

Welcome to your CDP Water Security Questionnaire 2023

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

For 124 years, Klabin has been part of the daily lives of millions of people by creating customized sustainable solutions for various industrial sectors. Klabin is the Brazil's largest paper manufacturer and exporter and the country's leading producer of papers and paperboard for packaging, industrial bags, and corrugated board packaging. Moreover, Klabin is the only Brazilian company to simultaneously supply hardwood pulp (eucalyptus), softwood pulp (pine) and fluff pulp to the market.

Founded in Brazil in 1899, currently Klabin has 23 industrial units, 22 units distributed in ten Brazilian states and one in Argentina. Klabin also has commercial offices in various Brazilian states, a branch office in the United States, other in Austria, and sales representatives and agents in many countries. Recently, in 2020, Klabin acquired five units from International Paper in Brazil.

The paper and paperboard for packaging manufactured, as well as corrugated board packaging and industrial bags, offer protection and safety to foods, beverages, hygiene and cleaning products, electronics and consumer appliances, cement, seeds, chemical products, and other items.

The Klabin's Integrity Program comprises a lot of procedures to prevent, detect and remediate conduct which can expose Klabin to undesirable situations, while also implementing best global practices related to the matter. In this way, Klabin demonstrates its commitment to building ethical relationships, contributing to a more transparent business environment, strengthening its image, reputation, and business strategy, and helping to build a more just and sustainable society. The program, which is aligned with the UN Sustainable Development Goals (SDG), is available to anyone who works or interacts with Klabin in the public or private sectors.

Klabin is a global reference in sustainable development. Its forestry and industrial operations are based on this concept to help preserve biodiversity and the ecological balance of the ecosystems surrounding its operations. Klabin's Sustainability Policy integrates the entire production chain and aims to offer the market environmentally responsible products.

To Klabin, sustainability is the continuous creation of value that prioritizes balance among the economic, social, and environmental dimensions. We are a unique forestry company with a responsible management that is committed to biodiversity. We work in collaboration with our clients and suppliers, always guided by innovation and the constant improvement of our

products and processes. We together to foster the engagement and development of our people and local communities to achieve increasingly better and sustainable results for the entire value chain.

We directly and indirectly influence the social and economic dynamics of the communities living in the cities where we operate. More than just offering good job opportunities, Klabin invests in the region so that the entire population benefits from initiatives in the areas of local development, education, culture, and environmental education. Klabin also offers its employees programs to promote their personal development and volunteer initiatives.

All Klabin’s operations incorporate into their strategy environmental management aspects, such as water, energy, climate change and biodiversity. In this way, the company strengthens its commitment to preserve natural resources, such as by working to reduce the use of non-renewable resources, controlling environmental impacts, monitoring biodiversity, and preserving fauna and flora in the forests where it has operations.

To guarantee quality, attest to the credibility of our products and reinforce our commitment to continuous improvement, our processes are certified by several systems and methodologies that are widely recognized in the global market. The certifications that Klabin holds attest to its pioneering efforts in meeting the needs of its clients and anticipating market trends.

Klabin has a research team working at two research facilities focused on improving its production chain. The first – the Forestry Research Center in Lagoa, Telêmaco Borba (PR) – is dedicated to studying everything related to the forestry chain, such as genetic enhancement, wood quality, soil and climate studies, genetic adaptation, pest control and biotechnology, among others. The mission of the other Technology Center, also located in Telêmaco Borba (PR), is to improve the quality of products, while anticipating trends and developing new technologies and sustainable applications. The professionals seek solutions for an increasingly more efficient consumption of inputs to minimize environmental impacts.

The company creates 25,000 jobs (direct and indirect) and invests regularly in people development to promote competencies specific to its business, well-being, and safety.

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2022	December 31, 2022

W0.3

(W0.3) Select the countries/areas in which you operate.

- Argentina
- Brazil

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

- BRL

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which financial control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

No

W0.7

(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier
Yes, an ISIN code	BRKLBNC DAM18

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Vital	<p>Direct Use: Water is vital in pulp and paper sector. Klabin uses only fresh surface water in its processes and its products comply with strict food safety regulations. This is why the importance of good quality freshwater availability is vital. In 2022, Klabin's total water withdrawals was 122,279.56 megaliters, with 99.6% of surface water from rivers, 0.2% of groundwater and 0.2% of third party water.</p> <p>The reason for the chosen importance can be explained by the high water quantity required in our process, for example, on the timber debarking and the fiber line of the pulp process.</p> <p>Considering the future dependency, in last year,</p>

			<p>we report Klabin would have an increase in its water consumption. However, in 2022, even with the phase II expansion in Puma unit (construction of a paperboard machine), Klabin had a 1.36% reduction in water consumption compared to previous year. Moreover, based on the company's strategic growth plan, a one-off increase in water consumption and continued dependence on this resource is expected for the development of our production processes.</p> <p>Even so, the company plans to evolve the water use more efficiently, with the implementation of new technologies and actions, based on the best practices in the market.</p> <p>Indirect Use: Freshwater is vital raw material to our suppliers, principally chemical industry (i.g sodium hydroxide, sulfuric acid, and aluminum sulphate). Klabin wood suppliers, main raw material of its incoming supply chain, also have a water dependency for irrigation. Therefore, the freshwater available for use are especially important for us.</p> <p>Considering the future dependency, the freshwater will continue being vital to our chemical and wood suppliers because Klabin has an ongoing expansion, and our suppliers needs to follow the same pathway with Klabin.</p> <p>According to freshwater is especially important to us, Klabin started in 2019 an Environmental and Social Responsibility Program that assess the water management of our suppliers.</p>
<p>Sufficient amounts of recycled, brackish and/or produced water available for use</p>	<p>Vital</p>	<p>Neutral</p>	<p>Klabin do not used the brackish and produced water to direct and indirect use.</p> <p>Direct Use: Recycled water is vital in pulp and paper industry. In 2022, Klabin's total water recycled was 246,976.90 megaliters, which represents 66.9% of the total water use (water withdraw + reuse water) in 2022.</p> <p>Puma unit (Paraná state) use the same water around 5 times before returning approximately 84% of its total water withdrawn. Internal water recycling is crucial for Klabin, it allows company save money and energy, and reduces risks of water dependency and legal restrictions.</p>

			<p>Another example in Klabin is the use of recycled water in its forest nurseries that reuses water for irrigation of seedlings.</p> <p>Considering the future dependency, in last year, we report Klabin would have an increase in its water consumption due the phase II expansion in Puma unit (the construction of a paperboard machine). However, in 2022, Klabin had a 1.36% reduction in water consumption compared to 2021. Moreover, based on the company's strategic growth plan, a one-off increase in water consumption and continued dependence on this resource is expected for the development of our production processes.</p> <p>Even so, the company plans to evolve the water use more efficiently, with the implementation of new technologies and actions, based on the best practices in the market.</p> <p>Indirect Use:</p> <p>Indirect use of recycled water is of neutral importance because Klabin's supply chain does not significantly rely on recycled water. However, there are opportunities for recycled water use in our suppliers located in water stress areas. Considering the future dependency, we expect indirect use of recycled water will be important because we have been observed more frequently water shortage events in places not classified as water stress areas. Even that the forests we are getting our timber from are sustainably managed, Klabin expected that the indirect use in recycled water will be important to us in soon future.</p>
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W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	100%	Continuously	The method of measurement is based direct monitoring using "in-place" flow meters.	Klabin measures 100% of water withdrawals - total volumes to ensure company will not withdraw higher volumes than the

				<p>source regenerative capacity to ensure future availability of the resource. Klabin industrial units monitoring their water withdrawals continuously basis using "in-place" flow meters. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. Due to environmental and water permits figures are reported by annually basis to the authorities. For our company, 'units' refers to our factories. Our answer in this line is related to all our factories</p>
Water withdrawals – volumes by source	100%	Continuously	<p>The water sources are known and recorded for all our units. The method of measurement is based direct monitoring using "in-place" flow meters. The flow meters</p>	<p>100% of water withdrawals by source is measured because it is important to company knows how its impact in each source is and how the company can improve the water quantity and</p>



			<p>are installed in rivers points of withdrawal when the unit uses surface water use in its operations, in each water well when the unit uses groundwater and, in third party water connections existing in the unit when this is the source used.</p>	<p>quality available in each source. Klabin uses surface water from rivers (more than 99% of total water withdrawals), renewable groundwater and third party sources. The water volume by source is monitored continuously basis using "in-place" flow meters. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. Due to environmental and water permits figures are reported by annually basis to the authorities. For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.</p>
Water withdrawals quality	100%	Daily	<p>Water withdrawal quality is monitored in our units using collect to water samples and lab testing. The parameters</p>	<p>Klabin monitors daily 100% of the water withdrawals quality (e.g. BOD, COD, P, N, TSS, temperature). Klabin is</p>

			measured include BOD, COD, P, N, TSS, temperature. For example, BOD and COD concentrations is measured according to standards APHA Standards Methods (5220).	measuring the quality of its water withdrawals for all its operations on a daily basis. The data are consolidated by local database on a monthly basis. Due to environmental and water permits figures are reported by annually basis to the authorities. For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.
Water discharges – total volumes	100%	Continuously	The method of measurement is based in using "in-place" flow meters to measure discharge volumes continuously.	Klabin measures 100% of total volume of water discharged. The total volumes of water discharged in all sources is monitored continuously basis. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. Due to environmental and water permits figures are reported by annually basis to

				<p>the authorities. 100% of this measured volume is treated effluent, complying with all applicable legislation, and the best effluent treatment practices. In addition to monitoring the water flow, the quality of the treated effluent is monitored on a daily basis to guarantee compliance with legal requirements.</p>
Water discharges – volumes by destination	100%	Continuously	<p>We use "in-place" flow meters to measure discharge volumes continuously in each destination. The destination of the discharge is known and recorded for all our units.</p>	<p>Klabin measures 100% of water discharged by destination (e.g. surface water, irrigation of land, for recycling & reuse or third party destinations). The volume discharged in all sources is monitored on continuously basis. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. Due to environmental and</p>

				<p>water permits figures are reported by annually basis to the authorities. We are committed to reducing water pollution. The monitoring the volumes of our discharges by destination is relevant because we need to know how is water discharges impact and how we can improve the water quality available in each destination.</p>
<p>Water discharges – volumes by treatment method</p>	<p>100%</p>	<p>Continuously</p>	<p>The method of measurement in Klabin is based in using "in-place" flow meters to measure discharge volumes continuously at its units. Klabin keeps records of the methods and water discharge treatment level at all its units.</p>	<p>Klabin measures 100% of water discharged volumes by treatment method (eg. only physical treatment or physical and biological treatment). The frequency of monitoring is continuously. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. Due to environmental and water permits figures are</p>

				reported by annually basis to the authorities.
Water discharge quality – by standard effluent parameters	100%	Daily	<p>Water discharge quality is monitored by standard parameters in our units using collect to water samples and lab testing. The key parameters measured include BOD, COD, P, N, TSS, temperature. For example, BOD and COD concentrations is measured according to standards APHA Standards Methods (5220).</p>	<p>Klabin monitors daily 100% of the water discharge quality (e.g., BOD, COD, P, N, TSS, temperature). Klabin is measuring the quality of its water discharged for all its operations on a daily basis. The data are consolidated by local database on monthly basis. These parameters monitored are considered part of the usual management for our units. Due to environmental and water permits figures are reported by annually basis to the authorities. 100% of this measured volume is treated effluent, complying with all applicable legislation, and following the best effluent treatment practices. In addition to monitoring the quality of the treated effluent, the water flow is monitored on a</p>

				continuously basis to guarantee compliance with legal requirements.
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	100%	Yearly	<p>Emissions to water is monitored using "in-place" flow meters to measure discharge volumes and water samples are collected and lab testing to measure substances concentrations after effluent treatment process. Emissions to water by pollutant considers water discharge volumes x substances concentrations. The substances monitored include nitrates, cadmium, mercury, nickel, and other relevant substances.</p>	<p>We are committed to ensure that quality and quantity of discharged water complies with standards and regulations. For this, we monitor 100% of our effluents and their quality parameters applicable to our business and required based on current legislation, including compounds such as cadmium, mercury, nickel, and other relevant substances to ensure legal compliance for treated effluents in all our industrial units. Klabin measures yearly the emissions to water of this substances in all its operations. The data are consolidated by local database after measurement. Due to environmental and water permits</p>

				<p>figures are reported by annually basis to the authorities. The monitoring the emission to water is relevant because we need to know how is water discharges impact and how we can improve the water quantity and quality which received our discharges. Proactively, some units perform water discharged quality monitors which frequency less than one year (semesterly).</p>
Water discharge quality – temperature	100%	Continuously	<p>We use sensors specifically designed to monitor temperature in wastewater and industrial effluent treatment applications. The online sensors (thermometers) are factories calibrated and regularly maintained.</p>	<p>Klabin continuously monitors and measures temperature of its wastewater released during and after wastewater treatment plant. Each unity controls the quality data of water discharged locally on daily basis. The consolidated data are registered by local database on monthly basis. Due to environmental and water permits figures are</p>

				reported by annually basis to the authorities. For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.
Water consumption – total volume	100%	Continuously	Water consumption is calculated continuously using a water balance which considers water withdrawals, evaporation from dryers, evaporation from wastewater treatment plants, water left in our end products and water discharges. Water withdrawals and water discharges are measured using "in-place" flow meters.	Klabin is committed to reduce water consumption at its operations. For this, Klabin calculates and monitors the total water consumption in all its operations and facilities. The water consumption is calculated by water withdrawals volumes minus water discharges volumes continuously. After that, the monthly data is consolidated in the SAP system or other Klabin's internal database where we generate the reports. All Klabin's units monitor water consumption. For our company, 'units' refers to our factories.
Water recycled/reused	100%	Continuously	Water recycled/reused	The use of water recycled/reused is vital to Klabin.

			is measures by flow meters.	100% of water recycled/reuse is monitored continuously basis. The data is registered on the Klabin's internal database monthly basis. Recycling of water takes place in many ways in our factories: 1. In process to cooling water, we reuse the same water several times before discharged. 2. Some treated process waters are recycled for use as water intake such a new process water. 3. Condensate water is also recycled within the units.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Continuously	The method of monitoring is based on "in-place" flow meters to measure volumes and water samples are collected and lab testing to guarantee potable water quality.	Klabin is working in its operations in compliance with international hygiene standards and according to Brazilian law. 100% of Klabin production units monitors by continuously basis the volume water provided for fully-functioning, safely managed WASH services. Due to environmental and

				<p>water permits figures are reported by annually basis to the authorities. In addition to volume, water quality parameters are also continuously monitored to ensure that its use is 100% safe for our employees. We are committed to keep access to safe water, sanitation, and hygiene at the workplace at quality of standard for all employees in all our units.</p>
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W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Please explain
Total withdrawals	122,279.56	Higher	Facility expansion	About the same	Facility expansion	As we report last year, the Puma unit had an expansion on going (phase I was completed with startup of new packaging paper

