



2022

Sustainability
Disclosure
& GRI Index

2022

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Dear Mosaic Stakeholders

As societies around the globe reunited following over two years of pandemic-forced restrictions, new trials emerged in 2022. Long-simmering tensions between Russia and Ukraine boiled into a grinding Russian invasion, with far-reaching humanitarian and economic ramifications. Economic prosperity and tight labor markets caused significant inflation and rising interest rates in all the developed countries of the world. And elections in Brazil, the United States and elsewhere led to considerable shifts in national and international policy direction.

The many geopolitical situations rightfully focused the world's attention on food: With Ukraine's usually vast wheat crop imperiled, and with major disruptions in fertilizer production and trade flows, pressure on global agriculture to supply sufficient sustenance for 8 billion people intensified rapidly.

At Mosaic, we take our mission — to help the world grow the food it needs — very seriously. Perhaps never before in our company's history has our mission been more critical or more challenging to achieve.

Despite geopolitical events, we continued to produce and ship potash and phosphate from our mines and plants in the United States, Canada, Brazil and Peru, and we continued to meet our customers' demands. At Mosaic, we did our part to feed the world.

No year passes without challenges. After a decade of steady improvements, our employee safety performance took a step backward in 2022. I am sorry to report that a tragic incident at our Rondonópolis blending facility in Brazil resulted in the deaths of three contractors after eight years without a fatality at any of our sites. All of us at Mosaic have as our top priority for 2023 to reinvigorate our safety culture and return our performance to the excellent standard we have previously achieved.

Mosaic's commitment to responsible operation does not waver, regardless of business conditions. We continued to lead our industry in sustainability reporting and performance, and we once again bolstered our environmental, social and governance performance targets. 2022 marked a decade since we became a United Nations Global Compact signatory, and we are as committed as ever to embodying the 10 universal principles the Compact promotes.

In 2022, we added four new sustainability targets related to diversity and inclusion to further strengthen our organization and reinforce a culture of belonging. By 2030, we are driving for 30 percent growth in the diversity of our leadership ranks, 30 percent growth in underrepresented groups in the workplace, 30 percent of our workforce made up of women and 30 percent of our community investment spending targeted at programs supporting diversity and inclusion. These targets will stretch us, and all of us at Mosaic are committed to doing our part to help us achieve the goals.

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We are just as focused on our other commitments. Mosaic is on its way to achieving our 2025 greenhouse gas emission and water use reduction targets, and we are piloting a number of innovative and economically viable projects that will help us achieve our net-zero emission targets. In addition, we are making good progress toward reaching 25 million acres of North American farmland under 4R Nutrient Stewardship certification — an important contribution to healthy water quality in critical watersheds.

We at Mosaic have lofty expectations of ourselves. We strive to deliver positive outcomes for all our stakeholders by driving strong financial performance across the business cycle, ensuring the safety of our people, contributing to the solidity of our operating communities, developing innovative products, working to minimize our environmental impact and providing workplaces where people want to grow and thrive.

Mosaic is operating from many positions of strength as we move through 2023, and we fully intend to build on our momentum.

Sincerely,



Joc O'Rourke
President and Chief Executive Officer
The Mosaic Company

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Environmental, Social and Governance (ESG) Performance Targets

We continue to approach our environment, social and governance performance with the same determination we apply to our mission: to help the world grow the food it needs. Our short-, mid- and long-term targets, prioritized in the areas of People, Environment, Society and Company, serve as our compass as we drive progress in the areas that matter most to Mosaic and our diverse stakeholders.

ESG Performance Targets Summary



See all of our ESG Performance Targets on the following pages >>

Environmental, Social and Governance (ESG) Performance Targets

Click on the target to view more content within this document.








TARGET	2022 PERFORMANCE	STATUS
Engage suppliers and service providers representing key ESG areas	Continued engagement with key transportation, raw materials and procurement suppliers and contractors on ESG topics including diversity and inclusion, greenhouse gas emissions and water tracking and management	ON TRACK
Increase indigenous representation in Canada in three key areas	Achieved 8% procurement spend, 16% workforce new hires and 24% community investments	ON TRACK
Empower farmers to reduce environmental impacts by implementing 4R Nutrient Stewardship practices on 25 million acres	4R Nutrient Stewardship practices implemented on 13 million acres in North America	ON TRACK
Achieve 30% performance product sales of phosphate and potash crop nutrient tonnes	Achieved 25% sales of performance products	TRAILING
Focus 30% of community giving on diversity and inclusion	More than 30% of giving dollars allocated to diversity and inclusion (D&I) grants, representing over \$4.5 million in D&I community investments globally	ON TRACK

Environmental, Social and Governance (ESG) Performance Targets

Click on the target to view more content within this document.

ENVIRONMENT

TARGET	2022 PERFORMANCE	STATUS
Enact companywide governance structure for tailings management and assess against a global standard	Gap assessment underway; dam safety standard training scheduled for 2023	
Reduce freshwater use by 20% per tonne of product	6% reduction in freshwater intensity since baseline year, representing year-over-year intensity increase of 16%. In 2020 we disclosed a significant reduction in freshwater use that occurred, in part, due to the nonlinear and cyclical nature of water use and we maintained those reductions in 2021. In 2022 we saw an increase in water use due to production shortfalls, weather and operational challenges. Overall, we are still on course to meet our 2025 targets	
Reduce greenhouse gas emissions by 20% per tonne of product	12% reduction in GHG intensity since baseline year, representing 1.5% decrease in scope 1 and 2 GHG emissions intensity year over year	
Eliminate significant environmental incidents	19% year-over-year reduction in environment incident frequency rate	
Achieve net-zero GHG emissions in Florida by 2030 and 2040 companywide	Piloted decarbonization roadmapping exercises in Canada and Brazil with plans to kick off a US-based study in 2023	

Environmental, Social and Governance (ESG) Performance Targets

Click on the target to view more content within this document.

PEOPLE

TARGET	2022 PERFORMANCE	STATUS
Advance risk reduction to drive health and safety performance	Reached 123% of risk reduction target, representing execution of more than 1,450 projects	ON TRACK
Implement worker wellness programs that enhance worker safety and health, engage employees in development opportunities and promote inclusivity	Progressed global wellness training initiatives; computer-based training module development underway	ON TRACK
Update our Commitment to Inclusion and engage employees in its principles	Refreshed and distributed in 2023; efforts to engage employees in principles of inclusivity are ongoing	COMPLETE
Have women representing 30% of our workforce	16% of the workforce represented by women	TRAILING
Have 30% growth in underrepresented groups in the workplace	27% growth in underrepresented groups	ON TRACK
Reach 30% growth in leadership diversity	35% growth in diverse leadership	ON TRACK

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GRI Content Index

General Standard Disclosures

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE	
GENERAL DISCLOSURES						
GRI 3: Material Topics 2021	2-1	Organizational details	2022 10-K, pg. 1	-		
	2-2	Entities included in the organization's sustainability reporting	2022 10-K and PDF pg. 21	-		
	2-3	Reporting period, frequency and contact point	PDF pg. 21	-		
	2-4	Restatements of information	PDF pg. 21	-		
	2-5	External assurance	PDF pg. 21	-		
	2-6	Activities, value chain and other business relationships	PDF pg. 22	-		
	2-7	Employees	PDF pg. 25	-		
	2-8	Workers who are not employees		We are omitting this disclosure due to availability of data. Mosaic does not track individual contract worker counts or demographics.	-	
	2-9	Governance structure and composition	Proxy Statement pgs. 19, 23	-		
	2-10	Nomination and selection of the highest governance body	Proxy Statement pgs. 5-6, 17	-		
	2-11	Chair of the highest governance body	Proxy Statement pgs. 23-24	-		
	2-12	Role of the highest governance body in overseeing the management of impacts	Proxy Statement pg. 19 and PDF pg. 26	-		
	2-13	Delegation of responsibility for managing impacts	Proxy Statement pg. 19 and PDF pg. 26	-		
	2-14	Role of the highest governance body in sustainability reporting	Proxy Statement pg. 8 and PDF pg. 26	-		
	2-15	Conflicts of interest	Proxy Statement pgs. 65-66	-		
	2-16	Communication of critical concerns	Proxy Statement pg. 71	-		
	2-17	Collective knowledge of the highest governance body	Proxy Statement pgs. 12-18	-		
	2-18	Evaluation of the performance of the highest governance body	Proxy Statement pg. 18	-		

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
GENERAL DISCLOSURES (continued)					
GRI 3: Material Topics 2021	2-19	Remuneration policies	Proxy Statement pgs. 27-29	-	
	2-20	Process to determine remuneration	Proxy Statement pgs. 27-29	-	
	2-21	Annual total compensation ratio	Proxy Statement pg. 49	-	
	2-22	Statement on sustainable development strategy	CEO Letter PDF pg. 2	-	
	2-23	Policy commitments	PDF pg. 26	-	
	2-24	Embedding policy commitments	PDF pg. 26	-	
	2-25	Processes to remediate negative impacts	Mosaicco.com/Our-Responsibility	-	
	2-26	Mechanisms for seeking advice and raising concerns	PDF pg. 28	-	
	2-27	Compliance with laws and regulations	PDF pg. 28	-	
	2-28	Membership associations	PDF pg. 29	-	
	2-29	Approach to stakeholder engagement	PDF pgs. 31-32	-	
2-30	Collective bargaining agreements	PDF pg. 32	-		
Material Topics					
GRI 3: Material Topics 2021	3-1	Process to determine material topics	PDF pg. 33	-	
	3-2	List of material topics	PDF pgs. 33-34	-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ECONOMIC					
Economic Performance					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	PDF pgs. 36-37	-	
	201-2	Financial implications and other risks and opportunities due to climate change	PDF pg. 38	-	
	201-3	Defined benefit plan obligations and other retirement plans	PDF pgs. 38-39	-	
	201-4	Financial assistance received from government	PDF pg. 39	-	
Market Presence					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	PDF pg. 41	-	
	202-2	Proportion of senior management hired from the local community	PDF pg. 41	-	
Indirect Economic Impacts					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	PDF pgs. 42-43	-	
	203-2	Significant indirect economic impacts	PDF pgs. 44-45	-	
Procurement Practices					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	PDF pg. 45	-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ECONOMIC (continued)					
Anti-Corruption					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	EM-MM-510a.1
GRI 205: Anti-Corruption 2016	205-1	Operations assessed for risks related to corruption	PDF pg. 46	-	EM-MM-510a.2
	205-2	Communication and training about anti-corruption policies and procedures	PDF pg. 47	-	
	205-3	Confirmed incidents of corruption and actions taken	PDF pg. 47	-	
Anti-Competitive Behavior					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 35	-	
GRI 206: Anti-Competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	PDF pg. 47	-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ENVIRONMENTAL					
Materials					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 48	-	
GRI 301: Materials 2016	301-1	Materials used by weight or volume	PDF pg. 48	-	
	301-2	Recycled input materials used	PDF pg. 48	-	
	301-3	Reclaimed products and their packaging materials	PDF pg. 48	-	
Energy					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51	-	
GRI 302: Energy 2016	302-1	Energy consumption within the organization	PDF pg. 56	+Assurance Statement	RT-CH-130a.1; EM-MM-130a.1
	302-2	Energy consumption outside of the organization		-	
	302-3	Energy intensity	PDF pg. 58	-	
	302-4	Reduction of energy consumption	PDF pg. 58	-	
	302-5	Reductions in energy requirements of products and services		Reductions in energy requirements of products are not available at this time due to this indicator's limited applicability to our product mix and business model. We report emissions performance developments associated with use of our products in 305-5.	-

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ENVIRONMENTAL (continued)					
Water and Effluents					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pgs. 49-51		-	
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	PDF pg. 52		-	
	303-2 Management of water discharge-related impacts	PDF pg. 53		-	
	303-3 Water withdrawal	PDF pg. 53		+ / Assurance Statement	RT-CH-140a.1; EM-MM-140a.1
	303-4 Water discharge		We report total water discharge by quality and destination in line with GRI 306-1 (GRI 306: Effluents and Waste 2016). Please see PDF pg. 54.	-	
	303-5 Water consumption		Water consumption is unavailable as an individual line item. Mosaic manages all water that falls on its active, operational footprint. The water is managed, used in our operations, treated if necessary and discharged pursuant to water quality standards stipulated by permits in each of our operating jurisdictions. Based on GRI's guidance on how to calculate consumption (withdrawals minus discharges), in many instances our consumption is negative because we are discharging more water than we withdraw. Accordingly, we communicate to stakeholders about our water management practices with other measures, including reporting water withdrawals by source.	-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ENVIRONMENTAL (continued)					
Biodiversity					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51	-	
GRI 304: Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	PDF pg. 62	-	EM-MM-160a.1; EM-MM-160a.3
	304-2	Significant impacts of activities, products and services on biodiversity	PDF pg. 63	-	EM-MM-160a.1
	MM1	Land disturbed or rehabilitated	PDF pg. 64	-	
	MM2	Number and percentage of sites identified as requiring biodiversity management plans	PDF pg. 64	-	
	304-3	Habitats protected or restored	PDF pg. 65	-	
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	PDF pgs. 66-67	-	
Emissions					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51	-	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	PDF pg. 58	+ / Assurance Statement	EM-MM-110a.1; EM-MM-110a.2; RT-CH-110a.1
	305-2	Energy indirect (Scope 2) GHG emissions	PDF pg. 58	+ / Assurance Statement	
	305-3	Other indirect (Scope 3) GHG emissions	PDF pg. 59	+ / Assurance Statement	EM-MM-110a.2
	305-4	GHG emissions intensity	PDF pg. 59	-	EM-MM-110a.2; RT-CH-110a.2
	305-5	Reduction of GHG emissions	PDF pgs. 60-61	-	
	305-6	Emissions of ozone-depleting substances (ODS)		-	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions	PDF pg. 61	-	RT-CH-120a.1; EM-MM-120a.1

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
ENVIRONMENTAL (continued)					
Waste					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51	-	
GRI 306: Waste 2016	306-1	Total water discharge by quality and destination	PDF pg. 54	-	
	306-2	Total weight of waste by type and disposal method	PDF pg. 68	-	RT-CH-150a.1
	306-3	Total number and volume of significant spills	PDF pg. 70	-	
	MM3	Overburden, rock, tailings and sludge	PDF pg. 69	-	EM-MM-150a.1; EM-MM-150a.2
	306-4	Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally	PDF pg. 68	-	
	306-5	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	PDF pg. 54	-	
Environmental Compliance					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51		
GRI 307: Environmental Compliance 2016	307-1	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	PDF pg. 70		RT-CH-140a.2; EM-MM-140a.2
Supplier Environmental Assessment					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pgs. 49-51	-	
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria		This data is unavailable. As of today, we do not track the percentage of new suppliers that were screened using environmental criteria.	-
	308-2	Negative environmental impacts in the supply chain and actions taken	PDF pg. 70		-

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
SOCIAL					
Employment					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 71	-	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	PDF pg. 72	-	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	PDF pg. 73	-	
	401-3	Parental leave	PDF pg. 74	-	
Labor/Management Relations					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 71	-	
GRI 402: Labor/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	PDF pg. 74	-	
	MM4	Number of strikes and lock-outs exceeding one week's duration, by country	PDF pg. 75		EM-MM-310a.2
Occupational Health and Safety					
GRI 3: Material Topics 2021	3-3	Management of material topics	PDF pg. 77	-	
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	PDF pg. 77	-	
	403-2	Hazard identification, risk assessment and incident investigation	PDF pg. 78	-	
	403-3	Occupational health services	PDF pg. 78	-	
	403-4	Worker participation, consultation and communication on occupational health and safety	PDF pg. 78	-	
	403-5	Worker training on occupational health and safety	PDF pg. 79	-	
	403-6	Promotion of worker health	PDF pg. 79	-	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	PDF pg. 80	-	
	403-8	Workers covered by an occupational health and safety management system	PDF pg. 77	-	
	403-9	Work-related injuries	PDF pg. 80	-	EM-MM-320a.1; RT-CH-320a.2
	403-10	Work-related ill health	PDF pg. 81	-	RT-CH-320a.1; RT-CH-320a.2

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
SOCIAL (continued)					
Training and Education					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 82		-	
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	PDF pg. 82		-	
	404-2 Programs for upgrading employee skills and transition assistance programs	PDF pg. 83		-	
	404-3 Percentage of employees receiving regular performance and career development reviews	PDF pg. 83		-	
Diversity and Equal Opportunity					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 71		-	
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	PDF pg. 75		-	
	405-2 Ratio of basic salary and remuneration of women to men	PDF pg. 76		-	
Non-Discrimination					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 84		-	
GRI 406: Non- Discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	PDF pg. 84		-	
Freedom of Association and Collective Bargaining					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 84		-	
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	PDF pg. 84		-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
SOCIAL (continued)					
Child Labor					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 84		-	
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	PDF pg. 85		-	
Forced or Compulsory Labor					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 84		-	
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	PDF pg. 85		-	
Rights of Indigenous Peoples					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 84		-	
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	PDF pg. 85		-	
	MM5 Number of operations taking place in or adjacent to indigenous peoples' territories	PDF pg. 85		-	
Local Communities					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 86		-	
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments and development programs	PDF pgs. 86-88		-	
	413-2 Operations with significant actual and potential negative impacts on local communities	PDF pg. 88		-	
	MM6 Number and description of significant disputes related to land use, customary rights of local communities and indigenous peoples	PDF pg. 89		-	
	MM7 The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and the outcomes	PDF pg. 89		-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
SOCIAL (continued)					
Public Policy					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 90		-	
GRI 415: Public Policy 2016	415-1 Political contributions	PDF pg. 90		-	
Customer Health and Safety					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 91		-	
GRI G4 Guidelines: Mining and Metals Sector Disclosures	MM9 Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	PDF pg. 90		-	
	MM10 Number and percentage of operations with closure plans	PDF pg. 90		-	
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	PDF pg. 91		-	
GRI 417: Marketing and Labeling 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services		We do not report incidents of non-compliance concerning the health and safety impacts of products and services as an individual line item due to availability of data. We comply with safety, environmental, labeling, and registration required by country and local governments where we sell and distribute fertilizer, animal feed and industrial products.	-	

General Standard Disclosures (continued)

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSIONS	EXTERNAL ASSURANCE	SASB DISCLOSURE
SOCIAL (continued)					
Marketing and Labeling					
GRI 3: Material Topics 2021	3-3 Management of material topics	PDF pg. 91		-	
GRI 417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	PDF pg. 92		-	
	417-2 Incidents of non-compliance concerning product and service information and labeling	PDF pg. 92		-	
	417-3 Incidents of non-compliance concerning marketing communications		Mosaic's business model is primarily business to business. We report other disclosures associated with this material topic but have omitted a disclosure about incidents of non-compliance concerning marketing communications due to limited applicability to our business and activities.	-	

NOTE: As of the date of this report, there is not a Sector Standard applicable to Mosaic's activities. We are anticipating the release of a Standard focused on the mining sector and will report on a list of the topics in the applicable Standard that are not material to Mosaic at that time.

General Standard Disclosures

The Organization and its Reporting Practices

2-2 Entities included in the organization's sustainability reporting

2-3 Reporting period, frequency and contact point

2-4 Restatements of information

2-5 External assurance

Our 2022 sustainability disclosure details The Mosaic Company's 2022 performance across broad sustainability focus areas of People, Environment, Society and Company. Our report has been prepared in accordance with the GRI Standards: Core option. The content of this report has been shaped by the issues identified through a significance study, the results of which we analyze on an ongoing basis. This report primarily summarizes the activities occurring in the period of calendar year 2022, and unless otherwise noted, all data is presented on a calendar year (CY) basis. We encourage readers to refer to our [2022 ESG Performance Summary](#), [2022 Environment Metrics Supplement](#) and mosaicco.com/Our-Responsibility for additional information about Mosaic's environment, social and governance performance.

The period covered by this report is January 1, 2022–December 31, 2022, and follows the release of our last annual sustainability disclosure in June, 2022. The contact point for questions regarding the report or its contents is Benjamin Pratt, Senior Vice President, Government and Public Affairs.

We are restating municipal water withdrawals for 2021 due to a data error that occurred as a result of misinterpretation of units.

This report covers our global operations, including entities over which Mosaic exercises majority operational control and all its operations and departments that have the potential to generate significant impacts. Except for financial and select environmental data, this report does not specifically reflect equity-method investments, including joint ventures in which we have a minority interest. Please see our [2022 10-K](#) (page F-52) for more information about those investments. Emissions impacts associated with a joint venture in the Kingdom of Saudi Arabia in which we have a 25 percent interest are reported as part of our Scope 3 emissions in [305-3](#).

ERM CVS performed limited assurance of 2022 total energy (direct and indirect), total GHG emissions (Scope 1 and Scope 2 location-based), Scope 1 GHG emissions, Scope 2 location-based GHG emissions, total water withdrawals, and total water withdrawals by source. We also achieved assurance on Total Scope 3 categories, composed of select categories. To understand the scope, activities and conclusions of the assurance process, please view the [ERM CVS Assurance Statement](#).

Throughout the report, “tonnes” refers to metric ton unit of measurement equaling approximately 2,205 pounds, whereas the occasional reference to “tons” refers to the unit of measurement equaling 2,000 pounds. References to sulfur are in “long tons,” which is equal to 2,240 pounds.

General Standard Disclosures

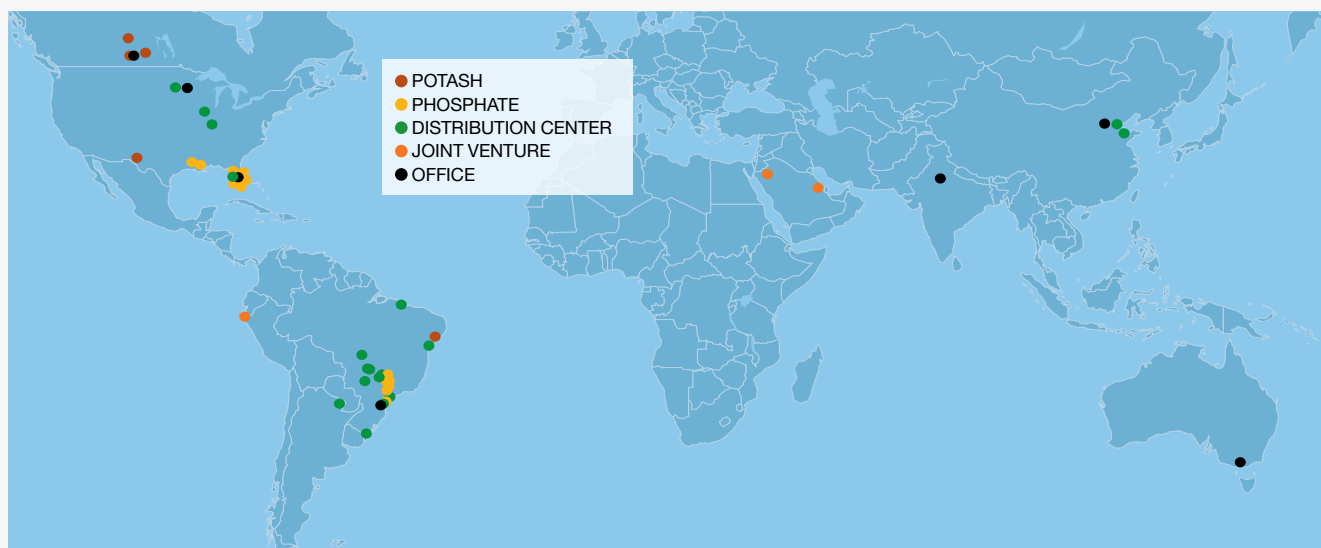
Activities and workers

2-6 Activities, value chain and other business relationships

The Mosaic Company is the world's leading producer and marketer of concentrated phosphate and potash crop nutrients. Through our broad product offering, we are a single source supplier of phosphate- and potash-based crop nutrients and animal feed ingredients. We serve customers in approximately 40 countries. We are the second largest integrated phosphate producer in the world and one of the largest producers and marketers of phosphate-based animal feed ingredients in North America and Brazil. We are the leading fertilizer production and distribution company in Brazil.

We mine phosphate rock in Florida and Brazil. We process rock into finished phosphate products at facilities in Florida, Louisiana and Brazil. We are the majority owner of a joint venture operating a phosphate rock mine in the Bayóvar region in Peru, in which we previously held a minority equity interest. We mine potash in Saskatchewan, New Mexico and Brazil. We have other production, blending or distribution operations in Brazil, China, India and Paraguay, as well as a joint venture that operates a phosphate rock mine and chemical complexes in the Kingdom of Saudi Arabia.

Global Operations



General Standard Disclosures

We account for approximately 12 percent of estimated global annual phosphate production. We also account for approximately 14 percent of estimated global annual potash production.

Our business is organized into three reportable business segments:

Phosphate

We sell phosphate-based crop nutrients and animal feed ingredients throughout North America and internationally. We account for approximately 69 percent of estimated North American annual production of concentrated phosphate nutrients.

Potash

We sell potash throughout North America and internationally, principally as fertilizer, but also for use in industrial applications and, to a lesser degree, as animal feed ingredients. We account for approximately 35 percent of estimated North American annual potash production.

Mosaic Fertilizantes

We produce and sell phosphate, potash and nitrogen-based crop nutrients, and animal feed ingredients, in Brazil. In addition to five phosphate rock mines, four chemical plants and a potash mine in Brazil, this segment consists of sales offices, crop nutrient blending and bagging facilities, port terminals and warehouses in Brazil and Paraguay. The Mosaic Fertilizantes segment also serves as a distribution outlet for our Phosphate and Potash segments.

We account for approximately 72 percent of estimated annual production of concentrated phosphate crop nutrients in Brazil and 93 percent of estimated annual potash production in Brazil.



General Standard Disclosures

Mining, producing and delivering millions of tonnes of fertilizer each year to customers around the globe is complex. It requires teams of dedicated professionals working to make responsible decisions each day and at every step in the production and supply chains.

MINING

We work to safely extract potash and phosphate ore from the Earth's extensive reserves.

