line with GRI disclosures, the Sustainable Development Goals (SDGs), and the recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD). In addition, new featuring this year, we are presenting information in accordance with the disclosure standards of the Sustainability Accounting Standards Board (SASB) and the recommendations of the World Economic Forum (WEF). Some of the information provided on the platform also meets some of the main ESG indices and ratings, such as Sustainalytics, MSCI Index, Dow Jones Sustainability Index (DJSI), Corporate Sustainability Index (ISE), and Carbon Disclosure Project (CDP). Suzano was also the first company in the pulp and paper sector to be featured in a case study of the Task Force On Climate-related Financial Disclosure (TCFD) Hub. The Indicator Center can be acessed in the following link: https://centraldeindicadores.suzano.com.br/en/"

C13. Other land management impacts

C-AC13.1/C-FB13.1/C-PF13.1

(C-AC13.1/C-FB13.1/C-PF13.1) Do you know if any of the management practices implemented on your own land disclosed in C-AC4.4a/C-FB4.4a/C-PF4.4a have other impacts besides climate change mitigation/adaptation?
Yes

C-AC13.1a/C-FB13.1a/C-PF13.1a

(C-AC13.1a/C-FB13.1a/C-PF13.1a) Provide details on those management practices that have other impacts besides climate change mitigation/adaptation and on your management response.

Management practice reference number
MP1

Overall effect
Mixed

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield

Description of impact
Positive effect: Currently, due to the accumulated technical knowledge, Suzano plants in the form of mosaics, intercalating the bands of native forests with plants (allowing "ecological corridors" or even "biological corridors"). These mosaic plants allow the interconnection between natural habitat and planted forest and the use of a corridor between forest fragments with an environmental impact of natural eucalyptus forests, allowing the passage of animals and thus expanding the available habitat for the local fauna. Positive effect: Suzano's eucalyptus plantings is carried out following the contour lines. The contour lines are arranged perpendicular to the slope and help to conserve the nutrients in the soil, essential for the success of the plantation. In addition, it balances the speed of rainwater, preventing the crop from losing minerals as well. This technique is essential for steep areas and promotes soil conservation against erosion and contributes to the drainage of rainwater, making it infiltrate the earth more easily and prevent landslides. Suzano's Eucalyptus forests promote greater water percolation through the soil, making it more porous and drainable and with less leaching compared to cattle pastures, for example. Negative effect: One of the frequent criticisms addressed to eucalyptus refers to, if not well managed, the consumption of water by trees can affect the availability of water in the soil and rivers.

Have you implemented any response(s) to these impacts?
Yes

Description of the response(s)
The intelligent use of water is a priority in Suzano's investments, as we understand that this is an important natural resource for the balance of the ecosystems and for the continuity of our business. In this sense, we perform regular measurements of quali-quantitative parameters of the main watersheds in which we operate and adopt forest management technologies that favor the efficient use of water resources within these watersheds, which helps us reduce the risks of water shortage in neighboring operations and communities. Also, in order to advance its processes and improve the notion that natural resources can and should be harmoniously shared with other users, Suzano has made a long-term commitment to implement specific actions in watersheds identified as critical, seeking to increase water availability in these locations. The assessment of supply and possible water scarcity is being conducted considering a historical hydrological records, as well as environmental and social characteristics of all watersheds in Suzano's forest base.

Management practice reference number
MP3

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield
Other, please specify (Local Communities)