						<p>machine in mid-2021 and the phase II is ongoing). This machine operation in all months for 2022 year and the phase II ongoing in Puma unit were responsible for increase about 8,000 megaliters in 2022. That's why, the Klabin's total water withdrawals increased 6.7% in 2022. Even so, the proportion of water returned to the environment, in relation to the total amount of water withdrawn, was higher comparison to previous year, resulting in 1.36% lower and more efficient water consumption. Fresh surface water is vital to Klabin because this</p>
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						<p>volume represents 99.6% of all water withdrawn. All volumes for each source are measured and monitored directly by Klabin, quantitative and qualitatively. Klabin has a technical group that it is working on water reduction actions which aims to identify opportunities in all Klabin's industries to reduce water withdrawals and water consumption. In 2022, the group identified actions in all Klabin's units and, among these, the highlight the Monte Alegre and Otacilio Costa units which realized 13 actions, resulting in a reduction</p>
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						<p>about 4,645,000 m3/year. Even with the startup of new paper machine in Puma unit, due the phase II of its expansion, and other expansions planned in our units which already consider best practice in water use, the total water withdrawals are estimated to be increased less than 5% in the next five years. The total volume of water withdrawn is verified by a third party and the results are publicly available in our 2022 sustainability report. To Klabin, the description for "comparison with previous reporting year" and</p>
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						<p>“five-year forecast” thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower. For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.</p>
Total discharges	103,151.44	Higher	Facility expansion	About the same	Facility expansion	<p>The total water discharge was higher by 8.3% in 2022 compared to 2021 even as Klabin's water withdrawal has increased by 6.7%, this is a good thing because it shows that our water consumption was controlled, i.e., the proportion of water returned to</p>

						<p>the environment, in relation to the total amount of water withdrawn, was higher comparison to previous year, resulting in 1.36% lower and more efficient water consumption. All volumes for each source are sourced from direct measurements and are monitored by Klabin, quantitatively and qualitatively. Puma unit has one of the largest amounts of water discharged in the Tibagi River. However, its treatment process is one of the most robust in the company. With tertiary treatment, the water discharged into the river</p>
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						<p>has a much higher quality than the required environmental limits. The water withdrawals point is downstream from the water discharge point, which demonstrates our commitment with the best available practices. Even with the startup of new packaging paper machine in Puma unit, due the phase II of its expansion and other expansions planned in our units which already consider best practice in water use, the total water discharged are estimated to be increased less than 5% in the next five years. The total</p>
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						<p>volume of water discharged is verified by a third party and the results are publicly available in our 2022 sustainability report.</p> <p>For us, the description for "comparison with previous reporting year" and "five-year forecast" thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower.</p> <p>For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.</p>
Total consumption	19,128.12	About the same	Increase/decrease in business activity	Lower	Facility expansion	Klabin's total water consumption (C) is

						<p>calculated by difference between the total water withdrawals (W) and water discharge (D) water from Klabin's units ($C = W - D$). The total consumption of water decreases 1.36% in 2022 compared to 2021. When we consider our operations located in water-stressed areas in the states of Pernambuco, Ceará, Goiás and São Paulo the water consumption was 19.09% lower in 2022 compared to 2021. This has been caused due to increase of percentual (%) water discharge has been higher than percentual (%) water</p>
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						<p>withdrawal in the same period. This is a good thing because, even with phase II ongoing in Puma unit, the actions to optimization in process implanted during the year resulted in reduction of water consumption. The water consumption volume considers: (i) the volume incorporated into products and residues; (ii) the evaporated volume; and (iii) the volume consumed by human beings.</p> <p>As we report in last year, in near future, we expect a reduction of water consumption due to our commitment to improving our water reuse and</p>
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						<p>water use efficiency, especially in operations located in water-stressed areas.</p> <p>To Klabin, the description for "comparison with previous reporting year" and "five-year forecast" thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower.</p> <p>For our company, 'units' refers to our factories. Our answer in this line is related to all our factories.</p>
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W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Identification tool	Please explain
Row 1	Yes	1-10	About the same	Increase/decrease in efficiency	About the same	Increase/decrease in efficiency	WRI Aqueduct	<p>Klabin units were evaluated using the WRI Aqueduct tool. Water stressed sites were defined as having a baseline water stress score of 20% or more. According WRI Aqueduct tool, baseline water stress measures the ratio of total annual water withdrawals to total available annual renewable supply, accounting for upstream consumptive use. Higher values indicate more competition among water users. All water stressed areas are measured at a minimum catchment</p>

							<p>level.</p> <p>No exclusions were considered.</p> <p>To Klabin, the description for “comparison with previous reporting year” and “five-year forecast” thresholds:</p> <p>Deviation +/- or equal 5% = about the same;</p> <p>Deviation between +/- 5-10% = higher / lower;</p> <p>Deviation > +/- 10% = much higher / lower.</p> <p>In 2018, this criterion had only one unit as being in water stressed areas: Goiana unit, located in Pernambuco/ Brazil.</p> <p>Goiana’s withdrawals water represented 0.89% of total withdrawals water by Klabin that year.</p> <p>In 2019, this criterion had more two units as being classified in</p>
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								<p>water stressed areas: Jundiá DI e Jundiá TP units, both located in the São Paulo state. In 2019, the three sites now classified as water stressed represented 1.10% of total withdrawals water by Klabin.</p> <p>In 2020, this criterion had more one site as being classified in water stressed areas: the new unit of Horizonte, located in the Ceará state. In 2020, the four sites classified as water stressed areas withdrawn represented 0.90% of total withdrawals water by Klabin.</p> <p>In 2021, this criterion had more three sites as being classified in water stressed areas: the three units were acquired</p>
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								<p>from International Paper in 2020 (Franco da Rocha, Rio Verde and Suzano units). In 2021, the seven sites, all in Brazil, now classified as water stressed areas withdrawn represented 1.17% of Klabin's total withdrawals water. In 2022, there were no changes in areas classified as water stress and the seven sites represented proportion to 1.13% of Klabin's total withdrawals water. Therefore, in 2022, the proportion water is withdrawn from areas with water stress relation to total Klabin was 3.4% LOWER compared to 2021.</p>
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								<p>The percentage of water withdrawn from areas with water stressed areas in column 2, even that small, is very important to Klabin. All units located on water stressed areas have an action plan to improve the water efficiency, increase the reuse of water and get an alternative water source. To Klabin, 'units' refers to its factories. The evaluation using WRI Aqueduct tool, explained in this line, considers all Klabin factories. Considering the next five years, Klabin expect keep stable water withdrawals in units located in water stressed areas because of</p>
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								actions planned to increase water efficiency in its operations even if there is an increase in production.
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W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	121,783.25	Higher	Facility expansion	Fresh surface water is vital to Klabin because it represents 99.6% of all its water withdrawn and it is from rivers. All each source volumes are measure through flow meters. The fresh surface water volume is higher by 6.7% from 2022 to 2021. As we report last year, the Puma unit is in expansion. The new packaging paper machine operation (startup in mid-2021) in all months 2022

					<p>and the phase II ongoing were responsible for increase more than 8,000 megaliters in 2022. Moreover, based on the company's strategic growth plan, an increase by 7 to 9% in fresh surface water withdrawal is expected for the development of production processes in the next five years. Even so, the company plans to evolve the water use more efficiently, with the implementation of new technologies and actions, based on the best practices in the market. For us, deviation +/- or equal 5% = about the same; deviation between +/- 5-10% = higher/lower;</p>
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					deviation > +/- 10% = much higher/lower.
Brackish surface water/Seawater	Not relevant				No brackish surface water/seawater intake for any use. The brackish surface water is not relevant because is impossible due costs and distance. Considering possible future trends, Klabin will not consume brackish surface water/seawater .
Groundwater – renewable	Relevant	242.92	Higher	Change in accounting methodology	The groundwater (renewable) withdrawal has increased by 7.8% in 2022 compared to 2021. Goiana unit increased its groundwater withdrawal to use in improvement actions in its facilities. The groundwater is relevant for us because around 70.6% of total groundwater

					<p>withdrawals are in water stressed area. The groundwater withdrawal represents only 0.2% of all Klabin's water intake. All water volumes are direct measures through "in place" flow meters and are monitored by Klabin, quantitative and qualitatively. Considering possible future trends, Klabin could have an increase of groundwater (renewable) withdrawn due to possibility of expansion on Goiana unit. For us, deviation +/- or equal 5% = about the same; deviation between +/- 5-10% = higher/lower; deviation > +/- 10% = much higher/lower. In 2022, there</p>
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					was change in Rio Verde unit accounting methodology from third part source to groundwater source.
Groundwater – non-renewable	Not relevant				Klabin is not using non-renewable groundwater sources. The non-renewable groundwater is not relevant because this use has environmental impacts. Considering possible future trends, Klabin will not consume non-renewable groundwater.
Produced/Entrained water	Not relevant				Klabin is not consume the produced water and so it is not relevant for us. Considering possible future trends, Klabin will not consume produced water.
Third party sources	Relevant	253.39	Higher	Increase/decrease in business activity	The water withdrawal from third party sources increased by

					<p>9.2% from 2022 to 2021 due improvements to facilities and increase production at some units (Suzano and Otacílio Costa). Even it represents only 0.2% of total, the water withdrawal from third party is very relevant to Klabin because 17.1% of total third party source withdrawals are located in water stressed area. The water from third party sources is use mainly in WASH services, but, in a few units we also used this water to packaging production (e.g Feira de Santana and Jundiá). 100% of third party source is from municipal/state supplier and it is measure</p>
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					<p>through flowmeters. For us, deviation +/- or equal 5% = about the same; between +/- 5-10% = higher/lower; deviation > +/- 10% = much higher/lower. As we report last year, considering possible future trends, Klabin will have a stability of third party sources withdrawal. In 2022, there was change in Rio Verde unit accounting methodology from third part to groundwater source.</p>
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W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	102,948.99	Higher	Facility expansion	The fresh surface water discharge is relevant to Klabin because 99.8% of total discharge is into the fresh surface

				<p>water. There was an increase by 8.3% from 2021 to 2022.</p> <p>To Klabin, deviation +/- or equal 5% = about the same; deviation between +/- 5-10% = higher/lower; deviation > +/- 10% = much higher/lower.</p> <p>All volumes for each source are sourced from direct measurements through flowmeters and are monitored by Klabin, quantitative and qualitatively.</p> <p>As we report last year, the Puma unit is expansion on going. The new packaging paper machine operations (startup in mid-2021) in all months 2022 and the phase II ongoing were responsible for increase more than 7.500 megaliters in water discharged.</p> <p>With the startup of new</p>
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					packaging paper machine in Puma unit, due the phase II of its expansion and other expansions planned in our units which already consider best practice in water use, the total fresh surface water discharge is estimated to be increased by 10 to 15% in the next five years.
Brackish surface water/seawater	Not relevant				Klabin is not discharge water in seawater and so it is not relevant for us. Considering possible future trends, Klabin will not discharge in seawater.
Groundwater	Not relevant				Klabin is not discharge water in groundwater and so it is not relevant for us. Considering possible future trends, Klabin will not discharge in groundwater.
Third-party destinations	Relevant	202.45	Higher	Increase/decrease in efficiency	Even it represents only 0.2% of total water discharged, in 2022, the water discharge in third

				<p>party sources is very relevant to Klabin because 30.4% of total water discharged in third party source are located in water stressed area. This only happens for unit that are close to urban areas. 100% of third party sources is in municipal/state supplier. The water discharge in third party sources has increased by 7.6% in 2022 compared to 2021 due performed actions to increase efficient and reduce water losses in production process. All volumes for each source are sourced from direct measurements through flowmeters and are monitored by Klabin, quantitative and qualitatively. To Klabin, deviation +/- or equal 5% =</p>
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					about the same; deviation between +/- 5-10% = higher/lower; deviation > +/- 10% = much higher/lower. As we report last year, considering possible future trends, Klabin will have a stability of third party sources destination.
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W1.2j

(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	Primary reason for comparison with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Tertiary treatment	Relevant	50,661.08	Much higher	Facility expansion	11-20	The volume of water discharged with tertiary treatment is relevant to Klabin because represents more than 49% of total water discharged. 4 of 23 industrial units of Klabin have

						<p>tertiary treatment: Itajaí, Jundiá TP, Puma and São Leopoldo units. Tertiary treatment follows secondary and primary treatment. In these facilities, there are regulatory standards and requirements from Environmental Agency more restrictive than other locals. For that, Klabin has considered the tertiary treatment in these facilities. This is our rationale to select the level of treatment. The total volume of water discharged in 2021 was 43,120.08</p>
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						<p>megaliters. The total volume of water discharged in 2022 was 50,661.08 megaliters. Therefore, the volume has increased by 7,541 megaliters (equivalent to an increase of 17.5%). To Klabin, the description for “comparison with previous reporting year” thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower. With the startup of new packaging</p>
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						<p>paper machine in Puma unit, due the phase II of its expansion and other expansions planned in our units which already consider best practice in water use, the total water discharged are estimated to be increased by 10 to 15% in the next five years.</p>
Secondary treatment	Relevant	52,357.97	About the same	Facility expansion	61-70	<p>The volume of water discharged with secondary treatment is relevant to Klabin because represents more than 50% of total water discharged. 16 of 23 industrial units of Klabin have</p>

						<p>secondary treatment: Angatuba, Betim, Correia Pinto, Feira de Santana, Franco da Rocha, Goiana, Horizonte, Jundiaí DI, Lages 1, Manaus, Manaus II, Monte Alegre, Otacílio Costa, Paulínia, Rio Verde and Suzano units. Secondary treatment follows primary treatment. In these facilities, there are regulatory standards and requirements from Environmental Agency more restrictive than other locals but not so much like the tertiary treatment.</p>
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						<p>For that, Klabin has considered the secondary treatment in these facilities. This is our rationale to select the level of treatment. The total volume of water discharged in 2021 was 51,986.54 megaliters. The total volume of water discharged in 2022 was 52,357.97 megaliters. Therefore, the volume has increased by 371.43 megaliters (equivalent to an increase of 0.7%). To Klabin, the description for "comparison with previous reporting year"</p>
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						<p>thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower. Considering possible future trends, Klabin will have a stability of water discharged with secondary treatment.</p>
Primary treatment only	Relevant	132.4	About the same	Facility expansion	1-10	<p>The volume of water discharged with primary treatment is relevant to Klabin because the primary treatment is the first step of treatment even so representing only 0.1% of Klabin's total water discharged.</p> <p>2 of 23</p>

						<p>industrial units of Klabin have primary treatment: Piracicaba and Rio Verde units. In these facilities, there are no restrictive regulatory standards and requirements from Environmental Agency because normally we discharge water in third party sources. For that, Klabin has considered the primary treatment in these facilities. This is our rationale to select the level of treatment. The total volume of water discharged in 2021 was 126.34 megaliters. The total volume of</p>
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						<p>water discharged in 2022 was 132.40 megaliters. The volume of water discharged with primary treatment has increased by 4.8% between 2021 and 2022. To Klabin, the description for "comparison with previous reporting year" thresholds: Deviation +/- or equal 5% = about the same; Deviation between +/- 5-10% = higher / lower; Deviation > +/- 10% = much higher / lower. Considering possible future trends, Klabin will have a</p>
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						stability of water discharged with primary treatment.
Discharge to the natural environment without treatment	Not relevant					As it is a disposal of untreated water that can have an impact on the environment, this type of treatment is relevant for Klabin. However, Klabin does not dispose of water without treatment to the environment. We had no changes between 2021 and 2022. Considering the future scenarios, Klabin will never discard of untreated water in the environment that it does not comply with current legislation.
Discharge to a third party	Not relevant					As it is a disposal of untreated

without treatment						<p>water for third parties and that can cause impacts on the environment, this type of treatment is relevant for Klabin. However, Klabin does not dispose of untreated water on third party sources. We had no changes between 2021 and 2022. Considering the future scenarios, Klabin will never discard of untreated water in the environment that it does not comply with current legislation.</p>
Other	Relevant	0	About the same	Other, please specify	1-10	<p>As it is another way to water treatment and that can cause impacts on the environment, this type</p>

