

2023 Environmental, Social and Governance (“ESG”) Report





Environmental

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How we manage environmental impacts of our operations and provide solutions for global challenges. See **page 17**



Social

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How we work to keep people and communities safe, foster positive relationships with stakeholders, and help to build a responsible supply chain. See **page 57**



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How we develop and foster an ethical business culture and responsible business practices, including governance of ESG strategy, performance and reporting. See **page 83**

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All financial data in this report is stated in US dollars except as otherwise noted.

ESG Ratings Profile

NUTRIEN ESG RATINGS PROFILE (shows improvement from 2019 to 2022)

▲ 2022 Peer Average¹ ▼ 2019 Nutrien ▼ 2022 Nutrien



NOTE: These ratings reflect the extent our public ESG disclosure and rating agencies' assessments of Nutrien's processes and actions to manage risks and capture opportunities related to Nutrien's key material ESG issues. Where possible, we have addressed reporting gaps in this report. For disclaimers related to the use of ESG research rating logos, please see [page 119](#).

- 1 Peer groups: MSCI and FTSE = Specialty Chemicals; Sustainalytics, CDP, S&P and ISS = Chemicals.
- 2 CDP Water not scored in 2019.

MSCI
ESG RATINGS

AA

CCC | B | BB | BBB | A | AA | AAA

As of 2022, Nutrien Ltd. received an MSCI ESG Rating of AA

Sustainability Yearbook Member
S&P Global ESG Score 2022

64 /100

As of February 7, 2023. Position and Score are industry specific and reflect exclusion screening criteria. Learn more at [sustainabilityyearbook.com](#)

S&P Global | Sustainable1

Rated

McWANEISSOR | SUSTAINALYTICS

As of October 2022, Nutrien Ltd. received an ESG Risk Rating of 28.2 from Sustainalytics and was assessed to be at medium risk of experiencing material financial impacts from ESG factors.

CDP DISCLOSURE 2022

Nutrien discloses both CDP Climate and Water annually

Letter From the President & CEO

I'm pleased to share Nutrien's 2023 Environmental, Social and Governance ("ESG") Report, demonstrating our enduring commitment to sustainability and our progress in feeding the future responsibly. As in years past, our employees and partners around the world have worked together through ongoing global geopolitical challenges in an effort to support global food security.

From São Paulo to Saskatoon, our employees continue to rise to the occasion, helping to sustainably feed a growing population.

Since launching our Feeding the Future Plan and related sustainability commitments in 2021, we have learned a lot as we continue to push ourselves to improve our ESG performance and reporting. Nutrien has made progress in a number of areas, but there are also areas where we need to do better or adjust as we learn. That's why this report is so important – it acts as a scorecard, sharing our progress in a clear and transparent way. Transparency and trust will be key to the success of Nutrien and our colleagues across the industry, as we find ways to work together to help address some of the world's biggest food challenges.

Actioning Our Commitments

We execute our sustainability strategy under three areas of focus: feeding the planet sustainably, environment and climate action, and inclusive agriculture. You can find details about all of our initiatives within each focus area

throughout this report, but I'd like to highlight a few that I'm particularly proud of:

Feeding the Planet Sustainably

Growers are the ultimate stewards of their land and at the center of everything we do at Nutrien. As we continue to scale our sustainability initiatives, we have been leveraging our deep, trusted relationships with growers as we work together to implement positive outcomes in their operations. I'd encourage you to [visit our website](#) and read about how our Carbon Program took Nutrien's relationship with one family farm to the next level. Nutrien has also continued to engage multiple downstream partners like [Maple Leaf Foods Inc.](#) to build a better understanding of how we can use our combined scale to influence sustainable outcomes from farm to table.

Environment and Climate Action

In 2022, we announced our intention to evaluate building potentially one of the world's largest clean ammonia production facilities at our Geismar, LA Nitrogen plant. The proposed facility could produce 1.2 million tonnes of clean ammonia every year



Ken Seitz, President & Chief Executive Officer – Nutrien

and would leverage our existing access to low-cost natural gas, tidewater access to world markets, and high-quality carbon capture and sequestration infrastructure. This effort represents a potentially significant opportunity to help the world meet its decarbonization goals, permanently sequestering more than 1.8 million metric tonnes of CO₂ in dedicated geological storage per annum.

Inclusive Agriculture

Recognizing a need to drive greater industry investment in Black, Indigenous

and People of Color ("BIPOC") and women entrepreneurs in the ag-tech space, we approached Radicle Growth with the idea of an inclusion challenge focused on these demographics. As a result, we hosted the Radicle Inclusion Challenge by Nutrien in 2022, which led to applications from hundreds of ag-tech entrepreneurs across the globe. Four finalists competed in a pitch day, where Nutrien ultimately awarded FA Bio Ltd., a company that uses soil microbes to help growers produce more with less, and Agtools Inc., a provider of

Letter From the President & CEO *(continued)*



“Transparency and trust will be key to the success of Nutrien and our colleagues across the industry, as we find ways to work together to help address some of the world’s biggest food challenges.”

supply chain market data and analytics for growers, with investments of \$250,000 each, plus access to ongoing mentorship and networking opportunities.

Looking at the Bigger Picture

One thing that has become clear in our sustainability journey is that to truly make a measurable difference, we cannot focus solely on one aspect of ESG. For example, working with growers to sequester carbon in their soils is critical, but so is conserving precious water resources and maintaining biodiversity. If we focus too closely on one area, we lose sight of the bigger picture, and it is that big-picture mentality that will enable Nutrien to make a difference. The same goes for equity, diversity and inclusion. We need to do everything we can to hire diverse talent, but also maintain a workplace that’s grounded in inclusion so that we all feel welcome and are given the same opportunity to perform at our best.

With this in mind, our leadership team has evolved our company values to ensure we

are capturing and progressing our culture with these key tenets. Our values of Safety and Integrity are critical and will remain at the core of everything we do, but we have recognized an opportunity to evolve the company culture, and therefore have added Inclusion and Results as additional core values. We have also launched a Strategic Inclusion Plan, after taking time to better understand our shortcomings in this area. To thrive, I believe we need to continue to facilitate an inclusive and psychologically safe environment where our people can bring their whole selves to work and feel comfortable speaking up, respectfully challenging each other and bringing new ideas to the table.

Continuing to Deliver

When addressing societal imperatives like food security and climate, we must think holistically and work collaboratively. We cannot simply choose one or the other; it is critical that we solve for both. That’s why we have also placed focus on emissions in our own operations. With regards to Scope 1

and 2 greenhouse gas (“GHG”) emissions, we launched capital projects within our operations to meet our 30 percent emissions intensity reduction target by 2030. We are also working alongside industry partners and peers to develop a sectoral decarbonization approach for the fertilizer industry, representing a pathway to setting Science-Based Targets. This work is expected to result in a sector-specific emissions reduction pathway and will support the evolution of our longer-term emissions targets. In terms of Scope 3 emissions, Nutrien is working to establish a baseline across our material emission categories that can be replicated annually to measure improvements over time. We see Scope 3 emissions as an important catalyst for greater collaboration between value chain partners that share common source emissions, including grain processors, food companies and even retailers. We continue to advance our soil data knowledge with several industry partners who are involved in our sustainability pilot programs across North American and Australian acres, with plans to do the same in South America.

To close, I believe it is important for our employees, customers, partners and all stakeholders to understand what Nutrien stands for, and why we come to work every day. With the global population recently hitting 8 billion people, and food security becoming a greater concern every day, the need to safely and sustainably feed a growing world has never been more


evident. That’s why we’ve recently evolved our Purpose statement to *Feeding the Future*. Everything we do is with a better future in mind: we are striving for a more environmentally friendly and sustainable world that is focused on equitable outcomes. Driving sustainable and productive agriculture forward to help end hunger: that is the noble pursuit that connects and drives us forward in *Feeding the Future*.

Sincerely,

Ken Seitz
President & Chief Executive Officer
March 2023

About Nutrien

Nutrien's purpose is *Feeding the Future*, which is rooted in the global challenge of feeding, clothing and fueling a population of 10 billion people by 2050.



At Nutrien, we're raising expectations of what an agriculture company can be.



As the world's largest provider of crop inputs and services, Nutrien plays a leading role in cultivating solutions for growers to meet this challenge and support a new era of sustainable agriculture. By leveraging the competitive advantages of our integrated business model, we are well positioned to efficiently meet the needs of our customers and deliver long-term value for all our stakeholders.

We are committed to continuous improvement of our environmental performance and we champion diversity and inclusive growth in the agriculture industry. We operate with a long-term view and are committed to working with our stakeholders as we address economic, environmental and social priorities. Our integrated business model provides a number of advantages compared to our competitors, including operational, financial and sustainability benefits.

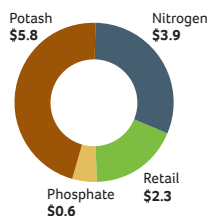
We have four reportable operating segments: Nutrien Ag Solutions ("Retail"), Potash, Nitrogen and Phosphate. Nutrien Ag Solutions distributes crop nutrients, crop protection products, seed and merchandise, and provides services directly to growers through a network of Retail locations in North America, South America and Australia. The Potash, Nitrogen and Phosphate production segments are differentiated by the chemical nutrient contained in the products that each produces. In 2022, we had manufactured sales volumes of approximately 25 million tonnes of potash, nitrogen and phosphate products for agricultural, industrial and feed customers worldwide. To learn more about Nutrien's operating segments, please see our [2022 Annual Report](#), pages 14 to 15.