Description of impact
Conducted since 2017 by Suzano, the project called Nascentes do Mucuri encourages the protection of the springs of the Mucuri River and its surroundings, thereby promoting the perpetuity of this water resource so valuable for maintaining the ecosystem services in the region. The river originates in the northeast region of the state of Minas Gerais and discharges in the South of the state of Bahia, extending for 446 kilometers in an area of approximately 15,400 square kilometers and a population of 537,000. The project promotes environmental education and training of local producers to consolidate a culture of preservation in the region. Therefore, Nascentes do Mucuri's promotes the agroecological transition in existing agricultural and livestock farming in the region, promoting greater autonomy for farming families and encouraging them to preserve their natural areas and water springs. In 2020, more than 100 families started the Agroecological Transition Plan, a Suzano's Program for Rural Land Development, which is consolidated practice in several regions where Suzano operates. With this improvement, we believe we can generate greater economic, food and environmental security in properties in the Northeast situated in the state of Minas Gerais, where the Mucuri River basin is located. The monitoring of areas that are in the process of restoration is carried out every six months in order to assess whether natural regeneration is taking place or whether any intervention will be necessary, such as direct planting, enrichment planting, among other possible methodologies. The results reached up to now were: 1,506 properties visited; 402 springs under restoration; 30.061 seedlings planted; 15.625 people engaged; 3,753 hours dedicated to social and environmental education. Financial controls are also carried out, where the monthly disbursement with the project's actions is monitored. In 2020, a study was carried, applying modeling, which considered the areas (in hectares) in which the project intends to operate, with Environmental Restoration / Conservation iniciatives, as well as in productive areas of rural properties using sustainable management techniques. The projection estimated the potential of water infiltration increase into the soil, as well as the loss of soil avoided in the Mucuri river basin.

Have you implemented any response(s) to these impacts?
No

Description of the response(s)
We have not implemented any response as we did not identify any negative impacts caused by this management practice.

C-AC13.2/C-FB13.2/C-PF13.2

(C-AC13.2/C-FB13.2/C-PF13.2) Do you know if any of the management practices mentioned in C-AC12.2a/C-FB12.2a/C-PF12.2a that were implemented by your suppliers have other impacts besides climate change mitigation/adaptation?
Yes

(C-AC13.2a/C-FB13.2a/C-PF13.2a) Provide details of those management practices implemented by your suppliers that have other impacts besides climate change mitigation/adaptation.

Management practice reference number
MP3

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield

Description of impacts
The restoration of landscapes and forests can recover degraded areas, making them productive and generating environmental services through the recovery of their ecological functions. Restored areas benefit rural producers with diversified revenues and improved water quality, promoting a sustainable economy around the forest. Restored areas also benefit the entire society, as they preserve springs, protect the soil and sequester carbon, mitigating climate change and reducing risks in food production.

Have any response to these impacts been implemented?
Yes

Description of the response(s)
Suzano Technology Center has a soil management program to ensure the best practices available for each regional conditions are applied

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Management practice reference number
MP2

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil

Description of impacts
The prevention of forest fires is essential, given that they are one of the main drivers of destruction of forest vegetation and cause several damages to the components of the ecosystem. Forests are one of the main components of soil protection, regulation of the hydrological cycle, preservation of biodiversity and CO2 fixation, which is why their preservation is extremely important. When fires occur in eucalyptus areas, there is still the additional factor of loss of forest asset.

Have any response to these impacts been implemented?
Yes

Description of the response(s)
Suzano has invested in education and communication with the surrounding communities, aiming to raise awareness and reduce intentional fires and fires.

Management practice reference number
MP1

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield

Description of impacts
The agroforestry system provides an increase in production, since in its implementation it combines tree species (fruit and / or timber) with agricultural crops and / or animal husbandry, simultaneously or rotatively. In addition, the system also promotes ecological benefits due to the conservation of natural resources, making it possible to produce different species and encouraging farmers to recover forest areas. In addition, it makes it possible to maintain and diversify income for communities in the rural area. As for water, there are scientific studies that indicates an increase in soil moisture in the alleys of tree plantations, reinforcing the importance of the Cattle Livestock and Forest Integration model.