FACT In our Florida Phosphate operations, phosphate rock is recovered using draglines. Our Brazil operations use an open pit process to extract phosphate reserves.

MANUFACTURING

We refine, process, and blend phosphate and potash minerals to create crop nutrition products, then prepare goods for shipment.

FACT We produce renewable energy through cogeneration, the process of converting waste heat to energy, satisfying approximately 40 percent of our phosphate operations' annual electricity consumption.

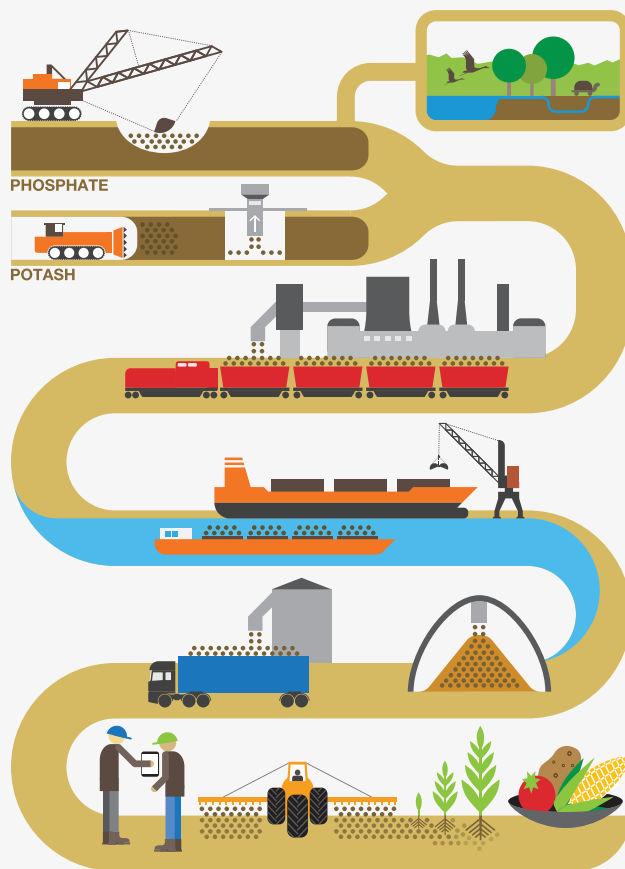
CUSTOMERS

We sell to retail customers and regional distributors, as well as large international growers.

FARMERS

We provide large and smallholder farmers with the vital crop nutrients and micronutrients they need to help grow healthy plants, achieve better yields, and grow food, feed, fuel and fiber more sustainably.

FACT Our premium MicroEssentials® product increases corn yields an average of 7.2 bushels per acre vs. traditional fertilizer.



LAND RECLAMATION & COMPENSATION

In Florida, we reclaim every acre of phosphate-mined land, creating high-quality habitats and wildlife corridors for fish, birds, and other animals, and land suitable for agriculture and other diverse beneficial uses. In Brazil, reclamation efforts include respicing and revegetating the mined area. Additionally, we set aside a portion of a mining site—approximately 20 percent of the project footprint—as a part of our efforts to preserve and protect unmined land.

FACT We reuse and recycle water to decrease our companywide consumption and increase efficient use.

TRANSPORTATION

We move raw materials, phosphate, potash and finished crop nutrition products across the supply chain using pipelines, trains, trucks, river barges and ships.

STORAGE & DISTRIBUTION

We have port terminals, warehouses and storage capacity in key geographies, with global distribution.

CONSUMERS

Our crop nutrients play a key role in growing crop yields and providing people with the healthy, affordable food they need to thrive.

FACT We partner with Field to Market®, The Nature Conservancy and other organizations on initiatives aimed at increasing agricultural productivity, sustainability and food security—while reducing environmental impacts and protecting natural resources.

Unlike many of our competitors, we have our own distribution system to sell phosphate- and potash-based crop nutrients and animal feed ingredients, whether produced by us or by other third parties, around the globe. In North America, we have one of the largest and most strategically located distribution systems for crop nutrients, including warehouse facilities in key agricultural regions. We also have an extensive network of distribution facilities internationally, including in the key growth regions of South America and Asia, with port terminals, warehouses, and blending plants in Brazil, Paraguay, China, and India. Our distribution operations serve the top four nutrient-consuming countries in the world: China, India, the United States and Brazil. Our global presence allows us to efficiently serve customers in approximately 40 countries.

General Standard Disclosures

2-7 Employees

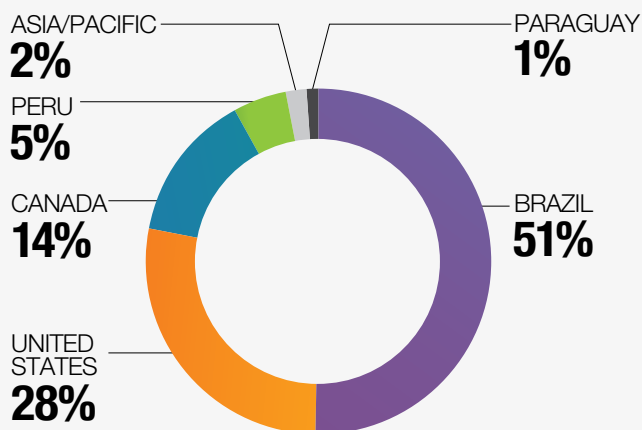
As of December 31, 2022, Mosaic employed 13,570 regular employees.

EMPLOYEES

COUNTRY	FEMALE				MALE				TOTAL			
	TEMP	FULL TIME	PART TIME	COUNT	TEMP	FULL TIME	PART TIME	COUNT	TEMP	FULL TIME	PART TIME	COUNT
Brazil	81	1,159	15	1,174	34	5,700	10	5,710	115	6,859	25	6,884
Canada	2	288	0	288	8	1,630	0	1,630	10	1,918	0	1,918
China	0	48	0	48	0	103	0	103	0	151	0	151
India	0	8	0	8	0	58	0	58	0	66	0	66
Paraguay	0	13	0	13	0	37	0	37	0	50	0	50
Peru	12	68	0	68	9	623	0	623	21	691	0	691
Saudi Arabia	0	0	0	0	0	1	0	1	0	1	0	1
United States	0	602	1	603	0	3,205	1	3,206	0	3,807	2	3,809
Total	95	2,186	16	2,202	51	11,357	11	11,368	146	13,543	27	13,570

NOTE: Mosaic does not track individual contract worker counts or demographics. "Temporary" employees represent a very small percentage of our total workforce (approximately 1 percent). In 2022, we had 27 part-time workers, including 15 female and 10 male employees. 16 percent of Mosaic's total workforce is female.

EMPLOYEES BY REGION



General Standard Disclosures

Governance

2-12 Role of highest governance body in overseeing management of impacts

2-13 Delegation of responsibility for managing impacts

2-14 Governance structure and composition

Mosaic's approach to sustainability reflects our commitments to global food security, the environment, our people, society and our company. We encourage each person at Mosaic to act responsibly and contribute to our company's success. It's our collective decisions and actions that must be ethical, strategic and sustainable.

Sustainability leadership begins with our Board of Directors (BoD). The Environmental Health, Safety and Sustainable Development (EHSS) Committee of Mosaic's BoD provides oversight of our environmental, health, safety, and sustainable development strategic vision and performance.

View our [2022 Proxy Statement](#) (pgs. 7-8) and the [EHSS Committee Charter](#) for more information. The Board and the company's Senior Leadership Team review the EHSS Committee's recommendations in order to develop new companywide policies, initiatives, targets and goals. A team of employees, overseen by a Senior Vice President of Government and Public Affairs, manages sustainability initiatives on a day-to-day basis and communicates up and down the organizational structure about sustainability topics.

The Mosaic Company [Senior Leadership Team \(SLT\)](#), led by our President and Chief Executive Officer, is primarily responsible for managing profit and loss, capital deployment, and delivering growth. Implementation and delivery of Mosaic's business strategy and plan are monitored by SLT members. The SLT is supported in matters of sustainability by leading vice president- and director-level employees who are accountable for achieving the goals through site-specific, business segment and companywide implementation.

2-23 Policy commitments

2-24 Embedding policy commitments

Mosaic is a signatory to the United Nations Global Compact and is committed to upholding its ten universal principles and our responsibilities in the areas of human rights, labor, environment and anti-corruption.

We have publicly available commitment statements that outline where we stand as a company on topics most relevant to us and our diverse stakeholders. In addition to commitments to [Climate Change](#), [Inclusion](#), [Human Rights](#) and [Water Stewardship](#), we have statements related to [Environment Health and Safety](#), [Deforestation](#), and a [Supplier Code of Conduct](#), among others. See [Our Responsibility Page](#) for more information.

We address precautionary approach and other elements of this disclosure in our [Proxy Statement](#) (pg. 20).

General Standard Disclosures

Ethics and Integrity

In a rapidly changing business environment, it is important for us to remain grounded and focused on what we determine is most important. No matter where Mosaic operates in the world, our employees adhere to the same companywide principles.

MISSION: We help the world grow the food it needs

PRINCIPLES: We are responsible, innovative, collaborative and driven

STRATEGIC PRIORITIES:

1

Operations Organizational Transformation and Alignment

Align our operations and support services across North and South America

2

South America Growth Engine

Leverage Mosaic's in-country capabilities to drive growth and profitability in key South American markets

3

Grow and Strengthen the Product Portfolio

Expand our reach in growing markets; deploy new digital demand generation capabilities; and continue to build our product portfolio

4

Increase Functional Efficiency and Scalability

Expand impact and effectiveness of functional initiatives

5

Optimize Capital Management

Prioritize and effectively allocate capital across the business

6

Act Responsibly

Drive actions and behaviors that build Mosaic's brand as a respected and responsible company with a diverse and inclusive culture

Our [Code of Business Conduct and Ethics](#) aligns with these principles and provides information about how we make sure we always do the right thing.

General Standard Disclosures

2-26 Mechanisms for seeking advice and raising concerns

Mosaic supports and participates in a variety of formal and informal channels through which employees can submit concerns or grievances. For example, Mosaic maintains a 24-hour independently administered confidential and anonymous incident reporting hotline called EthicsPoint for all Mosaic employees, contractors, vendors, and the public to report perceived ethical issues. In 2022 we received 476 EthicsPoint reports. Most of the reported allegations related to employee relations; discrimination, harassment or retaliation; and contractor, supplier and third-party relations.

2-27 Compliance with laws and regulations

Mosaic's global ethics and compliance programs are focused on guiding our business to achieve its mission to help the world grow the food it needs in an ethical, lawful and sustainable way.

Mosaic reports any environmental enforcement action that it has identified as potentially material to investors, or if not potentially material, as potentially meeting or exceeding a significance threshold of \$300,000. In 2022, no enforcement actions were resolved that met this threshold.

General Standard Disclosures

2-28 Membership of associations

Mosaic recognizes the importance and value of being active in industry associations and cross-sector business forums. These common platforms help advance cutting-edge scientific research and best management practices within our company and our industry. We consider the relevance of each engagement opportunity to our business strategies, and we pursue mutually beneficial partnerships. Many of the key organizations we engage with are listed here.

ORGANIZATION	WAYS WE ENGAGE	INVOLVEMENT
CROSS-SECTOR ORGANIZATIONS		
CDP	Reporter Services Member for Climate Change and Water	Mosaic supports CDP's aims to improve transparency with respect to greenhouse gas emissions goals and develop reduction strategies. We report to CDP annually.
Ethos Institute for Company Social Responsibility	Member	Mosaic is a member of the Ethos Institute, a leading civil society organization in Brazil, which is responsible for promoting sustainable and responsible management practices.
Field to Market	Member	Mosaic contributes to solutions for sustainability and continuous improvement in U.S. commodity agriculture.
Global Reporting Initiative (GRI)	GOLD Community Business Leadership Forum	As a member of the GOLD Community, Mosaic is helping to shape the future of sustainability and reporting. Our annual sustainability disclosure is based on GRI's Standards: Core Option. We participate in GRI's Business Leadership Program, which drives participation from the private sector in measuring corporate performance on the UN Sustainable Development Goals.
Sustainability Accounting Standards Board	Standards Advisory Group	As a member of the Standards Advisory Group, Mosaic provides ongoing feedback on the implementation and use of SASB standards, as well as emerging sustainability issues to be considered as part of the standard-setting process.
United Nations Global Compact (UNGC)	Signatory and Advisory Council Member	In 2011, Mosaic became a signatory to the UNGC, affirming our deep commitment to operating responsibly. In early 2019 our Mosaic Fertilizantes business became a signatory to UNGC. We communicate our progress on the UNGC's universal principles in our annual sustainability disclosure. Our Mosaic Fertilizantes business is a signatory to the Brazilian Network of UNGC and participates as a member of the UNGC Brazil Advisory Council.
INDUSTRY ORGANIZATIONS		
Ag Clean Water Alliance	Associate Board Member	Mosaic contributes to Ag Clean Water Alliance's efforts to promote implementation of science-based practices to improve water quality outcomes.
Agricultural Retailers Association (ARA)	Board Level	Mosaic contributes to ARA's mission to advocate, influence, educate and provide support to agricultural retailers.
Agriculture Nutrient Policy Council (ANPC)	Member	Our membership in the ANPC allows us to be an active stakeholder and leader in the water quality policy process.
American Chamber of Commerce – Brazil (AMCHAM)	Member	As a member of AMCHAM, Mosaic supports Brazil – U.S. trade and investment relations and participates in strategic bilateral discussions to improve the business environments for both countries.
Associação Nacional para Difusão de Adubos (ANDA)	Board Level	As a member of ANDA, Mosaic promotes the value and correct use of fertilizers in Brazil.
Associated Industries of Florida	Member	Mosaic is engaged with AIF's policy development process and their advocacy on behalf of industry.
Brazilian Agribusiness Association (ABAG)	Member	At ABAG, Mosaic engages in policy discussions to improve the business environment for agribusiness and promote initiatives to support farmers.
Brazilian Association of Mineral Feed Industries (ASBRAM)	Member	Mosaic engages in regulatory discussions that affect the animal feed industry.
Brazilian Mining Institute (IBRAM)	Board Level	Through IBRAM, Mosaic contributes directly to regulatory discussions that affect the mining sector and provides support of sustainability initiatives.
Brazilian National Port Terminals Association (ABTP)	Member	As a member of ABTP, Mosaic participates on discussions to enhance Brazilian logistics competitiveness through the improvement of ports infrastructure and regulations.
Business Council for International Understanding (BCIU)	Member	Mosaic is a member of BCIU, which promotes cooperation between U.S. companies with the diplomatic community around the world.
Canadian Chamber of Commerce	Member and Committee	Mosaic leaders participate on two committees: Ottawa Liaison Committee & Natural Resources & Environment Committee.

General Standard Disclosures

2-28 Membership of associations (continued)

ORGANIZATION	WAYS WE ENGAGE	INVOLVEMENT
INDUSTRY ORGANIZATIONS (CONTINUED)		
Conservation Technology Information Center (CTIC)	Board Level	Mosaic continues to partner with CTIC on several initiatives that champion, promote, and provide information on technologies and sustainable agricultural systems.
Council for Agricultural Science and Technology (CAST)	Member	We participate as a member of CAST to provide credible, unbiased, science-based information about food and agriculture to policymakers, the media, the private sector and the public.
Fertiliser Association of India (FAI)	Member	Mosaic supports and partners with FAI in its objective to ensure food security through balanced and efficient use of plant nutrients.
Fertilizer Canada (formerly Canadian Fertilizer Institute)	Committee and Board Level	Mosaic supports Fertilizer Canada's efforts to promote the responsible, sustainable and safe production distribution and use of fertilizers.
Florida Chamber of Commerce	Member	Mosaic is engaged with the Chamber's policy development process and their advocacy for business and participates in the Chamber's legislative candidate interview evaluation process.
Industrial Energy Consumers of America (IECA)	Board and Committee	Mosaic participates in IECA's engagement on federal energy-related issues in the United States and contributes to discussions with Federal Energy Regulatory Commission and Department of Energy about fair energy.
International Fertilizer Industry Association (IFA)	Board and Member	Mosaic supports IFA's efforts to represent, promote and protect the fertilizer industry among policymakers, regulators, farmers and society at large.
Manufacturers Alliance for Productivity and Innovation (MAPI)	Member and Council Participant	MAPI's mission is to build strong leadership within manufacturing, and to drive the growth, profitability, and stature of global manufacturers. As a member of MAPI, Mosaic has representatives on several councils, and uses and provides input to the nonprofit's research and benchmarking efforts.
Manufacturers Association of Florida (MAF)	Member	Mosaic participates the development of MAF's advocacy positions on issues of importance to Florida manufacturing, including workforce education and regulatory issues, and assists with advocacy efforts.
Mining Industry Union of the State of Goiás (SIEEG)	Member	Mosaic engages SIEEG as part of the Mining Chamber of the State of Goiás, a network of companies that promotes a better business environment for the mining industry.
Mining Industry Union of the State of Minas Gerais	Member	Mosaic engages Sindixtra to promote a better business environment for the mining industry in the State of Minas Gerais.
National Association of Manufacturers (NAM)	Member and Board Level	Through membership and committee participation, Mosaic contributes to NAM's work to create a favorable policy climate for manufacturing in the United States.
National Union for the Animal Feed Industry (Sindirações)	Member	Through Sindirações, Mosaic contributes to the discussions at the technical chambers of the Ministry of Agriculture of Brazil.
National Union for the Fertilizer's Raw Materials Industry (Sinprifert)	Board Level	At the board level of Sinprifert Mosaic leads initiatives to improve the competitiveness of the national producers of fertilizers.
New Mexico Mining Association (NMMA)	Board Level	As a member of the Board, Mosaic supports the NMMA's goal of advancing the mineral resources and mining industries in New Mexico.
Saskatchewan Chamber of Commerce	Committee and Board Level	Mosaic contributes to the Chamber's role as the voice of Saskatchewan business, promoting Saskatchewan as the best place to live, work and invest.
Saskatchewan Industrial Energy Consumers Association	Member	Mosaic is a participant in SIECA, the leading energy advocacy group in the province of Saskatchewan
Saskatchewan Mining Association (SMA)	Committee and Board Level	Mosaic supports the SMA's aims to enhance the general welfare of the mining industry through technical innovations in the fields of health and safety standards, waste disposal, environmental protection, and extractive metallurgy research and development.
Sustainable Phosphorous Alliance (SPA)	Member	Mosaic participates as a member to influence SPA's engagement on 4R Nutrient Stewardship and sustainable phosphorous use.
Tampa Bay Partnership	Member and Board Level	The CEO-driven regional advocacy organization is committed to creating a unified, competitive and prosperous Tampa Bay.
The Fertilizer Institute (TFI)	Committee and Board Level	Mosaic partners with TFI in its mission to represent and promote the fertilizer industry.
Women in Mining Brazil	Member	Mosaic participates in this organization's aims to expand and strengthen the participation of women in the Brazilian mining industry.

General Standard Disclosures

Stakeholder Engagement

2-29 Approach to stakeholder engagement

Mosaic's stakeholders include employees, investors, local communities, customers, government and regulatory officials, civil society organizations, environmental organizations, suppliers, media, academia and others. We identify our stakeholders as those who are affected by our activities and whose actions have the potential to affect the outcome of our business activities. Our stakeholders help shape our strategic priorities and give meaning to our mission to help the world grow the food it needs.

STAKEHOLDER ENGAGEMENT			
MOSAIC'S STAKEHOLDERS	WAYS WE ENGAGE	HOW OFTEN	TOPICS OF IMPORTANCE
Academia	Fund or sponsor research, technical and industry meetings, research site visits, in-person visits during growing season, remote meetings	Monthly to Quarterly	Product and process innovations, agronomic research and development, nutrient stewardship, product trials, regulations, and impacts of our business and the industry
Civil Society Organizations	Internet site, meetings with organizations, local community and business leaders, corporate communications	Weekly to Biannually	Nutrient stewardship, habitat conservation, watershed protection and restoration, sustainable agriculture, food security, local community investment and partnerships
Customers	Sales relationships, regular visits, customer service surveys, special events, memberships in industry organizations, AgCollege	Weekly to Biannually	Product innovations, agronomic research and development, nutrient stewardship, certifications, impacts of our business and the industry
Employees, Senior Leadership Team and Board of Directors	Intranet sites, e-screens at plants and mines, town hall meetings, engagement surveys and activities, Annual Meeting, committee meetings	Daily to Quarterly	Environment, health and safety; company, business segment and facility performance; our business and our industry; business conduct and ethics; professional development and training; Mosaic's strategic community
Government and Regulatory Officials	Federal, provincial/state, and local executive and legislative branch advocacy, permitting applications, tours of plants and mines, engagement in state, national and trade association activities	Biweekly to Quarterly	Compliance, environmental investment and footprint, industry leadership, voluntary programs
Growers	Direct media, commodity organizations, industry partnerships, surveys	Monthly to Quarterly	Agricultural best practices, our business and our industry, agronomic research and development, product innovation, and nutrient stewardship
Investors and Financial Markets	Internet site, webcasts and presentations, Securities and Exchange Commission (SEC) reports, analyst meetings, annual shareholder's meeting, press releases	Daily to Quarterly	Investments, financial results, market data, operational excellence, risks and opportunities, company and shareholder priorities
Joint Ventures and Business Partners	Board meetings, technical and planning sessions, site visits	Daily to Biannually	Project details, environment, health and safety, investments, technologies, product and process knowledge
Labor Unions	Employee and labor relations meetings, contract negotiations	Daily to Annually	Safety, contract interpretation, employee relations issues, engagement, productivity, work environment
Local Communities	Internet site and community microsites, tours of plants and mines, community advisory panels, town halls and/or open houses, media, community organization memberships, economic and charitable partnerships	Daily to Quarterly	Partnerships and community relations, corporate and charitable support, environmental investment, environmental footprint, education, local jobs, economic impact
Media	Press releases, interviews and briefings, internet site and community microsites, SEC reports, tours of plants and mines, town halls and/or open houses	Daily to Quarterly	Company priorities, performance and products, food security, nutrient stewardship, watershed restoration, local economic impact, partnerships and community relations, corporate and charitable support
Retirees	Mailings, HR Connect	As needed to Annually	Plan benefit summaries and changes, investment updates and disclosures
Suppliers	Internet site, supplier survey, site visits, meetings	Daily to Biannually	Cost reduction, productivity, quality and innovation opportunities; new technologies; contract preparation; environment, health and safety evaluation; products and services provided; certifications; impacts of products and services
Trade and Industry Associations	Organizational membership, committee participation, meetings	Monthly to Quarterly	Productivity and innovation, best practices, industry priorities, risk management

General Standard Disclosures

2-29 Approach to stakeholder engagement (continued)

Earnest communication is critical to our ability to maintain our license to operate and succeed long-term. We understand the importance of responding to our stakeholders' evolving needs and we prioritize frequent and sincere two-way dialogue as a means of building relationships and fostering trust. Nevertheless, as a global mining and chemicals manufacturing company operating in the 21st century, occasionally our activities are prone to opposing or different views. In 2022, we engaged stakeholders to address, and ideally reach resolutions related to the following topics.

Stockholders — Stockholders and their representatives are increasingly interested in non-financial elements of Mosaic's performance, particularly our greenhouse gas (GHG) emissions footprint, water management practices, diversity and inclusion progress, among other topics. In 2022 we received a shareholder proposal related to our GHG targets, specifically requesting the issuance of a scope 3 target aligned to Paris Agreement's goal of limiting global temperature rise to 1.5°C. We are committed to reducing GHGs and anticipate that in time our commitments will expand to include scope 3 ambitions. Following a lengthy engagement with the stockholder's representative, we reinforced our position that due to the absence of a sectoral decarbonization approach for chemicals and nitrogen fertilizer sectors and other factors outside our control, Mosaic cannot commit to establishing Paris-aligned targets at this time. More information on this topic is in our [2022 Proxy Statement](#) (PDF pgs. 78-79).

Unions — We value collective bargaining as an important form of collaborative employee engagement. Approximately 73 percent of Mosaic's global workforce is covered by a collective bargaining agreement. In 2022 we negotiated several aspects of our employees' union contracts, including ratification of three collective bargaining agreements with our represented employees. Our key focuses continue to be on safety, wages, benefits and preparing our workforce for the next generation of mining.

Government — In 2022 we collaborated with government officials at state and federal level to advocate for better representation of water quality outcomes tied to agricultural best management practices and [4R Nutrient Stewardship](#). Engagement at the state level includes state nutrient loss reduction strategies for 12 states in the Mississippi River Basin that are working on progress towards the Hypoxia Task Force goals of reducing nutrient losses of both nitrogen and phosphorus by 45 percent by 2035. The other state engagements include Lake Erie and the 40 percent reduction goal on phosphorus loading set by Indiana, Michigan, Ohio, and Ontario. At the federal level, we have been working closely with EPA and USDA to address water quality outcomes tied to practice changes and elevating the state partnerships with Mosaic and other external stakeholders. In Canada, ongoing dialogue with government takes place to advocate for a more competitive business environment that encourages investment while working toward ESG and sustainability goals. Governments are encouraged to develop a policy that will realize growth and the long-term success of critical minerals, such as potash. In Brazil, Mosaic Fertilizantes engaged with government officials at state and federal levels to advocate for a more competitive business environment in the mining and agribusiness industries. Engagements with government also included sustainable mining topics and partnership initiatives to promote pastureland restoration and enhance technical assistance to farmers and ranchers.

2-30 Employees covered by collective bargaining agreements

EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS

COUNTRY	UNION EMPLOYEES	NON-UNION EMPLOYEES	% COVERED BY COLLECTIVE BARGAINING AGREEMENTS
Brazil	6,884	0	100%
Canada	1,112	807	58%
China	148	3	0%
India	0	66	0%
Paraguay	0	50	0%
Peru	0	691	0%
Saudi Arabia	0	1	0%
United States	1,176	2,032	47%
Total	9,920	3,650	73%

NOTE: Totals do not add up to 100 percent due to rounding. We work closely with unions and our unionized employees at both a national and international level. All employees in China, except those still on a probation period, are represented by collective bargaining agreements. In 2022, three employees in China were employed in a probation period. The total reported above represents the percentage of our total workforce covered by collective work agreements. Figures differ from what is reported in the [2022 10-K](#) (pg. 17) in that it represents percent of all employees, whereas the 10-K figure cites union involvement as a percent of the hourly workforce.