Our Global Profile

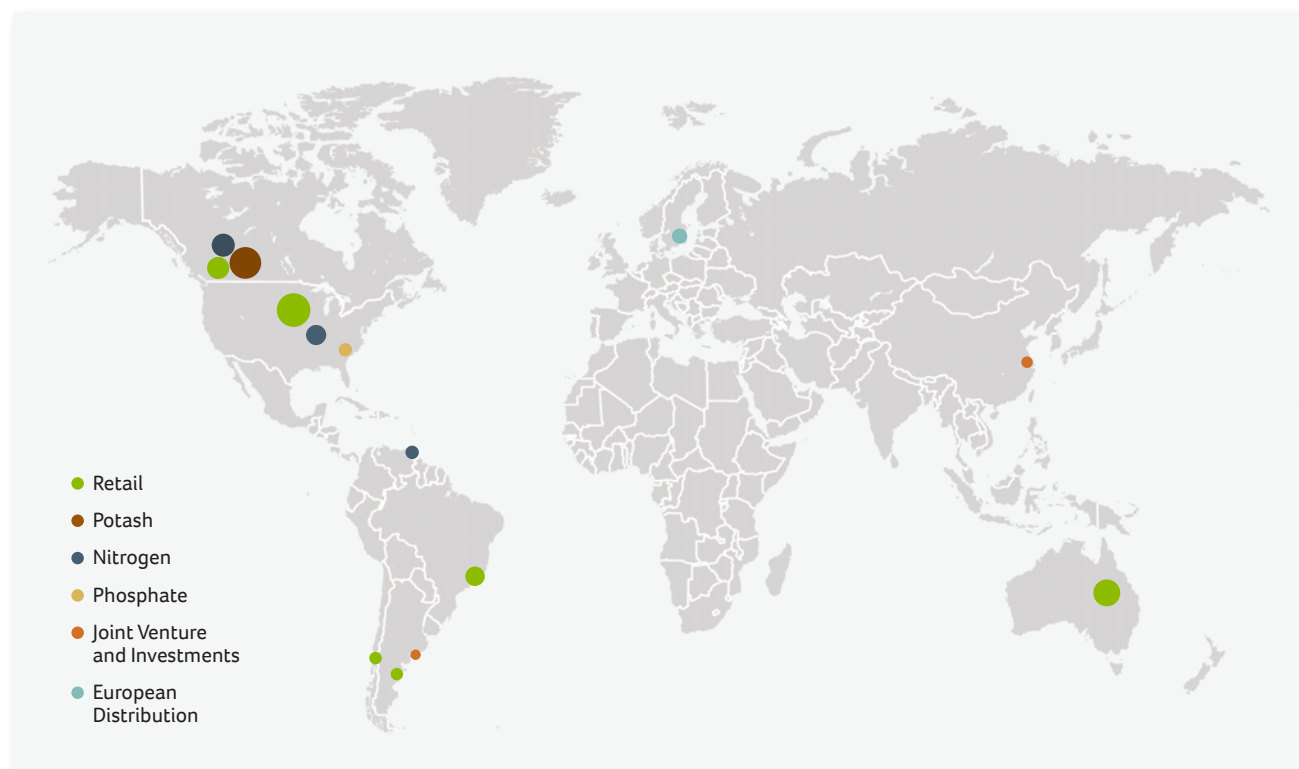
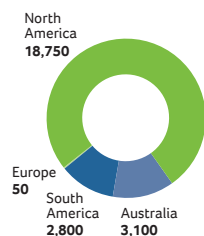
Nutrien is the world’s largest provider of crop inputs and services, serving key markets in North America, South America, Asia and Europe. We have operations and investments in 13 countries with some of the highest-quality and lowest cost production assets. Our extensive distribution capabilities, supply chain and direct connection to the grower position us to deliver products efficiently to the market.

WHERE OUR EARNINGS COME FROM

Adjusted EBITDA by operating segment in 2022 (\$ billions)

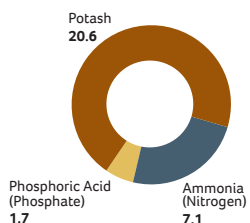


WHERE OUR EMPLOYEES WORK

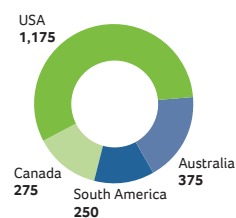


WHAT IS OUR PRODUCTION CAPACITY

Nameplate production capacity (million tonnes of fertilizer N-P-K)



WHERE OUR RETAIL SELLING LOCATIONS ARE SITUATED



Analyst Corner
 Learn more about our corporate strategy in our [2022 Annual Report](#).
 Learn more about [Nutrien's Purpose](#).

Our 2030 Sustainability Commitments

Our Feeding the Future Plan, launched in 2021, translates our goal to lead the next wave of agricultural evolution into ambitious commitments.

We continue to evolve and grow our approach through collaboration, innovation and continuous improvement. Our commitments are responsive and adjusted as needed to support tangible and meaningful impact in each strategic pillar. [Learn more.](#)

Feeding the Planet Sustainably

Strengthen food security by scaling sustainable and productive agriculture.



2030 Commitment

ENABLE growers to adopt sustainable and productive agricultural products and practices on 75 million acres globally.

2022 Progress

In 2022, we measured and documented approximately one million acres in North America and Australia. We continue to provide growers with whole-acre solutions that support sustainable and productive agriculture and aim to deliver improved environmental outcomes. Our three-tiered approach helps define outcomes and measures to execute this target. The first tier involves collaborating with growers to apply sustainable products, conservation practices and technology solutions. The second tier leverages our digital platform including Agrible® to track and measure outcomes such as crop quality, soil health, water quality and biodiversity. The third tier aims to independently verify sustainability outcomes, such as GHG emission changes through third-party verifiers such as SustainCERT and the Climate Action Reserve. By working with value-chain partners, we are seeking to collectively advance global agriculture sustainability goals for the broader supply chain.

[Learn more.](#) Read more on [page 19](#), including our definition of “whole-acre solutions.”

2030 Commitment

LAUNCH AND SCALE a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts.

2022 Progress

In 2022, we enabled North American pilots on approximately 685,000 acres, working with growers and collaborating with approximately 10 suppliers and downstream partners. Our whole-acre solutions approach supports a program that aims to be capable of generating high-quality carbon outcomes for both voluntary and regulated carbon markets. Although global carbon markets and protocols for agricultural systems remain immature, through our direct engagement with growers, we have advanced our capabilities to support program expansion and focused on a practical and science-based approach. Our collaboration with growers and value-chain partners will likely remain foundational to our efforts as we continue to build and scale sustainability programming going forward.

[Learn more.](#) Read more on [page 25](#).

Our 2030 Sustainability Commitments (continued)



The United Nations' Sustainable Development Goals ("SDGs") bring the world together to address global challenges and are intended to be achieved by the year 2030. While our efforts connect to many of the goals, our primary focus is **SDG 2 Zero Hunger** through indicator 2.4.1: **Proportion of agricultural area under productive and sustainable agriculture**. Learn more about our contributions in our [SDG Impact Assessment](#).

Environment and Climate Action

Provide solutions and platforms to achieve emissions reductions in alignment with climate science.



2030 Commitment

ACHIEVE at least a 30 percent reduction in GHG emissions (Scope 1 and 2) per tonne of our products produced, from a baseline year of 2018.

2022 Progress

We have continued with multiple initiatives to improve energy efficiency and emissions performance across our manufacturing facilities, including the completion of nitrous oxide ("N₂O") abatement projects at Lima, OH, Kennewick, WA and Augusta, GA nitrogen sites. We also continued to evaluate a pathway for setting science-based emissions reduction targets. We continue to explore other strategic emissions abatement projects, as well as continue to evaluate current and upcoming projects. We anticipate investing more than \$500 million in pursuit of our 2030 emissions intensity reduction target.

Analyst Corner

[Feeding the Future Plan](#)
[SDG Impact Assessment](#)

2030 Commitment

INVEST in new technologies and pursue the transition to low-carbon fertilizers, including low-carbon and clean ammonia ¹.

2022 Progress

We are evaluating the construction of a new clean ammonia facility at our existing Geismar, LA site, which would produce 1.2 million tonnes of clean ammonia annually and potentially be among the world's largest clean ammonia production facilities if approved. The project is in the front-end engineering design ("FEED") phase and a final investment decision is expected in 2023. If approved, construction of the approximately \$2 billion facility is expected to begin in 2024 with full production anticipated by 2027. In addition, our near-term focus is on using carbon capture, utilization and storage ("CCUS") infrastructure, and growing our low-carbon ammonia production. As of 2022, Nutrien has annual production capability for approximately one million tonnes of low-carbon ammonia at our Geismar, LA, Redwater, AB and Joffre, AB nitrogen facilities.

We continue collaborating with our shipping partner EXMAR to evaluate building a low-carbon ammonia-powered vessel. The project has progressed to initial engine design and is subject to further analysis, validation and a final investment decision. If approved in 2023, the anticipated completion is end of 2025. We believe this is an important step forward for the wider adoption of low-carbon ammonia as a clean fuel for the maritime industry.