						<p>of treatment (spray drying process) is relevant to Klabin. One unit of Klabin, located on Buenos Aires, Argentina, transform their wastewater in solid waste through spray drying process. That's why, this unit has not volume of water discharge. We had no changes between 2021 and 2022. Considering the future scenarios, Klabin will not expect any changes.</p>
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W1.2k

(W1.2k) Provide details of your organization’s emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

Emissions to water in the reporting	Category(ies) of substances included	List the specific substances included	Please explain
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	year (metric tonnes)		
Row 1	4.19	Nitrates Phosphates Pesticides Priority substances listed under the EU Water Framework Directive	<p>The priority substances measure includes Alachlor, Atrazine, Benzene, Cadmium and its compounds, 1,2-dichloroethane, Dichloromethane, Endosulfan, Hexachlorobenzene, Mercury and its compounds, Nickel and its compounds, Pentachlorophenol, Simazine, Trichlorobenzenes, Trichloromethane (chloroform), Trifluralin, Heptachlor and heptachlor epoxide.</p> <p>All Klabin units treat the water discharged through Effluent Treatment Plants before returning to the water body or concessionaire. Water discharged is monitored internally and by third party to demonstrate compliance with all applicable legal requirements.</p> <p>The minimum standards for water discharged are based on municipal, state and federal norms for each unit. Klabin also compares its results with the International Finance Corporate (IFC) indicators, which has reference standards for pulp and paper sector.</p> <p>The parameters assessed for pulp and paper business include pollutants emissions such as nitrates, total phosphorus, pesticides and other priority substances because the production process in this sector involves the use of chemical substances and it is necessary to guarantee the quality of the water discharged.</p> <p>In the Pulp and Paper sector, with units located in Alto Paranapanema (SP), Tibagi River (PR) and Canoas River (SC) watersheds, there is also a management plan for pollutants emissions involving studies of water dispersion and self-</p>

				<p>purification which aims to assess and determine limits that do not cause variations in available and quality water of the water body which receives the water discharged from the production processes. Emissions to water are not nearby to vulnerable communities or within water stressed areas.</p>
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W1.3

(W1.3) Provide a figure for your organization’s total water withdrawal efficiency.

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	20,033,000,000	122,279.56	163,829.506746671	As we report last year, we expect that this number will decrease in the next two years due to increase of Klabin's revenue be lower than an increase of water withdrawals with the finish phase II of Puma unit expansion. After that (4-5 years), we expect the number will increase due to water efficiency improving and water reuse that will decrease of water withdrawals.

W1.4

(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances	Comment
Row 1	No	Klabin has a strict quality control of its products and uses laboratory tests to assess the physical and chemical characteristics of its products. 100% of the products are constantly assessed according to quality and safety parameters to guarantee compliance with health and safety requirements applicable to our business.

	<p>Besides, to attest to the credibility of our products, we have certified food safety processes.</p> <p>The ISEGA Certification guarantees the quality of the paper used to produce packaging that comes into contact with food.</p> <p>The American Institute of Baking (AIB) recognition attests to the processes adopted by Klabin to produce food sacks. With the recognition of the Lages unit, Klabin is the first company in Latin America to receive the recommendation from the AIB.</p> <p>All these recognitions attest to the processes adopted by Klabin in its Food Packaging Program, which guarantees the integrity of its products, their sanitary conditions, and the health of the consumer.</p>
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W1.5

(W1.5) Do you engage with your value chain on water-related issues?

	Engagement
Suppliers	Yes
Other value chain partners (e.g., customers)	Yes

W1.5a

(W1.5a) Do you assess your suppliers according to their impact on water security?

Row 1

Assessment of supplier impact

Yes, we assess the impact of our suppliers

Considered in assessment

Basin status (e.g., water stress or access to WASH services)
 Supplier dependence on water
 Supplier impacts on water availability
 Supplier impacts on water quality
 Procurement spend

Number of suppliers identified as having a substantive impact

473

% of total suppliers identified as having a substantive impact

1-25

Please explain

Klabin has more than 7,000 active suppliers in its supply chain, which 473 have been considered critical suppliers (substantive impact).
 Currently, we use the WRI Aqueduct as a tool to assess the criticality of the supplier and the dependence of its process on water use and consumption. We consider as the threshold criteria if supplier is located in an area with a water stressed score of 20% or more in WRI, as well as its overall EcoVadis system score.

The threshold used to assess supplier impacts on water quality/availability is based on EcoVadis score which considers environmental indicators (quali/quantitative and water management indicators in each process) as an index for generating this final classification. A ranking is created considering supplier 'answers in these questions to classify their potential impact.

We monitor these suppliers' actions (through the EcoVadis system) aims of engage them to improve the water management, as well as reducing water use by their processes.

W1.5b

(W1.5b) Do your suppliers have to meet water-related requirements as part of your organization's purchasing process?

Suppliers have to meet specific water-related requirements	
Row 1	Yes, water-related requirements are included in our supplier contracts

W1.5c

(W1.5c) Provide details of the water-related requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Water-related requirement

Complying with going beyond water-related regulatory requirements

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

Grievance mechanism/Whistleblowing hotline

Supplier self-assessment

Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Klabin's supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin/supplier, and it includes water-related guidelines, policies, and procedures that must be fulfilled beyond regulatory requirements.

We also use the EcoVadis system to assess suppliers with a substantial impact which considers their self-assessment and rating according to score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference.

In addition, Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

In case Ecovadis score is below 35 or if supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it. 100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they are all comply.

Water-related requirement

Conducting water-related risk assessments on a regular basis (at least once annually)

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

- Grievance mechanism/Whistleblowing hotline
- Supplier self-assessment
- Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Klabin's supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin/supplier, and it includes water-related guidelines that must be fulfilled.

We also use WRI Aqueduct to identify suppliers in water stressed areas yearly (20% or more score) and the EcoVadis system to assess suppliers with a substantial impact which considers their self-assessment and rating according to score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference.

In addition, Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

In case of Ecovadis score below 35 or if supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it. 100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they are all comply.

Water-related requirement

Complying with a water-related certification

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

Grievance mechanism/Whistleblowing hotline

Supplier self-assessment

Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Klabin's supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin/supplier, and it includes water-related guidelines that must be fulfilled.

We also use the EcoVadis system to assess suppliers with a substantial impact. This system includes question about water audits performed (item ENV3226) and considers supplier self-assessment and a rating according to its score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference.

In addition, Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

In case of Ecovadis score below 35 or if supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it.

100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they are all comply.

Water-related requirement

Setting and monitoring water withdrawal reduction targets

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

Grievance mechanism/Whistleblowing hotline

Supplier self-assessment

Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Our supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin/supplier, and it includes water-related guidelines that must be fulfilled.

We also use the EcoVadis system to assess suppliers with a substantial impact. This system includes question about water targets (ENV610) and water use reduction (ENV3226). The evaluate considers supplier self-assessment and a rating according to its score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference.

In addition, Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

In case of Ecovadis score below 35 or if supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it. 100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they're all comply.

Water-related requirement

Setting and monitoring water pollution-related targets

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

- Grievance mechanism/Whistleblowing hotline
- Supplier self-assessment
- Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Our supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin/supplier, and it includes water-related guidelines that must be fulfilled.

We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets (ENV610) and their performance on it (ENV6332). The evaluate considers supplier self-assessment and a rating according to its score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference.

Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

In case of Ecovadis score below 35 or if supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it. 100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they're all comply.

Water-related requirement

Providing fully-functioning, safely managed WASH services to all workers

% of suppliers with a substantive impact required to comply with this water-related requirement

100%

% of suppliers with a substantive impact in compliance with this water-related requirement

100%

Mechanisms for monitoring compliance with this water-related requirement

Grievance mechanism/Whistleblowing hotline
Supplier self-assessment
Supplier scorecard or rating

Response to supplier non-compliance with this water-related requirement

Retain and engage

Comment

Our supply area assesses yearly all suppliers about their compliance with the "Requirements Book". This document is part of the contract between Klabin, and supplier and it includes water-related guidelines, including about current legislation and standards to must be fulfilled.

Through compliance with legal requirements, we also demonstrate compliance with health and safety issues, including about WASH Services.

Klabin monitors grievance regarding operations of our suppliers through whistleblowing hotline.

If supplier has a grievance/non-conformity identified, Klabin's supply area develops an action plan to support and engage it.

100% of suppliers must comply with these water-related requirements as part of our organization's purchasing process and currently, they're all comply.

W1.5d

(W1.5d) Provide details of any other water-related supplier engagement activity.

Type of engagement

Information collection

Details of engagement

Collect water management information at least annually from suppliers

% of suppliers by number

51-75

% of suppliers with a substantive impact

100%

Rationale for your engagement

The Klabin forestry units have a Controlled Wood Program where the wood suppliers are evaluated by specific forestry team, based on specific methodology related to the FSC® chain of custody certification. These suppliers were selected because they represent an important part of our supply chain due to high risks this sector represents. In 2022, the volume of wood consumption in the industrial process was 14.3 million tons, 82% of which from certified sources. Among this certified wood, 51% from Klabin own forests and 31% acquired from suppliers. All our certified suppliers have been assessed on water-related issues by FSC® certification.

In 2022, 687 audits were carried out, evaluating 361 areas of non-certified wood in the states of Paraná and Santa Catarina, and audits in 77 areas of certified wood in Paraná. It is important to point out that inspections by the Controlled Wood team in certified wood areas occur in specific cases because this demand is responsible of the certifier company.

All suppliers of the forestry units are audited by Klabin on a quarterly basis. In case of non-compliance with the water-related targets or guidelines, Klabin stops supplying immediately and sends a recommendation of adequacy. After fulfilling the recommendations, the supplier is audited again and, in the event of no pending issues, the supply contract is resumed.

Impact of the engagement and measures of success

Klabin measures the success by compliance percentage of all sustainability parameters on properties involved in the Program. This checklist has labor and human rights, environmental (water, solid wastes, emissions) and social aspects and it is used to measure of success of the engagement.

In 2022, 6 of 687 audits has blocked the wood suppliers because causing negative significant impacts. This shows that the properties of Klabin's wood suppliers, almost entirely, meet the assessed requirements.

With this engagement, Klabin could assess the progress in careful and protection to build water resilience in your wood suppliers.

Comment

In Parana, the percentage of audits identified in 2022 as causing significant and negative impacts which improvements were verified and resolved: 0.8% (6 audits).

W1.5e

(W1.5e) Provide details of any water-related engagement activity with customers or other value chain partners.

Type of stakeholder

Customers

Type of engagement

Education / information sharing

Details of engagement

Share information about your products and relevant certification schemes

Rationale for your engagement

Klabin's customers are relevant stakeholder because they are the main group which promotes and challenges the company towards a sustainable economy. This is increased by Klabin's Stakeholder Engagement Policy, which establishes that the Company must meet its customer's needs, considering their growing demands for innovation and sustainability of their products. The theme "Customers and Products" is increasingly related to innovation and sustainability, and it is considered a Klabin Goals for Sustainable Development (KODS).

To meet these demands, Klabin develops Life Cycle Analysis studies for its products, which include calculation of the water footprint, and shares this information with its main customers.

In addition, we also share information about certifications such as FSC® (FSC-C022516), Forest Stewardship Council®, and CERFLOR (recognized by PEFC). These certifications attest that the main raw material used in the company's production process, wood (95% of the total used), undergoes rigorous verification of compliance with certification standards for forest management and chain of custody, in order to guarantee the reliability and sustainability of our supply chain, including assessment about water-related issues.

Impact of the engagement and measures of success

Klabin conducts annual satisfaction or perception surveys specific to each of its businesses aims to identify strengths and opportunities for improvement in products, processes and operations. Quality, safety, qualification, technical support and sustainability indicators (including life cycle analysis) are part of these surveys. For example, Pulp and Paper survey, answered by customers who represent around 80% of total volume sold, evaluated Klabin with an excellent score (4.3 out of 5 total points) in 2022.

As result of challenges related to water footprint, from 2018 to 2022 Klabin reduced 17.8% in its specific water consumption (2018 the result was 4.42 m³/tones and 2022 the resulted was 3.63 m³/tones).

Specific water consumption (S) is the difference between the volume of water withdrawn (W) and the discharge (D), divided by the total production (P) ($S = (W - D) / P$).

This continuous engagement contributes to improve water security in regions where Klabin has operations and to improve available water to other stakeholders in these regions.

Type of stakeholder

Investors & shareholders

Type of engagement

Education / information sharing

Details of engagement

Run an engagement campaign to educate stakeholders about your water-related performance and strategy

Rationale for your engagement

The involvement of investors and shareholders are relevant to Klabin because they reinforce its commitment and socioenvironmental performance in Brazil, demonstrating its pioneering approach to financial strategy linked to sustainability.

The company run an engagement campaign to educate investors and shareholders about its water-related performance and strategy. Klabin has a target about water consumption in Sustainability Linked Bond (SLB). SLB is a financial instrument aimed at companies reaches sustainability goals, which are periodically monitored. These bonds can have their financial characteristics changed, depending on reach pre-established targets are achieved on dates determined for verification.

Klabin set targets in SLB related of water, waste and biodiversity. These targets are part of the Company's ambition to increase the resilience and rationality of its model for extracting, transforming, reusing and regenerating resources. Klabin's influence on these three themes directly impacts its cost-efficiency, its ability to maintain constructive relationships with society and, ultimately, the capacity of ecosystem, where the company operates, to respond positively to actions for greater productivity in forestry and industrial operations.

Impact of the engagement and measures of success

The water 2030 target defined in Sustainability Linked Bond (SLB) is "reduce by 20% the specific consumption of industrial water (compared to 2018)" and Sustainability Performance Target Trigger, defined to reach in 2025, is "Water consumption equal to or below 3.68 m³ per ton of production (16.7% reduction compared to 2018).

As result of this target, from 2018 to 2022 Klabin reduced 17.8% in its unit's water consumption (2018 the result was 4.42 m³/tones and 2022 the resulted was 3.63 m³/tones). By this way, the challenge is to continuous improvement this target through actions to optimization of water consumption in company.

The target calculated according to specific water consumption (S) is the difference between the volume of water withdrawn (W) and the discharge (D), divided by the total production (P) ($S = (W - D) / P$).

If the target is not reached, there will be an increase in 12.5 bps.

This continuous engagement contributes to improve water security in regions where Klabin has operations and to improve available water to other stakeholders in these regions.

Type of stakeholder

Other, please specify

Community

Type of engagement

Education / information sharing

Details of engagement

Educate and work with stakeholders on understanding and measuring exposure to water-related risks

Rationale for your engagement

The community is an important stakeholder to Klabin in actions related to water security. Educate and work with community on understanding about water-related risks is essential to expand the scope of results beyond Klabin's operating.

One of the means of engaging the community in water security actions is through Klabin's Caiubi Program.

Klabin Caiubi Program aims to capacitate ecologically aware educators, contributing to training of more responsible citizens. The editions are guided by a main theme related to water security chosen after analyzing local needs.

Impact of the engagement and measures of success

Klabin Caiubi Program started in 2001 in Parana state, and it was expanded to Santa Catarina (2008), Bahia (2020), Rio Grande do Sul (2021) and São Paulo (2022), it has been taking place in cities where Klabin operates. The schools are invited to participate of the program through its Municipal Department of Education.