General Standard Disclosures

3-1 Process to determine material topics

3-2 List of material topics

As a global, publicly traded company, we are continually exploring what it means to be responsible and accountable to Mosaic's diverse stakeholders. From employees, customers, stockholders and industry partners to trade unions, community organizations, government officials and academics, we seek ongoing dialogue with individuals or representatives of stakeholder organizations that impact — or are impacted by — Mosaic's business activities. Topics and indicators that reflect Mosaic's economic, environmental and social impacts or that would substantively influence the assessments and decisions of stakeholders are deemed by us to be "significant" for sustainability reporting purposes. AccountAbility's AA1000 Stakeholder Engagement Standard guided the review process that reflects our company's commitment to more fully inform all stakeholders on matters that influence our business and society.

In addition to analyzing peer sustainability reports, Global Reporting Initiative (GRI) Standards and the GRI Mining and Metals sector supplement; Sustainability Accounting Standards Board Standards for Chemicals and Metals & Mining; as well as other reports and frameworks, our ongoing significance analysis includes:

- Reviewing Mosaic's public financial reports, sustainability reports, GRI tables, policies and commitments as well as an internally conducted survey of senior management, customers and employees
- Surveying suppliers, contractors and service providers about their performance in key areas
- Assessing stakeholder engagement techniques, targets, material issues and reporting best practices of competitor, industry peer and supplier companies
- Scanning media reports, social media and blogs for issues raised for public concern
- Engaging leaders of local, regional, national and global community organizations
- Cataloging issues identified by stakeholder surveys, sustainability indexes, United Nations Sustainability Development Goals, principles of the United Nations Global Compact, regulatory and policy trends, industry associations and cross-sector partnerships
- Reviewing marketing research and customer satisfaction survey results
- Analyzing investor insights, hosting analyst day events with Q&A sessions, and participating in meetings
- Compiling community perceptions through social media activity and brand awareness surveys

Significant issues are structured around and summarized in four areas of our sustainability focus: People, Environment, Society and Company. Please see mosaicco.com/Our-Responsibility for more insight into each of these areas. Our goals and reporting continue to evolve as we refine our understanding and identify further significant issues.

General Standard Disclosures

3-2 List of material topics (continued)

Full disclosures of Mosaic's management approaches for material topics precede the disclosure of the respective topic.

MATERIAL TOPICS	
GRI	TOPIC
GRI 201	Economic Performance
GRI 202	Market Presence
GRI 203	Indirect Economic Impacts
GRI 204	Procurement Practices
GRI 205	Anti-corruption
GRI 206	Anti-competitive Behavior
GRI 301	Materials
GRI 303	Water
GRI 304	Biodiversity
GRI 305	Emissions
GRI 306	Effluents and Waste
GRI 307	Environmental Compliance
GRI 308	Supplier Environmental Compliance
GRI 401	Employment
GRI 402	Labor/Management Relations
GRI 403	Occupational Health and Safety
GRI 404	Training and Education
GRI 405	Diversity and Equal Opportunity
GRI 406	Non-discrimination
GRI 407	Freedom of Association and Collective Bargaining
GRI 408	Child Labor
GRI 409	Forced or Compulsory Labor
GRI 411	Rights of Indigenous Peoples
GRI 412	Human Rights Assessment
GRI 413	Local Communities
GRI 415	Public Policy
GRI 416	Customer Health and Safety
GRI 417	Marketing and Labeling

Category: Economic

Economic Performance

Mosaic's business is cyclical and subject to impacts from economic and market trends and geopolitical change. We have built our company to thrive across cycles and to take advantage of opportunities by reducing costs across the business; improving productivity; and leveraging innovation in new ways. Mosaic is developing highly focused plans across our businesses and functions that keep us aligned and working together toward a common outcome.

Motivated by a "value first" mindset, we are focused on executing against **six strategic priorities:**

Operations Organizational Transformation and Alignment - Align our operations and support services across North and South America

South America Growth Engine - Leverage Mosaic's in-country capabilities to drive growth and profitability in key South American markets

Grow and Strengthen the Product Portfolio - Expand our reach in growing markets; deploy new digital demand generation capabilities; and continue to build our product portfolio

Increase Functional Efficiency and Scalability - Expand impact and effectiveness of functional initiatives

Optimize Capital Management - Prioritize and effectively allocate capital across the business

Act Responsibly - Drive actions and behaviors that build Mosaic's brand as a respected and responsible company with a diverse and inclusive culture

Mosaic's sustainability efforts and performance are closely aligned with our operational and financial goals. We respond annually to CDP and use the Global Reporting Initiative (GRI) Standards with the Mining and Metals Sector Supplement to report on our environmental and sustainability performance. Our reporting index is aligned to many of the Sustainability Accounting Standards Board (SASB) metrics for the Metals & Mining and Chemicals industries. As it relates to maximizing our impact in communities, we believe it is our responsibility to use our financial resources, technical expertise and innovative spirit to help the world sustainably grow the food it needs through strategic partnerships with leading organizations. Our community investments are focused in the areas of food, water and local initiatives.

FOOD: Mosaic is committed to supporting organizations that advance global agricultural development, agricultural research and education, and hunger relief for community members in need. These programs, respectively, include The Mosaic Villages Project in India; micronutrient deficiency research and mobile soil testing labs; and local community food drives, food distribution trucks and school backpack programs.

WATER: Mosaic supports organizations that work in watershed restoration, habitat conservation and nutrient stewardship. These programs, respectively, include shoreline restoration and oyster reef installations; improved land management practices and wildlife protection; and 4R Nutrient Stewardship, which is best management practices for fertilizer application, minimizing field runoff and improving farmer yields.

LOCAL: Mosaic supports philanthropic or civic partnerships that enrich the long-term strength of communities in which Mosaic has offices and operations. These programs include local schools, healthcare institutions, museums; special projects and sponsorship of events; and housing and disaster relief.

We support a variety of formal and informal Mosaic channels through which stakeholders can submit concerns, including **communicating with the Board of Directors.**

Category: Economic

201-1 Direct economic value generated and distributed

ECONOMIC PERFORMANCE (IN MILLIONS)

	2018	2019	2020	2021	2022
Revenue	\$9,587.3	\$8,906.3	\$8,681.7	\$12,357.4	\$19,125.2

OPERATING COSTS (IN MILLIONS)

	2018	2019	2020	2021	2022
Cost of Goods Sold	\$8,088.9	\$8,009.0	\$7,616.8	\$9,157.1	\$13,369.4
Selling, General and Administrative Expenses	\$341.1	\$354.1	\$371.5	\$430.5	\$498.0
Impairment and Restructuring	\$0.0	\$1,462.1	\$0.0	\$158.1	\$0.0
Less: Unrealized Gain/Loss on Derivatives	(\$32.6)	\$39.8	\$22.2	(\$13.5)	(\$21.3)
Less: Depreciation, Depletion and Amortization	\$883.9	\$882.7	\$847.6	\$812.9	\$933.9
*Less: Wages and Benefits	\$1,657.5	\$1,539.2	\$1,477.4	\$1,524.2	\$1,751.1
Total Operating Costs	\$5,921.2	\$7,363.5	\$5,641.2	\$7,264.0	\$11,203.7
Wages and Benefits	\$1,657.5	\$1,539.2	\$1,477.4	\$1,524.2	\$1,751.1

* Cost of Goods Sold include wages and benefits. For the purpose of the sustainability disclosure, wages and benefits are requested separately, so they are excluded here and added back in as a separate line item directly below.

PAYMENTS TO PROVIDERS OF FUNDS (IN MILLIONS)

	2018	2019	2020	2021	2022
Dividends Paid	\$38.5	\$67.2	\$75.8	\$103.7	\$197.7
Payments for Share Repurchases	\$0.0	\$149.9	\$0.0	\$410.9	\$1,665.2
Interest Paid (Net of Amount Capitalized)	\$173.9	202.8	\$199.5	\$189.9	\$169.6
Total Payments to Providers of Funds	\$212.4	419.9	\$275.3	\$704.5	\$2,032.5
Retained Earnings	\$11,064.7	\$9,921.5	\$10,511.0	\$12,014.2	\$14,203.4

TAX - PAYMENT TO GOVERNMENT (IN MILLIONS)

	2018	2019	2020	2021	2022
United States	(\$42.4)	(\$93.4)	(\$94.8)	(\$5.5)	\$90.9
Canada	\$12.2	\$120.0	\$48.1	\$122.9	\$788.4
Brazil	(\$15.1)	\$8.3	\$41.2	\$55.6	\$76.0
Other	\$11.1	\$11.6	\$11.7	\$24.6	\$170.2
Total Income Taxes Paid	(\$34.2)	\$46.5	\$6.2	\$208.6	\$1,125.5

* 2018–2020 United States tax refunds relate primarily to AMT tax credit refunds because of the Tax Cuts and Jobs Act. The 2018 Brazil tax refunds relate to refunds of tax credits.

Category: Economic

201-1 Direct economic value generated and distributed (continued)

CANADIAN RESOURCE TAXES AND ROYALTIES EXPENSE (IN MILLIONS)

	2018	2019	2020	2021	2022
Canadian Resource Taxes and Royalties Expense**	\$198.8	\$211.9	\$176.1	\$301.5	\$1,040.5

** Represents tax expense during the period, not cash payments.

OTHER NON-INCOME TAXES AND ROYALTIES*** (IN MILLIONS)

	2018	2019	2020	2021	2022
Other Non-income Taxes	\$89.1	\$89.2	\$86.1	\$86.20	\$89.8
Other Royalties	\$22.7	\$29.6	\$31.4	\$43.6	\$68.0

*** Other non-income taxes include property taxes and a Florida mining tax. Other royalties are for payments to governments associated with relevant mining activities in Brazil and the United States.

The combined 2022 contributions by The Mosaic Company, The Mosaic Company Foundation and The Mosaic Institute in Brazil provided more than \$15.6 million of support through companywide philanthropic grant making, in-kind products and services contributions, and paid employee volunteerism, including pro bono, skills-based technical assistance and functional-specific services. In 2022, Mosaic employees tracked more than 18,000 hours of volunteerism globally. Our engagement with local and global organizations promotes shared value. In addition to helping achieve positive community and societal outcomes, our investments contribute to Mosaic's ability to execute our strategy by helping us build a talent pipeline; maintain a positive reputation; protect our license to operate; differentiate our company as a good neighbor; and meet specific stakeholder expectations.

Please see [203-1](#) and [203-2](#) for more information about our contributions. 2022 community investments by geography are as follows:

2022 COMMUNITY INVESTMENTS BY GEOGRAPHY (U.S. DOLLARS)

GEOGRAPHY	INVESTMENT
Brazil	\$1,359,018
Canada	\$4,327,298
Florida	\$6,222,694
Global Partnerships	\$448,432
Louisiana	\$136,923
Minnesota	\$254,964
New Mexico	\$135,501
United States — National	\$1,281,566
Villages — Brazil	\$348,704
Villages — India	\$931,423
Administrative/Program	\$189,584
Total	\$15,636,106

In North America, Mosaic uses an online grant application system to receive and evaluate proposals for funding. By accessing the online grant application system, potential grantees have access to Mosaic's focus areas, grant making guidelines, application deadlines and our non-discrimination policy. Establishing a standardized grant making system with stated guidelines and policies online has provided greater transparency to our partners, stockholders, employees and communities. Through this system, grantees provide reports on their outcomes, enabling Mosaic to evaluate the effectiveness of each grant.

Category: Economic

201-2 Financial implications and other risks and opportunities for the organization's activities due to climate change

Mosaic's "**Commitment on Climate Change**" acknowledges that global climate change creates uncertainty for our business and poses challenges for the health and well-being of the world's populations — ecologically, socially and economically.

The potential financial implications regarding the physical, transition and regulatory changes associated with climate change, as well as potential regulatory response changes, are discussed in Mosaic's **2022 CDP Climate Change Response**, our **TCFD Reporting Index** and in Mosaic's **2022 10-K** (pgs. 26, 29-30, F-24–F-28).

Mosaic has been tracking developments of emerging sustainability and climate change reporting requirements, such as the U.S. Security and Exchange Commission's (SEC's) proposed rule on Climate Disclosures. The outcome of the SEC's proposed rule is still uncertain, but we believe we are well positioned to adopt new requirements, having reported on sustainability topics and GHG emissions for over a decade.

201-3 Defined benefit plan obligations and other retirement plans

BENEFIT PLAN OBLIGATION (IN MILLIONS)

	2018	2019	2020	2021	2022
Pension Plan Obligation	\$673.6	\$755.5	\$796.6	\$739.6	\$299.5
Fair Value of Plan Assets	\$701.2	\$790.6	\$845.2	\$807.0	\$345.6

NOTE: Please refer to the discussion of our defined benefit pension plans in our **2022 10-K** (pg. F-70).

PENSION PLAN ASSET ALLOCATION

UNITED STATES PENSION PLANS

	ASSETS AS OF 12/31/2018	ASSETS AS OF 12/31/2019	ASSETS AS OF 12/31/2020	ASSETS AS OF 12/31/2021	ASSETS AS OF 12/31/2022 [†]
Fixed Income	75%	80%	83%	100%	0%
United States Equity Securities	15%	9%	8%	0%	0%
Non-United States Equity Securities	1%	11%	9%	0%	0%
Other					100%
Total	100%	100%	100%	100%	100%

[†]As of December 31, 2022, the United States combined defined benefit pension plan has been terminated and there are no remaining liabilities.

CANADIAN PENSION PLANS

	ASSETS AS OF 12/31/2018	ASSETS AS OF 12/31/2019	ASSETS AS OF 12/31/2020	ASSETS AS OF 12/31/2021	ASSETS AS OF 12/31/2022
Fixed Income	66%	65%	71%	80%	82%
United States Equity Securities	9%	10%	12%	8%	6%
Canadian Equity Securities	8%	10%	0%	0%	0%
Non-United States Equity Securities	13%	14%	17%	10%	10%
Private Equity	0%	0%	0%	0%	0%
Other	4%	1%	1%	2%	2%
Total	100%	100%	100%	100%	100%

INVESTMENT PLAN AND SAVINGS PLAN (IN MILLIONS)

	2018	2019	2020	2021	2022
Attributable Expense	\$51.2	\$56.4	\$48.0	\$55.8	\$55.7

Category: Economic

201-3 Defined benefit plan obligations and other retirement plans (continued)

As noted above, as of December 31, 2022, the United States combined defined benefit pension plan has been terminated and there are no remaining liabilities. Participation and funding target percentages for our remaining pension plans as of December 31, 2022 are as follows:

BENEFIT PLAN PARTICIPATION AND TARGET ATTAINMENT (as of December 31, 2022)

LOCATION	PARTICIPANTS	FUNDING ATTAINMENT
Colonsay (Union)	514	108%
Colonsay (Salaried)	63	110%
Esterhazy (Union)	1,312	117%
Esterhazy (Salaried)	184	116%
Brazil (Hourly)*	3,415	
Brazil (Salaried)*	1,646	

* We have four plans in Brazil, three of which are subject to funding requirements. These plans have 4,814 active participants and were funded at approximately 118 percent at the time of this report. The remainder of the plans are similar to defined contribution plans and, therefore, not subject to funding requirements.

Mosaic offers retirement benefits in the form of defined contribution plans in all of our primary operating geographies. For each of these plans, in addition to making an annual employer contribution, Mosaic offers retirement plan matching contributions that vary based on years of service, age, union status and other factors. In the United States, Canada and Brazil, approximately 95 percent, 98 percent and 70 percent of employees, respectively, contribute to defined contribution plans.

201-4 Financial assistance received from government

TAX CREDITS AND SUBSIDIES

COUNTRY	TYPE	AMOUNT
Brazil	Employee Meal Subsidies	\$1,136,443
Brazil	Research and Development Incentive	\$518,630
Canada	Research and Development Credit	\$7,749,516
United States	Mine Rescue Team Training Credit	\$16,239
United States	Research and Development Credit	\$708,533
United States	FMLA Credit	\$119,740

NOTE: All figures are reported in United States dollars. As actual 2022 figures were not available at the time of reporting, these figures represent actual 2021 amounts. The Brazil and Canada figures were calculated using an average income statement exchange rate used for financial reporting purposes.

Category: Economic

Market Presence, Indirect Economic Impacts and Procurement Practices

At Mosaic, we understand that our business and our communities are indelibly linked. Our operating communities are also our homes — where we live, work and raise children. We strive to be a thoughtful and engaged neighbor, investing carefully and generously as we seek long-term partnerships with organizations that are making a difference. Mosaic is dedicated to advancing the many ways that our business contributes to the sustainable development of the communities where we operate: investing in communities; hiring employees and contracting vendors from local communities; offering competitive wages and benefits to our workforce; and developing our future workforce.

Investing in Communities

The Mosaic Company, The Mosaic Company Foundation and The Mosaic Institute in Brazil partner with industry associations, nonprofit groups and stakeholders focused on food, water and local initiatives. We are especially committed to the strength and prosperity of the communities where we have offices and operations, including North America, South America and Asia. Our financial support is magnified by employee volunteerism and community involvement. In 2021, we launched an employee portal in North America where employees can connect their personal causes to corporate giving, matching and volunteerism opportunities. The system joins one that was already in place for our Brazil workforce; now 12,000+ global Mosaic employees have access to systems for tracking volunteer hours and giving. Proudly, our employees provided support for more than 1,000 organizations in 2022 by volunteering more than 18,000 hours and donating nearly \$617,000 in financial contributions and company matches.

Hiring Employees and Contracting Vendors From Local Communities

As a matter of practice, and in accordance with Mosaic's global job posting policies, we will "hire from within wherever possible." In addition, Mosaic initiates and conducts its search for qualified candidates locally, before the search is broadened.

Mosaic's mining and production operations take place in communities of varying size throughout North America. Mosaic does not have a written policy for giving preference to locally based suppliers, but we do encourage and support local suppliers of all sizes. As a global company, the vendor screening process we have in place ensures that we maintain strict ethics, quality and safety standards. In an effort to support more local suppliers, we engage them, build partnerships, and explore opportunities to build capacity.

Our **Supplier Code of Conduct** outlines the standards of business integrity to which we hold ourselves and our suppliers accountable. We are committed to engaging our suppliers and service providers as we seek opportunities to improve the ESG performance of our supply chain. In 2022 we completed a supplier diversity assessment to establish supplier diversity baselines and formalize geography-specific goals.

Offering Competitive Wages and Benefits to Our Workforce

Our global talent investment philosophy is to provide competitive compensation and benefits, with flexibility to choose programs that best meet our employees' needs.

Developing Our Future Workforce

Skilled labor is a key priority in the geographies where we operate. We work with governments and institutions to help train skilled labor to develop the knowledge required to support Mosaic's future workforce.

Category: Economic

202-1 Ratios of standard entry-level wage by gender compared to local minimum wage at significant locations of operation

Mosaic offers competitive compensation and benefits in each of the company's significant locations of operation. As shown below in local currency, the standard entry-level wage range is higher than the prevailing local minimum wage for each location presented. For Mosaic, minimum wages are generally not relevant since most entry-level Mosaic positions require a higher level of skills or knowledge than jobs to which the minimum wage rate would apply.

2022 MOSAIC LOCAL MINIMUM WAGE COMPARED TO LOCAL MINIMUM WAGE

SIGNIFICANT OPERATIONS	LOCAL MINIMUM WAGE	MOSAIC ENTRY-LEVEL WAGES	MOSAIC ENTRY-LEVEL WAGE RELATIVE TO LOCAL MINIMUM WAGE
U.S. wage range/hr (USD)	7.25	17.50–45.15 (hourly) 15.63–24.28 (salaried)	216%
Canada wage range/hr (CAD)	13.00–16.00	33.74–38.19 (hourly) 24.28–37.74 (salaried)	187%
Brazil wage range/hr (BRL)	5.92	6.15	104%
China wage range/hr (CNY)	12.07–13.33	28.25–36.38	254%
India wage range/hr (INR)	69.26–101.86	176.78–347.28	300%
Paraguay wage range/hr (PGY)	10,626.00	10,626.00	100%

NOTE: Mosaic's compensation practices adhere to the respective regulations in the geographies where we have operations.

202-2 Proportion of senior management hired from the local community at significant locations of operation

As a matter of practice, we will hire from within wherever possible. For senior leader roles, if no internal candidates are identified, a search will be conducted externally to find the best candidate for the leader role. The hire may or may not come from one of the communities where we have a presence. We also support these candidates with relocation assistance. In 2022, approximately 95 percent of newly hired senior leaders — 19 in total — came from local communities. For the purpose of this indicator, “significant locations of operation” refers to United States, Canada and Brazil. “Senior leaders” is defined as those individuals who are responsible for a business unit, corporate function, business unit function, country or operations site; “local community” is defined as the country where our operations are located. “Senior leaders” represent less than 3 percent of our total workforce.

Category: Economic

203-1 Development and impact of infrastructure investments and services supported

Livable communities require stable infrastructure and connectivity. As part of our community investment focus on local communities, Mosaic responds to community needs for welcoming public spaces, hospitals and emergency services, and entertainment and sports facilities that bring additional revenue to local economies. Our investments in this category in 2022 totaled approximately \$4.4 million. Here are examples of some of our recent community investments in infrastructure.

Global

- Following the Ukraine humanitarian crisis, Mosaic donated \$100,000 CAD to The Ukrainian Canadian Congress (UCC) of Saskatchewan and \$50,000 to The International Rescue Committee. These organizations are helping Ukrainian refugees resettle in Canada, the U.S. and other places around the world. Our employees also contributed. Through the Mosaic Employee Giving Program, The Mosaic Company Foundation matches qualifying donations, including service grants for volunteer hours. In 2022, employees contributed nearly \$25,000 to six organizations – together with the match, this totaled more than \$50,000.

North America

- In February 2021, Mosaic launched The Mosaic Employee Giving Program. The program offers each North American employee a 1:1 match up to \$2,000 per calendar year. In addition, the program offers volunteer service grants for volunteer hours completed on personal time. Through the new Mosaic Employee Giving Program, we supported 666 causes and logged 13,990 volunteerism hours in North America.

Florida

- Following Hurricane Ian in September of 2022, The Mosaic Company Foundation donated \$100,000 supporting local recovery efforts in some of the hardest-hit communities in Florida's Hardee, Manatee and DeSoto counties. Prior to hurricane season, Mosaic also provided \$55,000 in storm preparation funds to organizations across Central Florida.
- Mosaic provided \$200,000 to the School District of DeSoto County in Florida to construct a livestock barn at DeSoto County High School. The livestock barn supports the Agriculture Department at the high school to engage youth and encourages family involvement through livestock best management practices and food/plant sciences. Students will have the opportunity to fully engage in the agriculture program which potentially leads to industry certification in Animal Science.
- The Mosaic Company Foundation supported Feeding Tampa Bay's \$40 million capital campaign with a \$500,000 investment to help build a new food bank. Besides serving as their main warehouse, the new center will also designate between 20–25 percent of the space for the community to use. This will include classrooms, training spaces, technology hubs and offices for some of their key social services partners. In addition, the center will have an on-site medical clinic, grocery store and community café.
- In 2020, The Mosaic Company made a five-year, \$1.5 million commitment to support Tampa Bay Innovation Hub's capital campaign. Mosaic's annual \$300,000 grant supports the organization's Embarc Collective, a state-of-the-art 32,000 square foot facility located in downtown Tampa which opened in January 2020. The innovation hub helps recruit, retain and develop new tech start-ups in an effort to build bold, scalable and thriving companies in Tampa Bay.
- Mosaic launched the Tackling Hunger Fueled by Mosaic Program with the Tampa Bay Buccaneers in 2021 to open five food pantries in the region over the next five years. The long-term investment of \$1M a year is inspired by Mosaic's mission and passion to address food insecurity, and the Buccaneers' extensive community platform to drive social change and empower youth. The Bucs and Mosaic will partner with Feeding Tampa Bay, part of the Feeding America network, to build and manage the pantries.

Category: Economic

203-1 Development and impact of infrastructure investments and services supported (continued)

Canada

- In 2022, \$306,000 CAD of Mosaic's dedicated Indigenous Community Investment budget was spent on community infrastructure needs and \$288,000 CAD was spent on programming and food security.
- A \$50,000 investment to Ochapowace First Nation helped build a new Community Sweat Lodge. This dome-like structure is a culturally significant place for mental, physical, and spiritual healing and prayer for many Indigenous peoples.
- Mosaic supported Buckets & Borders and "Project Pick n Roll" with the support of \$30,000 CAD to help build communities. The investment was directed toward restoration projects for three basketball courts in Regina's core neighborhood. The restored court at the Mâdawêyatîtan Centre included in-depth programming with high school students who led the naming of the court, event organizing and design, which included seven sacred teachings and the slogan "I Can Do All Things", prominently displayed on the court.

India

- Mosaic's Krishi Jyoti project aims to improve livelihoods in villages in rural India by enhancing farm productivity. In partnership with the project's implementing partner, The Sehgal Foundation, 17 check dams have been constructed since 2008, increasing water storage capacity to 136 million gallons. The project also promotes education among children in these remote villages by providing them a healthy and safe school environment. Krishi Jyoti has supported the renovation of 37 government schools in the project villages, benefiting 8,688 children. 2022 marked Mosaic's 14th year participating in the Krishi Jyoti project.

Brazil

- Building off the success of the Mosaic Villages Project in India, The Mosaic Company Foundation launched Villages Brazil in 2019, which now supports 60 smallholder-farmers. In 2022, the Village program continued to work in Balsas (Maranhão) and intensified its efforts in Barreiras (Bahia) to boost family farming productivity. The results include 840,000 liters (about 221,904.48 gal) of water saved, 41 cisterns built, 60 irrigation systems installed, 3 schools supported, and a 410 percent increase in crop production for one group in Barreiras.
- In 2022 Mosaic made significant contributions in the focus area of food, supporting initiatives that enable vulnerable communities to access healthy food, with a focus on nutrition and food security.
- As part of our efforts to continually innovate and address the emerging needs of communities, we identified a new opportunity to facilitate mutual learning and respect with the creation of sensory gardens. The gardens are designed to be accessible to people of all abilities, promoting integration and inclusion and providing hands-on learning experiences and interdisciplinary education. We have four accessible sensory gardens.