Nutrien continued our partnership with the US Department of Energy ("DOE") and other industry partners to develop a clean ammonia plant with technology developed from the Renewable Energy to Fuels Through Utilization of Energy-Dense Liquids ("REFUEL") program.

¹ Low-carbon and clean ammonia previously referred to as blue and green ammonia. Low-carbon ammonia is ammonia made with direct GHG emissions typically reduced by approximately 60 percent but up to 80 percent, produced primarily utilizing carbon capture, utilization and storage ("CCUS") or other low-emission production technologies. To be considered clean ammonia, more than 90 percent of GHG emissions must be reduced.

[Learn more](#). Read more on [page 38](#).

[Learn more](#). Read more on [page 40](#).

Our 2030 Sustainability Commitments *(continued)*

Inclusive Agriculture

Support rural livelihoods and increase participation of underrepresented stakeholders in agriculture.



2030 Commitment

LEVERAGE our farm-focused technology partnerships and investments to drive positive impact in industry and grower innovation and inclusion.

2022 Progress

We invested \$500,000 in ag-tech entrepreneurs through an Inclusion Challenge with Radicle Growth, which aims to accelerate inclusive investments in our industry. The challenge was a pitch competition from ag-tech entrepreneurs around the globe who identified as female, BIPOC, from historically underrepresented groups in agriculture, or were committed to diversity and inclusion while advancing a sustainable food value chain. We invested \$250,000 in each of the winners: Agtools Inc. and FA Bio Ltd. Radicle and Nutrien will also provide mentorship and networking opportunities to help accelerate the winners' pathway to success.

2030 Commitment

CREATE new grower financial solutions to strengthen social, economic and environmental outcomes in agriculture.

2022 Progress




We began developing an internal training program for Nutrien Financial employees to promote understanding of financial inclusion and support the creation of new solutions to support underserved communities. We continued to offer financial opportunities so growers can adopt sustainable agriculture solutions and support positive environmental outcomes. Our financing solutions play an important role in providing competitive product financing for our customers, supporting customer retention and business growth.

[Learn more.](#) Read more on [page 73.](#)

[Learn more.](#) Read more on [page 72.](#)

ESG Performance Goals and Targets Summary

In addition to our 2030 Commitments, we have also set ESG goals and targets that are representative of key issues and opportunities. These are designed for completion within shorter time frames, focused on continuous improvement, and revised and updated as our operating context evolves. Our commitments, goals and targets are governed through our ESG Governance Framework. Here is a high-level summary:





Focus Area	Goals and Targets	Progress to Date	2022 Progress	Read More
Climate Change 	Reduce GHG emissions in nitrogen production by one million tonnes CO ₂ e by the end of 2023 ¹	On track	Our priority GHG reduction projects, headlined by our CCUS and N₂O abatement projects, are on track to incrementally reduce emissions by approximately one million tonnes of CO₂e annually by the end of 2023¹ (calculated on an intensity basis). Because one tonne of N ₂ O is equivalent to approximately 298 tonnes of CO ₂ , reductions in N ₂ O have the potential to significantly reduce GHG emissions.	Page 38
	Deploy self-generated wind and/or solar energy at four Potash facilities by the end of 2025	On hold	We have deployed renewable-based wind and solar meteorological and energy resource data collection stations at four additional Potash sites, for a total of six stations since 2021. We have paused our onsite renewables program until 2024 to engage in consultations with our provincial utility provider, SaskPower ² , related to their clean energy transition initiative and the adoption of related regulations. We are exploring the most feasible access to renewable energy whether that is onsite or offsite or a combination of both. Due to the uncertainty associated with the implementation of SaskPower's clean energy transition, and the changing regulatory landscape in the province, it is possible that this target will not be met by the end of 2025.	Page 39
Product Stewardship 	Complete risk evaluation profiles of NPK (fertilizer) manufactured products by 2023	Revised goal	Throughout 2022, we aligned multiple best practices to identify and establish categories forming the basis for our product risk profiles. To ensure a holistic and comprehensive risk profile, we continue to consolidate and evaluate this information, which highlights the types of risk across our portfolio and informs priorities for improving product safety and sustainability. Revised goal: The original goal was to complete the profiles by 2023, which we do not expect to be met. Due to the complexity of the evaluation and our desire to ensure data and process integrity, we recognized the need to adjust our expectations, align resources and extend the time frame to complete NPK risk profiles by 2024.	Page 43
Water Stewardship 	Complete a watershed risk assessment of our production sites in 2021 to inform context-based operational water targets by 2023	Achieved goal and New target	We completed watershed risk assessments for our production sites in 2021 and in 2022 we used the assessment to set a new operational water use target. New target: Reduce annual freshwater use in current operations at higher-risk and higher-use manufacturing facilities by 3.0 million cubic meters by 2025, which cumulatively is expected to reduce freshwater use by 30 million cubic meters by 2030 ³ .	Page 47

1 On an intensity basis vs 2018 baseline emissions intensity.

2 Saskatchewan Power Corporation, operating as "SaskPower", is the principal electric utility in Saskatchewan, Canada.

3 Improvement is on an intensity basis vs 2018.

ESG Performance Goals and Targets Summary (continued)





Focus Area	Goals and Targets	Progress to Date	2022 Progress	Read More
 Biodiversity	Determine how digital on-farm tools can identify and track opportunities to enhance biodiversity conservation on agricultural landscapes by end of 2023	On track	<p>In 2022, we measured and documented approximately 835,000 acres in the US in collaboration with various downstream partners, which included biodiversity metrics. Note, these acres are included in our 75 million acre 2030 sustainability commitment.</p> <p>We continue to use our internally developed framework to characterize and measure grower performance on various metrics developed by Cool Farm Alliance and Field to Market®. Our Agrible® platform now includes Field to Market's Habitat Potential Index ("HPI") to assess on-farm habitat for plants and animals.</p>	Page 18
 Waste	Develop Nutrien Ag Solutions' plastic recycling strategy and set a target by 2022	Revised goal	<p>In 2022, we developed a Global Nutrien Ag Solutions Waste Management Strategy, and identified improved data collection as a necessary next step for effective target setting. In Nutrien Ag Solutions, we continue to implement waste management programs, which are largely focused on empty, plastic product containers returned to designated Nutrien Ag Solutions locations. Each region has varying levels of recycling maturity.</p> <p>The original goal to set a target by the end of 2022 has not been met and has been revised.</p> <p>Revised goal: Nutrien Ag Solutions will continue to broaden and implement our Global Waste Minimization Standard, with a focus on improving our data management system and analytics with an aim to set a target by 2025.</p>	Page 53
 Workplace Safety	Achieve top-quartile safety performance across all operating segments by end of 2025	On track	<p>In 2022, we achieved both top-quartile Lost Time Injury ("LTI") and Total Recordable Injury ("TRI") performance across Retail, Nitrogen and Phosphate operating segments, reflecting our deliberate effort on Serious Injury and Fatality ("SIF") and severity elimination. Further, our Potash operating segment made positive progress towards achieving top-quartile LTI performance. Measuring against industry and globally recognized metrics ensures we evaluate our performance for Nutrien as an enterprise, as well as individual operating segments.</p>	Page 59
	Zero SIF incidents annually ¹	Not achieved	<p>Safety is a core value at Nutrien. In 2022, Nutrien had five SIF incidents. No incidents resulted in a fatality. Each incident was actioned immediately by response teams onsite. All SIFs were investigated, and actions were taken based on the investigation outcome. In addition, debriefs with lessons learned were held with relevant stakeholders to review the findings of each investigation and opportunities for process improvements, policies, procedures and training programs were identified. Resources were deployed accordingly. Our Culture of Care strives to create a safe environment.</p>	Page 59
	Expand safety coaching into performance conversations for all employees by 2022	Achieved goal	<p>This goal is complete and safety coaching remains a priority approach we continue to implement and improve upon. All operating segments have coaching built into their existing processes and procedures.</p>	Page 59
 Environmental Incidents	Develop Loss of Containment ("LOC") ² reduction strategy and provide related target by 2023	Achieved goal and New target	<p>In 2022, we developed a LOC reduction strategy.</p> <p>New target: Reduce the three-year moving average LOC Index³ from 1.52 in 2022 to 1.25 by 2030. This will be approximately an 18 percent reduction from 2022 baseline in LOC incidents.</p>	Page 65

¹ Target includes work-related fatality or life-altering injury/illness experienced by an employee or directly supervised contractor conducting work on behalf of Nutrien.

² An unplanned release of material from its process that has the potential to impact human health and/or the environment.

³ LOC Index is calculated from the number of LOC incidents and normalized to production/sales data.