Have any response to these impacts been implemented?
Yes

Description of the response(s)
The PDRT Program (Rural Territorial Development Program) aims to promote the territorial development of neighboring rural communities through constant dialogue and the strengthening of their organizations and networks, based on agroecological principles. Therefore, the Program's focus is on supporting the communities' agricultural and livestock activities through a qualified Technical Assistance and Rural Extension service (ATER) (technical teams), as well as investments in equipment and supplies needed to carry out these activities. This program has already served more than 4 thousand families in agroecological agricultural production and milk and dairy products in more than 100 communities, generating more than 20 thousand tons of food to date. The Colmeias (Beehives) project in the states of São Paulo, Mato Grosso de Sul, Espírito Santo, Bahia and Maranhão works to strengthen the beekeeping activity in these states, generating employment and income by improving the production chain of honey from eucalyptus and native forests. The program supports the implementation of new technologies and training in strategic concepts on handling, management and marketing of the product, expanding and advancing the activity. In 2020, the production of honey was 1200 tons and generated more than R $ 11 million, moving the economy of the municipalities. Sustainable Extraction Program: Strengthen sustainable development, local culture and the preservation of the Cerrado and the Amazon through the strengthening of traditional extractive knowledge. With three fronts of activity - handicrafts, açaí and babassu coconut - the program invests in structuring and promoting the generation of knowledge about the production, management and commercialization with 8 associations and 211 families located in Maranhão and Tocantins. In 2020, the commercialization value reached R $ 2.2 million.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Financial Officer	Chief Financial Officer (CFO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	30460000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	BR	SUZBACNOR0

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Banco Santander Brasil

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

96.1

Uncertainty (±%)
20

Major sources of emissions
Stationary emissions in industry units and mobile emissions in forest units and logistic operations.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
"The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions/ton of product) calculated in the GHG inventory and the amount of product acquired by each client. "

Requesting member
Banco Santander Brasil

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
11.8

Uncertainty (±%)
20

Major sources of emissions
Scope 2 emissions from Eletricity purchased in the specifics units related to sold product

Verified
Yes

Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

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Requesting member
Banco Santander Brasil

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
40.5

Uncertainty (±%)
20

Major sources of emissions
Purchased good and services transport, products logistic (maritime, rail and road), waste and wastewater management, waste transportation, employee transportation and air travel.

Verified
Yes

Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions /ton of product) calculated in the GHG inventory and the amount of product acquired by each client. The data is specific per mill and related and value chain operation.

Requesting member
Marfrig Global Foods S/A

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
13.5

Uncertainty (±%)
20

Major sources of emissions
Stationary sources (industrial), refrigerant gases, waste management, internal logisctic, industrial processes, Harvesting, Wood Logistics (road and barges), Fertilizers.

Verified
Yes

Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions /ton of product) calculated in the GHG inventory and the amount of product acquired by each client. The data is specific per mill and related and value chain operation.

Requesting member
Marfrig Global Foods S/A

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
1.65

Uncertainty (±%)
20

Major sources of emissions
Scope 2 emissions from Eletricity purchased in the specifics units related to sold product

Verified
Yes

Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions /ton of product) calculated in the GHG inventory and the amount of product acquired by each client. The data is specific per mill and related and value chain operation.

Requesting member
Marfrig Global Foods S/A

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
5.69

Uncertainty (±%)
20

Major sources of emissions
purchased good and services transport, products logistic (maritime, rail and road), waste and wastewater management, waste transportation, employee transportation and air travel.

Verified
Yes

Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions /ton of product) calculated in the GHG inventory and the amount of product acquired by each client. The data is specific per mill and related and value chain operation.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

The allocation of Suzano GHG emissions per client was estimated by the use of a indicator (emissions/ton of product) in the specific mill where it was fabricated the products acquired by each client, and the amount of product acquired in 2020. All information about our GHG Inventory are publicity in our Indicador Center: https://centraldeindicadores.suzano.com.br/en/

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	The paper and pulp production are 100% integrate in our mills with several energy and input consumption optimizations. The greenhouse gas inventory is calculated according the Brazilian Public Greenhouse Gas methodology and registry, and based on all consumptions in the entire operation and not separete per process or product, and the separation is not directy proportional per type of product.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

Suzano seeks to be updated with the most renowned methodologies related to climate change and has been studying and dialoguing with institutions and associations updates and improvements in methodologies that are able to translate, increasingly better, the way of reporting their data, including emissions.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member
Banco Santander Brasil

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, replacing a single use plastic.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Bluecup Bio is a paperboard for cups, that can replace plastic cups, reducing the use of single use plastic for water and other cold / room temperature liquids. It is a paperboard, with a biodegradable barrier.