In 2022, combined contributions made through philanthropic funding by The Mosaic Company, The Mosaic Company Foundation and The Mosaic Institute in Brazil, employee engagement and in-kind donations totaled more than \$15.6 million. View our global and local community investments on [Mosaic's Giving Page](#).

Category: Economic

203-2 Significant indirect economic impacts, including the extent of impacts

Mosaic has diverse and varied indirect economic effects on communities across the world as an employer, community partner, taxpayer, and consumer of goods and services. Due to the complex nature of the business and philanthropic activities in which Mosaic engages, we do not attempt to estimate our full indirect economic impact by using a measurement of currency. Here are some of the ways Mosaic contributes indirectly to economies around the globe:

- Our customers, dealers, and vendors are all meaningful contributors to the economic vitality of the rural and regional communities where they operate. They provide employment, purchase goods and services, and pay taxes in their own communities. An **economic study** by The Fertilizer Institute estimates that the United States fertilizer industry contributes nearly \$131 billion to the United States economy. The study goes on to estimate that fertilizer producers, wholesalers and retailers, and the businesses that serve them, support nearly 500,000 United States jobs.
- Located in Tampa, Florida, The Florida Aquarium received nearly 925,000 visitors, making 2022 the highest attendance in its 27-year history. Approximately six times a year, Mosaic barges returning from Louisiana collect sea water from the Gulf of Mexico and deliver this vital resource to the aquarium, which helps support over 17,000 aquatic and terrestrial animals. In 2022, Mosaic delivered nearly 2.5 million gallons of sea water saving the aquarium over \$600,000 in costs related to the manufacturing of salt water. The water delivery also resulted in waste reduction for the aquarium for related supplies.
- The Tampa Economic Prosperity Foundation started the initiative to transform an underperforming industrial area in the East Tampa Industrial District — a community redevelopment area — into a magnet for new investments, attracting manufacturing operations and generating good paying jobs for local residents. Mosaic contributed \$150,000 to this project to demonstrate its commitment to positively impacting underserved communities within its footprint. This was a multi-phase approach to engage existing residents and business owners surveying their needs, educating the public of the intention to bring living-wage paying jobs to the community and building infrastructures that will provide training for the newly created jobs that can hire local residents.
- Second Harvest Heartland, in partnership with The Good Acre, purchases fresh fruits and vegetables, at market prices, from over 55 Black, Indigenous and other People of Color (BIPOC) farmers in Minnesota. This three-year program was initiated in 2021 to build capacity among emerging farmers in the region, including those from Black, Indigenous, Latino and Asian communities. These farmers are focused on providing a wider variety of healthy food to people who visit the local food pantries or participate in various meal programs. Through this project, the farmers have a commitment in advance of the growing season to purchase their produce at fair prices, allowing them to strengthen their businesses. Mosaic was invited to participate in the third year of this program and contributed \$100,000 to the program.
- The AlimentAção Program in Brazil combines classroom activities with fieldwork in vegetable gardens, enabling members of the school community to become multipliers of information on the importance of healthy and balanced eating habits. In 2022, the initiative reached over 23,000 students, nearly 2,000 teachers and 5,000 family members around our operating communities.
- The Mosaic Institute in Brazil also promoted programs for local development. We have a Social Entrepreneurship program, developed in Paranaguá, state of Paraná, that supports efforts to build entrepreneurial capacity for local businesses. In 2022, Mosaic supported two recyclers' cooperatives and the program reached its second cycle, Acceleration, with a focus on improving production and governance at Assepar and Nova Esperança. Over a nine month period, The Mosaic Institute supported these organizations to enhance their organization skills and operations, as well as their potential to overcome challenges, adopt new learnings, and become a reference in recyclable waste management in the municipality.

Category: Economic

203-2 Significant indirect economic impacts, including the extent of impacts (continued)

- In Brazil, in line with our commitment to the United Nations Sustainable Development Goals, we continued supporting a social bidding initiative that provides funding for projects that promote water stewardship. In 2022, 15 projects were selected. In its fourth cycle, the Water Bidding Program of The Mosaic Institute prioritized projects that not only promote the sustainable management of water, but also benefit marginalized communities. Specifically, the program favors projects that empower minority groups, including women, individuals with disabilities, black and indigenous people, and other non-white individuals, as well as traditional communities.
- In Canada, Mosaic has funded Habitat for Humanity in Saskatchewan for over a decade, helping fund homes for 175 families. Homeownership has provided a foundation for safe, affordable housing that supports low-income families as they work to become self-reliant. The indirect impact of supporting reliable housing is realized by reducing poverty, creating safe and sustainable communities, and creating opportunities for families.
- In August 2022, Mosaic announced a \$1 million CAD investment in the Morris Interactive Digital Transformation in Potash Mining (DTPM) program, which provides education and career skills to 12 Indigenous students. The 10-week program involves eight weeks of classes and two weeks of a practicum at a Mosaic mine site. Continuing this partnership aligns with Mosaic's commitment to ensuring 15 percent of new hires are Indigenous peoples by 2025.

Additionally, many of Mosaic's partnerships with community organizations continue to support positive healthcare, education, housing and recreational opportunities for our neighbors. Please see [203-1](#) and [Mosaic's Community Giving page](#) for more information.

204-1 Proportion of spending on local suppliers at significant locations of operations

We report on purchases from local suppliers in the United States, Canada and Brazil. For the purposes of this indicator, operations in these areas are considered "significant" since they are in key geographies where our mining and chemical manufacturing, and as a result, most of our purchasing and supply chain activities, take place.

LOCAL SUPPLY CHAIN (PERCENT)

OPERATIONAL LOCATIONS	2022
Phosphate (United States)	85%
Phosphate (Peru)	96%
Potash (Canada and United States)	66%
Mosaic Fertilizantes	99%

NOTE: Excludes governmental, raw materials, membership in clubs and organizations, employee-related and freight and warehouse expenditures. Includes as locals in the Phosphates segment all vendors with addresses in Louisiana and Florida, and in the Potash segment all vendors with addresses in New Mexico, Saskatchewan and Manitoba. Phosphate Peru spend categories exclude raw materials, diesel, potable water and power and defines local as all vendors in Peru. Mosaic Fertilizantes spend categories include indirect expenditures and logistics for Brazil and Paraguay operations. Figures include all vendors with addresses within the country of operations.

Category: Economic

Anti-corruption and Anti-competitive Behavior

Mosaic operates in a regulated industry and in areas throughout the world with potentially varying degrees of perceived corruption. Mosaic also has routine interactions with foreign government officials and agencies related to obtaining licenses and approvals, customs, land use and other matters. The risk of corrupt practices exists in the countries where we operate as government officials and agencies are inherently involved in the production, sale, and distribution of our fertilizer products through the related laws and regulations governing these activities.

Mosaic must comply with all applicable laws of the United States, and all other countries in which we do business, that are designed to prevent bribery and corruption. Our **Code of Business Conduct and Ethics** demands compliance from our employees and Mosaic requires employees who have been assigned a company computer user ID to complete online code of conduct training and certify compliance in an Annual Compliance Acknowledgment and Disclosure. In 2022, more than 7,000 nongraded employees took Code training and completed a modified acknowledgment of its principles. In addition, 100 percent of salaried employees, which includes managers, (approximately 4,000 employees total) completed Code training; approximately 3,900 completed the Annual Compliance Acknowledgment and Disclosure.

Mosaic also maintains a 24-hour independently administered confidential and anonymous incident reporting ethics line for all Mosaic employees. In addition, our company conducts a robust global risk assessment to identify potential risks related to the U.S. Foreign Corrupt Practices Act (FCPA) and performs requisite testing to assess the degree to which these potential risks are mitigated. Similarly, fraud-related risks are assessed and tested in conjunction with our Sarbanes-Oxley compliance efforts.

We recognize the significance of the FCPA and have established a **Worldwide Anti-Bribery, Anti-Corruption Policy**. In addition to providing training on anti-bribery and anti-corruption for employees (approximately 1,900 employees trained in 2022), we conduct periodic FCPA audits of selected various geographic locations and respective individuals — including but not limited to country managers, sales representatives, accounting/finance personnel and supply chain — whose job responsibilities require a keen awareness of and compliance with the FCPA.

205-1 Total number and percentage of operations assessed for risks related to corruption and the significant risks identified

During 2022, Mosaic reviewed the following foundational elements of our anti-corruption program: Tone at the Top, Policies and Procedures, and Training, to provide assurance that Mosaic is taking the appropriate measures to mitigate the risk of an employee or representative (third parties) engaging in activities that may violate FCPA or other anti-corruption laws or regulations. These reviews included performing audit procedures at the company's operations in the United States, Canada, Brazil and China.

Transparency International's Corruption Perception Index ranks 180 countries and territories by their perceived levels of public sector corruption. We do not have production facilities in any of the 20 lowest-ranked countries.

Category: Economic

205-2 Communication and training on anti-corruption policies and procedures

Mosaic requires all salaried employees (which includes all management employees) to complete Foreign Corrupt Practices Act (FCPA) training annually. In 2022, we administered approximately 3,000 hours of anti-corruption, business conduct and ethics and other legal compliance trainings. As part of our Compliance certification process, which is required annually of all salaried employees, employees are specifically asked to certify as to their compliance with the FCPA and **Mosaic's Code of Business Conduct and Ethics** in the past year. The 2022 Compliance certification, completed in early 2022, had a 100 percent completion rate. View **404-1** for more information.

All Board members are recertified on **Mosaic's Code of Conduct** annually, which includes expectations regarding ethics, anti-corruption and anti-bribery.

Regarding business partners, Mosaic's service agreements generally require suppliers to agree to follow all applicable laws, rules and regulations and agree to follow Mosaic's **Supplier Code of Conduct**, a section of which addresses preventing bribery and corruption as well as conflicts of interest. The Supplier Code of Conduct states that suppliers adhere to the same level of integrity and ethical standards as are required by Mosaic employees.

Mosaic's purchasing policy requires suppliers to acknowledge Mosaic's Supplier Code of Conduct annually in writing. Mosaic's **Worldwide Anti-Bribery, Anti-Corruption Policy** and **Code of Business Conduct and Ethics** are both publicly available on our **website**.

205-3 Confirmed incidents of corruption and actions taken

In 2022 there were no confirmed incidents of corruption. There were no public legal cases brought against Mosaic or its employees in 2022, therefore no fines associated with corruption for the calendar year.

206-1 Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes

In 2022, there were no legal actions for anti-competitive behavior, anti-trust or monopoly practices.

Category: Environment

Materials

In line with Mosaic's strategic priority to **Act Responsibly**, we strive to be good stewards of natural resources, using them as efficiently as possible. We use various mineral resources and materials to make our crop nutrition products. For example, limestone is used to produce our animal feed products and for water treatment. Sulfur, a byproduct of crude oil and natural gas de-sulfurization, is used to produce steam, electricity and sulfuric acid, which is used to produce phosphoric acid. We use byproduct heat from sulfuric acid production to generate steam that we use in our operations and to generate electricity. Sulfur is also used in the production of our MicroEssentials® product line. Various micronutrients, including zinc and sulfur, are key ingredients in our MicroEssentials product line. Ammonia is used in our finished products, diammonium phosphate (DAP), monoammonium phosphate (MAP) and MicroEssentials, and to adjust the pH of the stack gases at our Esterhazy potash mine.

Coproduct and byproduct materials that are generated during the extraction and beneficiation of potash and phosphate are addressed in the waste section of this report. Mosaic strives to improve recovery and reuse of its wastes in Brazil, where the regulatory construct is more supportive of reuse of products such as phosphogypsum, a byproduct of the phosphate manufacturing process. In 2022, the Mosaic Fertilizantes business sold approximately 5 million tonnes of phosphogypsum, among significant volumes of other coproducts.

Mosaic products, predominantly fertilizer and animal feed ingredients, are used in agricultural operations. To the extent possible, bulk transport is used to minimize the need for extensive packaging — and therefore packaging waste — throughout the supply chain. Mosaic supports and helps promote The Fertilizer Institute's (TFI's) Bulk Blend Workshops and Manual, which eliminates the need for packaging of major raw materials or the final product.

301-1 Materials used by weight or volume

MATERIALS MINED OR CONSUMED (MILLION TONNES)

MATERIALS	2022
Ammonia	1.1
Soda Ash	0.02
Limestone	0.6
Phosphate Rock	18.0
Potash Ore	32.1
Sulfur (Long Ton)	4.3

NOTE: Ammonia consumed depicted in the table above is for production of phosphate crop nutrients and for use in smaller applications at one of our potash facilities. Sulfur value represents long tons used for our own production in 2022.

301-2 Percentage of materials used that are recycled input materials

Sulfur is the most significant recycled raw material in our manufacturing processes. The sulfur used is recovered from crude oil and natural gas processing and then recycled in our plant operations to produce sulfuric acid, which we use to make phosphoric acid, steam and electricity. Our use of this product prevents an excess of sulfur that otherwise might be disposed of in landfills. In 2022, sulfur made up approximately 8 percent by weight of our total raw materials.

301-3 Percentage of products sold and their packaging materials that are reclaimed by category

Mosaic products, predominantly fertilizer and animal feed ingredients, are used in agricultural operations. To the extent possible, bulk transport is used to minimize the need for extensive packaging throughout the supply chain. Mosaic supports and helps promote (TFI's) Bulk Blend Workshops and Manual, which eliminates the need for packaging of major raw materials or the final product. In any given year, more than 60 percent of the sales volumes (tonnes) from our businesses are sold in bulk.

Category: Environment

Water, Energy, Emissions, Biodiversity, Effluents and Waste, and Environmental Compliance

Respect for the natural environment is essential to the sustainability of our business. From our potash mines in Saskatchewan to our Florida phosphate operations and mining, manufacturing and distribution facilities in Brazil, we strive to optimize our production processes and reduce our environmental impact.

Our management of water, energy and greenhouse gas emissions and waste is guided by our [Environmental, Health and Safety Policy](#) and commitment to the United Nations Global Compact. Our ESG Performance Targets, progress toward which we report annually, help focus our efforts and track our progress on these key issues. [Policy and commitment statements](#) describe our efforts and where we stand as a company on topics most relevant to us and our diverse stakeholders.

We support a variety of formal and informal Mosaic channels through which stakeholders can submit concerns. Beyond outreach directly to Mosaic, the public has an opportunity to comment on local, state and federal rules and permits through Public Hearings, Public Notice and formal comment periods. Please see [413-1](#) for more information.

Water

We recognize that water is a critical natural resource that is essential to the sustainability of our operations, as well as to the communities and ecosystems in which we operate. As it relates to the use of our products, crop nutrient products like those Mosaic manufactures have the potential to run off farmland and into waterways, which can contribute to impaired water quality.

We manage this priority by:

- Reducing companywide freshwater use
- Minimizing tailings management area storage and phosphogypsum pond water inventories
- Maintaining the quality of the water we use in the communities where we operate
- Promoting agricultural best practices and 4R Nutrient Stewardship to minimize runoff of fertilizers into waterways
- Partnering with organizations that address habitat conservation, nutrient stewardship and watershed restoration

By preserving the quality of water resources, addressing our water risks at a site-level, minimizing our own water use, and promoting agricultural practices that preserve and protect water resources, we reduce the environmental impact of fertilizers on the global food supply. See our [Commitment to Water Stewardship](#) for more information.

Mosaic's water stewardship efforts are focused on:

- Preserving and maintaining the quality of the water resources we use in the communities where we operate
- Integrating an environment, health and safety management system that is focused on identifying, evaluating and controlling risks
- Maximizing water recycling and reuse
- Supporting and participating in partnerships that advance nutrient stewardship, habitat conservation and watershed restoration
- Investing in water-efficient technologies and automation to drive improved water performance
- Partnering with industry and government to use alternative water sources
- Reporting our water performance and engaging with stakeholders

Category: Environment

Energy and Emissions

Fertilizer production is an energy-intensive activity. We use energy and generate direct and indirect greenhouse gas emissions in the mining, production, distribution and use of our phosphate and potash crop nutrient products. Since our company's formation in 2004, we have invested in initiatives aimed at reducing energy use and emissions — efforts that have resulted in improvements in environmental performance and operating cost savings. By improving the efficiency of our operations and promoting sustainable agricultural practices, we are adapting to the potential threats of climate change and reducing the environmental impact of fertilizers on the global food supply.

See [Our Leadership on Climate Change](#) for more information.

Our approach to managing energy and greenhouse gas emissions includes:

- Emphasizing operating efficiency
- Maximizing generation of electricity produced from waste heat at our phosphate manufacturing facilities
- Investing in energy-efficient technologies and evaluating alternative energy sources
- Leveraging our agronomic expertise to promote efficiencies in agricultural systems, which have the potential to enhance customers' productivity
- Advocating for balanced clean energy policy that encourages the generation and consumption of existing, low-cost resources, such as waste heat recovery
- Reporting our energy and GHG performance and communicating with stakeholders

Biodiversity

Protection of biodiversity is critical to global sustainable development and a significant component of Mosaic's sustainability efforts.

In both our phosphate and potash operations in the United States, Canada and Brazil, prior to the start of mining — or when extending or expanding a mine — permits are secured from local, regional, state and federal government agencies. This thorough planning and approval process protects water, air, ecology, wildlife, transportation, safety and other environmental, health, and public welfare considerations.

We work with multiple parties to evaluate ecological resource preservation opportunities and to avoid and minimize any harm to state and federally protected wildlife species found on mine properties.

Phosphate mining represents a temporary disturbance of ecological resources. Once mining is complete, we conduct acre-for-acre **reclamation** and return mined lands to productive uses for wildlife and people. To promote biodiversity, Mosaic may introduce certain species into reclaimed lands, such as the gopher tortoise, that may have previously resided on the parcel but were moved prior to mining. Introductions and relocations of protected species are conducted in accordance with federal and state requirements and guidelines.

In our potash facilities located in Saskatchewan, Canada, our approach to evaluating potential impacts to wildlife includes biological assessments for projects located in new or expanded footprint areas. Since potash mining is underground, such impacts are rare once a facility is in operation. Assessments include field surveys to identify rare species of plants, birds, mammals, reptiles and amphibians of special concern that may be impacted. Survey methods follow the recommendations of the provincial and federal agencies. Biological assessments for all expansion areas at the potash facilities followed this approach.

We work closely with regulators as to comply with all applicable regulations and agency-approved management plans and to fund or conduct research that promotes the goal of wildlife and habitat conservation.

Category: Environment

Waste

Large quantities of byproduct materials generated as a result of mining and processing of potash and phosphate are managed during the operation of a facility, and upon its closure. We apply industry best practices to manage and reuse overburden, tailings and byproducts associated with our mining and production practices. Potash tailings, consisting primarily of salt and clay, are stored in tailings management areas. A portion of the excess salt generated from potash mining is processed and then used for commercial purposes, including road salt, water softener salt, and use in food grade products and industrial uses. Phosphate clay residuals from mining are deposited in clay settling areas (CSAs) located within the approved mine boundaries. These CSAs are eventually dewatered and reclaimed. Overburden and sand tailings produced at our phosphate mines are used in reclamation and mitigation conducted at the mines.

Phosphogypsum, a byproduct of our phosphate manufacturing process, is managed in permitted and heavily regulated phosphogypsum management systems (“gypstacks”) in the United States.

In Brazil some phosphogypsum is stacked, whereas the remainder is sold to third parties for use in agricultural and industrial applications. We sell most of the total volume of phosphogypsum generated at the Cajati and Uberaba facilities. We store the process water that separates from phosphogypsum during the dewatering process in gypstacks. We are subject to federal, state and local regulations related to these materials.

Certain solid wastes generated by our phosphates operations in the United States are subject to regulation under the Resource Conservation and Recovery Act (RCRA) and related state laws. The EPA rules exempt “extraction” and “beneficiation” wastes, as well as 20 specified “mineral processing” wastes, from the hazardous waste management requirements of the RCRA. Accordingly, certain residual materials like phosphogypsum, as well as process wastewater from phosphoric acid production, are exempt from RCRA’s hazardous waste regulations. Phosphogypsum and process wastewater nonetheless still are subject to extensive regulation.

Mosaic’s operations generate a variety of nonhazardous solid wastes, including domestic refuse, construction and demolition debris, and waste lubricants. Our waste management program provides assurance that all of our locations have a process in place to minimize waste generation, maximize recycling, and to ensure that waste management practices do not adversely affect the environment or health and safety of employees and the public.

We endeavor to choose on-site process chemicals that are the least hazardous, thereby seeking to lower risk to occupational health and safety and minimizing waste management implications. Mosaic facilities generate hazardous waste during production and maintenance operations. The types of hazardous solid waste generated at Mosaic’s United States facilities typically include spent cleaning solvents, paint-related wastes and some spent laboratory chemicals. At concentrate facilities, wastes generated during production and maintenance operations include waste that is characteristically hazardous for corrosivity and/or toxicity (e.g., low pH and/or metals content). Each location has an appropriate hazardous waste management system to ensure that the waste is properly and safely disposed. No hazardous wastes are shipped internationally for disposal.

We continue to improve our comprehensive waste management strategy, accounting for federal, state and local requirements and to align it to the Mosaic environmental health and safety management system.

Environmental Compliance

We support a variety of formal and informal Mosaic channels through which stakeholders can submit concerns. Please see [413-1](#) for more information.

Category: Environment

303-1 Interaction with water as a shared resource

We recognize that water is a critical natural resource that is essential to the sustainability of our operations, as well as to the communities and ecosystems in which we operate. In our direct operations, we consume significant volumes of water in the mining and production of our phosphate and potash crop nutrient products.

The primary sources of water for Mosaic's operations are surface water and groundwater. Our facilities monitor and evaluate water use from these sources to confirm it is minimized, and water recycling and reuse are being maximized. Secondary sources of water include rainwater captured within the active footprint of our operations, water supplied by local authorities and partially treated industrial and domestic reclaimed water, also supplied by local authorities. Surface water withdrawals include once-through cooling water used by our Louisiana operations and sea water used at our Miski Mayo phosphate joint venture in Peru.

Downstream, growers rely on clean and abundant sources of water to grow crops. As it relates to the use of our products, crop nutrient products like those Mosaic manufactures have the potential to run off farmland and into waterways, which can contribute to impaired water quality.

We identify water-related impacts continually through a combination of internal and external tools including the Mosaic Management System and associated EHS tools, environmental performance data, regulatory inspections, internal company knowledge and regular audits.

All of Mosaic's operations use recycled or reused water, when possible, to minimize reliance on freshwater resources.

North America

Our Central Florida operations use captured rainfall as an "alternative water supply." Groundwater use is heavily regulated and is used by Mosaic to supplement captured rainfall. Local regulations promote the use of available alternative water supplies, such as reclaimed water from municipalities, before groundwater use. Mosaic Florida sites received reclaimed water from six municipal wastewater treatment plants in 2022 at an average rate of 7 million gallons per day (MGD).

Mosaic Florida Phosphates operations do not withdraw water from nationally or internationally protected surface water sources. However, Mosaic has two withdrawal points from springs: Lithia Springs and Buckhorn Springs. This water is used at Mosaic's Riverview facility. In 2022, an average of 3 MGD was pumped from Lithia Springs and less than 0.1 MGD from Buckhorn Springs, representing less than 10 percent of the annual average flow for these springs. Although the state of Florida has over 700 springs, 30 of which have been designated as Outstanding Florida springs and are afforded extra protection, neither Lithia nor Buckhorn Springs is on the Outstanding Florida spring list. Nonetheless, Lithia Springs is a valuable recreational and cultural asset to the local community. Mosaic and its predecessors have leased Lithia Springs as a 160-acre recreational park to Hillsborough County since 1957.

In the Potash business, water use, including source and allocated volumes, are subject to site-specific regulations and permits. Water used in the operations process is recycled or reused, when possible. Our Saskatchewan potash operations withdraw from provincially regulated surface water and groundwater sources. Many of these sources also provide drinking water for nearby communities, and the surface water sources, including Cutarm Creek, Buffalo Pound Lake and Zelma Reservoir, are also used for recreational purposes. None of these sources are designated as national or international conservation areas.

Brazil

The Mosaic Fertilizantes business does not withdraw from nationally or internationally protected water sources, though some facilities are located near water bodies or regions that have significant biodiversity value. For example, our Cajati mine is located approximately 15–20 km from a Ramsar-listed protected area in the states of São Paulo and Paraná that contains diverse landscape and animal and aquatic environments. No withdrawals are made from water bodies within this protected area, but we do withdraw water from the Jacupiranguinha River, an important natural resource for the region and local community since it is home to endemic species and serves as a source of public water supply for the community. In 2022, withdrawals from this water body amounted to approximately 45 percent of the site's permitted volumes and about 11 percent of the average daily flow of this river. Some of our facilities withdraw from sources in or near communities that are also used for drinking water or recreational purposes. All our facilities are heavily regulated and subject to facility-specific regulations, monitoring requirements and permits relating to water source and allocations. Please see 303-1 and 303-3 for additional context.

Category: Environment

303-2 Management of water discharge-related impacts

Discharges from Mosaic's operations to downstream water bodies are highly regulated through local and federal agencies and are monitored, sampled and analyzed regularly by Mosaic, with reports provided to regulatory agencies to demonstrate compliance with permit limitations. The limitations are based on the water quality standards that protect the designated uses of the receiving water body. Mosaic's Saskatchewan facilities maintain a "zero-discharge" approach. When the discharge of freshwater is warranted following a high precipitation event, it is approved in advance by multiple regulatory agencies.