ESG Performance Goals and Targets Summary (continued)

Focus Area	Goals and Targets	Progress to Date	2022 Progress	Read More
Equity, Diversity and Inclusion (“EDI”) 	Women comprise no fewer than 30 percent of the Board of Directors (maintain annually)	Achieved goal	As of December 31, 2022, we are exceeding our target with 33 percent women on our Board of Directors. Nutrien is also a member of the 30% Club, an international group of Chairs and CEOs promoting gender diversity on boards and senior management teams.	Page 84
	30 percent women in leadership (director and above) by 2025	Room for improvement	The percentage of women in senior leadership positions is 21 percent in 2022, which is the same percentage as 2021. To reach our 30 percent target by 2025, we will continue to expand leadership programs focused on women, look to remove any systemic barriers, explore new avenues to attract women and drive cultural change that fosters an inclusive workplace where all employees, including women, can thrive.	Page 69
	By 2025, 25 percent of local spend in our Potash business has direct Indigenous economic impact	On track	In 2022, our Potash business exceeded the target, reaching an approximate 30 percent spend with local direct Indigenous economic impact. This reflects approximately CAD\$270 million of contract opportunities that support direct positive impact with Indigenous communities and Peoples.	Page 73
	Annually, 100 percent of potash suppliers contracted under a Master Supply Agreement (“MSA”) have local Indigenous inclusion commitments	Achieved goal	In 2022, all new signed MSAs with potash suppliers included commitments to local Indigenous inclusion as a requirement to engage in our bidding process.	Page 73
Community Relations 	Develop and implement a targeted approach to measure the impact of our sustainability and community investments in 2023	On track	In 2022, we continued to develop our impact measurement framework. The framework aims to measure the impact of our investments on a continuum of change (that is, connect, improve, change and impact), allowing us to ensure a targeted and consistent approach with the largest impact. We expect the framework to be finalized and implemented in 2023.	Page 80
	Employees volunteer at least 25,000 hours by 2025	On track	Nutrien’s total 2022 annual volunteer hours were more than 17,000 hours, representing a 53 percent increase over 2021. In 2022, we offered eligible employees three paid volunteer days during work hours or reward dollars for charities if volunteering outside of work hours.	Page 81
Integrity 	All employees, directors and officers complete mandatory Code of Conduct training annually	Achieved goal	All employees, directors and officers have completed mandatory Code of Conduct training. We update and rotate topics from year to year. We also provide refresher training on a periodic basis to address new or changing legal and compliance risks.	Page 89
Cybersecurity 	Host quarterly education and training on cybersecurity for our community partners and stakeholders	Achieved goal	In 2022, we hosted five external cybersecurity sessions consisting of dedicated in-person events with targeted groups as well as cybersecurity awareness sessions targeting our customers and community non-profit partners. Value-chain partnership in cybersecurity is critical to protect Nutrien and we continue to find new ways to engage with peers, vendors and customers on this issue.	Page 93

2022 At a Glance

We are evaluating the construction of a new **clean ammonia plant**, with an expected production capability of

1.2M
tonnes per year,
at our Geismar, LA site

We joined the **Taskforce on Nature-related Financial Disclosures** (“TFND”) pilot program

We awarded **\$500k** to two innovative Ag companies¹

Our **Potash business** achieved

~30%
spend with local direct
Indigenous economic impact

Our **Carseland, AB team** achieved more than

3 years
without a **Lost Time Injury**

We completed **external verification of our water stewardship practices**²

1 As winners of the Radicle Inclusion Challenge by Nutrien
2 By the Water Council’s WAVE program



ESG Management Approach

We believe that managing ESG impacts contributes to long-term value creation for our organization and all stakeholders while enhancing our resilience and future-proofing our business.

Frameworks Used ¹

Index

SASB disclosure for the chemicals and mining standards are tagged throughout the report, with an index table in Additional Content.

[page 114](#)

GRI Index is included in Additional Content.

[page 116](#)

TCFD disclosures are tagged throughout the report, with our consolidated reporting in the Governance section.

[page 117](#)

The International Business Council *Stakeholder Capitalism* index table is included on our website.

[Learn more here](#)

¹ The listing of these organizations does not imply endorsement or approval of this report.

We welcome and value your feedback on this report and all of our sustainability and ESG initiatives.

Please contact us at: sustainability@nutrien.com or investors@nutrien.com.

Management of ESG strategy at Nutrien starts with our annual key ESG topic assessment process, which is overseen by both our Executive Leadership Team (“ELT”) and Board. Integration of ESG is supported by cross-functional Strategic Issue Teams to manage and develop strategy and action around our identified material topics. This report is designed to provide our investors and other stakeholders with information about how Nutrien manages key ESG topics. Our ESG management and reporting approach centers on six principles:

Considering industry risks

We evaluate how industry risks can impact our success as a company. We are a member of and participate in the World Business Council for Sustainable Development’s (“WBCSD”) industry-wide Dynamic Risk Assessment to better understand the emerging trends, risks and opportunities stemming from internal and external forces impacting the food and agriculture sector.

Listening to stakeholders

We proactively and regularly engage with our key stakeholders to identify and address their concerns and communicate the long-term value creation opportunities associated with our business plans. We incorporate stakeholder feedback into our reporting and actions. Our efforts are intended to address what matters most to our stakeholders. [Read more.](#)

Implementing ESG reporting best practices

There are several voluntary ESG reporting frameworks available for use by organizations at this time, with each offering differing informational focus. Our ESG Report is informed by best practices from the WBCSD ESG Disclosure Handbook, metrics from the SASB Standards (“SASB”), which is now a part of the IFRS Foundation’s International Sustainability Standards Board (“ISSB”), and recommendations from the Task Force on Climate-related Financial Disclosures (“TCFD”). Nutrien accounts for GHG emissions in alignment with the GHG Protocol Corporate Accounting and Reporting Standard. In addition, our disclosures are informed by the Global Reporting Initiative (“GRI”) Standards. Securities regulators have also published proposed mandatory climate-related disclosures. We monitor these developments, and prepare and continue to comply with all legal requirements.

Focusing on material topics

In this document, we focus our reporting on ESG topics that are material, from an ESG perspective, and we disclose material issues and opportunities for our business, from an ESG perspective. In this report, materiality refers to our ESG priorities as determined within the frameworks used with input from our stakeholders and our ESG materiality process discussed below. This differs from the manner in which materiality is defined for disclosure requirements under applicable securities laws or accounting standards.

Monitoring global trends

As an international company working in a globalized industry, we are informed by and respond to environmental and social trends in many jurisdictions. This is a key consideration in our risk management process and necessary to achieve our long-term vision. Megatrends are the key trends that shape our strategy and actions and are defined as emerging macro-level trends and global dynamics that we believe will have ongoing impacts on business, government and society, and shape our future over the next decade. We track and analyze megatrends because they are critical elements of our operating environment, and our understanding of these trends helps inform Nutrien’s strategy. See pages 17 to 18 in the [2022 Annual Report](#) for further details on megatrends. Our ESG strategy supports the SDGs. [Learn more.](#)

Reporting scope and boundary

This report focuses on Nutrien’s material ESG topics, performance and key initiatives for the fiscal year ending December 31, 2022. Read about our [material ESG topics here](#). Data included in our reporting relates to our operations where we have operational control, unless otherwise noted. Reports from previous years and supplementary ESG information are available on our website.

ESG Management Approach
(continued)

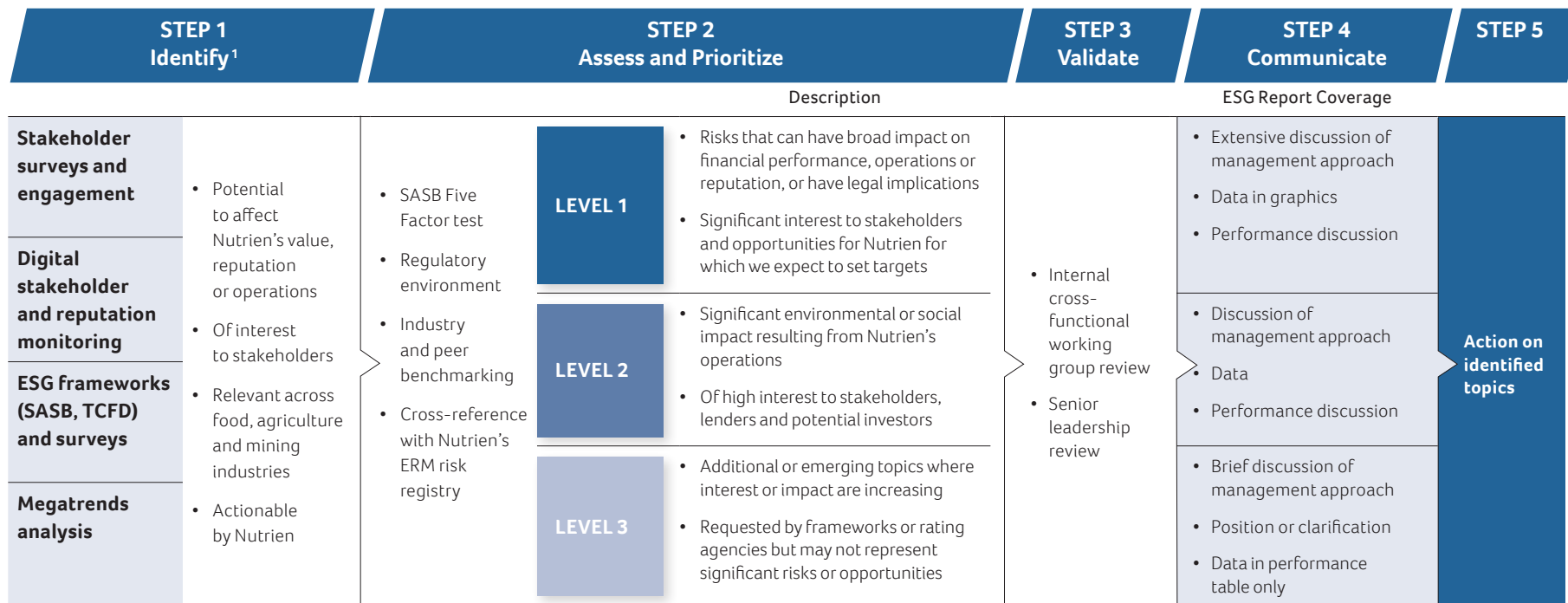
Material ESG Topics

Nutrien’s materiality process, from an ESG perspective, integrates our material ESG topic assessment process with our existing Enterprise Risk Management (“ERM”) framework. The process includes internal and external survey tools, leading and lagging indicators, and trend analysis to guide our decision making on material topics. The process leverages qualitative and digital tools such as artificial intelligence (“AI”) and machine learning to help clarify stakeholder expectations and potential risks or opportunities for Nutrien.