Caiubi edition has an annual schedule which includes:

Training: sustainability specialists share their knowledge with educators and guide them through practical and theoretical activities about the best way to work on the chosen theme in classroom.

Development: educators discuss the training issue in classroom, they also get new ideas and implement the projects with students.

Environmental Exhibition: through an environmental exhibition, students share with other classes, family members and community their learning and activities developed during the project.

Since the beginning, the program impacted positively more than 6,500 educators, 1,800 schools and 499,500 students.

Type of stakeholder

Other, please specify

Community

Type of engagement

Innovation & collaboration

Details of engagement

Collaborate with stakeholders on innovations to reduce water impacts in products and services

Rationale for your engagement

The community is an important stakeholder to Klabin in actions related to water security. Collaborate with community on innovations to reduce water impacts in the areas affected by Klabin's operations is important to achieve positive results locally and to contribute with other stakeholders who also depend on the same river basins. One of the innovations developed by Klabin is the application of the hydrossolidarity management methodology, which aims to improve the availability of water in the communities affected by Klabin's forestry operations.

Impact of the engagement and measures of success

Hydrossolidary management consists of a sustainable forest management method, pioneer by Klabin among its sector, which considers micro-basins as a forest operation planning unit to eliminate the trade of timber production and water production, establishing water regulation. The company sets a public objective to implant this methodology in 100% of forest operations under its own management until 2030. This process starts by applying hydrological principles: forest plantations should be made in areas with natural water availability compatible with the activity; it necessary to have legal compliance regarding to permanent preservation areas and legal reserve; soil conservation practices must be contemplated; riparian areas must be respected. An analysis of water availability must also be done, with the study and delimitation of region's micro-basin, which must contain: identification of the micro-basins; points of surface water collect by company and communities and respective watersheds; medium-term harvesting blocks; harvesting plan by micro-basin. In 2022, Klabin expanded hydrossolidary management for 97.3% of its own forest. In this way, Klabin contributes to protection of micro-basins to ensure water quality and availability for communities and other stakeholders around its forestry units.

Type of stakeholder

Other, please specify
Community

Type of engagement

Innovation & collaboration

Details of engagement

Encourage stakeholders to work collaboratively with other users in their river basins toward sustainable water management

Rationale for your engagement

The community is an important stakeholder to Klabin in actions related to water security. To Klabin is important participate of actions to encourage stakeholders to work collaboratively with other users in their river basins toward sustainable water management. This action occurs through Klabin's participation in river basin committees.

Impact of the engagement and measures of success

Klabin participates in the River Basin Committees of Tibagi River (PUMA and Monte Alegre) and Canoas River (Correia Pinto and Otacilio Costa). In addition, it is a member

of the PCJ Consortium (Piracicaba, Paulínia, Jundiaí-DI and Jundiaí-TP) which serves on the River Basin Committee of the Piracicaba, Capivari and Jundiaí Rivers.

Klabin has a public goal of having 100% of the locations where it operates with initiatives to increase territorial water security by 2030.

The participation of Klabin's units in River Basin Committees is one of the ways to act, along with other stakeholders, in actions to increase water security in these regions.

In 2022, 74% of the locations where Klabin operates have these initiatives and participation in River Basin Committees represents 35% of this indicator (8 locations among a total of 23).

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Comment
Row 1	No	The Klabin maintains a legal area with environmental experts who monitor issues related to legal parameters. Moreover, Klabin has a permanent contract with an Environmental Advocacy Office aimed at preventive monitoring and advice on topics such as regulatory changes, including those related to water safety.

W3. Procedures

W3.1

(W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified
Row 1	Yes, we identify and classify our potential water pollutants	Klabin has internal procedures to conduct studies on water dispersion and self-purification of surface fresh water to ensure that the disposal of treated water does not alter the quality and volume of the receiving

		<p>water body.</p> <p>The reference for parameters to be monitored and maximum values allowed are defined in accordance with Best Available Technologies (BAT) and guidelines of indicators from the International Finance Corporate (IFC), as well the parameters of Brazilian legislation. The main Brazilian laws applicable are CONAMA Resolution 430 and 357, which establish standards for water discharged into bodies of water, and Ministry of Health Ordinance No. 888, which establish water potability standards. The local laws vary among Brazilian states, an example is Decree 8468, of São Paulo State, which provides for the prevention and control of environmental pollution, and it is applicable to 7 units located in this state.</p> <p>The above criteria are references which all company uses to know the parameters to be monitored and their respective references. The monitoring is constantly carried out by certified laboratories (ISO 17025) using the analysis standard based on methodologies and standard methods. Parameters such as cadmium, mercury, phosphorus, among others, are analyzed by collecting samples and laboratory tests to identify concentrations (milligrams/liter) and calculate emissions multiplying the concentration of the pollutant by the discharged water flow (kilograms/year).</p>
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W3.1a

(W3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Water pollutant category

Inorganic pollutants

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying, maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

Inorganic pollutants, formed by mineral acids, inorganic salts, heavy metals, and other metals, have a potential impact on water bodies, ecosystems, and human health. In ecosystems, inorganic pollutants can cause bioaccumulation, which potentiates the harmful effect of substances through the food chain. For human health, they can cause neurological problems and diseases in various organs.

The emission of inorganic pollutants can occur, for example, through maintenance and cleaning activities in production areas, storage of waste and storage of chemical products.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

- Direct operations
- Supply chain

Actions and procedures to minimize adverse impacts

- Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience
- Implementation of integrated solid waste management systems
- Industrial and chemical accidents prevention, preparedness, and response
- Requirement for suppliers to comply with regulatory requirements
- Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of inorganic pollutants include assessment of critical infrastructure and storage condition, their resilience and Industrial and chemical accidents prevention, preparedness, and response. These actions are performed by maintenance and safety teams of each unit. Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier). We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a non-conformity identified, our supply area develops an action plan to support and engage it.

Water pollutant category

Oil

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying, maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

Lubricating oil, as it is derived from petroleum and contains various additives, has the potential impact on water bodies, ecosystems, and human health. For human health, the lubricating oil can cause chronic intoxications such as loss of appetite; irritability;

anemia, respiratory and digestive problems, and other effects.

The emission of lubricating oil can occur, for example, through maintenance and cleaning activities in production areas, storage of waste and storage of chemical products.

Value chain stage

Direct operations

Supply chain

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Resource recovery

Implementation of integrated solid waste management systems

Industrial and chemical accidents prevention, preparedness, and response

Provision of best practice instructions on product use

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In direct operations, the management of lubricant oil potential impacts includes assessment of critical infrastructure and storage condition and industrial and chemical accidents prevention, preparedness, and response. For teams which use oil in activities there are training on best practice instructions on product use. These actions are performed by maintenance and safety teams of each unit.

Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices. All lubricant oil used is collected and destined for companies which recovery it.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier). We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a non-conformity identified, our supply area develops an action plan to support and engage it.

Water pollutant category

Nitrates

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying,

maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

In surface waters, nitrate is the main form of nitrogen. The presence of nitrate and phosphorus in water bodies can lead to the eutrophication process, characterized by an increase in the concentration of nutrients, which favors the accelerated multiplication of algae and cyanobacteria, resulting in an imbalance in the aquatic environment (low oxygen concentration and decrease in passage of light).

For human health, the presence of high nitrate concentrations can cause postural hypotension (due to vasodilation), headaches and malaise.

The emission of nitrates can occur through sanitary and hygienic activities, storage of waste and storage of chemical products.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

Direct operations

Supply chain

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Industrial and chemical accidents prevention, preparedness, and response

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of nitrates include assessment of critical infrastructure and storage condition, their resilience and industrial and chemical accidents prevention, preparedness, and response. These actions are performed by maintenance and safety teams of each unit.

Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier).

We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a non-conformity identified, our supply area develops an action plan to support and engage it. All this monitoring aims to guarantee that our operations do not offer risks to our employees and other stakeholders related to quality of our water and treated effluents.

Water pollutant category

Phosphates

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying, maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

The presence of nitrates and phosphates in water bodies can lead to the eutrophication process, characterized by an increase in the concentration of nutrients, which favors the accelerated multiplication of algae and cyanobacteria, resulting in an imbalance in the aquatic environment (low oxygen concentration and decrease in passage of light).

The emission of phosphates can occur through sanitary and hygienic activities, storage of waste and storage of chemical products.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

Direct operations
Supply chain

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience
Industrial and chemical accidents prevention, preparedness, and response
Requirement for suppliers to comply with regulatory requirements
Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of phosphates include assessment of critical infrastructure and storage condition, their resilience and industrial and chemical accidents prevention, preparedness, and response. These actions are performed by maintenance and safety teams of each unit.

Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier). We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a

non-conformity identified, our supply area develops an action plan to support and engage it.

Water pollutant category

Other nutrients and oxygen demanding pollutants

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying, maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

Among the characteristics of effluents from the pulp and paper sector is the high organic charge which includes nutrients and oxygen demanding pollutants. The emission these pollutants can occur, for example, through wood digestion, pulping and pulp washing processes.

The high demand for oxygen in water can cause the mortality of fish and other aquatic organisms, causing an imbalance in these environments and the ecosystem.

Klabin monitors daily 100% of the water withdrawals quality (e.g. BOD, COD, P, N, TSS, temperature). All effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

Direct operations
Supply chain

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Resource recovery

Beyond compliance with regulatory requirements

Industrial and chemical accidents prevention, preparedness, and response

Water recycling

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of pollutants include assessment of critical infrastructure and storage condition, their resilience and industrial and chemical accidents prevention, preparedness, and response. These actions are performed by maintenance and safety teams of each unit.

The Klabin's units also have resource recovery process which transformed waste potential pollutants into energy inputs in the production process. Further, there are water recycling process and effluents treatment plants which ensure optimization in this resource use and that 100% of water discharged comply with all applicable legislation and following the best effluent treatment practices.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier). We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a non-conformity identified, our supply area develops an action plan to support and engage it.

Water pollutant category

Other synthetic organic compounds

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit chemical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying, maintenance operations using oils and other chemicals, storage of hazardous waste, storage of chemical products, floor washing in productive areas and sanitary and hygienic activities.

The synthetic organic compounds (detergents, solvents, PAHs, and VOCs) have a potential impact on water bodies, ecosystems, and human health. In ecosystems, synthetic organic compounds can cause bioaccumulation, which potentiates the harmful effect of substances through the food chain. For human health, they can cause dysfunctions in the immune and reproductive systems.

The emission of synthetic organic compounds can occur, for example, through maintenance and cleaning activities in production areas, storage of waste and storage of chemical products.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

Direct operations

Supply chain

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Implementation of integrated solid waste management systems

Industrial and chemical accidents prevention, preparedness, and response

Provision of best practice instructions on product use

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of pollutants include assessment of critical infrastructure and storage condition, their resilience and

industrial and chemical accidents prevention, preparedness, and response. For teams which use these substances in activities there are training on best practice instructions on product use. These actions are performed by maintenance and safety teams of each unit.

Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices.

In addition, supply area assesses yearly all suppliers about their compliance with water-related guidelines, policies, and procedures that must be fulfilled according to Requirements Book (document attached in contract between Klabin/supplier). We also use the EcoVadis system to assess suppliers with a substantial impact, including question about water pollution-related targets end their performed on it. The evaluate considers supplier score: 0-20: high risk; 20-35: medium risk; 36-55: engaged; 56-75: advanced; above 75: reference. In case of Ecovadis score below 35 or if supplier has a non-conformity identified, our supply area develops an action plan to support and engage it.

Water pollutant category

Other physical pollutants

Description of water pollutant and potential impacts

The main processes in the pulp and paper sector that have the potential to emit physical pollutants are wood digestion, pulping, pulp washing, bleaching, and drying. Among physical pollutants, it is important monitoring effluent temperature because, in ecosystems, temperatures outside the thermal tolerance limits of aquatic organisms can cause impacts on their growth and reproduction.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies.

Value chain stage

Direct operations

Actions and procedures to minimize adverse impacts

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Please explain

In Klabin's direct operations, there are effluents treatment plants which use processes to ensure that 100% of water discharged comply with all applicable legislation and following the best effluent treatment practices.

The Klabin continuously monitors and measures temperature of its wastewater released during and after wastewater treatment plant.

Water pollutant category

Pathogens

Description of water pollutant and potential impacts

Pathogens have a potential impact on human health because they can cause diseases to the community.

The emission of pathogens can occur, for example, through sanitary and hygienic activities and storage of waste.

100% of effluent generated at Klabin's units is treated considering strict quality standards before being discharged into water bodies, including to avoid pathogens emissions in water bodies.

Value chain stage

Direct operations

Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Implementation of integrated solid waste management systems

Industrial and chemical accidents prevention, preparedness, and response

Please explain

In Klabin's direct operations, the procedures to manage potential impacts of pollutants include assessment of critical infrastructure and storage condition, their resilience and industrial and chemical accidents prevention, preparedness, and response. These actions are performed by maintenance and safety teams of each unit.

Our units also have integrated solid waste management systems, to avoid potential impacts due collections and storage of waste, and effluents treatment plants which use processes to ensure that 100% of effluent are comply with quality standards and following the best practices.

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Value chain stage

Direct operations

Supply chain

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an established enterprise risk management framework

Frequency of assessment

More than once a year

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market
Enterprise risk management
International methodologies and standards

Tools and methods used

EcoVadis
WRI Aqueduct
ISO 31000 Risk Management Standard
Life Cycle Assessment
ISO 14046 Environmental Management - Water Footprint

Contextual issues considered

Water availability at a basin/catchment level
Water quality at a basin/catchment level
Stakeholder conflicts concerning water resources at a basin/catchment level
Impact on human health
Implications of water on your key commodities/raw materials
Water regulatory frameworks
Status of ecosystems and habitats
Access to fully-functioning, safely managed WASH services for all employees

Stakeholders considered

Customers
Employees
Investors
Local communities
NGOs
Regulators
Suppliers
Water utilities at a local level
Other water users at the basin/catchment level

Comment

About the direct operations, the risk assessment department has updated the Klabin's risk policy in 2019. However, Klabin's factories have already developed a risk matrix for each unit with the strategic, operational, financial, environmental and regulate risks. According to ISO 31000 and WRI Aqueduct tool, Klabin assesses the water-related risks of all our units and present to Risk Committee where the company's directors discuss them. When the risks have assessed as high or critical, the industrial units develop an

action plan for control and risk management.

About the value chain, since 2019, Klabin assesses the water-related risks of all our suppliers (wood and industrial suppliers) through of Ecovadis platform (ISO 31000) which has some specific KPIs to water-related issues. Further, Klabin uses the WRI Aqueduct to assess the water-related risks of supply chain.

In addition, all types of Klabin's products produced have Life Cycle Analysis (LCA) and water footprint analysis performed. In Klabin, the assessment of the life cycle of products covers cradle to gate scope, considering from water use in the supply chain to product expedition to customer. The impact categories related to water risks in LCA covers: Acidification, Eutrophication, Human Toxicity, Ecotoxicity, Water Use and Water Footprint. The methodology used to Klabin is based on the recommendation of the European Commission in the context of the Environmental Footprint initiative and reflects the best practices available for addressing each category of impact. The assessment also considers the Water Footprint, following the principles of the ISO 14046 standard.

These studies are conducted aimed at identifying opportunities for us to constantly work on reducing the impacts and water footprint of our products.