303-3 Water withdrawal by source

GLOBAL WATER WITHDRAWALS (,000m ³)					
	2018	2019	2020	2021	2022
Groundwater	72,847	70,843	77,104	68,971	71,942
Municipal	1,296	1,003	1,048	185	185
Reclaimed (third-party) Water	9,888	8,642	8,436	8,590	9,290
Surface Water	301,441	218,550	258,652	209,256	236,504
Total	385,471	299,038	345,240	287,002	317,921

NOTE: Reclaimed (third-party) water includes wastewater sources from industry or municipalities. We use reclaimed water as alternative source water to offset reliance on freshwater sources. We are restating 2021 municipal water withdrawals data due to an error in the way we interpreted information from local utilities. Surface water includes once-through cooling used at our Uncle Sam, Louisiana facility, and seawater used at our Miski Mayo joint venture in Peru. Please see our discussion of freshwater intensity for our year-over-year performance toward our freshwater reduction target.

As of early 2023, two Mosaic facilities are located in basins considered to be in high or extremely high water stress according to the World Resources Institute Aqueduct Water Risk Atlas tool. One of the facilities operates almost exclusively on seawater, which undergoes a process of desalination before it is used. Actual freshwater withdrawals from these facilities represent 1 percent of Mosaic's total groundwater withdrawals. We update this analysis annually.

In 2020 we announced a target to reduce our freshwater withdrawals by 20 percent per tonne of product by 2025. As of the end of 2022, we have achieved a 6 percent reduction since our 2015 baseline. This is an increase since 2021, largely due to production shortfalls and operational challenges. However, we are still on course to meet our 2025 targets.

The values reported below reflect a freshwater intensity measurement, in line with our targets. Our intent with this metric is to drive water efficiency improvements across our business and to increase the use of alternative sources.

FRESHWATER INTENSITY (m ³ /TONNE)					
	2018	2019	2020	2021	2022
Mosaic companywide ¹	6.69	6.66	6.53	6.34	7.16

NOTE: ¹2022 water intensity excludes our Louisiana sites, Faustina and Uncle Sam, as these sites are currently under assessment of their water balance and once-through cooling water use within the plants. Freshwater intensity figures reported here are different from our freshwater target in that they include closed and idled sites. For withdrawals and total intensity broken down by business segment, please see our [2022 Environment Metrics Supplement](#).

[Back to ESG Performance Targets >>](#)

Category: Environment

306-1 Total water discharge by quality and destination

306-5 Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water or runoff

TOTAL WATER DISCHARGE 2022 (TONNES UNLESS OTHERWISE NOTED)

		2018	2019	2020	2021	2022
Phosphate Segment Discharges	Annual Outfall Discharges (,000 m ³)	454,995	388,980	342,251	318,013	330,543
	Phosphorous Loadings	1,505	976	1,289	1,651	1,089
	Nitrogen Loadings	466	462	385	507	229
Mosaic Fertilizantes Segment Discharges	Annual Outfall Discharges (,000 m ³)	164,803	140,337	169,824	90,234	118,971
	Phosphorous Loadings	681	2,049	2,265	2,127	2,195
	Nitrogen Loadings	82	53	22	71	76

NOTE: Nitrogen and Phosphorous loadings are dependable of precipitation levels. 2022 was considered a dry year for operations in Louisiana, which resulted in lower loadings for Phosphate in 2022.

RIVERINE BASINS WHERE MOSAIC OPERATES

WATER BODY/BASIN	BASIN SIZE (HECTARES)	RIVER LENGTH (KM)
NORTH AMERICA		
Hillsborough River	175,000	95
Peace River	608,000	169
Alafia River	109,000	38
Little Manatee River	58,000	58
Myakka River	155,000	106
Mississippi River	322,500,000	3,370
Pecos River	11,500,000	1,490
Qu'Appelle	1,780,000	430
BRAZIL		
Jacupiranguinha River	2,568,100	no data
Jacupiranga River	2,568,100	no data
Capivara River	2,209,100	93
Sal Stream	2,209,100	21
Fundo Stream	22,260	16
Mandaguari Stream	22,260	9
Salitre Stream	2,209,100	622
Bebedouro Stream	2,209,100	8
Bonito Stream	2,209,100	11
Limeira Stream	3,440,000	7
Imbé Stream	3,440,000	3
Inferno Stream	2,208,600	78
Grande River	258,300,000	1,360
Gameleira Stream	14,300,000	8
Seco Creek	14,300,000	6
Paranaguá Bay	1	no data

NOTE: The size of the basin for Brazil facilities is associated with the river basin that the water body is part of.

Category: Environment

306-5 Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water or runoff (continued)

In the Phosphates business, no outfalls discharge directly into a designated protected area, although discharges occur in three riverine basins upstream of Outstanding Florida Waters (i.e., segments of Little Manatee River, Hillsborough River and Myakka River) and Florida Wild and Scenic Rivers (segment of Myakka River). As an overarching principle, water that falls within the active, operational footprint of Mosaic's phosphate mining and fertilizer production facilities is actively managed, used in our operations, treated if necessary and discharged through NPDES outfalls pursuant to water quality standards stipulated by permits. Discharges are monitored, sampled and analyzed regularly by Mosaic, with reports provided to regulatory agencies to demonstrate ongoing compliance with permit limitations.

For our Canadian Potash business, in certain high precipitation events, off-site discharges of freshwater surface runoff are warranted and are approved in advance by the Saskatchewan Ministry of Environment and the Saskatchewan Water Security Agency. There was one such instance in 2022 involving the discharge of rain and snow melt out of a containment area. Please see **MM3** for a discussion of our Potash segment's brine disposal methods.

None of our Brazil facilities discharge directly into designated protected areas. Effluents are regularly monitored, sampled and analyzed by Mosaic, and reports are regularly provided to governmental environmental agencies in accordance with applicable requirements.

Category: Environment

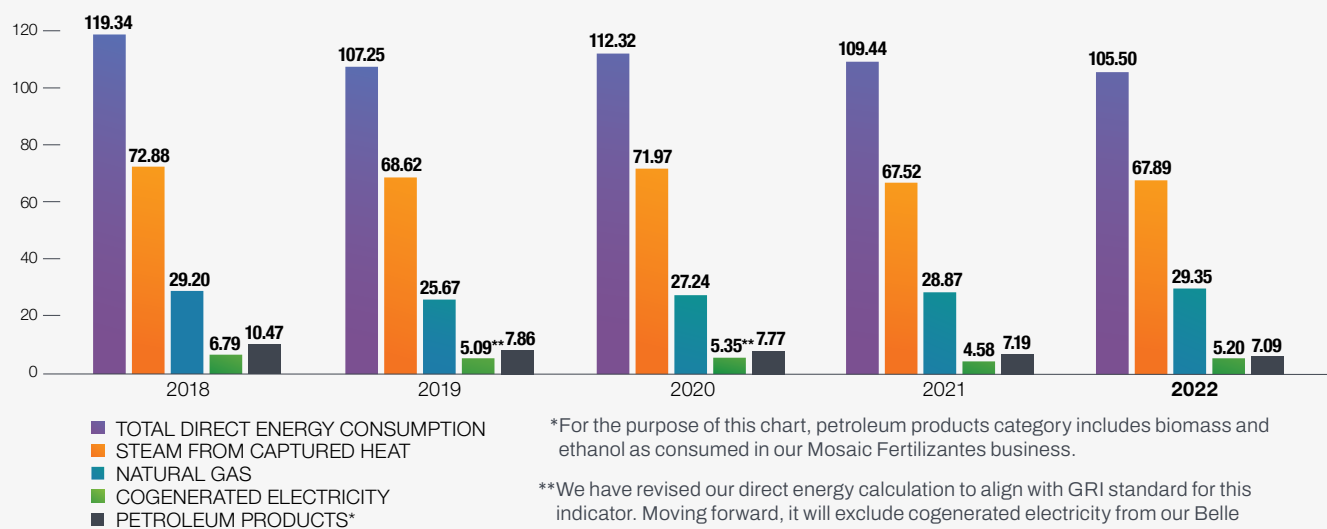
302-1 Energy consumption within the organization

Companywide, our direct and indirect energy use totaled 119 million gigajoules (GJ) in 2022. Our total direct energy consumption in 2022 was 105.5 million GJ and indirect energy consumption, which is the use of purchased electricity and purchased heat, was 13.84 million GJ.

Direct Energy Consumption by Source

Approximately 92 percent of Mosaic's worldwide total direct energy consumption in 2022 was from two sources: waste heat from sulfuric acid production and natural gas. The remaining portion was made up of petroleum products and propane.

TOTAL DIRECT ENERGY CONSUMPTION BY SOURCE (MILLION GJ)



*For the purpose of this chart, petroleum products category includes biomass and ethanol as consumed in our Mosaic Fertilizantes business.

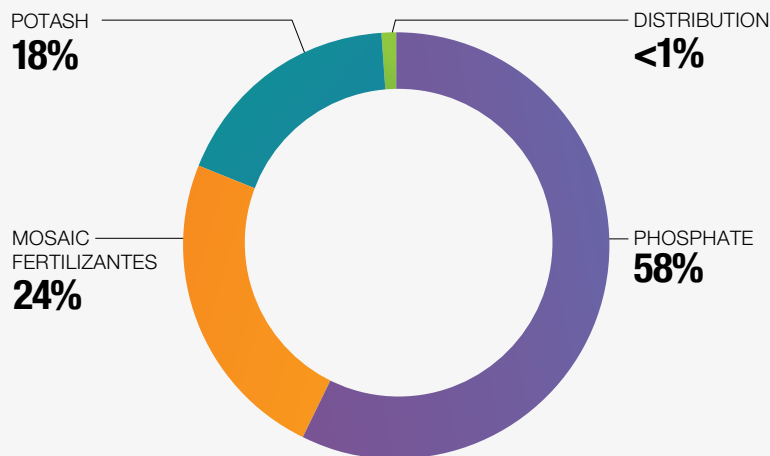
**We have revised our direct energy calculation to align with GRI standard for this indicator. Moving forward, it will exclude cogenerated electricity from our Belle Plaine, Saskatchewan facility, which produces cogenerated electricity in a process using natural gas. The quantity of natural gas used to create 1 million GJ of power at Belle Plaine in 2022 is included in companywide natural gas totals. The remaining cogenerated electricity includes power generated from waste heat from the sulfuric acid manufacturing process in our Florida, Louisiana and Brazil phosphate operations.

In 2022, our North America phosphates operations used a portion of steam energy from the sulfuric acid manufacturing process to produce 3.2 million GJ of electricity through a process called cogeneration, approximately 95 percent of which, or 3 million GJ, was used internally at our plants and mines. We consider the waste heat from sulfuric acid production to be a direct primary energy source for our North America phosphate operations. We exported approximately 150,071 GJ of power to the local utility grid in North America in 2022. Three of our Brazil facilities used a similar process to harness waste heat from the sulfuric acid manufacturing process, resulting in generation of approximately 900,000 GJ of energy for use at their operations, all of which they used internally.

Mosaic looks for opportunities to improve the efficiency and expand the electricity output of our cogeneration assets. Mosaic could have additional opportunities for harnessing emissions-free power under a more supportive regulatory construct. We advocate for a balanced renewable energy policy that recognizes cogenerated power from waste heat as emissions-free power; incentivizes and expands the generation and consumption of existing, low-cost clean energy, such as waste heat recovery; and promotes a universal clean energy credit assigned to all zero-emissions electricity.

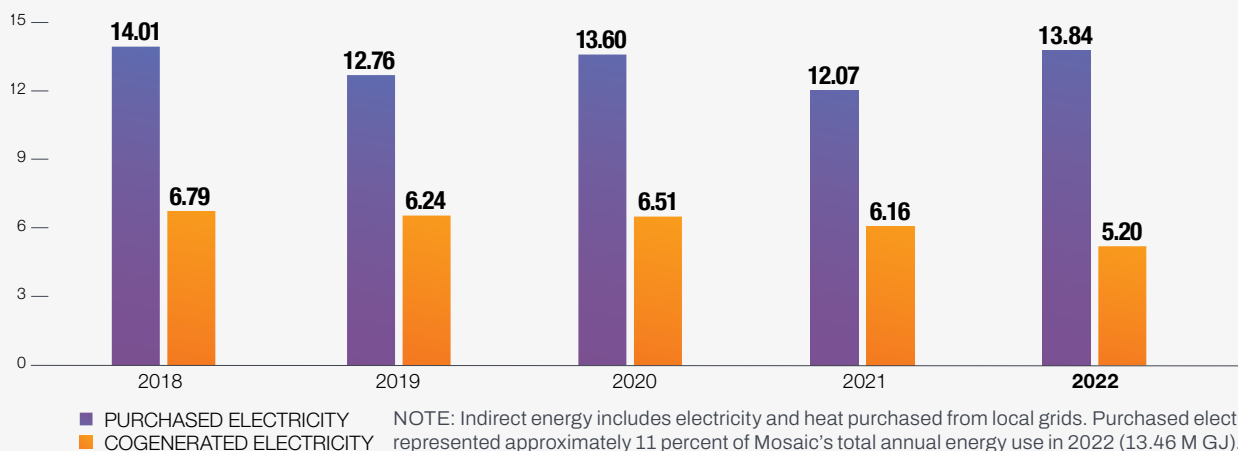
Category: Environment

DIRECT ENERGY CONSUMPTION BY BUSINESS SEGMENT 2022 (%)



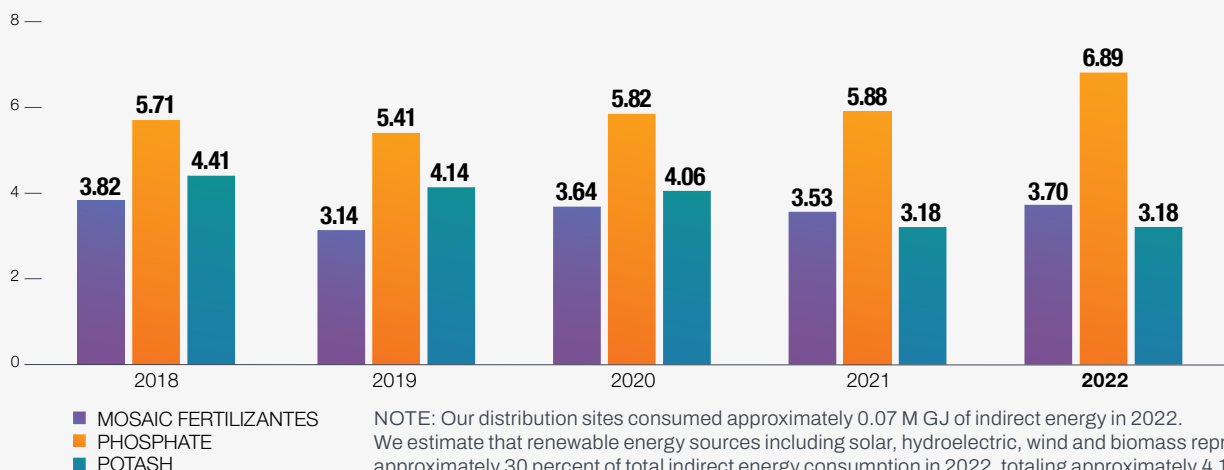
NOTE: The Phosphates and Mosaic Fertilizantes businesses use a significant amount of waste heat energy from the sulfuric acid manufacturing process, which is accounted for here. Distribution facilities accounted for less than 1 percent of companywide direct energy use.

INDIRECT ENERGY CONSUMPTION BY PRIMARY ENERGY SOURCE (MILLION GJ)



NOTE: Indirect energy includes electricity and heat purchased from local grids. Purchased electricity represented approximately 11 percent of Mosaic's total annual energy use in 2022 (13.46 M GJ). Purchased heat represented approximately 0.3 percent of total energy use in 2022 (0.38 M GJ). As visualized here, our use of cogenerated electricity (5.20 M GJ companywide in 2022) offsets what we would otherwise have to purchase from the grid.

INDIRECT ENERGY CONSUMPTION BY BUSINESS SEGMENT (MILLION GJ)



NOTE: Our distribution sites consumed approximately 0.07 M GJ of indirect energy in 2022. We estimate that renewable energy sources including solar, hydroelectric, wind and biomass represented approximately 30 percent of total indirect energy consumption in 2022, totaling approximately 4.15 M GJ.

Category: Environment

302-3 Energy intensity

DIRECT AND INDIRECT ENERGY INTENSITY (GJ/TONNE)

	2018	2019	2020	2021	2022
Mosaic Companywide	2.83	2.60	2.57	2.75	2.61

NOTE: Steam energy from the sulfuric acid manufacturing process is excluded from this calculation. For intensity broken down by business, please see our [2022 Environment Metrics Supplement](#).

302-4 Reduction in energy consumption

Our energy improvement and sustainability process is part of a broader strategic business plan designed to help Mosaic reduce greenhouse gas emissions and meet or exceed efficiency, production and profitability requirements. This plan includes strategies for lowering purchased energy consumption through more efficient processes and maximizing use of cogenerated energy.

We also emphasize energy efficiency in our office facilities. Mosaic's Florida headquarters in FishHawk was designed and constructed to Leadership in Energy Environmental Design (LEED) standards and maintains its ENERGY STAR certification. Mosaic's leased Regina, Canada, offices were built to LEED standards and included the purchase of interior design elements, furniture and products, as well as other energy efficiencies associated with LEED. The Regina office was LEED certified in 2017.

In 2022 we completed behavioral change, energy efficiency, fuel switch and process optimization projects that resulted in energy savings of approximately 106,000 GJ.

305-1 Direct GHG emissions (Scope 1)

305-2 Indirect GHG emissions (Scope 2)

WORLDWIDE GHG EMISSIONS (MILLION TONNES CO₂e)

BUSINESS SEGMENT/EMISSION TYPE	2018	2019	2020	2021	2022
Phosphates	2.56	2.29	2.56	2.30	2.44
Direct Emissions	1.87	1.67	1.88	1.68	1.73
Indirect Emissions	0.69	0.62	0.67	0.61	0.71
Potash	1.83	1.66	1.60	1.49	1.39
Direct Emissions	0.93	0.91	0.88	0.93	0.95
Indirect Emissions	0.90	0.74	0.73	0.56	0.44
Mosaic Fertilizantes	0.88	0.63	0.75	0.74	0.68
Direct Emissions	0.78	0.56	0.67	0.61	0.50
Indirect Emissions	0.10	0.08	0.07	0.13	0.04
Emissions from Biofuels (CO ₂)	0.18	0.16	0.14	0.14	0.14
Distribution	0.01	0.01	0.01	0.01	0.01
Direct Emissions	0.00*	0.00*	0.00*	0.00*	0.00
Indirect Emissions	0.01	0.01	0.01	0.00	0.01
Total Direct Emissions	3.58	3.13	3.44	3.23	3.19
Total Indirect Emissions	1.69	1.45	1.48	1.30	1.20
Total Emissions	5.28	4.58	4.92	4.53	4.39

NOTE: Subtotals may not always add up to totals due to rounding. Figures exclude emissions from land use change in our Florida phosphate operations. We expect that these emissions are material to our total global footprint; as of the date of this report, we are working to quantify this source as part of our Scope 1 emissions total. Approximately 29 percent of Mosaic's Scope 1 emissions (those generated in Canada) are covered under emissions-limiting regulations. Distribution, as reported here, represents Streamsong Resort and Mosaic-owned facilities involved in warehousing, blending and/or shipping Mosaic's products. Totals marked with an asterisk are less than 0.01 million tonnes. Direct emissions include Mosaic's consumption of natural gas, diesel, other fuels, process related activities and water treatment. Indirect emissions are location-based only and include electricity purchased from third-party utilities. The Mosaic Fertilizantes business consumes biomass and ethanol as fuel alternatives. Per the GHG Protocol, we have added a line item to account for CO₂ emissions from biomass. N₂O and CH₄ are represented within the direct emissions totals. Mosaic uses guidance from the CDP for calculating and reporting carbon dioxide equivalence (CO₂e). Please see Mosaic's [2022 CDP Climate Change Response](#) for more information on our GHG emissions performance.

Category: Environment

305-3 Other indirect GHG emissions (Scope 3)

OTHER INDIRECT GHG EMISSIONS (MILLION TONNES CO₂e)

SCOPE 3 CATEGORY		2022
Category 1 ¹ :	Purchased Goods and Services	2.03
Category 3 ² :	Fuel-and-Energy-Related Activities	0.76
Category 4 ² :	Upstream Transportation and Distribution	
	Global Trucking	0.05
	Global Rail	0.26
	Global Marine	0.24
Category 11 ³ :	Use of Sold Products	7.23
Category 15 ⁴ :	Investments	0.79

NOTE: ¹Category 1 emissions are associated with the purchase of ammonia for production of phosphate crop nutrients and use in smaller applications at our Esterhazy, Saskatchewan complex. ²Trucking represents upstream transportation of raw materials, in-process and finished goods related to our global operations. Rail emissions exclude unladen backhaul trips. In the absence of available fuel data related to marine transport, we are relying on emissions estimates that use known ship deadweights and distances traveled. The figures exclude port and ballast legs of the ocean-going vessels' journeys. Maritime emissions were not assured by ERM CVS. ³The emissions associated with use of sold products is from 2019 IPCC N₂O emissions from managed soils. We applied a Tier 1 methodology, which does not take into account different land cover, soil types, climatic conditions or management practices. ⁴Investment category includes emissions associated with our 25 percent interest in a joint venture investment in MWSPC, which operates a mine and chemical complex that produces phosphates fertilizers and other downstream products in the Kingdom of Saudi Arabia. Please see our [2022 CDP Climate Change Response](#) for more information about our Scope 3 emissions.

305-4 GHG emissions intensity

DIRECT AND INDIRECT GHG EMISSIONS INTENSITY (METRIC TONNE CO₂e/PER TONNE OF FINISHED PRODUCT)

	2018	2019	2020	2021	2022
Mosaic Companywide	0.248	0.232	0.234	0.230	0.223

NOTE: For total GHG intensity broken down by business, please see our [2022 Environment Metrics Supplement](#). Gases included in our calculation are CO₂, CH₄ and N₂O. ¹This intensity value differs from our targets calculation in that it includes all of our operating sites, including those idled or in closure status.

In 2020 we announced a target to reduce our Scope 1 and 2 greenhouse gas emissions by 20 percent per tonne of product by 2025. As of the end of 2022, we have achieved an 11 percent reduction since our 2015 baseline and a less than 1 percent decrease since 2021.

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Category: Environment

305-5 Reduction of Greenhouse Gas (GHG) emissions

Mosaic is taking a proactive approach to reductions in GHG emissions, with an emphasis on technology and improving energy efficiency with behavioral changes, process improvements, equipment upgrades and bold solutions. GHG emissions reductions resulting from the energy saving initiatives reported in **302-4** equal approximately 46,000 tonnes of CO₂e, the equivalent of taking more than 9,000 average United States cars off the road for a year. For more information on Mosaic's efforts to reduce GHG emissions and address climate change, please see our **2022 CDP Climate Change Response**.

In late 2021, we announced targets to reach net-zero GHG emissions in our Florida operations by 2030 and companywide by 2040. Our pathway focuses foremost on mitigation of emissions from our operations, and we are exploring opportunities to leverage nature-based solutions on our significant landholdings.

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Reducing Impacts Associated With Product Use

The GHG impacts associated with the downstream application of our products — primarily potash and phosphate crop nutrient products — are relatively minimal compared to nitrogen-based fertilizer products but relevant nonetheless. We report those emissions (Scope 3, Category 11) in 305-3 using an Intergovernmental Panel on Climate Change (IPCC) Tier 1 emissions factor for N₂O emissions from managed soils. We have plans to improve our approach to align to an IPCC Tier 2 methodology, which will allow us to pinpoint emissions by geography with more precision. Mosaic understands we have a role to play in reducing the environmental impact of fertilizers on the global food supply and we are engaged with agricultural stakeholders on multiple fronts.

- Mosaic promotes the use of agricultural best practices by supporting research and advancing educational outreach on practices that minimize GHG emissions and other environmental impacts associated with the use of crop nutrient products. Further, Mosaic supports the minimization of GHG emissions and other environmental impacts from the global food supply by encouraging stakeholders to enhance their understanding, adoption and promotion of 4R Nutrient Stewardship. In Brazil, Mosaic Fertilizantes partners with Embrapa (Brazil's Agricultural Research Company) in the *Bifequali Tech Transfer Program*, which aims at educating farmers and ranchers on best practices to use fertilizer in pastureland, thus promoting integrated crop-livestock systems that reduces GHG emission from livestock production.
- Mosaic maintains active partnerships with industry-leading research centers, targeting agriculture efficiency and productivity improvements that may facilitate GHG reductions associated with use of Mosaic's products. In 2022, we conducted more than 2,300 small plot, demonstration and research trials in Argentina, Brazil, Chile, China, Canada, India, Latin America (Mexico to Peru) and the United States.
- We are also engaged in agreements with two companies to develop and launch agricultural solutions, including a nutrient efficiency product and a nitrogen-fixing microbial product, that contribute to soil health and have positive environmental benefits.
- Mosaic acquired Plant Response Inc. (PRI). PRI is a leader in developing and manufacturing biological solutions for nutrient efficiency and enhancement they complement granular crop nutrient solutions.

Category: Environment

305-5 Reduction of Greenhouse Gas (GHG) emissions (continued)

- Importantly, Mosaic is strategically partnering with stakeholders and increasing research and development to improve nutrient use efficiencies of our products. MicroEssentials® was designated as an Enhanced Efficiency Fertilizer (EEF) by the Association of American Plant Food Control Officials (AAPFCO) in 2021. EEF products reduce nutrient losses to the environment through the slow release of nutrients or by disrupting the conversion of nutrient forms in the soil that are susceptible to loss all while increasing nutrient availability for the crop. Innovative fertilizers, like EEFs, are an important component of 4R Nutrient Stewardship. Combined with 4R practices, the use of EEFs and other emerging technologies will help to promote more sustainable farming practices while also solving for the world's increasing demand in food supply. Realizing the role these products — referred to as “Performance Products” at Mosaic — play in contributing to positive agricultural and societal outcomes, we established a companywide target in 2020 to increase our sales of them as a share of total crop nutrient production.
- In Brazil, where approximately 60 percent of pastureland is considered degraded to some extent, we launched MPasto Nitro, a high concentration nitrogen fertilizer containing stabilized urea with a urease inhibitor. Developed to address the health and recovery of chemical and biological properties of the soil on pastureland, MPasto Nitro optimizes use of the land and promotes livestock intensification, which translates to greater productivity and more efficient use of natural resources — thus reducing the impact of livestock systems on the environment and enabling better economic returns. MPasto Nitro is associated with 30 percent fewer GHGs when compared to traditional fertilizers used for pasture fertilization.