We classify our material topics into three levels that reflect the degree of associated risk and/or level of significance to Nutrien, and therefore

the amount of coverage in this report. Each topic includes several subtopics and related drivers. Level 1 topics generally represent the ESG-related risks and opportunities that reflect the highest degree of associated risk and/or level of significance to Nutrien, and we provide the most extensive content on these topics. We include less content on Level 2 and 3 topics due to the lower relative risk, opportunity or significance they represent, in relation to Level 1 topics.

We reassess Nutrien’s material ESG topics annually. In 2022, we began with our previous material ESG topics list and completed the following process:



¹ These criteria align with SASB’s criteria for a material topic.

ESG Management Approach
(continued)

ESG Material Topics and Boundaries Across Nutrien’s Value Chain

Value Chain	Upstream Indirect		Direct Operations			Downstream Indirect		Read More
	Sourcing	Mining	Manufacturing	Distribution and Logistics	Nutrien Ag Solutions	Product Use		
LEVEL 1								
E	Climate-related risks	■		■	■		■	99
	GHG emissions and energy use	■		■	■		■	34
	Soil health						■	18
	Product stewardship	■		■	■	■	■	42
S	Worker health and safety		■	■	■		■	58
	Equity, diversity and inclusion	■	■	■		■		68
	Responsible supply chain	■						74
G	Integrity	■	■	■	■	■	■	88
LEVEL 2								
E	Water stewardship		■	■			■	46
	Biodiversity		■				■	49
	Waste and tailings		■			■		52
S	Human capital		■	■		■		77
	Community relations		■	■		■		80
G	Cybersecurity and data privacy	■				■	■	92
LEVEL 3								
E	Air quality			■				55
	Reclamation and remediation		■					55

ESG Management Approach
(continued)

Interactions With Stakeholders in 2022

We regularly engage with stakeholders to better understand factors they believe are critical for Nutrien and the agriculture industry. In June of 2022, we held a virtual Investor Update for all stakeholders to attend, with Nutrien leaders speaking to our sustainability commitments, climate-related opportunities, ESG targets and action taken to date.

Stakeholder	Priorities and Themes Identified in 2022	How Nutrien Responded
Communities	<ul style="list-style-type: none"> Continued need to address food security Nutrien regions facing natural disasters and other urgent issues Continued demand for free and high-quality online educational resources on sustainability and agriculture 	<ul style="list-style-type: none"> We focused on food security in our communities through financial support and volunteering at local food banks. We contributed to organizations in response to natural disasters and targeted community violence. We also supported emergency response, rural safety and farmer mental health. We provided ongoing delivery of free online educational resources as well as resuming delivery of in-person educational programs.
Customers	<ul style="list-style-type: none"> Need for digital retail capabilities to educate and support delivery of products, services and solutions Rising demand for sustainability-focused products and services Increased demand from industrial customers to partner on ESG initiatives 	<ul style="list-style-type: none"> Our Nutrien Ag Solutions digital platform sales¹ in North America increased to \$2.8 billion in 2022, representing 18 percent of Nutrien Ag Solutions North American sales. In 2022, we continued to facilitate climate-smart products, practices and services. We worked closely with industrial customers on data measurement as well as longer-term goals of supplying low-carbon ammonia.
Employees	<ul style="list-style-type: none"> Nutrien’s support of EDI internally and in our communities Need for increased employee communications Hear what employees are doing on the ground to advance sustainability Implementation of Mental Health and Wellness strategy 	<ul style="list-style-type: none"> We refreshed Nutrien’s Purpose statement, and elevated Inclusion and Results to be core values at Nutrien along with Safety and Integrity. We launched our new Strategic Inclusion Plan. Significant education and communication campaigns were provided to employees on safety, inclusion, Indigenous awareness, unconscious bias and business ethics throughout 2022. Our “We Are Nutrien” campaign showcased how employees are impacting sustainability in their personal and professional lives. Mental health and wellness are a critical focus at Nutrien that extends beyond our employees to contractors, family members and other stakeholders. Our strategy includes services, programs, resources and training.
Shareholders	<ul style="list-style-type: none"> Nutrien’s ability to reduce GHG emissions in our Nitrogen business and increase production of low-carbon ammonia Governance measures and accountability for leading ESG progress Improvements to environmental impacts well beyond GHG reductions in our own operations Progress towards setting Science Based Targets related to near-term emissions reduction 	<ul style="list-style-type: none"> We continued to advance Nutrien’s 2030 Commitments and ESG targets that were set to achieve emissions reduction in alignment with climate science. A component of our executive short-term compensation is tied to ESG performance. Nutrien continued to develop and scale our Carbon Program, which is expected to drive a step change in agricultural sustainability and improved on-farm GHG reductions and carbon outcomes. We announced our intention to evaluate a project to build a 1.2 million tonne per year clean ammonia facility at our existing site in Geismar, LA, with a final investment decision expected in 2023. Nutrien supports the goals of the Paris Agreement and, to set Science Based Targets, we have engaged with the WBCSD, Science Based Targets initiative and industry peers to develop a Sectoral Decarbonization Approach.
Society	<ul style="list-style-type: none"> Every two years Nutrien conducts an extensive stakeholder survey. This survey took place in 2021 and is next planned for 2023. 	<ul style="list-style-type: none"> The external stakeholder survey contributed to our ESG materiality assessment and provides insight into how a diverse set of stakeholders view Nutrien and relevant topics.
Suppliers	<ul style="list-style-type: none"> Need for establishment of long-term supplier relationships with Nutrien Need for enhanced visibility of our critical inbound materials Need for a customized impact assessment tool to provide insights about how supply chain inclusion efforts improve access to opportunities that support supplier and labor market sustainability 	<ul style="list-style-type: none"> We continued to support our suppliers in building meaningful relationships with Indigenous partners through our Indigenous Content Playbook in our Potash operating segment. We maintained open channels of communication with our key suppliers and their key suppliers to ensure coordination during supply chain disruptions. We continually evaluate our supply chain on commitments to inclusion that match the composition of local markets and drive impact through engagement of historically underrepresented individuals.
Government/Regulators	<ul style="list-style-type: none"> Movement towards mandatory climate-related disclosures that provide consistent, comparable and decision-useful information to market participants 	<ul style="list-style-type: none"> Nutrien has provided comments to Canadian and US securities regulators on their climate-related disclosure proposals, as well as commented on the ISSB’s proposed general and climate-related disclosure standards. We continue to monitor these developments and are preparing to adopt requirements when enacted.

¹ Digital platform generated revenue includes grower and employee orders that are entered directly into the digital platform.

2022 Highlights

We measured and documented

~1M acres

in North America and Australia
related to our 2030 Commitment
of 75M acres

We joined the Taskforce on

**Nature-related
Financial Disclosures**

(“TNFD”)
pilot program

We achieved
external verification for our

**water
stewardship
practices**

through the WAVE program

Environmental

We are committed to developing products and innovative solutions that help our business and growers tackle the environmental challenges facing the agriculture industry and to reducing the environmental impacts of our operations on air, land, and water.

TOPICS IN THIS SECTION

- 18 Grower Solutions
- 34 Climate Change and GHG Emissions
- 42 Product Stewardship
- 46 Water Stewardship
- 49 Biodiversity
- 52 Waste and Tailings
- 55 Additional Environmental Topics



Grower Solutions



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Feeding a growing population requires the agriculture sector to produce food, fiber and fuel while balancing trade-offs between economic, environmental and social dimensions. By leveraging our global scale, distribution networks, agronomic expertise, innovative offerings and direct grower relationships, we believe that we are positioned to lead and transform the agriculture industry.



- Enable growers to adopt sustainable and productive agricultural products and practices on 75 million acres globally by 2030
- Launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture, reduce GHG emissions and impact soil carbon sequestration while rewarding growers for their efforts

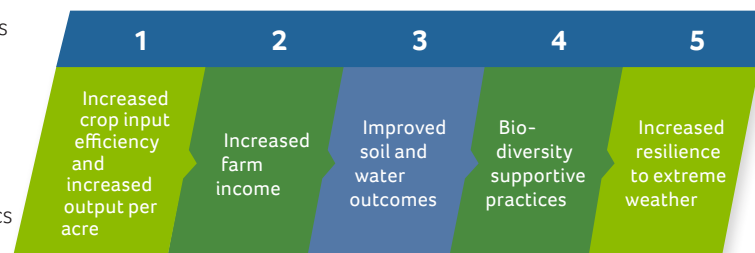
Our Vision

We are committed to transforming agriculture and doing what is right for our stakeholders and our planet. Nutrien’s vision is to be the leading global integrated agriculture solutions provider, and our Feeding the Future Plan strives to create lasting change and

sustainably feed a growing population by leveraging innovation and collaboration. We believe Nutrien is uniquely positioned to drive sustainability across the agricultural value chain for improved economic, social and environmental outcomes.