Requesting member
Banco Santander Brasil

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, replacing a single use plastic.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback

Cost/saving neutral

Details of proposal
Loop is a paper for straws, that can replace plastic straws, reducing the use of single use plastic. It is a paperbased straw, with a biodegradable barrier.

Requesting member
Banco Santander Brasil

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission when compared to similar products in the market, in case of the need to use a paperboard with shavings of used paper.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Suzano has a triplex paperboard with shavings of used paper. Besides that, Suzano has aa integrated process of production from pulp to paperboard, which reduce still more the carbon footprint of the product. Along the production chain, Suzano has lots of social projects that can combine with others stakeholders social projects.

Requesting member
Banco Santander Brasil

Group type of project
Reduce Logistics Emissions

Type of project
Route optimization

Emissions targeted
Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
34050.32

Estimated payback
Cost/saving neutral

Details of proposal
"Hexatrem"- using a truck with 6 trailers to transport wood inside Suzano farms this project seeks to optimize this part of Suzano's Supply Chain increasing up to 27% the productivity of our farms' logistics.

Requesting member
Banco Santander Brasil

Group type of project
Reduce Logistics Emissions

Type of project
Consolidated logistics

Emissions targeted
Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
63.38

Estimated payback
Cost/saving neutral

Details of proposal
Shared Transport: Suzano has established a partnership with another company to improve both companies logistics, by sharing same truck, but on different ways. Once each company will use one way of the freight both companies will reduce dead freight. This project will reduce carbon emissions up to 50% depending on the route and will positively impact on Suzano's supply chain.

Requesting member
Banco Santander Brasil

Group type of project
Change to provision of goods and services

Type of project
Reduced packaging weight

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Suzano is continuously working to reduce the footprint of its products and services, so we are working to reduce part of our cutsize product line packaging, by optimizing our pallet (base and top) designs and materials.

Requesting member
Banco Santander Brasil

Group type of project
Reduce Logistics Emissions

Type of project
Changing transportation mode (switch from air to rail)

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Cabotage: this project aims to reduce the number of trucks used to delivery Suzano's Products from Mills to Warehouses, by replacing road freight by marine freight.

Requesting member
Banco Santander Brasil

Group type of project
Reduce Logistics Emissions

Type of project
Route optimization

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
214

Estimated payback
Cost/saving neutral

Details of proposal
"Rodotrem": this project targets the use of a truck with two trailers to do part of Suzano's logistcs, replacing the tradional truck with a sigle trailer.

Requesting member
Banco Santander Brasil

Group type of project
Reduce Logistics Emissions

Type of project
Changing transportation mode (switch from air to rail)

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
23000

Estimated payback
Cost/saving neutral

Details of proposal
"Use of Electric Trucks to distribute UNP products to customers. Initial operation will have 1 or 2 vehicles in operation for the time being, running each vehicle around 200

km per day already considering round trip and also considering an average of 22 days / month of vehicle use."

Requesting member
Marfrig Global Foods S/A

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, replacing a single use plastic.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Bluecup Bio is a paperboard for cups, that can replace plastic cups, reducing the use of single use plastic for water and other cold / room temperature liquids. It is a paperboard, with a biodegradable barrier.

Requesting member
Marfrig Global Foods S/A

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, replacing a single use plastic.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Loop is a paper for straws, that can replace plastic straws, reducing the use of single use plastic. It is a paperbased straw, with a biodegradable barrier.

Requesting member
Marfrig Global Foods S/A

Group type of project
Other, please specify (Product that can be carbon neutral.)