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305-7 NO_x, SO₂ and other significant air emissions

CRITERIA AIR AND OTHER POLLUTANTS (,000 TONNES)

EMISSION TYPE	2018	2019	2020	2021	2022	NORMALIZED 2022
NO _x	3.25	2.84	2.33	4.29	2.87	0.15
CO	1.06	0.84	0.55	0.96	1.03	0.05
PM	6.24	4.70	4.37	5.56	7.72	0.41
SO ₂	19.31	16.47	15.64	16.92	15.63	0.83
VOC	0.28	0.20	0.12	0.23	0.23	0.01
NH ₃	1.01	0.30	0.05	0.23	0.19	0.01
FL	0.28	0.21	0.17	0.19	0.22	0.01
H ₂ S	0.01	0.01	0.01	0.02	0.02	0.00
SAM	0.34	0.27	0.24	0.32	0.35	0.02
HF	0.14	0.42	0.46	0.46	0.44	0.02

NOTE: Emissions based on stack test results and emission factors. “Normalized” refers to the emissions value per 1,000 tonnes of finished product. Values marked with an asterisk are less than 0.01 per 1,000 tonnes. “FL” represents total fluorides, including elemental fluorine and fluoride compounds. “H₂S” for some sites is accounted for as “total reduced sulfur” per local permitting requirements, which may mean we are overreporting actual H₂S emissions.

Category: Environment

304-1 Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas

North America

In Florida, although there are no UNESCO World Heritage sites or International Union for Conservation of Nature (IUCN) protected management areas near our operations, Mosaic has placed approximately 22,000 acres in conservation easements along wildlife corridors and other ecologically significant habitats. As of December 31, 2022, Mosaic owned or maintained mineral interests in about 375,343 acres of land in Florida related to our phosphate surface mining operations. These mine areas may abut or contain habitat and wildlife corridors, many of which are recognized on official state maps as being high in biodiversity. While Mosaic lands are not adjacent to, nor do they contain land registered as IUCN protected areas, many of these lands are permanently protected through conservation easements. As of 2022, Mosaic owns or controls more than 33,000 acres in Florida that are designated as preservation for conservation easements, non-impacted floodplain, and high-quality wetlands.

Mosaic operates three Canadian potash facilities in the southern half of the province of Saskatchewan, including a solution mine at Belle Plaine and underground mining operations near Esterhazy and Colonsay. Mosaic has mineral rights to approximately 619,335 acres in Saskatchewan for potash mining and surface rights to approximately 34,150 acres. Mosaic's United States potash operations consist of an underground mine in Carlsbad, New Mexico, with mineral rights to approximately 77,000 acres for potash mining and approximately 7,200 acres of surface rights. Fewer than 1 percent of our proven and/or probable reserves are beneath lands that have been categorized as being protected through mechanisms such as Crown Conservation Easements, IUCN or the Wildlife Habitat Protection Act. It is important to note that potash deposits in Saskatchewan occurs at depths greater than 3,000 feet below surface. There is limited surface disruption associated with the mine shafts, and adjacent above-ground processing facilities and tailings management areas.

Brazil

Mosaic operates five phosphates mines and one potash mine, and four crop nutrient production facilities in Brazil, totaling approximately 312,000 acres. Some Mosaic facilities in Brazil, such as the Cajati mine, are located in regions with high biodiversity value. The Cajati mining operations occupy approximately 4,699 acres near the Ribeira Valley region in the state of São Paulo. Though not within a protected area, this facility is near a region that is considered to have high cultural and biodiversity value due to the existence of prominent archaeological sites, diversity of flora and fauna and threatened species as defined by IUCN. Similarly, there are approximately 700 acres of environmental reserves area near our Uberaba production facility, which occupies approximately 1,438 acres in the state of Minas Gerais. The Tapira mine site, situated on approximately 20,900 acres in the state of Minas Gerais, is not classified as protected but some protected species have been observed in the vicinity of our facility (reported in 304-4). Though not registered as IUCN protected areas, this land and others adjacent to many of our mining or production facilities are protected by stringent site-specific permit requirements and government regulations.

Category: Environment

304-2 Descriptions of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas

Thriving and complex biodiversity is essential to ecosystem health and basic human rights. Due to our global footprint and the nature of our activities, some of our operations are adjacent to or near areas with high biodiversity value. Effective biodiversity management is Mosaic's responsibility, and it is critical to our maintenance of regulatory and community support for our activities.

Phosphate Mining and Production in the United States and Brazil

As part of an extensive permitting process, regulatory agencies review comprehensive site survey data and assessment reports to determine and approve temporary impacts to species and habitat. Site-specific Wildlife and Habitat Management Plans are developed for each mine, which outline measures to be implemented to protect and manage wildlife, listed species and their habitats, including provisions for pre-clearing surveys and species relocation for less mobile species, such as the gopher tortoise.

We generate direct and indirect greenhouse gas (GHG) emissions in the mining and production of Mosaic's phosphate crop nutrient products. We report those impacts in [305-1](#) and [305-2](#).

The groundwater level in mining areas, which is drawn down for safety of personnel and to allow for more efficient recovery of phosphate ore, is restored once mining is complete and the area is backfilled. The typical duration between land clearing and restoration of habitat is about 5-10 years. Wildlife repopulation of constructed habitat areas — mainly due to their connection to other habitats and foraging areas — demonstrate the reversibility of the impacts. Because mining occurs in a sequential pattern, while new areas are being cleared for mining, additional preservation areas are being set aside and land reclamation in other areas of the mine site are being completed such that habitat areas remain available for the affected species.

As with any land disturbance activity, affected land lends itself to nuisance plant species proliferation. Mosaic, however, uses aggressive approaches to establish biodiversity and minimize the proliferation of invasive species. In fact, post-reclamation wildlife surveys indicate that even though the ground surface may be affected for several years as a result of the mine process, revegetation and repopulation of these sites with wildlife species is successfully achieved. Many bird species are attracted to the water features contained within the active mine operation and remain onsite throughout the process.

Phosphate mining operations in Brazil use an open pit process to extract phosphate reserves. The process is heavily regulated and there are procedures in place to minimize impacts to wildlife and habitats. Each of our mining operations in Brazil has a management plan and environmental compensation strategies that address the locations' unique biodiversity needs. As an example of our environmental compensation strategies, we set aside a portion of the mining site — approximately 20 percent of the project footprint — as part of our efforts to preserve and protect unmined land. Please see [303-2](#), [304-1](#) and [MM2](#) for more information.

Potash Mining and Production in Brazil, the United States and Canada

Potash mining operations in Brazil, Canada and the United States use shaft and solution mining techniques. Because of the limited footprint on surface features, such as surface infrastructure and tailings management areas, impacts to wildlife and habitats are also highly localized and relatively small in scale. Prior to surface development, Mosaic's Saskatchewan facilities consult multiple stakeholders as part of best management practices and procedures that minimize risk to wildlife and habitats in our operating areas. In Carlsbad, open bodies of surface saline waters attract migratory birds. We have robust efforts in place to reduce impacts to avian populations, working in collaboration with local regulators and stakeholders. Our potash operations also generate direct and indirect greenhouse gas emissions associated with mining and crop nutrient production. We report those impacts in [305-1](#) and [305-2](#).

Category: Environment

MM1 Land disturbed or rehabilitated

In our Florida phosphate operations, Mosaic reports our Florida mining and reclamation activities to the Florida Department of Environmental Protection (FDEP) Mining and Mitigation Program. Once we have satisfied all reclamation requirements with respect to mined and disturbed lands, the FDEP “releases” those acres from further reclamation obligation and those reclaimed lands, are then considered “released acres” by FDEP. Accordingly, an increase in the annual released acreage is the result of our satisfaction of those reclamation requirements.

Our Brazil phosphate operations use an open pit process to extract phosphate reserves. Once mining is complete, land recovery efforts include re-sloping and revegetating the mined area.

LAND MINED AND RECLAIMED (ACRES)

FLORIDA PHOSPHATE OPERATIONS¹

YEARS	MINED AND DISTURBED		MINED AND DISTURBED RECLAIMED (INITIAL REVEGETATION COMPLETE)		RELEASED MINED & DISTURBED
	MINED	DISTURBED ONLY	MINED	DISTURBED	
All Previous	158,076	43,929	122,623	36,830	101,885
2018	2,331	-1,174	719	405	3,660
2019	1,843	1,533	1,432	-131	3,849
2020	1,817	362	835	76	757
2021 ²	1,531	972	1,082	194	139
2022 ²	1,320	102	1,015	144	1,859
Total	166,918	45,724	127,706	37,518	112,149

BRAZIL PHOSPHATE OPERATIONS³

YEARS	MINED		MINED AND DISTURBED RECOVERED		PENDING RECOVERY MINED & DISTURBED AREAS
	MINED	DISTURBED	MINED	DISTURBED	
2018	4,060	16,457	0	3,099	17,418
2019	3,919	12,778	64	2,296	14,340
2020	3,024	11,634	27	1,609	13,025
2021	1,836	4,412	123	651	5,474
2022	3,481	8,602	56	1,970	10,419
Total	16,320	53,883	270	9,625	60,676

NOTE: ¹Estimated acreages based on Annual Mine and Reclamation Reports submitted to the Florida Department of Environmental Protection (FDEP) pursuant to Chapter 62C-16.0091 F.A.C. and FDEP approved Conceptual Reclamation Plans. “Released” acres are those acres with no further reclamation obligations pursuant to Chapter 62C-16 F.A.C. Additional mitigation releases required pursuant to WRP, ERP, County and USACE Section 404 permits are not accounted for in this table. ²As of the date of this publication’s release, 2021–2022 reports have not been validated by FDEP. Accordingly, these figures are estimates only and may be revised in future reports. ³We are reporting mined and recovered area for Mosaic Fertilizantes back to 2018, the year we acquired this business in Brazil.

MM2 Number and percentage of sites identified as requiring biodiversity management plans

All active mine sites within the United States, Canada and Brazil are required to operate pursuant to federal, state/provincial and local regulations related to management of habitat and wildlife. Mosaic has three operating mines in Florida; all (100 percent) have both Wildlife and Habitat Management Plans and Wetland Mitigation plans to promote and maintain biodiversity. While Mosaic’s Carlsbad, NM potash mine is an underground mine, it maintains an active migratory bird program. In Saskatchewan wildlife management plans and procedures are used to ensure compliance with applicable legislation, project approvals and commitments. In Brazil, each of our five active mine sites has a biodiversity management plan in place. Environmental Stewardship, including biodiversity and preservation of important ecological sites, is a critical part of Mosaic’s sustainability efforts.

Category: Environment

304-3 Habitats protected or restored

In our Florida phosphate mining operations, we restore or reclaim every acre of land we mine or disturb, with an emphasis on habitat. We report those activities in **MM1**. Consequently, there are at least as many acres in wetland habitat after mining as before. In addition, environmentally sensitive lands — typically about 20 percent of a project site — are set aside for preservation, with additional reclaimed wetlands and some uplands (such as gopher tortoise recipient sites) protected in perpetuity through conservation easements. For example, a typical 10,000-acre mine site may be composed of about 25 percent wetland and 30 percent upland habitat, with the balance in other uses such as agriculture. Frequently — prior to mining — much of this habitat is fragmented or unconnected due to historical agricultural practices. Thus, holistic reclamation plans allow restoration to be consolidated and intertwined — as well as interconnected to the high-quality preserved land — to promote wildlife re-establishment and migration as well as in providing buffers for streams and flowways. Success of these restoration efforts is determined by standards imposed by regulatory agencies, and independent assessments by third-party ecological professionals. Mosaic's Florida business planted approximately 600,000 trees in 2022, reclaiming uplands, significant upland habitats and wetlands. Please see **MM1** for information on our reclamation activities in 2022.

Mosaic has fostered partnerships with, and funding for, a variety of non-governmental organizations (NGOs) and academic institutions to advance our understanding of the habitats we manage through reclamation. Examples of these groups include Tampa Bay Watch, The Nature Conservancy, Archbold Biologic Station and Audubon, Florida.

As part of our environmental compensation efforts in the Mosaic Fertilizantes segment, we set aside a portion of a mining site — approximately 20 percent of the project footprint (but in certain cases as much as 80 percent) — to preserve and protect unmined land in its natural state. Additionally, as part of other mining requirements, we complete other environmental compensation actions such as planting trees. As of 2022, more than 25,000 acres were classified as protected, preserved or restored. As another example of the Mosaic Fertilizantes business's efforts, in 2022 we invested in wildlife and forest preservation programs in the southwest region of the state of Minas Gerais. We also contributed to efforts to preserve and monitor at-risk avian species including the Brazilian merganser and grey eagle. Mosaic has invested in a mangrove monitoring and waste removal program, which has observed recovery of the mangrove area adjacent to the Fospar facility. Mangroves are an important resource for protection of coastal wetlands and habitat for valuable species of fish, crustaceans, mammals, birds and insects.

Category: Environment

304-4 Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk

Mosaic does not specifically manage wildlife species per the International Union for Conservation of Nature (IUCN) List designations, but rather in accordance with rules established for threatened or endangered species by regulatory agencies with authority in the regions in which we operate. Some of the species listed below are present on lists that are applicable to the region in which the facility is located.

IUCN RED LIST OF SPECIES POSSIBLY IN THE VICINITY OF OPERATIONS

FLORIDA PHOSPHATE OPERATIONS

IUCN RED LIST DESIGNATION	NUMBER OF SPECIES	TYPE OF SPECIES
Endangered	1	Black rail
Vulnerable	15	American crocodile, Florida bonneted bat, Florida mouse, gopher tortoise, Florida scrub jay, West Indian manatee, Eastern spotted skunk, sand skink, red-cockaded woodpecker, gopher frog, Eastern box turtle, diamondback terrapin, rusty blackbird
Near Threatened	15	Short-tailed snake, common bobwhite, loggerhead shrike, wood thrush, common grackle, red-cockaded woodpecker, piping plover, reddish egret, semipalmated sandpiper, black poll warbler, Eastern meadowlark, Bachman's sparrow, Eastern whippoorwill, Chuck-Will's-widow, king rail

Florida state or federally listed threatened species considered IUCN Least Concern include the American oystercatcher, black skimmer, burrowing owl, Everglades snail kite, Florida grasshopper sparrow, Florida sandhill crane, Florida pine snake, least tern, little blue heron, Southeast American kestrel, tricolored heron, wood stork, Eastern indigo snake, crested caracara, American alligator, Eastern diamond backed rattlesnake, roseate spoonbill, red-cockaded woodpecker, Florida grasshopper sparrow, Florida panther (puma), tricolored bat. We manage these species in accordance with rules established by applicable regulatory agencies.

IUCN RED LIST OF SPECIES POSSIBLY IN THE VICINITY OF OPERATIONS

U.S. POTASH OPERATIONS (NEW MEXICO)

IUCN RED LIST DESIGNATION	NUMBER OF SPECIES	TYPE OF SPECIES
Endangered	4	Black-footed Ferret, Comanche Springs Pupfish, Pecos Gambusia, Rio Grande Silvery Minnow
Vulnerable	9	Davis Mountains cottontail, Dunes sagebrush lizard, lesser prairie-chicken, chimney swift, Sprague's pipit, evening grosbeak, chestnut-collared longspur, Leon Springs pupfish, Pecos pupfish
Near Threatened	1	—

The Western burrowing owl is state listed in New Mexico. We manage this species in accordance with rules established by applicable regulatory agencies.

IUCN RED LIST OF SPECIES POSSIBLY IN THE VICINITY OF OPERATIONS

CANADA POTASH OPERATIONS

IUCN RED LIST DESIGNATION	NUMBER OF SPECIES	TYPE OF SPECIES
Endangered	—	—
Vulnerable	3	Horned grebe, Snowy owl, Sprague's pipit
Near Threatened	4	Blackpoll warbler, olive-sided flycatcher, loggerhead shrike, common grackle

Category: Environment

304-4 Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk (continued)

IUCN RED LIST OF SPECIES POSSIBLY IN THE VICINITY OF OPERATIONS

LOUISIANA PHOSPHATE OPERATIONS

IUCN RED LIST DESIGNATION	NUMBER OF SPECIES	TYPE OF SPECIES
Critically Endangered	1	Pallid sturgeon
Vulnerable	—	—
Vulnerable	2	West Indian manatee, Eastern spotted skunk
Near Threatened	—	—

Species listed as possibly affected by Louisiana operations are from Louisiana Department of Wildlife and Fisheries database and may not have been actually observed on or near Mosaic property. Some avian species listed as affected or possibly affected by New Mexico and Saskatchewan operations are migratory species with potential migration patterns proximal to our operations in those geographies.

IUCN RED LIST OF SPECIES POSSIBLY IN THE VICINITY OF OPERATIONS

BRAZIL PHOSPHATE AND POTASH OPERATIONS

IUCN RED LIST DESIGNATION	NUMBER OF SPECIES	TYPE OF SPECIES
Critically Endangered	1	Brazilian merganser
Endangered	4	Fernandina's flicker, crowned solitary eagle, Brasilia tapaculo, tapeti
Vulnerable	10	Bare-faced curassow, small red brocket, giant anteater, Southern tiger cat, black masked finch, campo miner, sharp-tailed tyrant, sickle-winged nightjar, lesser nothura, white-necked hawk
Near Threatened	15	Maned wolf, hoary fox, yellow-faced Amazon, bearded tachuri, greater rhea, black-fronted titi monkey, white-banded tanager, yellow-legged tinamou, azure jay, bare-throated bellbird, turquoise-fronted Amazon, neotropical otter, blue-winged macaw, black-and-gold howler monkey

Category: Environment

306-2 Total weight of waste by type and disposal method

306-4 Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention, and percentage of transported wastes shipped internationally

2022 WASTE GENERATED BY DISPOSAL METHOD (TONNES)

	TOTAL WASTE GENERATED	WASTE DIVERTED		WASTE DISPOSED		
		REUSE OR RECYCLE	OTHER	INCINERATION	LANDFILL	OTHER
Phosphate						
Hazardous	1,800	0	0	74	1,230	497
Non-hazardous	58,123	42,265	0	0	15,188	669
Potash						
Hazardous	1,414	167	0	3	102	1,142
Non-hazardous	50,486	37,564	0	0	12,920	2
Mosaic Fertilizantes						
Hazardous	2,644	145	0	12	1,003	1,484
Non-hazardous	25,730	17,395	0	0	3,677	4,657
Grand Total	140,198	97,537	0	90	34,119	8,452

NOTE: At this time, we cannot consistently differentiate between reuse and recycle methods, so we are reporting "Reuse or Recycle" as a single category. Similarly, all wastes disposed of through incineration techniques, regardless of whether it was in a waste-to-energy application or simple incineration for disposal, are included in the "Incineration" category. "Other" disposal method includes combinations of co-processing, retort, treatment and/or deep well injection. Subtotals may not always add up to totals due to rounding. Our tracking of wastes across our business continues to improve. Legacy Brazil facilities previously reported under International Distribution segment are now reported under Mosaic Fertilizantes segment. 2021 "landfill" figures were high for Mosaic Fertilizantes in 2021 due to construction activities, which resulted in increased generation of construction and demolition debris. 2022 "diverted" figures are significantly higher for Phosphate as a result of new initiatives to recycle and reuse white iron and HDPE pipe.

No hazardous wastes were shipped internationally.

Category: Environment

MM3 Overburden, rock, tailings and sludge

MINING AND MINERAL PROCESSING SOLID WASTE GENERATED AND DISPOSAL METHOD (TONNES)

PHOSPHATE

MATERIAL	2018	2019	2020	2021	2022	DISPOSAL METHOD
Overburden	120,461,664	113,826,257	85,369,264	97,668,585	86,993,936	Used for reclamation
Sand Tailings	37,790,316	36,994,175	33,368,070	33,931,139	30,079,158	Used for reclamation
Clay	15,573,299	14,628,902	15,493,615	13,200,097	12,316,601	Stored in surface impoundments and used for reclamation
Phosphogypsum	21,150,286	20,273,770	20,600,284	18,394,809	16,517,027	Managed in permitted phosphogypsum stack systems

POTASH

MATERIAL	2018	2019	2020	2021	2022	DISPOSAL METHOD
Tailings (Salt)	13,522,972	12,734,513	10,557,129	11,615,775	10,399,101	Stored or recycled for commercial use
Brine	13,547,629	12,176,515	13,977,675	10,196,105	5,984,048	Potash waste brine disposal or evaporation

MOSAIC FERTILIZANTES

MATERIAL	2018	2019	2020	2021	2022	DISPOSAL METHOD
Waste Rock (Sterile)	63,768,400	53,039,223	57,377,108	77,797,839	81,388,534	Stored and used for reclamation
Sand Tailings	19,169,629	13,012,380	15,414,844	14,862,381	15,333,825	Stored in tailings dams
Phosphogypsum	5,372,140	4,630,659	4,450,823	5,030,003	4,736,512	Managed in permitted phosphogypsum stack systems or used in coproduct applications
Brine	4,172,975	5,529,700	6,438,067	6,453,084	6,879,650	Evaporated or discharged

NOTE: Due to the composition of mineral deposits in Brazil, our Mosaic Fertilizantes operations handle various mining and production wastes we have not historically reported here. Please review our [2022 Environment Metrics Supplement](#) for more information. In 2022, Potash Waste Brine Disposal has significantly decreased due to the closure of K1 and K2 mines at Esterhazy.

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Category: Environment

306-3 Number and volume of significant spills

In 2022 we had a total of 11 releases equal to or greater than 2,000 gallons. We use another leading metric, potentially serious incidents (PSIs) to track progress toward our target to eliminate environmental incidents. Companywide we had eight PSIs in 2022, which represents a 38 percent decrease since 2020 and flat year-over-year. We define PSI as a potentially serious incident that could be life altering or affect our license to operate.

ENVIRONMENTAL RELEASES > 2,000 GALLONS

BUSINESS SEGMENT	2018	2019	2020	2021	2022
North America	1	3	3	1	10
Mosaic Fertilizantes	–	3	3	0	1

NOTE: Table includes environmental releases equal to or greater than 2,000 gallons equivalent. Environmental releases meeting these criteria in 2022 included one release of syn-gas to air; four releases of potash brine to soil; two releases of stormwater to water following a catastrophic hurricane; one event involving a release of ammonia to air; a release of process water to soil; an incident involving hazardous waste released to soil; and a release of clay files to soil.

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307-1 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations

Companywide, we resolved seven enforcement actions in 2022 alleging non-compliance with environmental permits or regulations, representing fines in the amount of approximately \$30,000. Of those, one event was related to water quality permits.

Mosaic reports any environmental enforcement action that it has identified as potentially material to investors, or if not potentially material, as potentially meeting or exceeding a significance threshold of \$300,000. In 2022, no resolved enforcement action met this threshold.

Supplier Environmental Assessment

308-2 Significant actual and potential environmental impacts in the supply chain and action taken

Through a collaboration with a third party, we determined that the environmental impacts associated with our supply chain are primarily associated with the purchase of manufactured ammonia — specifically, the greenhouse gas emissions associated with producing this material. We report those emissions in [305-3](#). In 2020 we issued a target to engage suppliers and service providers to assess their commitment to and performance in key ESG areas such as environment, diversity and human rights. We will continue to engage with suppliers to evaluate and report their performance, while identifying opportunities to mitigate and reduce their individual company and broader industry's environmental impacts. Topics of engagement in 2022 included diversity and inclusion, greenhouse gas emissions, and water tracking and management.

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Another potential impact relates to downstream use of crop nutrient products which, if used improperly, can run into waterways and contribute to impaired water quality and can also nourish algal blooms. Mosaic supports and promotes the 4R Nutrient Stewardship framework to achieve the agricultural benefits of fertilizer and reduce nutrient loss to the environment. Since 2004, Mosaic has invested over \$25 million with more than 150 organizations on water-related initiatives, including nutrient stewardship. In 2020, we issued a target to empower farmers in key growing areas in North America to reduce the impact of crop nutrient products on the environment by facilitating the implementation of 4R Nutrient Stewardship on 25 million acres by 2025. As of the end of 2022, 4R Nutrient Stewardship practices have been implemented on more than 13 million acres.

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Category: Social

Employment, Labor/Management Relations, Diversity and Equal Opportunity

At Mosaic, the strength of our business relies on the commitment of an exceptional global team of employees. Whether working in our mines, distribution facilities or offices, our more than 13,000 employees are part of a global Mosaic team that is richly diverse in skills, experiences and backgrounds. Together, we are responsible, innovative, collaborative and driven.

Mosaic aims to be the employer of choice for a diverse and inclusive workforce. Our global talent investment philosophy is to provide competitive compensation and benefits, with flexibility to choose programs that best meet our employees' needs.

Mosaic offers health, welfare and retirement benefits to all full-time employees and eligible dependents.

Mosaic offers competitive compensation and benefits in each of the company's significant locations of operation. Within each of the countries in which Mosaic operates, benefits provided or offered to our full-time employees may differ for various reasons, including:

- State or country mandated benefit laws that apply to Mosaic employees in a specific geography
- Labor agreements between Mosaic and labor organizations acting on behalf of represented employees
- Market-specific benefit programs or practices that exist within an area that Mosaic competes for labor
- The impact to employees of local or national tax laws regarding the treatment of company-sponsored benefits.

Mosaic values collective bargaining as an important form of collaborative employee engagement. In addition, Mosaic is sensitive to the needs of its employees, and much consideration is placed on applicable notice periods for any such changes that may impact employees.