Our Approach

Nutrien’s sustainable and productive agriculture approach aligns with the [United Nations Food and Agriculture Organization \(“FAO”\) principles](#) to increase productivity while protecting natural resources and enhancing grower resilience. Each aspect of sustainable and productive agriculture is interconnected and therefore requires an integrated systems approach. Sustainable and productive agriculture is enabled by data-driven agronomics and precision agriculture, and has the following dimensions:



Analyst Corner

- SASB RT-CH-110a.2
 - SASB EM-MM-110a.2
 - SASB RT-CH-140a.3
 - SASB EM-MM-160a.1
- [Grower Support Position](#)
[Soil Health Position](#)

Grower Solutions
(continued)

At Nutrien, we believe that we succeed when growers succeed. In today’s world, growers must thrive in ever-changing and unpredictable environments. The solutions we offer growers help strengthen food security; advance climate-smart agricultural practices; and enhance our technological capabilities and those of our growers.

To achieve our commitment of 75 million sustainable and productive acres by 2030, we must first define a sustainable and productive acre, which is having one or more of our whole-acre solutions (summarized on [page 21](#)) applied in a phased approach:

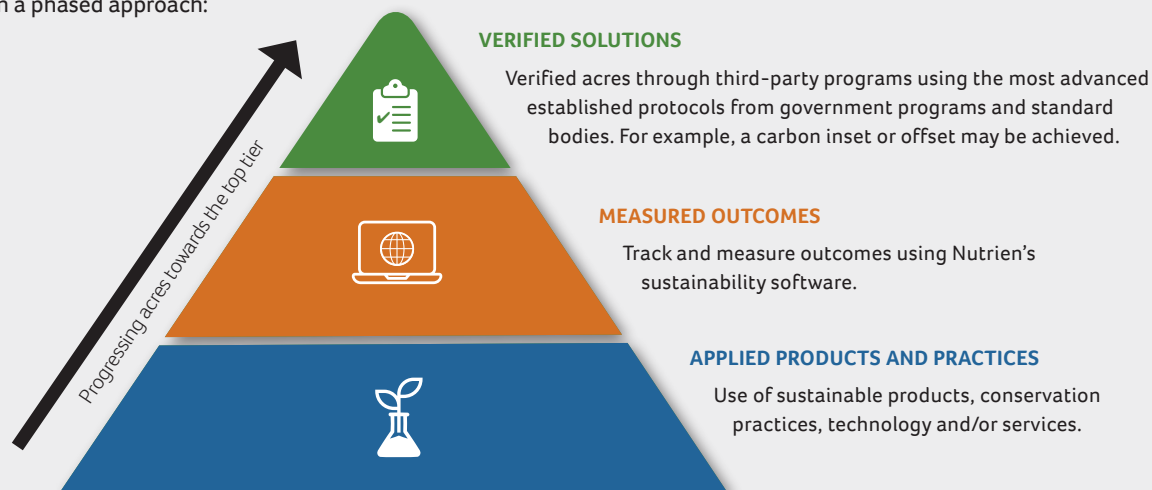
- **Fundamental:** Application of sustainable products, conservation practices, technology and/or services.
- **More advanced:** Use of our digital platform, including Agrible®, to track and measure outcomes such as yield, soil health, water quality and biodiversity outcomes to support precision agriculture.
- **Most advanced:** Verification of sustainability outcomes, including GHG emission reductions/removals through third-party verifiers such as SustainCERT and/or verified by our execution partners utilizing industry accepted protocols and standards.

The diagram below summarizes our current practices and approach. Our whole-acre solutions will continue to evolve with our investment and advancement in methodologies, technology and partnerships.

As part of an initial phase-in of the project, by the end of 2022 we measured and documented approximately one million sustainable and productive acres in North America and Australia. We expect to significantly increase these acres in the years ahead. Our extensive grower and partner networks will enable us to scale this phased approach as we strive for global adoption by the year 2030.

APPROACH TO ACHIEVE 75M SUSTAINABLE AND PRODUCTIVE ACRES BY 2030

We consider a sustainable acre as one acre where one or more of our whole-acre solutions ([summarized on page 21](#)) is applied in a phased approach:



Grower Solutions
(continued)



Nutrien developed a free online farm game called Farmers 2050 to explore how feeding the world sustainably relies on balancing economic, social and environmental impacts. Players can grow crops, raise livestock and engage with local and global partners, with real farmers from across the world showing what they are doing on their farms. [Learn more.](#)

Today,
~50%
of our food supply is attributed to the use of fertilizers

Our Whole-Acre Solutions

Farming is complex. Every farm is different because every acre is unique, and solutions need to be tailored to meet the growers' needs including the specific environmental needs of each crop, local geography, climate, soil and agricultural market. Our experts provide agronomic advice throughout each growing season and span across multiple crop rotations. Our whole-acre solutions begin with agronomic analysis and strategic field planning sometimes years in advance followed by precise application of crop inputs during the growing season, and end with measurement to quantify results and analytics to inform next season's program.

The need to feed a growing population while improving the environmental and social impacts of agriculture is an opportunity for Nutrien to provide the right solutions for growers' most pressing challenges and promote safe and responsible product use. Whole-acre solutions include products, services and programs that aim to improve soil health, protect existing carbon sinks, increase soil organic carbon ¹ ("soil carbon") sequestration, optimize nutrient-use efficiency, reduce GHG emissions, improve water quality and retain water, while conserving and improving biodiversity. Additionally, crop yields can increase, further building soil organic matter, enhancing nutrient recycling and reducing land conversion.

Our Impacts

On each unique acre, there is an optimum use of fertilizer and other crop inputs to maximize food production. Finding this balance of positive and negative economic, environmental and social impacts takes experience, technology, and the right suite of products and services.

The main impacts related to the application of crop inputs at the farm level are emissions to air, loss to water and impacts to land. These are each described in more detail on our [website](#).



LEARN MORE
on our website



“Considering the critical role of fertilizers in increasing agricultural productivity and hence in ensuring global food security... key priorities include increasing market transparency as well as promoting smart and precision farming practices and efficient fertilizers use to improve soil fertility through digital soil nutrition maps, research, innovation, training and extension services including in digital technologies...”

(Global Fertilizer Markets and Policies: A Joint FAO/ WTO Mapping Exercise, 2022)

¹ Soil organic carbon is derived from the decomposition of plant and animal materials. Increasing the input of plant residues, plant roots and manure can increase the amount of organic carbon in soil. The terms total organic carbon, organic carbon and soil carbon are used interchangeably to represent soil organic carbon.

Nutrien’s products, services and programs are described comprehensively on our website. Notable developments from 2022 are described in the sections below.



Our Actions: Products, Services and Programs Summary

Here is a summary of some of our key products, services and programs that support our efforts to provide whole-acre solutions and foster a more sustainable agriculture sector.

Brief Description and Key Environmental Benefits		Carbon	Water	Soil Health	Biodiversity	Yield
PRODUCTS						
1	Advanced plant nutrition Advanced products (such as nitrogen inhibitors and stabilizers) and Environmentally Smart Nitrogen® (“ESN”) help minimize nitrogen loss to the environment and associated GHG emissions Advanced naturally derived products (such as C ² Technology and biocatalysts) enhance soil and plant function via increased nutrient availability	■	■	■	■	■
2	Crop protection Herbicides and pesticides aim to reduce crop loss (due to diseases, weeds and pests) and maximize crop yield					■
3	Seed Advanced plant breeding and genetics resulting in seeds that may be more resistant to pests and drought, maximizing crop yields		■		■	■
4	Animal health solutions Our focus is on providing our growers with products that improve feed efficiency and liveweight gains and/or reduce methane emissions from livestock	■				■
SERVICES						
5	Digital solutions and agronomy Our digital solutions includes Agrible®, soil testing and other data technologies to measure the impacts of agricultural practices and recommend customized solutions to each grower	■	■	■	■	■
6	Precision agriculture Our digital precision agriculture tool, Echelon™, combines with Global Positioning System (“GPS”) data to allow us to provide specific variable rate recommendations to help improve yields and soil health, while reducing nutrient loss to the environment	■	■	■	■	■
7	Nutrient management Our recommendations include following best practices in nutrient application such as 4R Nutrient Stewardship (the Right Source of plant nutrients at the Right Rate, Right Time and Right Place) and Ferticare®	■	■	■	■	■
8	Irrigation management and water conservation practices Our team designs systems to optimize irrigation, especially in dry zones (for example, Australia)		■			
9	Vegetation, forestry and aquatics management Nutrien Solutions provides specialized services for non-agricultural managed lands across the US	■	■	■	■	
PROGRAMS						
10	Carbon Program Nutrien’s carbon-focused solutions are positioned to help growers implement best practices and measure outcomes to support soil carbon sequestration and reduce GHG emissions, which can be verified or certified by third parties and create a new source of income for growers	■		■		■
11	Sourcing and traceability program Our collaborations are exploring the traceability of quality and sustainability attributes in the agriculture supply chain, from the farm field through to finished consumer product, generating premium crop value	■	■	■	■	■
12	Measurement program Our sustainability measurement programs use the Agrible® platform and a wide range of data to calculate indicators or metrics developed by recognized industry standard organizations	■	■	■	■	■

Grower Solutions (continued)



LEARN MORE
on our website

Our Actions: Products

1 Advanced plant nutrition

Nutrients are essential for growing healthy crops. When improving nutrient use efficiency, more uptake of nutrients by the crop means decreased nitrogen losses to the environment, resulting in a more sustainable use of inputs. We have numerous enhanced nutritional products that also improve the environmental performance, including nitrogen inhibitors, stabilizers, enhanced efficiency fertilizers, our C² Technology and biocatalyst technologies. These are described in more detail on our [website](#).