W3.3b

(W3.3b) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

	Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
Row 1	The Klabin assess and responding to water-related risks within its direct operations and its supply chain. About product use phase, Klabin produces materials that are used as base material by its customers which produce packaging that will come into direct contact with the user. In this way, the product use phase is controlled by Klabin's customers and, indirectly, Klabin complies with product specifications (humidity %, quality, and others)	The stakeholder conflicts concerning water resources at a basin/catchment level are relevant because the decisions can directly impact the operational costs, water quality and availability of Klabin. For that, Klabin's suppliers are assess yearly through Ecovadis system. Klabin also has a Community Relationship Area to monitor potential conflicts with stakeholders due to increasing of pressure on natural resources.	Rise of awareness on natural resources pressure tend to make stakeholders more critical on that matter and therefore more selective when choosing products and its components. This movement causes a wave that encourage the whole value chain to act. This is one of the drivers for Klabin's continuously	In order to identify and map climate and water-related risks and opportunities, Klabin developed specific studies considering future climate scenarios for the regions in which it operates, based on studies available in the literature and Klabin's history and records with already experienced climate events. The identified risks were prioritized according to the Klabin's risk

<p>to ensure safety to the end consumer. 100% of Klabin units who are intended for food contact are certified according to FSSC 22000 hygiene management systems. To Klabin, it is important to assess 100% of its direct operations and supply chain to identify risks and define appropriate responses to these risks.</p> <p>The applied methodologies are based on ISO 31000, WRI Aqueduct tool and Ecovadis platform, where Klabin determines the evaluation criteria of impact and vulnerability of each listed risk, considering a heat map for the impact classification and vulnerability.</p> <p>Klabin also uses methodologies to Life Cycle Analysis and Water Footprint (ISO 14046), considering internal data and indicators related to water impact categories assessed (Acidification, Eutrophication, Human Toxicity, Ecotoxicity, Water Use and Water Footprint). Klabin determines the criteria of impact categories in</p>	<p>Klabin's water-related risk assessment also considers its suppliers of raw materials. The most significant risk is related to energy consumption. Using the WRI Aqueduct and Ecovadis on our suppliers, we forecast whether a decrease in the availability of local water will affect the capacity to generate energy.</p> <p>The water-related regulatory frameworks are relevant because the new requirements can impact directly Klabin operations and costs.</p> <p>The impact on human health is considered because it is important keep water safety and available to community nearby to our operations.</p> <p>The status of ecosystems and habitats also is considered because can impact directly Klabin operations and costs, mainly in its forest operations.</p> <p>The access to fully-functioning, safety managed WASH services is relevant to Klabin because this has impact directly in its employees' health and safety. All water to personal consumption is bought.</p>	<p>improve efficiency on water use and the main reason why these stakeholders are relevant to Klabin. Therefore, Klabin maintains a close relationship with its customers, employees, suppliers, investors, NGOs, local communities and regulators to seeks to understand what their needs and expectations through of materiality analysis.</p>	<p>management criteria and metrics. The criticality analysis tool considers both aspects related to impact (financial, reputation, environment and health and safety) and vulnerability (occurrence, internal controls and occurrence perspective).</p> <p>After identification and analysis, the risks are assessed, and the dealings defined. The Risk Committee is made up of Directors and Managers, and the Risk Management and Internal Controls are responsible for monitoring, evaluating and communicating risks and respective action plans.</p> <p>One of the risks mapped on Klabin's matrix, for example, is the increase in temperature and in the frequency of intense heat waves which can increase the growth of forest pests due to the increase of thermal stress on Klabin's plantations. This risk led the organization to strategically decide to create the Department of Forest Efficiency and Ecophysiology which monitors possible</p>
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LCA to develop actions aims to reduce water impact of its products.			future climate scenarios.
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W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Klabin has a specific area for risk management and controls of the wide organization and supply chain. In order to identify and map climate and water-related risks and opportunities, Klabin developed specific studies considering future climate scenarios for the regions in which it operates, based on studies available in the literature and Klabin's history and records with already experienced climate events. The identified risks were prioritized according to the company's risk management criteria and metrics - criticality analysis - which crosses the impact analysis (financial, reputational, environment and health and safety) with vulnerability analysis (occurrence, internal controls and perspective of occurrence).

To Klabin, substantive financial impacts are classified: > 700 MM: critical impact; > 400 MM and < 700 MM: high impact; > 150 MM and < 400 MM: medium impact; < 150 MM: low impact.

After identification and criticality analysis, the risks are: (i) treating: how to deal with each risk in order to structure action plans; (ii) monitoring: monitoring and reviewing risks and action plans; definition of indicator; and (iii) creating contingency plan: contingency plans and crisis management.

The company also has a Risk Committee composed by Executive Directors, with a quarterly agenda for discussion and decision-making. This ensures the governance of the businesses risks in the company, and climate risks are included.

The applied methodologies are based on ISO 31000, WRI Aqueduct tool and Ecovadis platform, where Klabin determines the evaluation criteria of impact and vulnerability of each listed risk, considering a heat map for the impact classification and vulnerability. This is applied to all direct operations and supply chain.

We classified all our facilities using WRI Aqueduct tool. To be considered as being exposed to substantive water risk the industrial units need:

- to have by 20% or more on baseline water stress score in WRI Aqueduct tool; and
- to represent more than 5% of Klabin's total revenue.

For example: in 2022, seven facilities (Horizonte, Rio Verde, Franco da Rocha, Suzano, Jundiáí DI, Jundiáí TP and Goiana units) were classified on water stressed areas (20% or more on baseline water stress score in WRI Aqueduct tool). However, only Goiana unit represent

more than 5% of Klabin's total revenue (6.9% of total revenue of 2022). That's why only Goiana unit is exposed to water risk with the potential to have a substantive financial or strategic impact on our business.

During 2020 and 2021, the company developed a robust study to integrate all information and data from the company's climate risk management to communicate in a transparent and objective manner how it adopts the TCFD recommendations.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	1	1-25	<p>To Klabin, our definition of "facility" is the same as definition for a factory, unit, or site, so there could be different types of factories operating in the same basin/area.</p> <p>We classified all our facilities using WRI Aqueduct tool. To be considered as being exposed to substantive water risk the facilities need to classify on baseline water stress score of 20% or more in WRI Aqueduct tool and to represent more than 5% of Klabin's total revenue.</p> <p>Klabin has 23 industrial units being seven facilities (Horizonte, Rio Verde, Franco da Rocha, Suzano, Jundiáí DI, Jundiáí TP and Goiana units) located on water stressed areas. However, only Goiana unit represent more than 5% of Klabin's total revenue. So, Goiana unit is exposed to water risk with the potential to have a substantive financial or strategic impact on our business.</p> <p>This unit (as well as others) has internal work on going aims to reducing water withdrawal and improving operational efficiency related to this resource use. Among these actions, there is the creation of TIM (internal improvement teams) which work through application of the "Problem Solving" methodology to identify opportunities for improvements in its operations. In addition, alternatives are studied such as rainwater harvesting, as well as actions to reduce risks related to the water use at Goiana unit (e.g. installation of wells for capturing groundwater).</p> <p>The other units do not have a substantive financial or strategic impact on our business.</p> <p>Additional information: Jundiáí DI and Jundiáí TP units represent around 2.9% of</p>

			<p>total production and 3.7% of Klabin's total revenue.</p> <p>Goiana unit represents around 5.9% of Klabin's total production and 6.9% of total revenue.</p> <p>Horizonte unit represents around 0.2% of Klabin's total production and 0.2% of total revenue.</p> <p>Franco da Rocha unit represents around 0.8% of Klabin's total production and 0.7% of total revenue.</p> <p>Rio Verde unit represents around 1.5% of Klabin's total production and 1.8% of total revenue.</p> <p>Suzano unit represents around 2.1% of Klabin's total production and 2.8% of total revenue.</p>
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W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Brazil

Other, please specify

Goiana River Basin

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

% company's total global revenue that could be affected

1-10

Comment

We classified all our facilities using WRI Aqueduct tool. To be considered as being exposed to substantive water risk the facilities need to classify on baseline water stress score of 20% or more in WRI Aqueduct tool and to represent more than 5% of Klabin's total revenue.

Goiana unit represents around 5.9% of Klabin's total production and 6.9% of total revenue. So, Goiana unit is exposed to water risk with the potential to have a substantive financial or strategic impact on our business.

This unit (as well as others) has internal work on going aims to reducing water withdrawal and improving operational efficiency related to this resource use. Among these actions, there is the creation of TIM (internal improvement teams) which work through application of the "Problem Solving" methodology to identify opportunities for improvements in its operations. In addition, alternatives are studied such as rainwater

harvesting, as well as actions to reduce risks related to the water use at Goiana unit (e.g. installation of wells for capturing groundwater).

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Brazil

Other, please specify

Goiana River Basin

Type of risk & Primary risk driver

Chronic physical

Water stress

Primary potential impact

Reduction or disruption in production capacity

Company-specific description

Goiana unit is located in water stressed area classified by WRI Aqueduct tool. Klabin has found the increased water stress in the Capibaribe-Mirim river to be a risk to meet the water demand to production of the recycled paper, corrugated board, and paper bags. Goiana unit represented around 5.9% of Klabin's total production and 6.9% of total revenue in 2022.

Goiana unit intake water from two sources: groundwater and surface water. Together, the water sources intake represents less than 1% of total water intake of Klabin.

Considering that the water stress is measured for the ratio of total water withdrawals to available renewable surface and groundwater supplies, the water stress risk can affect the available water to Goiana's use what it will impact directly in Klabin's production capacity. This scenario is more impacted in the months of October, November, and December, when there is a drought period.

Further, a study conducted by Klabin has realized that the interruption by 20% of total water withdrawals per day for one month is the maximum period can be impacted for this risk.

So, we use this information to calculate the potential financial impact. In additional, the magnitude of potential impact has considered that Goiana unit is the only Klabin unit that produces recycled paper, corrugated board, and paper bags. The worst scenario considers the total interruption on production for one month.

Today, the unit has a contingency plan for emergency cases like this, but as a worst-case scenario we are considering the interruption by 20% of total water withdrawals per day for one month.

In addition, this unit (as well as others) has internal work on going aims to reducing water withdrawal and improving operational efficiency related to this resource use.

Among these actions, there is the creation of TIM (internal improvement teams) which work through application of the "Problem Solving" methodology to identify opportunities for improvements in its operations. In addition, alternatives are studied such as rainwater harvesting, as well as actions to reduce risks related to the water use at Goiana unit (e.g. installation of wells for capturing groundwater).

Timeframe

1-3 years

Magnitude of potential impact

Medium-low

Likelihood

Likely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

22,876,603

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

The financial impact was estimated considering the reduction of production capacity during the interruption by 20% of total water withdrawals per day for one month. Further, we consider that the interruption by 20% of total water withdrawals impact by 20% of total production capacity.

In 2022, the total revenue of Goiana unit was BRL 1,391,660,000.00. The financial impact of reduction of production capacity during this period is BRL 22,876,603 (1,391.66 million of total revenue per year / 365 working days per year * interruption by 20% of total water withdrawals * 30 days/month).

Primary response to risk

Develop drought emergency plans

Description of response

Surface fresh water is very important to recycled paper production in Goiana unit, even representing less than 1% of Klabin's total water withdrawals. Goiana is located in the water stressed area. From 2021 to 2022, this unit has increased the water withdrawals by 4.8% due improvement actions in its facilities. The unit has a drought emergency plan which considers the drilling of three renewable deep wells (with 200-250 meters) in the region to supply the unit's water demand.

In 2022, the average freshwater intake per day was around 104 m³/h, with more than 95% of this volume coming from surface water. In addition, the plan envisages reducing the unit's specific water use from 3.8 m³/t to less than 2.0 m³/t. Currently, more than

60% of the wastewater treated at the unit are returned to recycled paper production machines, which further reduce the need to freshwater withdrawals. The cost involved for this plan is BRL 750,000 to drilling of three renewable deep wells.

The actions to implement the plan has started in the end of 2021 and one renewable deep well was drilled in March 2022. The next deep well was scheduled to be drilled by December 2022, but Goiana unit postpone the schedule to 2024 because it is analyzing the operation and water withdrawal at first deep well installed before next drilled.

The last deep well will only be drilled if the flow of the previous ones does not guarantee 50% of the total surface water used in unit.

It is important to mention that Goiana unit already has back up water lagoon that could be offer water for around 20 days of lack of water in case of drought.

Cost of response

750,000

Explanation of cost of response

This cost of response considers the drilling of three renewable deep wells on Brazilian northeast. Each deep wells cost around BRL 250,000. So, three renewable deep wells costs BRL 750,000. The investments to improve wastewater treatment system and new investments consider the change of equipment on primary treatment like floater that is very small to our process. So, with these investments, Goiana unit will be more potential to reuse of water and will have other possible to supply our demand of water in case of increase water stress in this location.

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Brazil

Other, please specify

Tibagi River Basin

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Chronic physical

Water stress

Primary potential impact

Increased operating costs

Company-specific description

Klabin's wood suppliers are exposed to the risk potential acceleration of the growth rate of forest pests due to increased thermal stress on plantations located on Paraná state where Klabin has the two largest produce unit, Monte Alegre and Puma units. Our tool for identifying and assessing forest risks that used future climate scenarios to identify risks to forest productivity has evaluated 100% of wood suppliers are exposed to this risk. This risk can increase Klabin's operating costs because it will make Klabin buy wood from greater distances than it currently has.

Therefore, Klabin has a specific department to take care that. The presence of forest pests can reduce the productivity of the forest from suppliers and consequently disruption the feeding of wood to the two largest units of Klabin located in Paraná state. As we report last year, considering future projections of average annual loss of supplier production per pest on eucalyptus, without control activity, at 14% and the average supplier planted area affected by pest at 21%, the volume of wood from suppliers exposed to pests was calculated in 196,110.97 tons.

This tool was used by Forest Eco-physiology and Protection Forest Departments. Klabin has invested in forestry research with testing of different materials of pine and eucalyptus, which are more resistant, for example, water deficit or pests. This investment is part of the general investment in the Klabin's forestry research and development area. The Klabin's Forest Eco-physiology and Protection Forest Departments recommends the necessary measures in case of adverse effects for both, Klabin and supplier forests.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-low

Likelihood

Unlikely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

35,300,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Considering future projections of average annual loss of supplier production per pest on eucalyptus, without control activity, at 14% and the average supplier planted area affected by pest at 21%, the volume of wood from suppliers exposed to pests was calculated in 196,110.97 tons.

This volume of wood was obtained by the product between the weighted average of the

production loss projections by pests and the average area affected by the pests "Gorgulho, Vespa da Galha, Psilídeo de Concha, Percevejo Bronzeado, Fungos/Bactérias e Formigas Cortadeiras" (equivalent to 21 %), multiplied by a rate of increase in the reach of pests aggravated by climate change of 10%, multiplied by the volume of eucalyptus (852,551.35 tonnes of eucalyptus) which represents the amount of wood from suppliers used by the Puma and Monte Alegre units.

This lost volume of 196,110.97 tons is multiplied by the cost of eucalyptus, plus 20% of its value, considered the premium on the input due to the possibility of the need to acquire it from the market. The price of BRL 150 per ton of eucalyptus - a value projected by the strategy area for the 2040 horizon - is considered for the expansion of new projects.

The total financial impact is estimated at BRL 35,300,000.