Mosaic's **Equal Employment Opportunity and Nondiscrimination Policy** provides equal employment opportunities to all Mosaic applicants and employees and other qualified persons without regard to race, religion, color, gender, national origin, age, disability, marital status, citizenship status, military or veteran status, sexual orientation, gender identity, genetic information, or any other legally protected status under applicable laws in countries where Mosaic employees work. The policy also provides that Mosaic is committed to maintaining a work environment free of discrimination. Mosaic's commitment applies to all terms and conditions of employment, including recruiting and hiring, training and promotion, compensation and benefits, performance assessments, transfers, terminations, layoffs or recall from layoff, leaves of absence, and company-sponsored training and education. We conducted internal pay equity reviews annually and commission an independent third-party review every three years. Retaliation or reprisal toward an employee who has exercised their rights under this policy is strictly prohibited **Mosaic's Code of Business Conduct and Ethics** reinforces this policy.

Our **Commitment to Inclusion** reinforces that Mosaic is focused on building a representative workforce that embraces the opportunities that diversity brings to the workplace. As of the date of this report, we have refreshed our Commitment to Inclusion, which was initially released in 2012, and we are continuously engaging employees in its principles as we work toward diversity and inclusion targets. Please see mosaicco.com for more information.

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Mosaic supports and participates in a variety of formal and informal channels through which employees can submit concerns or grievances, including an EthicsPoint hotline, engagement surveys, mediation, arbitration, and/or through other formal administrative tribunals such as the National Labor Relations Board and Equal Employment Opportunity Commission. Our collective bargaining agreements contain procedures for resolving grievances over the application or interpretation of such agreements, and Mosaic resolves labor grievances in accordance with the procedures outlined in those respective agreements. Please see our Human Capital disclosures in our **2022 10-K** (pg. 18) for more information.

Category: Social

401-1 Total number and rates of new employee hires and employee turnover by age group, gender and region

EMPLOYEES BY AGE GROUP, GENDER AND REGION

COUNTRY	<30		30-50		>50		COUNT
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	
Brazil	447	900	684	3,961	43	849	6,884
Canada	47	133	184	1,046	58	451	1,919
China	4	5	42	86	2	12	151
India	0	7	8	49	0	2	66
Paraguay	4	6	9	29	0	2	50
Peru	23	24	42	509	3	90	691
Saudi Arabia	0	0	0	0	0	1	1
USA	53	331	331	1,539	218	1,336	3,808
Total	578	1,406	1,300	7,219	324	2,743	13,570

NEW HIRES BY AGE GROUP, GENDER AND REGION

COUNTRY	<30		30-50		>50		COUNT
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	
Brazil	224	313	129	383	3	9	1,061
Canada	13	55	18	61	1	4	152
China	0	1	1	2	0	0	4
India	0	6	1	4	0	0	11
Paraguay	0	3	0	8	0	0	11
Peru	16	18	1	24	0	1	60
USA	22	141	63	247	11	56	540
Total	275	537	213	729	15	70	1,839

EMPLOYEE TURNOVER BY AGE GROUP, GENDER AND REGION

COUNTRY	<30		30-50		>50		BLANK	TOTAL
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE		
Brazil	124	259	116	420	3	67	0	989
Canada	10	13	7	44	8	49	0	131
China	1	1	2	4	1	1	0	10
India	0	3	2	4	0	1	0	10
Paraguay	0	3	0	12	0	1	0	16
Peru	6	4	3	10	0	0	5	28
USA	19	73	55	204	26	161	0	538
Subtotal	160	356	185	698	38	280	5	1,722

NOTE: "Blank" refers to employees in Peru who did not track gender data related to turnover in our HR system of record in 2022.

Category: Social

401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation

Mosaic provides competitive compensation and bonus opportunities for jobs in all disciplines and geographic markets based on company and individual performance. Additionally, Mosaic contributes toward retirement income benefits, which may include defined-benefit pension plans, defined-contribution plans or other supplemental retirement plans across our locations and countries. The majority of administrative, insurance and other costs associated with Mosaic-sponsored health and welfare plans is borne by us. Participation in the retirement plans is automatic in the United States and Canada. The defined-contribution plan is open to all, but it is not mandatory to participate.

EMPLOYEE BENEFITS (● = YES)							
TYPE OF BENEFIT	UNITED STATES	CANADA	BRAZIL	PARAGUAY	INDIA	CHINA	PERU
Healthcare	●	●	●	●	●	●	●
Travel Benefit - For Healthcare Services	●						
Life Insurance	●	●	●	●	●	●	●
AD&D Insurance	●	●			●	●	
Disability Coverage	●	●	●	●	●	●	●
Employee Assistance Program	●	●	●	●	●		●
Defined-benefit Pension Plan	●	●	●		●		
Defined-contribution Savings Plan	●	●	●		●		
Annual Profit Sharing	●	●	●	●	●	●	●
Maternity Leave	●	●	●	●	●	●	●
Paternity Leave	●	●	●	●	●	●	●
Family Leave	●	●					●
Sickness Leave	●	●	●	●	●	●	●
Deferred Bonus and Deferred Pay	●						
Long-term Incentives	●	●	●	●	●	●	●
Stock Ownership	●				●		
Relocation Assistance	●	●	●	●	●	●	
Flex Time Program	●	●	●	●		●	●
Formal Wellness Programs	●	●	●	●	●	●	●
Tuition Assistance/Education	●	●	●	●	●	●	●
Telecommute Program				●	●	●	●
Meal Program			●	●	●	●	●
Award for Years of Service	●		●	●	●		●
Emergency Services							
Annual Incentives	●	●	●	●	●	●	●

NOTE: In most countries maternity and paternity leave are offered in accordance with applicable law. Mosaic provides additional paternity leave in India; additional maternity leave in Brazil; and additional parental leave (maternity and paternity) in the United States which exceeds compliance benefits. Formal Wellness Program includes benefits such as biometric screenings and on-site fitness facilities. Individual wellness benefits vary by country.

Category: Social

401-3 Parental Leave

PARENTAL LEAVE							
		EMPLOYEES ENTITLED TO PARENTAL LEAVE (2021)	EMPLOYEES WHO TOOK PARENTAL LEAVE (2021)	EMPLOYEES WHO RETURNED TO WORK (2022)	EMPLOYEES STILL EMPLOYED 12 MONTHS AFTER RETURN (2021-2022)	RETURN TO WORK RATE	RETENTION RATE
Male		8,032	76	73	46		
	USA	1,541	41	38	34	100%	92%
	Canada	633	26	26	9	100%	100%
	Brazil	893	33	14	14	42%	100%
	India	58	2	2	1	100%	50%
	China	103	0	0	2	0%	100%
Female		1,892	48	60	63		
	USA	491	10	8	12	100%	75%
	Canada	174	5	12	23	100%	96%
	Brazil	1,171	31	38	27	100%	79%
	India	8	1	1	1	100%	100%
	China	48	1	1	0	0%	0%
Total		9,924	124	133	109		

NOTE: Per the definitions for this disclosure as laid out in the GRI Employment Standard, return to work rate is calculated as the total number of employees that returned to work after parental leave divided by the number employees due to return to work after taking parental leave. Retention rate is calculated as the number of employees retained 12 months after returning to work following a leave of parental leave divided by the total number of employees returning from parental leave in the prior reporting period(s).

402-1 Minimum notice periods regarding operational changes, including whether these are specified in collective agreements

In the United States, we adhere to or exceed the minimum notice or pay in lieu requirements set by federal and state Worker Adjustment and Retraining Notification Act (WARN) laws. Additionally, in the U.S. some of Mosaic's labor agreements contain provisions of advance notice periods with respect to significant operational changes that impact employees. In most locations the exact notice requirement varies depending on circumstances surrounding the changes. In Canada, Mosaic adheres to or exceeds the minimum notice or pay in lieu requirements set by provincial employment standards laws. In China, Mosaic adheres to or exceeds the 30-day notice or pay in lieu requirements set by Article 41 of the Employment Contract Law (ECL). In Brazil, Mosaic adheres to the minimum 30-day notice requirement for dismissals without cause required by Brazilian Labor Law. In the other regions where we operate, Mosaic meets and usually exceeds the minimum notice or pay in lieu required, which varies by local legislation and collective bargaining agreements.

Category: Social

MM4 Number of strikes and lockouts exceeding one week's duration, by country

There were no strikes or lockouts at Mosaic facilities in 2022.

405-1 Diversity of governance bodies and employees

WORKFORCE BY AGE AND GENDER

AGE GROUP	FEMALE		MALE		TOTAL	
	COUNT	PERCENTAGE	COUNT	PERCENTAGE	SUBTOTAL	PERCENTAGE
<30	578	4.3%	1,406	10.4%	1,984	14.6%
30-50	1,300	9.6%	7,219	53.2%	8,519	62.8%
>50	324	2.4%	2,743	20.2%	3,067	22.6%
Total	2,202	16.2%	11,638	83.8%	13,570	100%

NOTE: Excludes long-term leaves, co-ops, seasonal and temporary workers. 16 percent of Mosaic's total workforce is female and 18 percent of the management workforce is female. Approximately 22 percent of the United States management workforce is considered a member of a minority group; 29 percent of the total U.S. workforce is considered a member of a minority group. "Minority group" in the United States is defined as non-white ethnicity of any gender. It excludes any employees who did not provide a response, either inadvertently or by selecting "decline to respond."

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BOARD OF DIRECTORS BY AGE AND GENDER

AGE GROUP	FEMALE		MALE		TOTAL	
	COUNT	PERCENTAGE	COUNT	PERCENTAGE	SUBTOTAL	PERCENTAGE
30-50	0	0.0%	0	0.0%	0	0.0%
>50	3	27.2%	8	72.8%	11	100.0%
Total	3	27.2%	8	72.8%	11	100.0%

NOTE: Table represents age and gender information for Mosaic's 2021 Board of Directors. For more information, please review our [2022 Proxy Statement](#) (pgs. 11-16).

In early 2022 we formalized new global diversity and inclusion targets to drive improved representation and inclusion in our workforce and broader positive impact in communities. By 2030 we are striving to achieve:

- 30 percent women in the workplace
- 30 percent growth in underrepresented groups in the workplace
- 30 percent growth in leadership diversity
- 30 percent community giving D&I focused
- Ongoing: building a more inclusive culture

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Category: Social

405-2 Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation

We are committed to providing the environment, development opportunities and compensation to ensure that Mosaic is a company where employees are proud to work and grow.

We are an equal opportunity employer, and our recruiting practices focus on matching the best possible candidate to the position. Mosaic uses salary ranges that are competitive with market pay ranges for positions of comparable responsibility, functional knowledge, impact and other compensable factors. Gender is not a factor when determining compensation. Each salary range has a minimum or threshold salary for a new hire, although Mosaic typically sets the actual salary above this minimum.

Pay equity is fundamental to our compensation philosophy and our commitment to diversity and inclusion. Mosaic regularly evaluates pay equity and compensation practices to ensure fair and equitable treatment of employees based on our pay-for-performance framework. In 2022, Mosaic retained an independent consultant to assist with a pay equity analysis. The results revealed fewer than .07 percent outliers without adequate business justifications. Mosaic addressed all of the instances during our 2023 compensation cycle.

Category: Social

Occupational Health and Safety

We are dedicated to providing a safe, healthy and respectful work environment for an engaged, inclusive workforce. Mosaic's Environmental Health and Safety Management System (the Mosaic Management System [MMS]), aligned to ISO 14001, ISO 45001 and ANSI-Z10, integrates internationally regarded best management practices into our operations while affirming our ongoing safe and environmentally responsible performance. We strive to continually improve Mosaic's management system through efforts such as annual self-assessments, which are reviewed by both internal and external experts.

The Mosaic Management System is designed to identify, evaluate and control risks. This proactive approach allows us to understand the risks, take action and prevent incidents from occurring in the first place. We have risk reduction controls at all facilities which continues the drive toward zero injuries and incidents. Incident management is one of 14 elements of the Mosaic Management System and focuses on thorough incident investigation resulting in corrective and preventive actions. Mosaic's best practice is to communicate incident investigation findings to ensure lessons learned are shared throughout the company.

Though rare, emergencies can occur in our business, and the ability to respond promptly and effectively is critical. Mosaic's overarching approach to crisis management includes risk anticipation and mitigation, site-specific emergency response plans, and routine crisis simulation drills involving Mosaic employees from various functions and emergency response professionals from the communities where we operate. Our internal crisis management intranet site outlines response plan specifics, including roles, procedures, guidelines and protocols for handling crises and communicating with stakeholders.

Ultimately, our goal is zero harm to people and the environment. Globally, all Mosaic employees, service providers and contractors are held to the same high standards outlined in our [Code of Business Conduct and Ethics](#).

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403-1 Occupational health and safety management system

403-8 Workers covered by an occupational health and safety system

The Mosaic Management System, aligned to ISO 14001, ISO 45001 and ANSI-Z10, applies to all workers in North and South America. Coverage exceptions include India (66 workers).

Our concentrates facilities and ammonia distribution sites follow the process safety management (PSM) and risk management program standard for identified processes to address compliance with OSHA 29 CFR 1910.119 and EPA 0 CFR 68 as part of Mosaic's Management System. This approach is to ensure uniform, compliant, and sustainable process safety and risk management plans and processes integrated into plant operations. This will help prevent accidental releases of substances that can result in harm to employees, the public or the environment, and to mitigate the severity of releases that do occur. While not a regulatory requirement, some of our Mosaic Fertilizantes sites in Brazil are also implementing these standards. Audits and assessments are key components of a successful management system and regulatory compliance within Mosaic. Audits are regulatory- and risk-driven and are a combination of voluntary internal audits (completed by Mosaic and a third party) and required regulatory audits (completed by third-party auditors and Mosaic). Audits also check the health of Mosaic's Management System and are completed at each facility by both Mosaic employees and third-party assessors.

Audits are completed annually at our North and South American facilities by teams of Mosaic and third-party auditors to ensure that we are adhering to all internal standards and external regulatory requirements. Topics reviewed are determined through a risk-based approach and management review process. Corrective actions are tracked based on findings and reviewed by management and senior leadership.

Category: Social

403-2 Hazard identification, risk assessment and incident investigation

Mosaic uses an integrated information management system to track EHS incidents, associated corrective actions and risk management claims. To help with data quality and adherence to Mosaic standards and best practices, we have automated reporting that provides our sites with a consolidated view of incidents and corrective action compliance.

Incidents are entered primarily by supervisors and area managers rather than frontline workers to validate data quality and to promote ownership of incidents that occur within respective areas of responsibility. Many types of EHS incidents are managed within this approach: employee injury, near misses, property damage, environmental releases, government inspections, and permit exceptions or exceedances. Contractor incidents that occur on Mosaic property are tracked in the same manner as internal Mosaic incidents. A corporate EHS team manages the flow of information about key incidents by compiling and distributing a weekly EHS report to the site's operations management team, EHS management team and senior leadership team.

Further, Mosaic uses a Risk Register tool to identify and score various EHS risks, as well as document existing operational controls. Each facility maintains Risk Register to identify and track environmental and safety hazards, quantify baseline, inherent and residual risk scores, and collaborate with the workforce to implement operational controls to reduce or eliminate these hazards. Risk scores are calculated for each identified risk and take into consideration the severity of consequences expected, and the likelihood of exposure and any controls that have been implemented to reduce or eliminate the risk. This is a dynamic process where risks are reviewed whenever new controls are implemented or existing controls are reviewed or new risks are identified.

Over two-thirds of our employees are on the front lines — making crop nutrient products, completing potentially high-risk work and monitoring production processes. Beyond honing a culture that is relentlessly focused on safety, we have formal mechanisms in place that empower employees to stop a job to discuss and evaluate safety and environmental risks and assess and implement mitigations. [Mosaic's Code of Business Conduct and Ethics](#) encourages employees to speak up if they have a concern about workplace health or safety, and a Non-Retaliation policy prohibits retaliation against an employee for raising a concern.

403-3 Occupational health services

403-4 Worker participation, consultation and communication on occupational health and safety

From front-line workers to leaders, Mosaic employees at all levels contribute to the development, implementation and evaluation of our companywide Mosaic Management System. We regularly engage employees on the identification, prevention, communication and control of risks. Relevant communication about safety is conveyed to workers through many methods, such as daily shift-start and safety committee meetings, videos, messages from leadership, required training, pre-job risk assessments, newsletters and engagement surveys. An "open door" policy fosters a pervasive safety culture where daily communication about safety happens up and down the organizational structure.

Mosaic has safety committees at most of our global operations, representing more than 95 percent of employees. All Mosaic operating facilities located in Brazil, the United States and Canada have formal joint safety committees that meet on defined intervals, either monthly or quarterly. These committees maintain a registry of findings, actions and resolutions to provide routine updates to site teams detailing their progress. The role of these committees, which are composed of employees from all levels, is to promote safety awareness and reinforce a working environment that promotes connectivity, teamwork and productivity among employees while supporting Mosaic's pursuit of an incident- and injury-free workplace.

One hundred percent of our union contracts in the United States, Canada and Brazil cover health and safety topics. Please see [2-30](#) for more information on the number of employees covered by collective bargaining agreements. Topics covered include supply of personal safety equipment, medical examinations, incident reporting and investigation, rights to refuse unsafe work, and health and safety committees.

Category: Social

403-5 Worker training on occupational health and safety

“Training and competency” is one of the 14 elements of the Mosaic Management System. Beyond training workers to do their work effectively, employees and contractors are also trained to minimize safety issues and to be vocal about hazards.

Training needs are assessed on many factors, including local regulatory requirements; job-specific needs; employee category; and region of work. Training is designed utilizing established instructional design principles for adult learning including Bloom’s Taxonomy and Gardner’s Theory of Multiple Intelligences. The competency of Mosaic’s trainers is supported through focused training, ongoing paid professional development, and participation of our trainers in relevant professional organizations. Effectiveness of Mosaic’s training programs is regularly evaluated alongside the other elements of Mosaic’s management system through program level and focused audits and self-assessments.

Employees are required to participate in annual training across a range of EHS topics. Training is paid and typically hosted during working hours. In 2022, employees participated in more than 250,000 hours of EHS training enterprise-wide on topics such as emergency action; environmental compliance; first aid and CPR; general safety; incident reporting and auditing; industrial hygiene; occupational health and safety (OSHA) requirements; and security and transportation/safety handling. Please see [404-1](#) for more information.

403-6 Promotion of worker health

We have observed through incident investigations that psychological and physical health can contribute to incidents at work. Accordingly, worker wellness is a component of Mosaic’s management system. Called Live Well. Work Well., Mosaic’s wellness programs address four wellness pillars — safety, physical, psychological and financial — for our nearly 13,000 employees. Mosaic’s Worker Wellness program is based off Total Worker Health® (TWH), championed by the Centers for Mental Health Commission of Canada, Disease Control and Prevention (CDC) and the National Institute for Occupational Safety and Health (NIOSH).

Mosaic provides health benefits that include insurance plans, retirement savings plans, tobacco cessation programs, wellness incentive programs and flexible work schedules; leave benefits; and site-specific wellness programs, such as on-site gyms, fitness memberships and walking paths. We also offer a company-wide Employee Assistance Program (EAP) that is confidential and addresses a variety of concerns, both personal and work-related. Discussion may occur by speaking with an EAP counselor over the phone, having a face-to-face meeting with an EAP counselor or through a referral to a mental health professional in the employee’s local area. This benefit is offered as an additional resource for wellness. See [401-2](#) for more information.

Further, we are building on our psychological wellness efforts by expanding training and awareness-building among the North America and Brazil workforces. The training builds awareness about the existence of psychological health conditions like depression and anxiety and what it may look or feel like to be unwell. People leader training empowers supervisors to recognize mental health issues and take appropriate actions when concerns are identified. Moving forward, the program will address other wellness elements that contribute to overall health such as nutrition, resilience and self-care.

Category: Social

403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships

The safety of contractors and service providers is a priority. We select, screen and audit contractors using the ISN World Rating — a global system in which contractors and suppliers report their safety performance and conformance to regulatory and internal health, safety and procurement requirements. We use the ISN Site Tracker Tool to further drive contractor safety improvements, improve accountability and accurately track safety performance.

403-9 Work-related injuries

2022 WORK-RELATED INJURIES

	FATALITIES		HIGH-CONSEQUENCE INJURIES ¹		RECORDABLE INJURIES		TOTAL RECORDABLE INCIDENCE FREQUENCY (TRIF) ²		NUMBER OF HOURS WORKED
	#	RATE	#	RATE	#	RATE	#	RATE	
Employee	0	0.00	0	0.00	54	0.40	65	0.49	26,702,583
Contractor	3	0.01	4	0.02	72	0.35	73	0.36	40,748,736
All Workers	3	0.01	4	0.01	126	0.37	138	0.41	67,451,319

NOTE: Figures have been calculated based on injuries per 200,000 hours worked and include all employees and contractors. The numbers do not reflect any worker exclusions. ¹Four injuries in 2022 resulted in a permanent disabling injury. ²Though not a global safety metric for Mosaic, we are providing MSHA all-incidence rate to satisfy a request from the SASB Metals & Mining Sustainability Accounting Standard. As reported here, TRIFR differs slightly from MSHA all-incidence rate in that it includes the prescribing of medication for ailments. The MSHA all-incidence rate excludes incidents involving the prescription of medication except when it is related to an eye injury. In 2022, there were no incidents that met the definition to be included in TRIFR but not MSHA all-incidence rate; therefore, in 2022, these values are the same. ³Hand and finger cuts and fractures represented approximately 48 percent of total injuries for employees and contractors.

The work-related hazards that pose a risk of high-consequence injury primarily include falling objects (secured and unsecured) mobile equipment, electrical contact and interaction with mechanical parts and machinery. This conclusion is based on frequency of the occurrence of those events. These risks have been identified on Mosaic's Risk Register, a tool used to identify and score various EHS risks and document existing operational controls. Please see [403-2](#) for more information about the Risk Register.

In 2022, there were four high-consequence injuries:

1. A Brazil truck loading incident resulted in three contractor fatalities. We cannot share details of the incident investigation at this time but can confirm that root cause analysis were conducted and findings processed in alignment with our management system requirements.
2. A North America contract employee was propelled into the air and struck on the head by a tree branch during the process of removing a fallen tree. Incident details cannot be shared.

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Category: Social

403-10 Work-related ill health

2022 WORK-RELATED ILL HEALTH

	FATALITIES		RECORDABLE ILL HEALTH CASES ¹		MAIN TYPES OF ILL HEALTH
	#	RATE	#	RATE	
Employee	0	0.00	11	0.08	Covid-19
Contractor	0	0.00	1	0.005	Heat Stress
All Workers	0	0.00	12	0.00	

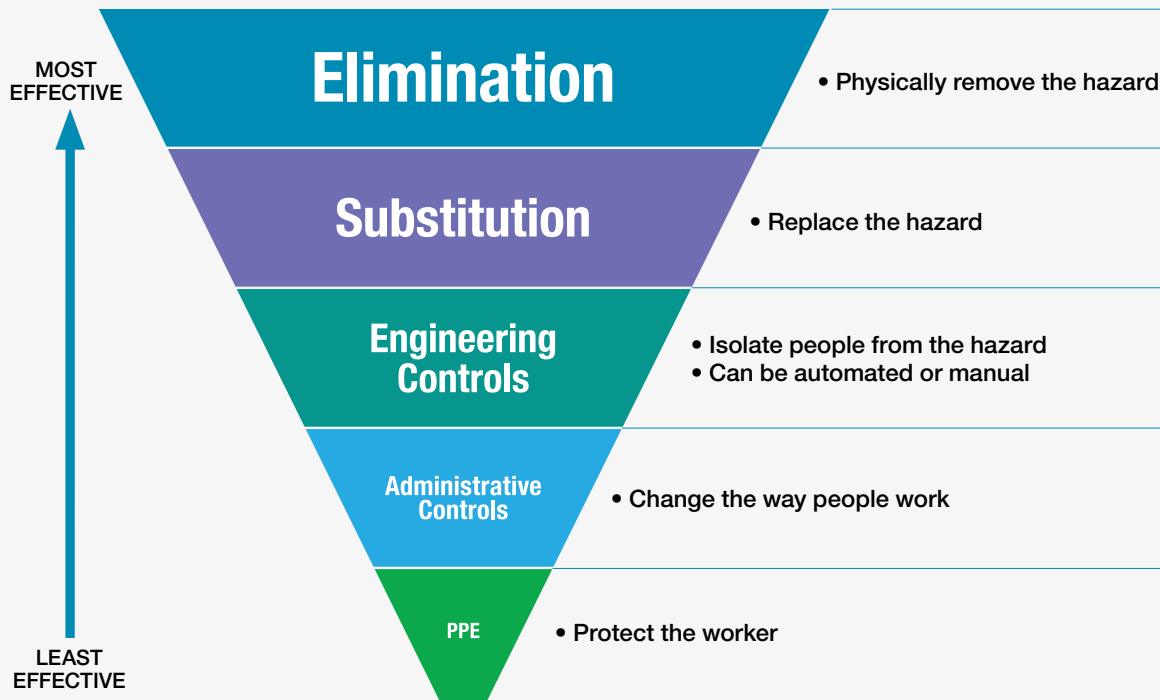
NOTE: Figures have been calculated based on illnesses per 200,000 hours worked and include all employees and contractors. The numbers do not reflect any worker exclusions.

¹ For employees, 100 percent of ill-health cases were due to work-related exposure to Covid-19. Some cases of Covid-19 in contractors may not have been captured due to difficulty in making determinations of work-relatedness and variations in individual case reporting and tracking processes.

The work-related hazards that pose a risk of high-consequence ill health primarily include repetitive stress. Like with the work-related injuries reported above, these risks have been identified on Mosaic's Risk Register. Mosaic's approach to risk mitigation is proactive, thus identifying and controlling risks before an incident or illness occurs. Please see [403-2](#) for more information about the Risk Register.

In 2022, the risks that caused or contributed to cases of ill health during the reporting period were primarily exposure to Covid-19 in the workplace and heat stress. OSHA recordable injuries and illnesses require investigations, but there are some exceptions for certain illnesses.

When an investigation is completed, the corrective actions are categorized using the hierarchy of controls illustrated below. Generally, control methods at the top of the graphic are preferred, because they are more effective at managing risk than those at the bottom.