We continue to develop and launch advanced plant nutrition products. In 2022:

- Nutrien Soluções Agrícolas, our Brazilian Nutrien Ag Solutions operations, launched UP Algas in Brazil, our first fertilizer made from seaweed skeletons, a renewable material that is retrieved from a seaweed “cemetery” in the state of Maranhão. The production process of UP Algas is aligned with regional environmental studies and follows strict local regulatory quality and safety standards.
- Loveland Products launched Accomplish Max™, a next-generation biocatalyst that provides nutrient efficiency and uses natural, biologically extracted kelp to enhance crop tolerance to stressors such as cold temperatures, drought and fertilizer salts.
- Loveland Products launched Radiate Next, a plant growth regulator that drives root growth and development tailored to increase nutrient and water use efficiency and tolerance to abiotic stress (for example, soil salinity, drought and extreme temperature) while increasing photosynthetic rate to improve energy production and realize higher yields.

2 Crop protection

Crop protection products and practices are designed to maintain crop quality and minimize yield losses by managing plant diseases, weeds and pests. We carry a complete line of products from leading crop protection manufacturers, including Nutrien’s Loveland Products, which are described on our [website](#).

We continue to emphasize innovation of ag biological products that are derived from naturally occurring microorganisms and provide environmental benefits. In North America, Nutrien Ag Solutions has established a research and commercial development partnership with an ag-tech firm that harnesses the power and potential of naturally derived peptides aimed at improving crop performance in high-value specialty crops. In 2023, Loveland Products expects to launch a novel biofungicide called Aura Citrus, targeting citrus greening, which causes significant farm gate losses per year.

Nutrien Soluções Agrícolas is working to offer innovative natural products and biological solutions to solve farmers’ challenges and make agriculture more sustainable. In 2022, we launched:

- In partnership with Plant Health Care, our first Industrial Seed Treatment (“IST”), the Saori™ biofungicide, a nature-based peptide used for effective management of Asian soybean rust¹. ISTs combine a wide range of bio-based plant protection with bio stimulants, inoculants (which promote plant health) and nutritional technologies into a single seed treatment.
- The Loveland Bio line of Biocontrol and Inoculation portfolio, consisting of seven products that target the pest or disease rather than the crop. These products were developed for use during the 2022-2023 soybean season and are planned for use in corn, citrus, coffee, sugarcane, tomato and potato crops for the 2023 season.

Responsible manufacturing and application of our chemical, fertilizer and seed products reduces negative impacts of crop protection products to non-target species. Nutrien determines product suitability and use based on scientific evidence, regulatory requirements and a holistic product rating system. We promote the safe and responsible use of our products by providing information to customers on appropriate use, handling and application. [Read more.](#)

¹ Asian soybean rust is a devastating disease that can damage up to 90 percent of the crop and make plants resistant to other crop protection measures.

Analyst Corner

[GMO Position](#)
[Pesticides Position](#)



LEARN MORE
on our website

Grower Solutions (continued)



3 Seed

We provide customers access to a broad portfolio of seed and only offer products that meet high quality standards. Across crops, hybrids and varieties combined with the latest trait technology are thoroughly tested across a range of geographies and environments to help Nutrien deliver increased yield and yield stability to our customers. Learn about Nutrien's innovative seed treatment technologies and our seed breeding programs on our [website](#).

4 Animal health solutions

Mixed farming, when farmers grow crops and raise livestock at the same time, is common practice in Australia. Nutrien Ag Solutions in Australia offers products to improve the safety, quality and productivity of livestock, working animals and pets, with a focus on products that improve feed efficiency and liveweight gains and/or reduce methane emissions from livestock. Our staff include animal health experts and trained nutritionists.

Our Actions: Services



5 Digital solutions and agronomy

Nutrien's digital solutions combine location, agronomic information (crop physiology, soil characteristics, and pest or disease impact), environmental data (such as precipitation, temperature), weather forecasting and data science to make field-specific recommendations for growers. These crop management solutions help growers calculate their return on investment, maximize product efficiency and minimize environmental impact. Learn about Agrible®, NutriScripture and our analytical testing capabilities on our [website](#).

crop-nutrient efficiency and minimize environmental impacts. We provide advice to growers that is aligned with the 4R Nutrient Stewardship System in North America and Fertcare® in Australia. Both organizations promote the adoption of best practices in fertilizer application. Learn more about nutrient management and our eKonomics™ tool on our [website](#). Nutrien's "The Dirt: an eKonomics podKast", provides ideas, information and insights from real farmers on effective crop nutrient-management strategies.

6 Precision agriculture

Precision agriculture uses digital agronomy and technology, including GPS and geospatial data processing analytics, to allow growers to apply a prescription for more precise seeding and fertilization considering variability in the field. Our crop advisors work with growers to create a precise map of their fields, giving the confidence to make better decisions in both planning and execution. They support getting growers the best results by combining local knowledge with timely, actionable data. Learn more about Nutrien's precision agriculture platform, [Echelon™](#).

8 Irrigation management and water conservation practices

Irrigation management involves infrastructure and technology to efficiently water crops in dry regions, minimizing evaporation and improving yields. Our growers rely on water for product blending and irrigation in arid growing environments. Their water dependency can vary from year to year based on weather patterns. We promote services and advice that improve water use efficiency and reduce nutrient impairment to groundwater and surface water.

7 Nutrient management

Nutrient management involves determining the Right Source of plant nutrients at the Right Rate, Right Time and Right Place (the "4Rs" approach) to maximize plant-nutrient benefits, optimize

Nutrien is committed to working collaboratively to address shared water-related challenges and opportunities through water stewardship action and partnerships. We develop, work with and use opportunities for best management practices through improved technology and processes. Learn more about this and Nutrien Water, one of the largest retail water businesses in Australia, on our [website](#).

Learn more about
the 4Rs with
4R CASE STUDIES
and the
**4R ADVOCATE
PROGRAM**

Analyst Corner

- SASB RT-CH-140a.3
[Water Position](#)

Grower Solutions
(continued)

9 Vegetation, forestry and aquatics management

Our Nutrien Solutions team (a division of Nutrien Ag Solutions) are specialists in vegetation management for non-agricultural managed lands (that is, the forestry, aquatics, range and pasture, roadside, railroad, and utility markets) in the US. We help keep these lands healthy with our local expertise and wide range of

products and value-added services. For example, our forestry team advises landowners regarding forest management to support wildlife and optimize CO₂ sequestration while maximizing their financial returns, and our aquatics specialists work with customers to maintain the functionality of irrigation canals and water quality of recreational water bodies. [Learn more.](#)



Taking Action: Helping to Protect the Great Barrier Reef

The coast of Queensland, Australia is home to both the Great Barrier Reef and large fields of sugarcane and horticultural crops. Heavy rainfall is common in this area and can create a significant risk of nutrient (specifically phosphorus and nitrogen) loss through runoff into the coral reef. Nutrien supports the sustainability of the sugarcane industry by helping growers adopt practices to improve water quality within the Great Barrier Reef Lagoon Catchment area while adhering to the strict Australian sugarcane industry guidelines. In 2022, Nutrien Ag Solutions developed a proprietary software platform that reports and captures farm nitrogen and phosphorus budgets, mapping of nutrient plans, farm soil types, and capturing actual farm records required for Australian Government Legislation. In recognition of these efforts, a Nutrien Ag Solutions employee was named a 2022 finalist for the Queensland Farmers’ Federation Reef Extension Officer Champion Award, which is given for “exemplary efforts of an extension officer in working with landholders to improve their farming practices and reduce run-off entering the Great Barrier Reef”. [Learn more.](#)

Listen to our sustainable ag podcast
“THE FUTURE. FASTER”

Our Actions: Programs

Nutrien’s whole-acre solutions involve a suite of sustainability programs including carbon, measurement and traceability projects. With these programs, Nutrien develops input strategies that increase grower profitability while also improving and measuring environmental outcomes. Our goal is to build connections and drive farm productivity, profitability and natural resource management together through customized, scalable solutions. We work with our grower customers, downstream partners and third-party experts to determine and incentivize optimal practices and products for continuous improvement. In 2022, we expanded these pilot programs into Australia to support the adoption and measurement of sustainable solutions.

With our suite of sustainable agriculture programs, we have partnered across the agricultural supply chain to build connections and drive farm productivity, profitability and natural resource management.

Grower Solutions

(continued)



Learn how agriculture can support **GHG ABATEMENT** on our [website](#)

Analyst Corner

- TCFD Strategy a) b) c)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2

[Whitepaper: Sustainable Agriculture Programs Driving Carbon Markets](#)

10 Carbon Program

Nutrien is partnering with growers, value-chain stakeholders, governments and NGOs to support the advancement of multiple pathways for the monetization of measurable carbon improvements in the agriculture sector. Nutrien is uniquely positioned with our trusted grower relationships across our global network, broad offering of products and services, and agronomic expertise to bring companies across the agricultural value chain together to incentivize grower adoption of sustainable products and practices that reduce GHG emissions and maintain or increase soil carbon stocks. The co-investment of various agriculture value-chain partners provides additional incentives to growers to accelerate the adoption of climate-smart practices, as well as generate mutual carbon footprint benefits.