Primary response to risk

Direct operations

Increase capital expenditure

Description of response

The identified risk is the increase in temperature and the frequency of intense heat waves that can increase the growth of forest pests due to increased thermal stress on plantations. This risk can affect Klabin and supplier forests. For this, Klabin create the Forest Eco-physiology and Healthy Forest Departments, located in Paraná state, which monitors possible future climate scenarios, developing data modelling related to climate parameters and assessing the impact of planted forests. The Department recommends the necessary measures in case of adverse effects for both, Klabin and supplier forests. Klabin has an important influence on its wood suppliers because we have a good relationship with them. Klabin constantly monitors the suppliers' forests to identify possible pests. Klabin has a specific department (Wood Comercialization Department) responsible for monitoring the forests of Klabin's wood suppliers, based on specific methodology related to the FSC® chain of custody certification.

For act in its wood suppliers, Klabin needs to increase its capital expenditure because increase the total monitored area searching to identify possible pests on wood supplier's forests. So, in this case, Klabin needs more technicians and specialists to make it happens.

However, for suppliers' forests, Klabin only recommends the products and the application methodology based on Forest Eco-physiology and Healthy Forest Departments, and the supplier is responsible for pest control. This monitoring is a continuous activity on Klabin.

Cost of response

550,000

Explanation of cost of response

The cost presented (BRL 550,000) refers to the annual cost of the Environmental Responsibility team (Wood Comercialization Department) responsible for monitoring the forests of Klabin's wood suppliers. This department's team performs quarterly basis audits on suppliers and provides communication materials on best practices and products to be used at specific periods (drought/flood) of the year. This cost considers

all involved people and monitoring cost in 2022.

In 2022, the volume of wood consumption in the industrial process was 14.3 million tons, 82% of which from certified sources. Among this certified wood, 51% from Klabin own forests and 31% acquired from suppliers. All our certified suppliers have been assessed on water-related issues by FSC® certification.

Further, 687 audits were carried out, evaluating 361 areas of non-certified wood in the states of Paraná and Santa Catarina, and audits in 77 areas of certified wood in Paraná. It is important to point out that inspections by the Controlled Wood team in certified wood areas occur in specific cases because this demand is responsible of the certifier company.

All suppliers of the forestry units are audited by Klabin on a quarterly basis. In case of non-compliance with the water-related targets or guidelines, Klabin stops supplying immediately and sends a recommendation of adequacy. After fulfilling the recommendations, the supplier is audited again and, in the event of no pending issues, the supply contract is resumed.

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Efficiency

Primary water-related opportunity

Cost savings

Company-specific description & strategy to realize opportunity

Klabin has a technical group that it is working on water reduction actions. The group aims to identify opportunities in all Klabin's industries to reduce water withdrawals and water consumption because Klabin has a 2030 target.

The group identified actions in all Klabin's units and, among these, the highlight the Monte Alegre and Otacilio Costa units which realized 13 actions in 2022, resulting in a reduction about 4,645,000 m3/year.

Among other opportunities identified by technical group are:

- Use of brown-white water in paper machine MP9, in Monte Alegre unit, with water use reduction potential of 60 m3/h and scheduled for October/2023.
- Use of brown-white water in pulp, in Monte Alegre unit, with water use reduction potential of 90 m3/h and scheduled for April/2024.
- Water recovery in paper machine MP16, in Correia Pinto unit, with water use reduction

potential of 100 m³/h and scheduled for November/2023.

- Reuse of condensed water from the evaporation process, in Puma unit, with water use reduction potential of 200 m³/h and scheduled for November/2024.

- There is a study on going to install a system for capturing and using rainwater in Goiana unit. The study is scheduled to end in September/2023 when it will be possible to identify its potential for reducing water use (the previous is 20 m³/h).

These main actions have a water use reduction expected of 4,004,400 m³/year.

Moreover, in Puma unit was installed a new cooling tower due expansion of facilities, including a new paper machine, which will increase recycled water. The new expansion facility will start in June/2023.

We expect that activities identified by technical group will increase by 15% the total recycled water on all Klabin units in the next 3 years.

Estimated timeframe for realization

1 to 3 years

Magnitude of potential financial impact

Low-medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

6,320,876

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

Considering in 2022 the cost of water treatment was BRL 0.40 per m³ and the cost of wastewater treatment was BRL 1.18 per m³, and considering that reduce would be the total amount of 4,004,400 m³ [4,004,400 * (0.4 + 1.18)], we can reduce the costs by, at least, BRL 6,320,876 per year.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name (optional)

Goiana

Country/Area & River basin

Brazil

Other, please specify

Goiana River Basin

Latitude

-7.556655

Longitude

-35.035038

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

916.57

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

878.75

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

37.82

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

554.29

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

554.29

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

362.28

Comparison of total consumption with previous reporting year

Much lower

Please explain

This facility is in a water stress region. Klabin units were assessed using WRI Aqueduct tool. According to WRI Aqueduct, baseline water stress measures the ratio of total annual water withdrawals to total available annual renewable supply, accounting for upstream consumptive use.

For this facility, the fresh surface water from river and the groundwater are the only water intakes. For future trend, we do not expect any increase to water withdrawal. All volumes for each source are sourced from direct measurements and are monitored by Klabin, quantitative and qualitatively.

No brackish surface water/seawater intake, no produced water intake, no non-renewable groundwater intake for any use, considering now and future trends.

To Klabin, the description for "comparison with previous reporting year": deviation +/- or equal 5% = about the same; deviation between +/- 5-10% = higher/lower; deviation > +/- 10% = much higher/lower.

In 2022, the total water withdrawals were 916.57 megaliters, representing 4.8% of increase compared to 2021. Moreover, the total volume water discharged was 554.29 megaliters, representing 22.1% of increase compared to 2021. The water consumption was calculated using water withdrawals minus water discharges and refers to partly by volume of incorporated water into products and by volume of evaporated water. The water consumption was much lower by 13.9% due to increase on water discharged due to optimizations process actions performed in Goiana.

W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?

Water withdrawals – total volumes

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water withdrawals – volume by source

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water withdrawals – quality by standard water quality parameters

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water discharges – total volumes

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water discharges – volume by destination

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water discharges – volume by final treatment level

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water discharges – quality by standard water quality parameters

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

Water consumption – total volume

% verified

76-100

Verification standard used

Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Commitment to align with international frameworks, standards, and widely-recognized water initiatives Commitment to prevent, minimize, and control pollution Commitment to reduce water withdrawal and/or consumption volumes in direct operations Commitment to reduce water withdrawal and/or consumption volumes in supply chain Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace	Klabin's Environmental Management System is certified by ISO 14001 and supported by the company's Sustainability Policy. Aspects such as water pollution, water security and water risks (including energy, climate change, biodiversity, collaboration, and evaluation of suppliers) are in our Sustainability Policy and they are considered in all operations, reaffirming our commitment to prevention, minimization, and control of environmental impacts. About biodiversity, we perform constantly fauna monitoring and projects regarding fauna conservation through projects conducted with our biodiversity team in Ecological Park. These aspects are monitored by indicators, whose management since 2018 has been consolidated in a specific platform, facilitating the traceability of information. The indicators and targets are defined by the Sustainability Committee, formed by director and representatives of industrial operations, and deployed in specific goals for each business. Since 2016, we have voluntarily joined the Sustainable Development Goals (ODS) and, in 2020, we approved new goals and targets to incorporate issues relevant to our business and this global

	<p>Commitment to safely managed Water, Sanitation and Hygiene (WASH) in local communities</p> <p>Commitment to stakeholder education and capacity building on water security</p> <p>Commitment to water stewardship and/or collective action</p> <p>Commitment to the conservation of freshwater ecosystems</p> <p>Commitments beyond regulatory compliance</p> <p>Reference to company water-related targets</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p>	<p>agenda to our Sustainability Strategy.</p> <p>Since 2014, Klabin has been integrating the Business Sustainability Index (ISE) of B3. It is also a signatory to the UN Global Compact and the National Pact for the Eradication of Slave Labor, seeking suppliers and business partners who follow the same values and principles of sustainability.</p> <p>In addition, all our operations are also committed to responsible management of water resources, and they perform it through the application of initiatives, based on national and international standards, aimed at continuous improvement in all processes, beyond regulatory compliance, and sustainability in our operations/value chain.</p> <p>In addition, our Innovation team is always looking for water-related innovations on the market and all of our product types are assessment throughout Life Cycle Analysis and water footprint quantification, using ISO standard.</p> <p>We also committed to safely managed Water, Sanitation and Hygiene (WASH) in the workplace, valuing quality water for employees and local communities through the initiatives to improve water security in regions where we operates, conservation of freshwater ecosystems and hydrossolidarity management of our forests, method pioneer by Klabin, which considers micro-basins as a forest operation planning unit to establish water regulation.</p>
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W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual or committee	Responsibilities for water-related issues
Chief Sustainability Officer (CSO)	The director of industrial technology, innovation, and sustainability officer (CSO) has the responsibility over water security and its water-related studies on impacts and opportunities. Alongside him, the Environmental and Sustainability Corporate team is also responsible for the day-to-day management of the issue with the responsibility of monitoring global and national water security agendas and

	<p>mapping their related risks and opportunities. It is worth mentioning that Klabin maintains a fixed sustainability committee main composed of directors. Also, participate in this committee, managers of people and corporate services, legal directory, industrial directory of papers and forest management areas. In 2019, the CSO decided the targets (including water-related targets) of Klabin's Sustainability Development Goals that it is into 2030 Klabin Agenda (https://kods.klabin.com.br/?I=EN). In 2020, the CSO approved three water-related targets until 2030:</p> <ol style="list-style-type: none"> 1. 100% of the locations where we operate with initiatives to increase territorial water safety. 2. 100% of forest operations under its management with hydrossolidarity management. 3. Reduce the specific consumption of industrial water by 20%.
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W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	<p>Monitoring implementation and performance</p> <p>Monitoring progress towards corporate targets</p> <p>Overseeing acquisitions, mergers, and divestitures</p> <p>Overseeing and guiding scenario analysis</p> <p>Overseeing major capital expenditures</p> <p>Overseeing the setting of corporate targets</p> <p>Overseeing value chain engagement</p> <p>Providing employee incentives</p>	<p>The Fixed Sustainability Commission, formed by the company's statutory and non-statutory directors, meets quarterly to debate, and decide on the company's social and environmental issues. At these events, the results of the monitoring of new projects and the environmental performance of the units and the climatic and water risks of the units are presented and discussed, mainly related to the assessment of water stress in the regions where Klabin operates. Based on these discussions and analyses, the directors guide budget issues related to water security, investments, and management of action plans to control and mitigate the assessed risks.</p> <p>In 2020, the Commission approved three new targets related to water until 2030 that make up Klabin's medium and long-term Goals, related to the UN Sustainable Development Goals. The approved targets were:</p> <ol style="list-style-type: none"> 1. 100% of the locations where we operate with initiatives to increase territorial water security. 2. 100% of forest operations under its management with hidrossolidarity management. 3. Reduce the specific consumption of industrial

	<p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding corporate responsibility strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p> <p>Reviewing innovation/R&D priorities</p> <p>Setting performance objectives</p>	<p>water by 20%.</p> <p>The Fixed Sustainability Commission also discusses about Klabin's units located in areas of water stress, classified according to the WRI Aqueduct tool.</p> <p>In addition, at these meetings, in 2022, were discussed about sustainability actions schedule, sustainability police, assess and engagement of suppliers (EcoVadis system), main actions performed and project planning to 2023, all these meeting themes included water-related issues. Results of previously defined actions were assessed, and new actions were created for each unit to maintain water availability even in current or future situations of water scarcity.</p> <p>All the contents of the meetings are passed on to the managers involved, who are responsible for structuring the action plans and monitoring these actions.</p> <p>The approval of the content discussed, and the actions created is the responsibility of the Chief of Sustainability Officer (CSO).</p>
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W6.2d

(W6.2d) Does your organization have at least one board member with competence on water-related issues?

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues
Row 1	Yes	<p>Company's management is accomplished by Executive Board and Board of Directors. Company's Board of Directors is composed of a minimum of 13 and a maximum of 18 members, elected and dismissed by the General Meeting, in accordance with the legislation in force, with a unified term of office of one year, reelection being permitted. Among the board members elected, at least 20% must be independent members, as defined in the Level 2 Regulation. The Board of Directors has an Internal Regulation approved in May 2021, which regulates the functioning and competence of the body: establishing the Company's business objectives; oversee the management of directors, elect, and dismiss the company's directors, establishing their attributions; observing the provisions of the Bylaws; etc. Klabin has three non-statutory advisory committees to Board of Directors, created in October 2020, which are permanently linked to it: Audit and Related Parties Committee, People Committee and Sustainability</p>

		<p>Committee. Such committees are formed, individually, by three members, elected by the Company's Board of Directors for a term of office of one year; reelection being permitted. The attributions and operating rules of Klabin's Committees are provided for their respective Internal Regulations, which are available for consultation on Company's IR website (https://ri.klabin.com.br/governanca-corporativa/estatuto-codigos-e-politicas/).</p> <p>Composed of three members with competence on water-related issues, elected by the Company's Board of Directors, the Sustainability Committee is the competent body to analyze the following matters, among other attributions that may be established by the Board of Directors: recommend and monitor adoption of best standards for sustainable development; recommend guidelines for the creation and/or adherence by the Company to institutional campaigns related to environmental or social issues; examine market opportunities or new business formats to strengthen the Company's sustainable growth strategy and recommend to the Board of Directors; among others.</p> <p>Klabin considers the water-related issues experience like a main criterion used to assess the board member(s). The ESG issues experience is also important, but it is not enough. Klabin's criteria are looking for real water-related issues experience like a participation on real water-related cases or projects and/or participation on water-related risk assessment.</p>
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W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Chief Sustainability Officer (CSO)

Water-related responsibilities of this position

- Assessing future trends in water demand
- Assessing water-related risks and opportunities
- Managing water-related risks and opportunities
- Conducting water-related scenario analysis
- Setting water-related corporate targets
- Monitoring progress against water-related corporate targets
- Managing value chain engagement on water-related issues
- Integrating water-related issues into business strategy
- Managing annual budgets relating to water security
- Managing major capital and/or operational expenditures related to low water impact products or services (including R&D)
- Managing water-related acquisitions, mergers, and divestitures
- Providing water-related employee incentives

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

Director of Industrial Technology, Innovation and Sustainability is the highest level of the organization, responsible for the execution of the Board of Directors' deliberations and approvals of water-related issues. He is the sponsor of the Sustainability Committee whose role is to define guidelines and assess the need for investments and prioritize initiatives, including water security and water-related impacts and opportunities.

The frequency of reporting to the board on water-related issues is quarterly.

Items related to water security and risks and opportunities are fixed agenda.

The nature of the report to the board aims to disclose and update Klabin's directors and officers on:

- the volumes of water withdrawal and discharged;
- monitoring of short, medium and long term targets;
- managing of water-related risks and opportunities and future trends;
- value chain engagement;
- the units located in areas of water stress and their action plans to reduce and mitigate these risks.