Category: Social

Training and Education

We are committed to providing the environment, development opportunities and compensation to ensure that Mosaic is a company where employees are proud to work and grow.

Mosaic employees are encouraged to continually learn and improve their skills. With management support, we offer a companywide educational reimbursement program to help employees in each of our operating countries better meet their current job responsibilities, as well as prepare for future career opportunities within our company.

Our internal training opportunities also support the continuous development of Mosaic employees at all levels:

- Leadership
- Professional and career development
- Environmental, health and safety (EHS) training
- Equipment and maintenance training
- Continuous improvement

404-1 Average hours of training per employee by gender and employee category

TRAINING AND EDUCATION 2022 (TRAINING HOURS BY EMPLOYEE GROUP)

COURSE TITLE	HOURLY	LEADERSHIP	PROFESSIONAL	SENIOR	STRATEGIC	SUPPORT	UNKNOWN	TOTAL	AVERAGE TRAINING HOURS PER EMPLOYEE	
									FEMALE	MALE
Diversity and Inclusion	18,644	8,257	12,342	302	1,805	3,185	43	44,577	1.0	1.2
EHS Training	195,050	17,948	27,277	0	558	23,440	39	264,312	2.2	2.3
Leadership Professional Development	21,803	9,378	13,610	156	1,102	3,647	68	49,765	1.4	1.4
Legal Compliance Training	8,880	3,029	6,063	20	236	3,271	21	21,520	1.1	0.8
Operations & Maintenance Training	87,598	4,605	13,793	0	102	3,584	0	109,683	5.9	5.6
Other	549	64	130	0	1	22	0	765	0.3	0.4
Total Growing U	332,524	43,280	73,215	478	3,804	37,149	171	490,622	1.8	2.1
Total Other								68,092		
Grand Total								558,714		
Hours per Employee									41	

NOTE: "Total other" includes hours associated with training opportunities that are not currently housed in our companywide system. Those hours include: 44,120 hours of training for North America employees across a variety of topics; 7,157 hours for Brazil employees; 1,412 hours for India employees; and 15,403 hours for Peru employees.

Category: Social

404-2 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings

We offer core leadership programs designed to engage and empower employees; develop leadership skills and assist with managing teams; and drive strong business results. Mosaic offers training courses to developing leaders that are mapped to Mosaic's ten leadership model competencies. In 2022, more than 226 global leaders participated in the Mosaic core leadership programs for first-line, mid-level and senior leaders. As it relates to career transitions, Mosaic provides employees with helpful planning tools, calculators, articles, videos and webcasts, in addition to optional services provided by our third-party vendors to help plan for retirement. When a reduction in our workforce occurs, we provide comprehensive career transition services to employees to help ease the stress that accompanies job loss. In 2022, Mosaic provided ten employees with third-party coaching, webinars and trainings to help manage career transitions.

404-3 Percentage of employees receiving regular performance and career development reviews, by gender and employee category

As part of our strategic priority to develop, engage and empower our people, we have a performance management process called Performance Review. Our performance management process has evolved to include scaled competencies, goal alignment, and an emphasis on employee and career development. In addition, we offer tuition reimbursement programs to support continued education for Mosaic employees. In 2022, approximately 244 employees received financial assistance to continue their education through Mosaic's tuition reimbursement program.

EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEWS BY GENDER 2022

	FEMALE	MALE	TOTAL
Performance Reviews Given	1,092	2,545	3,637
Performance Reviews Received	79%	71%	72%

NOTE: Represents percent of reviews conducted for eligible employees.

Category: Social

Non-discrimination, Freedom of Association and Collective Bargaining, Child Labor, Forced or Compulsory Labor, and Rights of Indigenous Peoples

As a signatory to the United Nations Global Compact, The Mosaic Company is committed to the protection and advancement of human rights. Mosaic's [Code of Business Conduct and Ethics](#) and [Supplier Code of Conduct](#) form the basis of our [Commitment to Human Rights](#).

406-1 Total number of incidents of discrimination and corrective actions taken

In 2022 there were five incidents of discrimination.

- In Brazil, there were a total of four substantiated incidents of discrimination/harassment. One resulted in termination of an employee, and the remaining three resulted in employee discipline.
- In the United States, there was one substantiated incident of discrimination resulting in the termination of an employee.

There were no substantiated incidents of discrimination/harassment in Canada.

407-1 Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights

Mosaic does not have any operations in which the right to exercise freedom of association and collaborative bargaining are identified as a significant risk. Mosaic does not discriminate based on association, per our [Commitment to Human Rights](#), which is guided by the Universal Declaration of Human Rights (UDHR), the most widely recognized definition of human rights and the responsibilities of national governments; the International Labour Organization (ILO) Declarations on Fundamental Principles and Rights at Work; and the Organization for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises. Per our Commitment to Human Rights, Mosaic aims to strengthen and enforce human rights in our policies and operations globally, including in our supply chain.

Category: Social

408-1 Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor

409-1 Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor

Mosaic does not have any operations that are identified as a significant risk for child labor or forced or compulsory labor practices. Mosaic abides by all applicable child labor laws, as well as our global hiring and employment policies. In the United States and Canada, we do not employ anyone under the age of 18. In Brazil, we do not hire anyone under the age of 18; however, we participate in an apprenticeship program that is governed by Brazilian law, which occasionally employs apprentices who are under 18. We do not tolerate forced or compulsory labor. Mosaic complies with all statutory requirements in the locations where we operate, as well as our own employment policies, including our [Commitment to Human Rights](#), which is guided by the UDHR, the most widely recognized definition of human rights and the responsibilities of national governments; the ILO Declaration on Fundamental Principles and Rights at Work; and the OECD Guidelines for Multinational Enterprises. Per our Commitment to Human Rights, Mosaic expects all of our business partners to comply with labor and employment laws in the countries where we operate, including laws pertaining to child labor and forced labor.

411-1 Total number of incidents of violations involving rights of Indigenous peoples and actions taken

MM5 Number of operations taking place in or adjacent to Indigenous peoples' territories

Although Mosaic does not conduct any operations on, or immediately adjacent to, any lands of Indigenous Peoples, in Canada there are four First Nations reserves (Cowessess First Nation, Ochapowace First Nation, Kahkewistahaw First Nation, and Sakimay First Nation) that are located within 100 kilometers of our Esterhazy, Saskatchewan potash mining operations. In addition, Cowessess First Nation leases approximately 160 acres of mineral lands to Mosaic for potash mining purposes, and Mosaic may from time to time enter into additional agreements to lease mineral rights owned by other First Nations. Mosaic has had no reported incidents related to violations involving rights of Indigenous peoples for the period covered in this report.

In Brazil there are three Quilombola communities — made up of approximately 650 people — residing near the company's Potash operations in the state of Sergipe. There were no reported incidents related to violations of the Quilombolas' rights in the period covered by this report. As a legal requirement prior to future Potash project development in Sergipe, Mosaic participated in a process with the Quilombola population to develop the Basic Environmental Plan for Quilombos (PBAQ) of Terra Dura, Patioba and Canta Galo. This collaborative process, as well as the outcome, are overseen and validated by public authorities. An Indigenous community of Mbya Guarani resides near our Fospar facility in Brazil. We continue to engage this group in efforts to help preserve their customs and culture. There were no reported incidents related to violations of their rights in the period covered by this report.

We do not have any reserves in or near areas of conflict.

Category: Social

Local Communities

Our local communities are our homes, and we have a vested interest in their sustainability. We understand that for Mosaic to prosper, so must our communities. We support formal and informal communication channels to connect our employees, communities, partners and customers. Examples include our Community Advisory Panels (CAPs) in Canada and Central Florida, regular meetings with communities in Brazil, as well as regional and international microsites intended as open lines of communication between Mosaic and local communities.

413-1 Percentage of operations with implemented local community engagement, impact assessments, and development programs

In alignment with Mosaic's Environment, Health and Safety policies, we are committed to conducting all business activities in a manner that protects the environment and the health and safety of our employees, our contractors, our customers and the public.

Our guiding principles — which state that we are responsible, innovative, collaborative and driven — define how we conduct business, how we interact with colleagues, and how we treat our communities and planet. Accordingly, 100 percent of our operations have impact assessment and development programs. We employ a variety of approaches to systematically assess and manage the diverse impacts of industry on the various communities in which we operate.

There were no non-technical delays as a result of political or community relations issues in 2022.

Sustaining Our Global and Local Operations

Although Mosaic continues to refine and adapt community investment programs throughout South America and Asia, due to the nature of our business and potential impact, this report heavily emphasizes the areas where our operations and employees are centered: Central Florida in the United States; Saskatchewan, Canada; and Brazil. View a list of [our locations](#) (62 as of the date of this report).

Our operations in Saskatchewan, Central Florida and Brazil work diligently to engage local communities as part of a strategy to proactively manage social risk. Mosaic's engagement within local communities includes monthly meetings with a series of CAPs, civic organizations, elected officials, civil servants and other opinion leaders. When the business plans to expand operations, we host community forums and participate in public hearings convened by local and regional governments. In each of our operating geographies, we consult communities and other stakeholders prior to the start of mining or business expansion.

Assessing Our Environmental Impact

Mosaic is committed to conducting and reporting the results of environmental impact assessments. In April 2013, the final Areawide Environmental Impact Statement (AEIS) on Phosphate Mining in the Central Florida District was released by the U.S. Army Corps of Engineers (ACOE) for public review. Administered by the ACOE in compliance with the National Environmental Policy Act, this process analyzed the environmental scope and potential impacts of phosphate mining in Central Florida.

The Mosaic Potash segment conducts regular environmental impact assessments, reporting the results to the Saskatchewan Ministry of Environment. All environmental impact assessments have been submitted and approved to date. Additionally, the Mosaic Potash facilities in Saskatchewan conduct thorough biological assessments of proposed expansion sites, such as the assessments for any new tailings expansions, as well as the K3 site at Esterhazy. Each of these assessments includes field surveys to identify rare species of plants and animals of special concern to identify if mitigation programs are required.

Category: Social

413-1 Percentage of operations with implemented local community engagement, impact assessments, and development programs (continued)

Developing and Consulting In Our Communities

The Mosaic Company, The Mosaic Company Foundation and The Mosaic Institute in Brazil make investments in our global communities through philanthropic grants, employee engagement and in-kind donations. Combined contributions in 2022 were more than \$15 million.

In 2022, Mosaic operations in Florida committed approximately \$6.2 million, and operations in Saskatchewan committed more than \$4.3 million to enrich and improve communities where we have offices and operations. In Brazil we invested more than \$1.7 million in local communities.

Mosaic employs regional, full-time public affairs (PA) staff to support all communities where we have an operating footprint. Mosaic PA staff are committed to maintaining an open dialogue with the people in our communities, assessing local needs and building partnerships designed to improve community vibrancy for local residents. Independent CAPs help facilitate this work. Underwritten by Mosaic, CAPs serve as a forum for open discussion among representatives of the local community and provide a place for companies to discuss community response to industry developments and plans.

In 2022, Mosaic's Brazil operations implemented dam emergency plans in cooperation with civil defense groups, emergency personnel, municipalities and other stakeholders, conducting training at all sites with dam operations. Additionally, we engage communities that are potentially impacted or impacted by our operations through programs that build trust and encourage two-way dialogue aimed at addressing environmental issues with the Environmental and Citizen Awareness Program.

Recognizing Indigenous Rights

The issue of indigenous engagement is relevant to Mosaic. We recognize the deep connection that indigenous peoples often have to the natural and human resources our industry relies on to conduct its work. Given the nature of Mosaic's core business, and our daily interaction with communities and with air, water and land resources across our operations, we prioritize indigenous engagement and understand its implications on the protection of human rights, environmental stewardship and safety.

In some locations, there are cultural implications to our business that Mosaic addresses through community engagement. Mosaic recognizes the significance of building relationships with First Nation and Métis organizations throughout Saskatchewan. For example, Mosaic partners with the Digital Transformation in Potash Mining program led by Morris Interactive, to prepare Saskatchewan's Indigenous workforce for careers in mining, and also with the Saskatchewan Science Center to provide science-based learning opportunities in Indigenous schools annually. We strive to be a thoughtful and engaged neighbor who invests carefully and generously, and, through working with First Nations and Métis communities, we identify strategic opportunities to target grant funding to initiatives and projects that are important to the growth and sustainability in the areas where we operate.

In Brazil we engage Quilombola communities near our potash operations in Sergipe in cultural and educational initiatives aimed at achieving several outcomes: administrative and management training for community leaders and associations; prevention of sexual exploitation of children and adolescents; reduction and avoidance of alcohol and drug use; and support for traditional African festivals. Please see [411-1](#) and [MM5](#) for more information.

[Back to ESG Performance Targets >>](#)

Engaging Our Stakeholders

Mosaic is committed to stakeholder engagement, and public outreach efforts. Through face-to-face meetings, social media, government relations, facility tours and more, Mosaic connects with stakeholders to keep them well informed and engaged with our mission to help the world grow the food it needs.

- Mosaic employees conduct tours of mines and manufacturing facilities for local, state and federal elected officials and staff, customers, investors, students, community leaders, the media, and nonprofit and civic groups throughout the year.
- Mosaic has an engaged social media presence (Twitter, Facebook, YouTube, LinkedIn). These media enable us to share information with the general public and engage in conversations about our business, making thousands of impressions on users and community members.

Category: Social

413-1 Percentage of operations with implemented local community engagement, impact assessments, and development programs (continued)

- Mosaic is an engaged business partner. We regularly collaborate with customers in crop nutrient education and business management principles through various events, such as Mosaic's AgCollege, which hosts approximately 250 of Mosaic's strategic customers from the United States, Canada, Mexico, Argentina, Brazil, Australia, Chile, China and India for the premier education, personal growth and leadership development event for fertilizer retailers.
- As a member of The Fertilizer Institute, Fertilizer Canada, the Saskatchewan Mining Association, the New Mexico Mining Association and Brazilian Mining Institute, Mosaic presents important information to government groups and decision-makers who directly impact operations, our current expansions, and our investments in our communities.
- In all regions where we have operations, Mosaic participates in ongoing consultation with government, covering topics such as operations updates, the need for infrastructure, consistency surrounding tax, partnership opportunities and Mosaic's approach to sustainability.
- Stakeholders may reach Mosaic in several different ways.
 - Send comments or questions regarding this report to mosaic.sustainability@mosaicco.com
 - Contact our Board of Directors via written communication in care of the General Counsel at the address of the company's executive offices, or by email: directors@mosaicco.com

413-2 Operations with significant actual and potential negative impacts on local communities

Mosaic provides significant economic and social benefits to the local communities in which it operates. However, as with all mining activities, the extraction and beneficiation of phosphate and potash and subsequent processing to meet the global demand for mineral fertilizer has the potential to cause environmental impacts.

Mosaic operates in a highly regulated and monitored industry. We work closely with state/provincial and federal officials on operations, expansions and sales to ascertain the environmental impact of industry activities on local communities. Through these efforts, Mosaic has identified and implemented mitigation opportunities that safeguard local communities from potential negative impact. For example, in Brazil we work closely with communities and local public authorities to communicate risks and safety precautions related to mining dams. These efforts include the formation of action groups that will be trained to recognize and act in emergency situations. In 2022 we resumed our dam emergency plan collaboration in cooperation with civil defense groups, emergency personnel, municipalities and other stakeholders. Simulation exercises, which were put on hold due to Covid-19, returned in 2022. Additionally, we engage communities that are potentially impacted or impacted by our operations through programs that build trust and encourage two-way dialogue aimed at addressing environmental issues. An Environment and Citizen Awareness Program provides further opportunity to engage our operating communities and build awareness of our operations.

For more information on actual or potential impacts, please see the discussion of risk factors in our [2022 10-K](#) (pgs. 22-35).

Category: Social

MM6 Number and description of significant disputes relating to land use, customary rights of local communities and indigenous peoples

MM7 The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and outcomes

We did not engage in disputes related to the land use or customary rights of local communities and indigenous people in North America or Brazil in 2022.

Grievance mechanisms vary by geography. In Canada, in line with requirements set forth by the Government of Saskatchewan, when undertaking a new development, Mosaic adheres to provisions of The Heritage Property Act to protect any heritage resources, including Indigenous resources. The heritage screening process within a project area includes partnering with a third-party expert and consulting with the Saskatchewan Heritage Conservation Branch of the Government of Saskatchewan. This information is included in a comprehensive report that is subsequently provided to the Saskatchewan Ministry of the Environment for review and approval prior to development.

In the United States, our activities are subject to rigorous state and federal laws and regulations that help protect against the destruction of items of historical or cultural significance. Specifically, before mining in Florida, Mosaic seeks an Environmental Resource Permit (ERP), which includes a third-party archaeological survey of the property we intend to mine as required by State of Florida's Division of Historical Resources (FDHR). The process entails a land title search, a review of events that have been recorded in master site file and register of historic places, and a grid-style field investigation around the perimeter of the parcel of land to shovel test the area for items of archaeological significance.

On December 22, 2020, the Florida Department of Environmental Protection (DEP) assumed administration of the federal Clean Water Act 404 permitting program. DEP reviews and issues 404 "dredge and fill" permits for projects affecting "State-assumed waters" in accordance with a Memorandum of Agreement (MOA) with the U.S. Environmental Protection Agency (EPA). The MOA is designed to ensure DEP satisfies all federal policies, standards and procedures applicable to 404 permits. With respect to "Historic Resources," (which term includes archeological resources, Native American habitations, ceremonial sites and abandoned settlements), the 404 permitting process follows the ERP process with FDHR reviewing whether a proposed project will affect protected resources. Additionally, DEP is required to send a copy of the Public Notice to a potentially affected tribe prior to issuance of any 404 permit, where the project has the potential to affect tribal water or resources. The tribes may submit comments and proposed project modifications for DEP's consideration. If DEP declines to adopt tribal recommendations, DEP must share those recommendations with USEPA — giving USEPA the opportunity to object to issuance of the 404 permit until tribal concerns are addressed. For projects affecting waters and wetlands that are not "State-assumed waters," the federal 404 permit is issued by the U.S. Army Corps of Engineers (Army Corps).

For those projects, the Army Corps, a federal agency, reviews the FDHR report and coordinates review with potentially affected tribes, including the Seminole Tribe, at which time the tribe can express objections or suggest project modifications for the Army Corps to incorporate into the final 404 permit. Whether issued by the DEP or Army Corps, the 404 permit will include a condition that mandates work stoppage if remains or artifacts are discovered during mining operations — a measure that serves as further protection for items of archeological or tribal significance.

Mosaic's operations in Brazil are primarily on land which we access through owned mineral rights. Prior to the start of mining in Brazil, and as a condition of the mine permitting process, we must conduct cultural and archaeological studies to identify areas of potential significance. Any such area — referred to as an "occurrence" — is put under local management in accordance with permits. To date, there are known archaeological occurrences identified around Tapira, Patrocínio and Catalão mines. Beyond rescuing and preserving the artifacts or materials discovered during these studies, Mosaic develops a cultural educational program to protect the knowledge of cultural materials and educate and engage surrounding communities in an ongoing discussion about their history and value. These archaeological programs are managed in line with a Brazil law from IPHAN (National Historical and Artistic Heritage Institute), which defines Mosaic's obligation as a mining company to protect cultural heritage.

Category: Social

Public Policy

As one of the world's leading crop nutrient companies, Mosaic has a responsibility to be actively engaged in the promotion of sound and sustainable public policies. We proactively educate all levels of our employees and government officials on the key issues our company and operations face, our value to operating communities, and our vital role in the world's food production. Mosaic supports elected officials, candidates for public office, and political committees that are supportive of Mosaic's mission and share our views on important issues, such as maintaining a strong North American manufacturing and mining base, recognizing the importance of crop nutrients in maintaining domestic and global food security, and supporting reasonable science-based regulation with responsible environmental stewardship.

Please see [2-28](#) for a list of the industry organizations of which we are members, some of which represent the public policy needs of our industry within our operating communities.

415-1 Total value of political contributions by country and recipient/beneficiary

Amounts of political contributions are reported based on when Mosaic issued the check, which in some cases may be in a different year than when the check was delivered and reported by the receiving candidate or organization. Contribution levels vary in accordance with election cycles in local and regional communities where we operate.

POLITICAL CONTRIBUTIONS (U.S. DOLLARS)					
	2018	2019	2020	2021	2022
United States	626,614	244,841	356,598	320,647	813,336
Canada*	10,713	11,916	23,163	4,582	11,000

NOTE: In line with local regulations, we do not make political contributions in Brazil. United States political contributions include both "hard" and "soft" money donations, with contributions made from the Mosaic Company Political Action Committee (PAC) included in the United States total. The 2018 increase in our United States political contributions reflected an election cycle in which most of Florida's Senate and House offices were up for election, as well as all four Florida statewide elected offices. 2022 figures were higher due to another election cycle. *The Canada figures were converted to USD using the currency exchange rate on December 31 of the respective calendar year. Since the figures were not converted on the actual date of the contribution, the amount in USD on the date of the contribution may differ slightly from what is reported here.

MM9 Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process

Mosaic's North American operations are well established mining regions with 50-plus years of operations. Mosaic purchased private properties near our operations in Canada and the United States in 2022, but no resettlements of communities took place. In Brazil, we negotiated resettlements with three families near our Catalão facility, resulting in three resettlements that will take place in 2023.

MM10 Number and percentage of operations with closure plans

Mosaic has plans in place as required by governmental regulations for the closure and post-closure care of our phosphogypsum management systems at eight former and current phosphoric acid manufacturing plants in Florida and Louisiana. Similarly, Mosaic has plans in place as required by governmental regulations for the closure and post-closure care of all its Carlsbad and Saskatchewan mining operations. In Brazil we have closure plans in place as required by governmental regulations for the closure and post-closure care of all production facilities, except for one, which is operating under a lease agreement with the government that calls for the facility to be maintained and reverted back to the government at the end of the concession period.

For specific details on our estimated asset retirement obligations, refer to our [2022 10-K](#) (pg. F-14–F-15).

Category: Social

Customer Health and Safety and Marketing and Labeling

Communications related to the health and safety of Mosaic's products are directed up and down the value chain, such as supplier certification requirements as part of sourcing and procurement of inputs, (material) safety data sheets (M/SDS), labels, registrations, quality/traceability information, training and educational materials.

Mosaic's research and development processes include internal and external research and science-based data generation to advance product advocacy and customer results.

Finally, process improvements include an Environmental Health and Safety Management System that is aligned to ISO 14001, ISO 45001 and ANSI-10, enterprise mechanical integrity programs and contractor accountability programs.

We believe Mosaic's products are among the most responsibly sourced in the world, and we are committed to the sustainable manufacturing of our products. For example, Mosaic uses improved raw material sourcing guidance for sulfuric acid and zinc to prevent impacts to our products with trace metals.

416-1 Assessment of the health and safety impacts of product and service categories

In 2022, approximately 36 percent of Mosaic's products, representing approximately \$6.9 billion in revenue, are GHS Category 1 or 2 hazardous substances. This figure includes revenue from the sale of crop nutrient, animal feed and industrial products, as well as coproducts and materials that are sold as part of supply agreements. It excludes blends from the Mosaic Fertilizantes business, some of which might be categorized as GHS Category 1 or 2.

As for hazard assessments, a portion of the Muriate of Potash (MOP) products sold through Canpotex agreements, representing approximately 15 percent of companywide revenue in 2022, undergo a REACH hazard assessment. The remainder of our products undergo various other health and safety assessments. For example, we conduct pre-job risk assessments (PJRAs) to identify potential hazards associated with manufacturing jobs and to prevent health and safety incidents from occurring. Through facility-level PJRAs and various other hazard assessment techniques — all of which are governed by Mosaic's environment, health and safety management system — we identify, implement mitigation controls for, document and communicate health, safety and environmental measures to manage risks so products can be safely used for their intended purposes.

Category: Social

417-1 Requirements for product and service information and labeling

One hundred percent of Mosaic's products are subject to labeling requirements. We comply with safety, environmental, labeling and registration required by country and local governments where we sell and distribute fertilizer, animal feed and industrial products.

Mosaic provides the required country, state and local product documentation for all shipments. This includes detailed labels, data specification sheets and a safety data sheet (SDS) for all products. These documents provide information about proper product handling, safety precautions and guaranteed analysis. Situations requiring disposal are also addressed in the SDS. For product undergoing vessel transport, the SDS includes certification that the discharge of cargo hold rinse is not harmful to the marine environment.

Approximately 36 percent of Mosaic's products are categorized as Globally Harmonized System of Classification and Labeling of Chemicals (GHS) hazard Category 1 or 2. GHS defines and classifies the hazards of chemical products and communicates health and safety information on labels and safety data sheets. See [416-1](#) for more information.

As it relates to safe use of our products, Mosaic promotes customer education following the [4R Nutrient Stewardship](#) framework of the Right nutrient source, applied at the Right rate, at the Right time and at the Right place. Our agronomists share this message worldwide.

More Information: Animal Testing

Some stakeholders have expressed an interest in Mosaic's involvement with animal testing, so we offer important context here. We produce animal feed ingredient (AFI) products (approximately 2 percent by weight of total products) that contain phosphate and potash. The U.S. Food and Drug Administration (FDA) is the primary Federal regulatory agency responsible for ensuring the safety of AFIs. Both the phosphate and potash components, and the resulting finished animal feed ingredient products they go into, are considered "generally recognized as safe" (GRAS) by the FDA. Therefore, safety testing is typically not needed as it has already occurred. There are respective approval and registration processes in each of the countries where we sell our products, but many of those jurisdictions rely on the FDA's stringent guidelines. In those limited instances where testing may be needed to evaluate the efficacy of our products, we work with third parties to conduct intermittent bioavailability studies involving animals.

417-2 Incidents of non-compliance concerning product and service information and labeling

Mosaic has systems to manage, track and monitor incidents related to non-compliance with regulations and voluntary codes concerning product and service information and labeling. We are committed to quality and responsible labeling. We investigate all questions or claims about the labeling or guaranteed analysis of our products and work with the customer and/or appropriate agency to resolve any claims that arise. Companywide in 2022, the sum of claims that resulted in penalties totaled less than \$15,000.

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