Type of project
Other, please specify (New product or service that has a lower upstream emissions footprint)

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, in case of the need to use a paperboard. We can neutralize the product carbon footprint.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Suzano has a paperboard called TP White, which is the paperboard that has lower emissions of carbon footprint in our portfolio. Besides that, Suzano has an integrated process of production from pulp to paperboard, which reduce still more the carbon footprint of the product. Along the production chain, Suzano has lots of social projects that can combine with others stekeholders social projects. And we can offer this product with a carbon neutral seal.

Requesting member
Marfrig Global Foods S/A

Group type of project
New product or service

Type of project
New product or service that has a lower upstream emissions footprint

Emissions targeted

Other, please specify (The target is to use a product with lower footprint emission when compared to similar products in the market, in case of the need to use a paperboard with shavings of used paper.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Suzano has a triplex paperboard with shavings of used paper. Besides that, Suzano has aa integrated process of production from pulp to paperboard, which reduce still more the carbon footprint of the product. Along the production chain, Suzano has lots of social projects that can combine with others stakeholders social projects.

Requesting member
Marfrig Global Foods S/A

Group type of project
Reduce Logistics Emissions

Type of project
Route optimization

Emissions targeted
Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
34050.32

Estimated payback
Cost/saving neutral

Details of proposal
"Hexatrem"- using a truck with 6 trailers to transport wood inside Suzano farms this project seeks to optimize this part of Suzano's Supply Chain increasing up to 27% the productivity of our farms' logistics.

Requesting member
Marfrig Global Foods S/A

Group type of project
Reduce Logistics Emissions

Type of project
Consolidated logistics

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
63.38

Estimated payback
Cost/saving neutral

Details of proposal
Shared Transport: Suzano has established a partnership with another company to improve both companies logistics, by sharing same truck, but on different ways. Once each company will use one way of the freight both companies will reduce dead freight. This project will reduce carbon emissions up to 50% depending on the route and will positively impact on Suzano's supply chain.

Requesting member
Marfrig Global Foods S/A

Group type of project
Change to provision of goods and services

Type of project
Reduced packaging weight

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal

Suzano is continuously working to reduce the footprint of its products and services, so we are working to reduce part of our cutsize product line packaging, by optimizing our pallet (base and top) designs and materials.

Requesting member
Marfrig Global Foods S/A

Group type of project
Reduce Logistics Emissions

Type of project
Changing transportation mode (switch from air to rail)

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Cabotage: this project aims to reduce the number of trucks used to delivery Suzano's Products from Mills to Warehouses, by replacing road freight by marine freight.

Requesting member
Marfrig Global Foods S/A

Group type of project
Reduce Logistics Emissions

Type of project
Route optimization

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
214

Estimated payback
Cost/saving neutral

Details of proposal
"Rodotrem": this project targets the use of a truck with two trailers to do part of Suzano's logistcs, replacing the tradional truck with a sigle trailer.

Requesting member
Marfrig Global Foods S/A

Group type of project
Reduce Logistics Emissions

Type of project
Changing transportation mode (switch from air to rail)

Emissions targeted
Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
23000

Estimated payback
Cost/saving neutral

Details of proposal
Use of Electric Trucks to distribute UNP products to customers. Initial operation will have 1 or 2 vehicles in operation for the time being, running each vehicle around 200 km per day already considering round trip and also considering an average of 22 days / month of vehicle use.

Requesting member
Banco Santander Brasil

Group type of project
Other, please specify (New product or service that has a lower upstream emissions footprint)

Type of project
Other, please specify (New product or service that has a lower upstream emissions footprint)

Emissions targeted
Other, please specify (The target is to use a product with lower footprint emission, in case of the need to use a paperboard. We can neutralize the product carbon footprint.)

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings
0

Estimated payback
Cost/saving neutral

Details of proposal
Suzano has a paperboard called TP White, which is the paperboard that has lower emissions of carbon footprint in our portfolio. Besides that, Suzano has an integrated process of production from pulp to paperboard, which reduce still more the carbon footprint of the product. Along the production chain, Suzano has lots of social projects that can combine with others stekeholders social projects. And we can offer this product with a carbon neutral seal.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?
No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?
No, I am not providing data

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now

Please confirm below
I have read and accept the applicable Terms