Name of the position(s) and/or committee(s)

Environment/Sustainability manager

Water-related responsibilities of this position

- Assessing future trends in water demand
- Assessing water-related risks and opportunities
- Managing water-related risks and opportunities
- Conducting water-related scenario analysis
- Setting water-related corporate targets
- Monitoring progress against water-related corporate targets
- Managing public policy engagement that may impact water security
- Managing value chain engagement on water-related issues
- Integrating water-related issues into business strategy
- Managing water-related acquisitions, mergers, and divestitures
- Providing water-related employee incentives

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

The Environment / Sustainability Executive Manager is positioned in the organizational structure below the director, responsible for consolidating, managing and leveraging sustainability practices and environment. The monitoring process at Klabin starts with day-to-day management by the environmental teams of each Klabin facilities and / or by the team of assistants from the corporate area of environment and sustainability. The assessing and management of these items is carried out by these areas along with their coordinators and their respective manager, who periodically critically examines the

items related to this subject so that they are brought to the steering committee for discussion and strategic decision making for the organization.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	<p>Since 2021, all company managers have been able to link their variable compensation to the company's performance for the Klabin Goals for Sustainable Development. In 2021, 56 sponsor managers and 50% of the executive directors linked their compensation to goals related to water use.</p> <p>In 2022, all executive directors started to consider a Sustainability Index in their variable compensation, created to prioritize the company's annual goals - among them, water consumption.</p> <p>Additionally, up to 10% of the variable remuneration can be converted into units, and it is doubled by the company, giving it a long-term commitment to the achievement of goals which, in turn, are linked to the performance of Klabin's goals (KSDG). In 2022, this benefit was extended to all employees, providing 100% coverage of a long-term incentive linked to the company's ESG performance.</p>

W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your organization's water commitments	Please explain
Monetary reward	Chief Sustainability Officer (CSO)	Reduction of water withdrawals – direct operations Reduction in water consumption volumes – direct operations	Klabin included the reduce impact on water resources in our strategy until 2030 through targets linked to our water commitments. For do this, the targets were incorporate into incentives provided to C-suite, directors, managers, and	Since 2021, all company managers have the possibility of tying their variable remuneration to the company's performance for Klabin's Sustainable Development Goals. Additionally, up to 10% of the variable remuneration can be converted into units, and is doubled by the company,

		<p>Reduction of water withdrawal and/or consumption volumes – supply chain</p> <p>Improvements in water efficiency – supply chain</p> <p>Improvements in wastewater quality – supply chain</p> <p>Increased access to workplace WASH – supply chain</p> <p>Supply chain engagement</p>	<p>coordinators and, among these targets, are:</p> <ul style="list-style-type: none"> - Reduce the specific consumption of industrial water by 20% - 100% of our critical suppliers assessed in Ecovadis system, including about water-related issues. - 100% of forest operations under its management with hydrossolidarity management. <p>This short-term variable incentive policy that establishes guidelines alignment with the sustainable strategy and policy established by the company. For C-suite employees, the variable incentive may vary according to the indicators results and performance.</p> <p>Since 2021, all company managers have the possibility of tying their variable remuneration to the company's performance for Klabin's Sustainable Development Goals.</p> <p>As result of this incentive, in 2022, we improved the specific water consumption in 17.8% compared to 2018 and we increase from 43% (2020) to 70% (2022) of our critical suppliers assessed in Ecovadis.</p> <p>There were no critical suppliers with low scores</p>	<p>conferring a character of long-term commitment to the achievement of targets which, in turn, are tied to the performance of Klabin's KODS targets. In 2022, this benefit was extended to all employees, providing 100% coverage of a long-term incentive linked to the company's ESG performance.</p> <p>In 2022, all executive directors started to consider a Sustainability Index in their variable compensation, created to prioritize the company's annual goals, including water consumption, engagement and socioenvironmental performance of suppliers (including assess about water stressed areas, water withdrawal and consumption, water efficiency, waste water quality, safety and health issues) and hydrossolidarity management.</p> <p>A salary bonus is related if Sustainability Index reach the targets assumed in this year. The indicators are monitoring monthly.</p> <p>Bonus payment occurs in February of the current year referring to the previous year's performance.</p>
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			<p>on water-related issues. About hydrossolidarity management, we improve the target from 79,7 (2020) to 97,3% (2022). For the future, we expect improve continuous our water management keeping inside our business strategy.</p>	
Non-monetary reward	No one is entitled to these incentives			No comment

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, direct engagement with policy makers

Yes, trade associations

Yes, funding research organizations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Only a few people are allowed to speak on behalf of the company. These people are trained by the communication area following the internal procedure (spokesperson internal procedure). Further, when the subject is water security, the sustainability area provides the necessary information to assist based on sustainability policy and strategy planning of Klabin. All employees are receiving training on Klabin's sustainable practices so they can always take correct information when they talk about the company. If an inconsistency is discovered, the person involved will be re-trained so that their actions are based sustainability policy and strategy planning of Klabin.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	11-15	<p>Klabin has guidelines that orientates its activities planning towards the management of Water Security seeking constant improvements in its operations in terms of use, reuse and emissions.</p> <p>Based on that, in 2013 Klabin started to study the most vulnerable aspects of its operations regarding change in rainfall and temperatures patterns, droughts and flooding. The study resulted in internal action plans and proposals for adaptive measures aimed at to prevent impacts to Klabin's operation (forest and industry). The potential short and medium terms effects were already added to company's strategic planning and are closely monitored by multiple groups, including by Sustainability Committee.</p> <p>The time horizon chosen was selected because the eucalyptus and pinus wood growth are 7 and 15 years and our goals are based on UN Sustainable Development Goals (SDGs) until 2030.</p> <p>In 2020, Klabin approved three water-related targets until 2030 that make up its medium and long-term goals related to the SDGs:</p> <ul style="list-style-type: none"> - 100% of the locations where we operate with initiatives to increase territorial water security. - 100% of forest operations under its management with hydrossolidarity management. - Reduce the specific consumption of industrial water by 20%. <p>To achieve this, Klabin has a technical group working on water reduction. In 2022, for example, the group identified 13 actions in Monte Alegre and Otacilio Costa units, the implementation of these actions resulted in a reduction of 4,645,000 m3/year.</p>
Strategy for achieving	Yes, water-related issues are integrated	11-15	<p>Since Klabin's long-term goals are linked to risk mitigation and maximizing opportunities, the strategy is divided into these two fronts as follows:</p>

<p>long-term objectives</p>			<p>In 2020 and 2021, Klabin conducted a study to integrate all information and data on the company's climate risk management and strategy, aiming to transparently and assertively communicate how it complies with the TCFD recommendations to the market. The financial impact is included in the company's financial planning, as evidenced in the "Water Scarcity" chapter of the report. The impact is calculated by a multidisciplinary team that involves the areas of strategy, investor relations, risk management, and sustainability.</p> <p>The company integrates short and medium-term goals related to water into the composition of the Sustainability Index, a basket of goals hired by 100% of executives, linking up to 25% of their variable remuneration to individual targets. In addition to executives, all managers tie their variable remuneration goals to sustainability themes, and in 2022, 22% of key managers set individual goals related to reducing water consumption. These commitments through variable remuneration are extended to all employees through the Long-Term Incentive Program (ILP for Everyone), where employees defer a portion of their variable remuneration into shares, which are matched by the company.</p>
<p>Financial planning</p>	<p>Yes, water-related issues are integrated</p>	<p>11-15</p>	<p>Klabin implemented the TCFD methodology, including scenarios for the main drivers of change in the economy. Due to the nature of the business, there are three main drivers: energy price, technological advancement, and regulation. Klabin's scenarios considers: physical scenarios (physical climate changes) and macroeconomic scenarios (focused on energy, technology and regulation).</p> <p>Water scarcity and average temperature rise are the two main risks identified with a significant impact on our operations and wood suppliers. The increase in temperature can intensify the risk of a forest fire. The identification of physical risks with mitigation plans helps the company to prepare itself to support, without prejudice, the intensification of the impacts of climate change.</p> <p>Further, the company aligns its financial strategy with its sustainability strategy. An example is the issuance of 10 and 30-year Green Bonds worth 1.2 billion USD, where a part of the funds is linked to industrial water reduction, water security actions, and hydro-solidary management. Of the already confirmed 716 million USD, the Sustainable Water Management criterion led to 11%</p>

			<p>reduction since the first issuance in 2017 though actions for reuse, recycling, and closed-loop systems, leading to an 11% reduction since the first issuance in 2017.</p> <p>The time horizon chosen was selected because the eucalyptus and pinus wood growth are 7 and 15 years and our goals are based on SDG of ONU until 2030.</p>
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W7.2

(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

-83

Anticipated forward trend for CAPEX (+/- % change)

-10

Water-related OPEX (+/- % change)

43

Anticipated forward trend for OPEX (+/- % change)

10

Please explain

MM = Million

CAPEX:

2021: BRL 72.6 MM

2022: BRL 12.7 MM

2023 estimated: BRL 11.4 MM

In 2022, Klabin reduced water-related investments (CAPEX) by 83%, as the disbursement of the Puma II project in water and wastewater treatment plant occurred largely in 2020. In addition, in 2022, other improvements were made to the water and wastewater treatment plant in Monte Alegre unit and improvements to the wastewater treatment plant in Puma due phase II of the expansion project of this unit.

OPEX:

2021: BRL 119.4 MM

2022: BRL 170.4 MM

2023 estimated: BRL 187.5 MM

In 2022, Klabin increased its operating cost (OPEX) with water and wastewater by 43% due to Puma unit is expansion (phase I was completed with startup of new packaging paper machine in mid-2021 and the phase II is ongoing). This machine operated in all months for 2022 year and the phase II ongoing in Puma unit, which increased the water

withdrawals, consequently, the water and wastewater treatment with use of chemicals products.

W7.3

(W7.3) Does your organization use scenario analysis to inform its business strategy?

	Use of scenario analysis	Comment
Row 1	Yes	To understand the potential risk to which its activities are subject, as well as the adaptive measures required to face such risks, Klabin conducts studies on its vulnerabilities regarding climate change and water security. The study is always based on global models such as the IPCC's Assessment Reports and on local scientific findings and focus on understanding risks, especially those with the highest potential to create a significant change in its business operations, revenues and expenses.

W7.3a

(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Climate-related	Klabin has a complete study on: (i) current and future climate conditions (ii) and the impact of climate change for the business. Thus, defining the relevant climate risks and its mitigation plans, integrating the Klabin risk management. In Brazil, it was projected the changes of the main climatic factors for eucalyptus and pinus growth - precipitation, evapotranspiration and deficit / surplus water. However, 100% of forest areas of Klabin (SP, PR and SC states) are concentrated in little	Increase of more intensive rains was identified, although it does not affect forest productivity, but can affect the logistic and transportation due to access to Klabin's harvest areas is not possible in time of intensive rains. In Paraná and Santa Catarina. the Klabin's forest operations are impacted and do not work in time of intensive rains. Therefore, these events cause an increase of operational costs to Klabin. It is estimated in the next 10 years around 3% of	It is estimated in the next 10 years around 3% of annual eucalyptus wood and 5% of annual pinus wood production will affect by climate change if no adaptation measures are taken. In 2022, Klabin invested around BRL 22 million in forestry research. All lines of forestry research work directly or indirectly to develop solutions to mitigate climate change impacts on forest production. An example is plant health and ecophysiology research, with an investment of BRL 3.11 million, which investigate the protection of plants against

		<p>affected areas because in here we have a good water availability and good precipitation. The analyses of climatic variables are based on historical climate data in the region (1981-2010); and reference scenarios on GHG emissions - RCP 8 - for climate models - MIROC 5 and Hadgen, in the period of 2021-2040. For some industrial units we also use the Aqueduct Water Risk based on two climate scenarios, RCP 4.5 and RCP 8.5.</p>	<p>annual eucalyptus wood production and 5% of annual pinus wood production is affected by climate change, if no adaptation measures are taken.</p> <p>The main physical risk is the change in climatic variables related to the growth of pine and eucalyptus (Klabin's main input). Example of studied climatic variables: amount and frequency of intense drought, minimum temperature, average temperature, potential evapotranspiration and water deficit. Analyses of climatic variables are made based on the history of regions with planted forests, between 1981- 2010; and based on future scenarios (2021-2040) operated on models with MIROC 5 and Hadgen.</p>	<p>pests, diseases, and climatic interactions.</p> <p>Another line is biotechnology and genetic improvement, with investments of around BRL 12.44 million, which selects eucalyptus clones and superior pine materials for forestry production aims to make them more tolerant possible climate change impacts.</p> <p>The department is also responsible for elaboration and assessment of Climate Scenarios. For this, it works with a data model related to climatic parameters exposure, evaluating the impact of changes in planted forests, and recommending actions in case of adverse effects.</p> <p>The main actions of the Department of Forestry Research are:</p> <ul style="list-style-type: none"> - Development of biotechnological protocols aimed at drought tolerance in Eucalyptus; - Genetic improvement of the genera of Pinus and Eucalyptus with tropical and subtropical species; - Genetic improvement of Corymbia and Eucalyptus species aiming at drought tolerance; - Genetic conservation of species (Eucalyptus/Corymbia and Pinus).
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W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

Yes

Please explain

At the moment, just one Klabin unit pay to withdraw or discharge fresh surface water (e.g. Piracicaba unit). Due to this, Klabin adopt an internal price in your units. Klabin has a cost to treat the water on Water Treatment Plant. After of water treatment, all the operational areas of unit pay for the volume water consumes. For example, in 2022, Puma unit has used 60,275.53 megaliters of treated water and had a cost of BRL 17,889,079.6. Therefore, for each m3 of water treated, the Puma unit paid in average BRL 0.30. This number is the internal price used by Puma unit. Each area in Puma unit uses this internal price to pay by your water consumption.

W7.5

(W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Please explain
Row 1	Yes	<p>Klabin defines low water impact products are considered as having a lower water footprint than the other Klabin's products compared. We use ABNT NBR ISO 14046 standard to calculate the water footprint of Klabin's products. Klabin already calculated the water footprint from:</p> <ul style="list-style-type: none"> - kraftliner paper - liquid packaging board paper - carrier board paper - hardwood bleached pulp - softwood bleached pulp - eukaliner paper - industrial sacks <p>When we compare the direct use with indirect use phases, the Klabin's impact is usually much more lower than indirect use impact.</p> <p>For example, kraftliner paper from Monte Alegre unit uses 2.44 cubic meters per tonne of paper (direct use) while the</p>	<p>Klabin defines low water impact products are considered as having a lower water footprint than the other Klabin's products compared. We use ABNT NBR ISO 14046 standard to calculate the water footprint of Klabin's products.</p>

		indirect use is 16.31 cubic meters per tonne of paper.	
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W8. Targets

W8.1

(W8.1) Do you have any water-related targets?

Yes

W8.1a

(W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category
Water pollution	Yes
Water withdrawals	Yes
Water, Sanitation, and Hygiene (WASH) services	Yes
Other	Yes

W8.1b

(W8.1b) Provide details of your water-related targets and the progress made.

Target reference number

Target 1

Category of target

Water consumption

Target coverage

Company-wide (direct operations only)

Quantitative metric

Reduction in total water consumption

Year target was set

2020

Base year

2018

Base year figure

4.42

Target year

2030

Target year figure

3.54

Reporting year figure

3.63

% of target achieved relative to base year

89.7727272727

Target status in reporting year

Underway

Please explain

The target for reducing water consumption by 2030 is 20%. In 2022, we already reduced the water consumption by 17.8% compared with 2018, representing 89% achieved of the target. This target of Klabin SA contributes to water security through better management of water resources and meeting the UN Sustainable Development Goals. This is due to the increase of percentual (%) water discharge that has been higher than % water withdrawal in the same period. Even with phase II ongoing in Puma unit, the actions to optimization in process implanted during the year resulted in reduction of water consumption.

As we report in last year, in next years, we expect a reduction of water consumption due to our commitment to improving our water reuse and water use efficiency, especially in operations located in water-stressed areas and we will increase our percentage of target achieved.

In addition, the startup of new paperboard machine in Puma unit expansion will have a significant impact on total water consumption due to higher water reuse in its operation.

Target reference number

Target 2

Category of target

Water pollution

Target coverage

Site/facility

Quantitative metric

Reduction in concentration of pollutants

Year target was set

2020

Base year

2019

Base year figure

0.45

Target year

2023

Target year figure

0.18

Reporting year figure

0.19

% of target achieved relative to base year

96.2962962963

Target status in reporting year

Underway

Please explain

The internal target to reduce water discharged phosphorus concentration in PUMA unit resulted in 0.19 mg/liter in 2022. This internal target has been managed by the unit since 2019.

The main contribution to reducing the concentration of this pollutant in water discharged occurred with the leading of a multidisciplinary group to work on reducing the concentration of the parameter, as well as the optimization of the tertiary effluent treatment plant, in 2020.

Currently, the unit perform actions to improve quality of its effluent treatment process aimed to guarantee quality of water discharged.

Target reference number

Target 3

Category of target

Water withdrawals

Target coverage

Company-wide (direct operations only)

Quantitative metric

Reduction in withdrawals per product

Year target was set

2020

Base year

2018

Base year figure

25.8

Target year

2030

Target year figure

20.7

Reporting year figure

23.2

% of target achieved relative to base year

50.9803921569

Target status in reporting year

Underway

Please explain

The internal target for reducing water withdrawal per total product by 2030 is 20%. In 2022, we already reduced the water withdrawal per total product by 10.1% compared with 2018, representing 51% of the target that has already been achieved. This target of Klabin contributes to water security through better management of water resources and meeting the UN Sustainable Development Goals.

To achieve this target, Klabin has a technical group that it is working on water reduction actions. The group aims to identify opportunities in all Klabin's industries to reduce water withdrawals and water consumption. In addition to this group, investments are made annually with the aim of contributing to the implementation of projects to reduce water use.

In next years, we expect a reduction of water withdrawal per total product due to our commitment to improving our water reuse and water use efficiency, especially in operations located in water-stressed areas increasing the percentage of target achieved.

In addition, the startup of new paperboard machine in Puma unit expansion is expected to have a positive impact on total water withdrawal per total product due to higher water reuse in its operation.

Target reference number

Target 4

Category of target

Water, Sanitation and Hygiene (WASH) services

Target coverage

Country/area/region

Quantitative metric

Increase in the proportion of local population using safely managed drinking water services around our facilities and operations

Year target was set

2020

Base year

2015

Base year figure

49

Target year

2025

Target year figure

900

Reporting year figure

728

% of target achieved relative to base year

79.7884841363

Target status in reporting year

Underway

Please explain

Social Forests Program - Planning Sustainable Properties is a program conducted by Klabin, developed in partnership with Apremavi and Sebrae. This program is applied in small and medium-sized rural properties located nearby our operations. Our internal target is related to the number of properties contemplated by the program. By 2025, our target is to serve 900 properties through the Social Forests Program. From 2015 to 2022, the program has already served 728 properties in the states of Paraná and Santa Catarina, representing 80% of the target that has already been achieved.

The objective of the program is to assist rural producers in diversifying their property's production and to support the restoration and recovery of areas of relevant ecological interest, considering water resources, preservation of springs and improvement of the quality of the water available for these properties and for the downstream users.

The actions developed directly contribute to increasing the availability of better quality water, directly affecting the improvement of WASH services in the region.

Target reference number

Target 5

Category of target

Supplier engagement

Target coverage

Company-wide (including suppliers)

Quantitative metric

Increase in the proportion of suppliers engaged

Year target was set

2020

Base year

2020

Base year figure

43

Target year

2030

Target year figure

100

Reporting year figure

70

% of target achieved relative to base year

47.3684210526

Target status in reporting year

Underway

Please explain

The target is 100% of critical suppliers assessed by the Sustainable Supply Chain Management Program until 2030. Klabin has more than 7,000 active suppliers in its supply chain, with 473 classified as critical suppliers. The classifying critical suppliers' criteria in water-related issues considers the supplier's classification water stressed area using WRI Aqueduct tool, supplier dependence on water and its impacts on water quality and availability assessed through Ecovadis system. We also consider in classifying critical suppliers: high value (procurement spend), representativeness in Klabin business, recurrence greater than six times in different months of the year and complexity in replacing the supply.

Klabin uses the EcoVadis methodology to assess suppliers about Labor and Human Rights, Ethics, Sustainable Purchasing and Environment. We assess approximately 20% of critical suppliers annually and, in 2022, 70% of critical suppliers were assess. This is an innovative program, and our objective is to evaluate and monitor the sustainability performance of 100% of our critical supplier by 2030. Annually we have advanced in this goal, contributing to the growth of the supply chain in a sustainable way.

Target reference number

Target 6

Category of target

Watershed remediation and habitat restoration, ecosystem preservation

Target coverage

Basin level

Quantitative metric

Increase in watershed remediation and habitat restoration, ecosystem preservation activities

Year target was set

2020

Base year

2020

Base year figure

79.7

Target year

2030

Target year figure

100

Reporting year figure

97.3

% of target achieved relative to base year

86.6995073892

Target status in reporting year

Underway

Please explain

The target is increase in habitat restoration, ecosystem preservation activities through implantation of hidrossolidarity management methodology in 100% of forest operations under Klabin's until 2030.

Hydrosolidarity management consists of a sustainable forest management method, pioneer by Klabin among its sector, which considers micro-basins as a forest operation planning unit to eliminate the trade of timber production and water production, establishing water regulation. This process starts by applying hydrological principles: forest plantations should be made in areas with natural water availability compatible with the activity; it necessary to have legal compliance regarding to permanent preservation areas and legal reserve; soil conservation practices must be contemplated; riparian areas must be respected.

An analysis of water availability must also be done, with the study and delimitation of region's micro-basin, which must contain: identification of the micro-basins; points of surface water collect by company and communities and respective watersheds; medium-term harvesting blocks; harvesting plan by micro-basin.

In 2022, Klabin expanded hydrosolidarity management for 97.3% of its own forest. In this way, Klabin contributes to restoration of habitats, preservation of ecosystems and protection of micro-basins to ensure water quality and availability for communities and other stakeholders around its forestry units.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	The data verified are volumes total withdrawals water, discharges wastewater and total consumption water.	AA1000AS	Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.
W4 Risks and opportunities	The data verified are risks and opportunities of company-wide.	AA1000AS	Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.
W6 Governance	The data verified are company-wide governance.	AA1000AS	Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which

			represents the guarantee of sampling methods, recycling systems and a wide management.
W8 Targets	The data verified are targets and goals of company-wide.	AA1000AS	Conecta Consulting conducted the process of independent verification of the Klabin Sustainability Report 2022 preparing process, developed in accordance with the GRI with verification process with adherence to the principles of the AA1000; and sustainability management company. In addition, we have ISO 14.000 certification standards, which represents the guarantee of sampling methods, recycling systems and a wide management.

W10. Plastics

W10.1

(W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Yes	Direct operations Supply chain	<p>Klabin is a forestry-based company that brings technological solutions/products to replace plastic products for a series of materials such as packaging and industrial bags to offer protection and safety to foods, beverages, hygiene and cleaning products, electronics and consumer appliances, cement, seeds, chemical products, and other items.</p> <p>Klabin have exclusive lines for recycling aseptic carton packages that have polyethylene and aluminium beds. To value this type of post-consumer material, we have been working with various stakeholders in the recycling chain to value this material that was previously a waste to be valued and reintroduced into the production chain.</p> <p>Plastics are contaminant in pulp and paper process and can offer quality losses of our products. That's why, we also have a good practice to engage our suppliers in reducing the use of plastic in our operations.</p> <p>We also have an R&D team which are constantly studying products of forest origin that can replace the use of plastic in packaging or barriers for water, oil, steam, and other substances in products.</p> <p>In addition, all types of Klabin's products produced have Life Cycle Analysis (LCA) and water footprint analysis performed. In Klabin, the assessment of the life cycle of products covers cradle to gate scope,</p>

			<p>considering from water use in the supply chain to product expedition to customer. The impact categories related to water risks in LCA covers: Acidification, Eutrophication, Human Toxicity, Ecotoxicity, Water Use and Water Footprint. The methodology used to Klabin is based on the recommendation of the European Commission in the context of the Environmental Footprint initiative and reflects the best practices available for addressing each category of impact. The assessment also considers the Water Footprint, following the principles of the ISO 14046 standard.</p>
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W10.2

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact assessment	Value chain stage	Please explain
Row 1	Yes	Direct operations Supply chain	<p>Klabin has been constantly researching, together with different partners and suppliers, the replacement of films with resins that fulfil the role of a barrier. These barriers are required in applications to package used in the food, cosmetics, or chemical industry, for example.</p> <p>Plastic films used as barriers in packaging papers make recyclability difficult, because they do not have use and market value.</p> <p>Currently, alternative resins are fossil-based and have applicability in solutions that require low barrier. In these cases, recyclability is favoured, since the resin does not mix with the paper, allowing recycling.</p> <p>In addition, all types of Klabin's products produced have Life Cycle Analysis (LCA) and water footprint analysis performed. In Klabin, the assessment of the life cycle of products covers cradle to gate scope, considering from water use in the supply chain to product expedition to customer. The impact categories related to water risks in LCA covers: Acidification, Eutrophication, Human Toxicity, Ecotoxicity, Water Use and Water Footprint. The methodology used to Klabin is based on the recommendation of the European Commission in the context of the Environmental Footprint initiative and reflects the best practices available for addressing each category of impact. The assessment also considers the Water Footprint, following the principles of the ISO 14046 standard.</p>

W10.3

(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.

	Risk exposure	Please explain
Row 1	No, risks assessed, and none considered as substantive	Risks to the business were assessed through the Task Force on Climate-Related Financial Disclosure (TCFD). Among the identified risks that impact Klabin's business are related to regulatory changes that lead to greater demands for efficiency, emission control and monitoring of land use. Plastics-related risks were not identified to Klabin business. Klabin are not exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on its business.

W10.4

(W10.4) Do you have plastics-related targets, and if so what type?

	Targets in place	Please explain
Row 1	No – but we plan to within the next two years	<p>Klabin has some open action fronts to eliminate the use of plastic in operations, paper products and waste management.</p> <p>To find alternatives to non-renewable products, we have developed a stretch paper that replaces polymer-based stretch film in our customers' operations. In the paper products we produce, some have barriers and films materials to protect food and liquids. For these products, we have invested significant efforts in researching and developing alternative sources that are sustainable in the broadest sense of the term (environmentally, economically, socially and that guarantee the necessary scale to serve a company the size of Klabin). We participate in projects together with other companies, research centers and universities, in order to study the feasibility of using films and barriers produced from renewable contents.</p> <p>In waste management, we analyze whether post-consumer paper scraps that eventually contain plastic tapes or films generate microplastics in the effluents from the effluent treatment stations of the recycling units. To date, we have not identified any risks associated with microplastics.</p> <p>In addition, we have a public target to zeroing out the disposal of industrial waste from our operations to landfills and, in 2022, we had a result of 98.5%.</p>

W10.5

(W10.5) Indicate whether your organization engages in the following activities.

	Activity applies	Comment

Production of plastic polymers	No	No comment.
Production of durable plastic components	No	No comment.
Production / commercialization of durable plastic goods (including mixed materials)	No	No comment.
Production / commercialization of plastic packaging	No	No comment.
Production of goods packaged in plastics	No	No comment.
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	No comment.

W11. Sign off

W-FI

(W-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.

No comments.

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Statutory Director on board.	Director on board

SW. Supply chain module

SW0.1

(SW0.1) What is your organization's annual revenue for the reporting period?

	Annual revenue
Row 1	20,033,000,000

SW1.1

(SW1.1) Could any of your facilities reported in W5.1 have an impact on a requesting CDP supply chain member?

This is confidential

SW1.2

(SW1.2) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
Row 1	Yes, for all facilities	We have 100% of geolocation data for our facilities.

SW1.2a

(SW1.2a) Please provide all available geolocation data for your facilities.

Identifier	Latitude	Longitude	Comment
Betim unit	-19.964755	-44.120758	No comments.
Feira de Santana unit	-12.290827	-38.91198	No comments.
Itajaí unit	-26.891305	-48.709733	No comments.
Lages 1 unit	-27.808633	-50.363555	No comments.
Pilar unit (Argentina)	-34.41692	-58.96018	No comments.
Manaus I unit	-3.071521	-59.912241	No comments.
São Leopoldo unit	-29.786711	-51.114425	No comments.
Rio Negro unit	-26.083283	-49.77273	No comments.
Correia Pinto unit	-27.551489	-50.364019	No comments.
Angatuba unit	-23.565067	-48.359227	No comments.
Otacílio Costa unit	-27.513275	-50.116603	No comments.
Puma unit	-24.258055	-50.746944	No comments.
Monte Alegre unit	-24.310186	-50.6079	No comments.
Piracicaba unit	-22.687536	-47.674963	No comments.
Horizonte unit	-4.070883	-38.50081	No comments.
Jundiá DI unit	-23.1752	-46.931352	No comments.
Jundiá TP unit	-23.266963	-46.865105	No comments.
Rio Verde unit	-17.817519	-51.003516	No comments.
Paulínia unit	-22.757154	-47.163636	No comments.
Franco da Rocha unit	-23.325001	-46.756239	No comments.
Suzano unit	-23.656859	-46.329985	No comments.
Manaus II unit	-3.116783	-59.971282	No comments.
Goiana unit	-7.556655	-35.035038	No comments.

SW2.1

(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.

Requesting member

Ajinomoto Co.Inc.

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for the Ajinomoto Co.Inc, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

Ambev S.A

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for the Ambev S.A, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

L'Oréal

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for the L'Oréal, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

Philip Morris International

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for the Philip Morris International, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

Symrise AG

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for the Symrise AG, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

The Coca-Cola Company

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products for The Coca-Cola Company, therefore leading to a lower price per unit and other environmental benefits in the basin.

Requesting member

Unilever plc

Category of project

Relationship water assessment

Type of project

Assessing products or services' water-related impacts to identify efficiencies

Motivation

Declining water availability and quality in water stressed areas which factories.

Estimated timeframe for achieving project

2 to 3 years

Details of project

In water stressed areas is possible engagement the municipal government in use of available specific financial public resources to water issues improvement to develop local actions.

Projected outcome

Collaborating to influence local government to improve water-related issues may result in improved water availability and quality in a basin where there are operates. This could lead to reduced water treatment costs at a facility where there are manufacture products

for the Unilever plc, therefore leading to a lower price per unit and other environmental benefits in the basin.

SW2.2

(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?

No

SW3.1

(SW3.1) Provide any available water intensity values for your organization's products or services.

Product name

Pulp - Puma unit

Water intensity value

30.7

Numerator: Water aspect

Water withdrawn

Denominator

tonne

Comment

The water withdrawals per tonne of pulp was 30.7 m3/tonne in 2022.

Product name

Paper - Monte Alegre unit

Water intensity value

39.3

Numerator: Water aspect

Water withdrawn

Denominator

tonne

Comment

The water withdrawals per tonne of paper was 39.3 m3/tonne in 2022.

Submit your response

In which language are you submitting your response?

Brazilian Portuguese

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.

Yes, CDP may share our Main User contact details with the Pacific Institute

Please confirm below

I have read and accept the applicable Terms