In 2022, Nutrien continued to advance our programming to generate potential verified carbon offsets and insets. In our

Canadian Carbon Program, we continued to use established protocols for improved nitrogen management and maintaining soil carbon in an inset pathway. In the US, Nutrien’s Sustainable Nitrogen Outcomes program, launched in 2022, is designed to achieve emissions reductions associated with the use of nitrogen fertilizer through the implementation of whole-acre solutions that enable growers to reduce nitrogen application rates while managing for increased yields. The carbon equivalent outcomes generated in this program can potentially be validated and verified for carbon monetization into the voluntary offset market or utilized for supply chain insetting. Both programs are designed for easy implementation for growers, with streamlined eligibility requirements, a short-term contractual agreement, and outcome-based incentive payments, as well as sustainability performance reporting through our digital sustainability platform, Agrible®. [Learn more.](#)


LEARN MORE
on our website

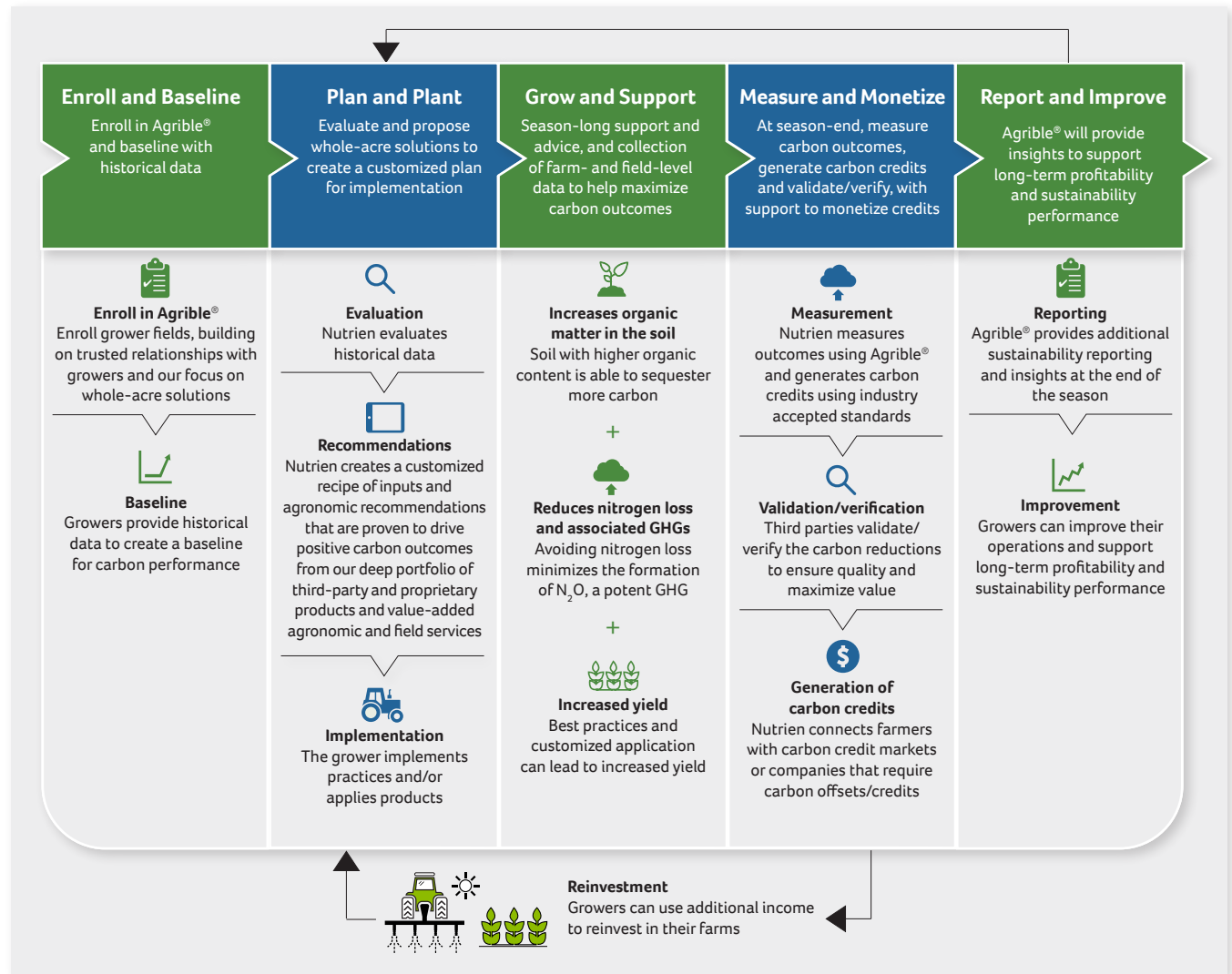
[Learn how](#) our Carbon Program took Nutrien’s relationship with one family farm to the next level.

Grower Solutions
(continued)

Our Carbon Program pathway

Agriculture has an opportunity to reduce GHG emissions and increase soil carbon through the adoption of climate-smart products, practices and services. By supporting growers' goals to implement best practices, leverage digital technology (which can measure and analyze impact) and the use of crop inputs that support sustainability, the industry can drive improvements throughout the entire agricultural value chain. As voluntary and compliance carbon markets continue to develop, they could be leveraged to pay growers for every tonne of reduced emissions and sequestered carbon, which we believe will be key to supporting agriculture sector emission improvements.

At the end of 2022, the enrolled **2021 CARBON PROJECT ACRES** were in the **validation/verification stage** of the process to the right



- Analyst Corner**
- TCFD Strategy a) b) c)
 - SASB RT-CH-110a.2
 - SASB EM-MM-110a.2
 - SASB RT-CH-140a.3
 - SASB EM-MM-160a.1

Nutrien's Carbon Program

What is the challenge?	GHG emissions related to the use of sold products, and primarily the application of nitrogen fertilizer on soil, are estimated to represent approximately 70 percent of our Scope 3 emissions, yet nitrogen application is critical to maintain crop production and quality and support global food security.
What is the opportunity?	<p>Agriculture has a critical role to play in addressing global carbon emissions.</p> <p>Growers have the ability, through the use of best practices, to increase and maintain soil organic matter levels and optimize the application and efficiency of nitrogen fertilizer to reduce GHG emissions and sequester carbon with verifiable outcomes. As a result, agriculture is positioned to become a leading driver of climate action and a significant source of monetizable carbon outcomes.</p>
What do we intend to do?	Our goal is to help growers generate high-quality carbon outcomes (offsets or insets) that can be monetized into the voluntary or compliance carbon markets.
Benefit to the grower	<p>Nutrien's Carbon Program aims to generate long-term value for growers by making each acre more profitable as a result of sustainable farming practices, helping growers meet evolving regulatory and food value chain expectations.</p> <p>Nutrien's Carbon Program partners directly with growers from field planning to harvest while supporting sustainable agriculture and enhancing grower profitability. Our whole-acre solutions approach enables the Carbon Program to:</p> <ul style="list-style-type: none"> • increase crop input efficiency and output per acre • increase farm income • improve GHG, soil, biodiversity and water outcomes
Benefit to Nutrien	This program, combined with our broader sustainable agriculture efforts, represents an opportunity for our Company over time as we integrate sustainability-focused capabilities across our global network, with a solutions-based approach that leverages more of our products and services to deliver agronomic and sustainability outcomes and value to our grower customers. To meet future emissions reduction targets, we believe that Nutrien, along with our value-chain collaborators, is well positioned to potentially claim carbon outcomes from our program to reduce Scope 3 emissions over the longer term.
How are we doing it?	<p>We primarily use our Agrible® platform to track and measure the results that growers share. Carbon outcomes will be generated using existing and emerging protocols/frameworks, including government-endorsed frameworks when available, to independently validate/verify and validate carbon performance, leveraging proven agronomic modeling and soil sampling methods to generate high-quality outcomes.</p> <ul style="list-style-type: none"> • In the US: We have worked with the leading carbon registries (Climate Action Reserve, Verra, Gold Standard®) to progress our understanding of their protocols and have helped to shape their continued evolution. In addition, we have worked with SustainCERT to understand options for project designs that can be scaled in the future for Carbon Insets, also known as Supply Chain Interventions. Additionally, we have submitted a project under the Climate Action Reserve ("CAR") Nitrogen Management Project Protocol ("NMPP") based on a segment of 2021 pilot work, with the goal of generating verified carbon offsets for these projects in early 2023. • In Canada: We have worked with SustainCERT to understand options for GHG reduction/removal project designs that can be scaled in the future for Carbon Insets within the agri-food value chain. Additionally, we closely follow the evolution of regulated Carbon Offsets pathways at the federal and provincial levels, within the framework provided by the Conservation Cropping Protocol ("CCP") and Nitrous Oxide Emission Reduction Protocol ("NERP"). • In Australia: Our program is focused on abatement of N₂O emissions in cropping systems and methane (CH₄) emissions in livestock systems. We are investing in the development of digital tools designed for Australian farming systems, and support the development of new N₂O and CH₄ abatement methodologies available in Australia through the Emissions Reduction Fund, Verra and Gold Standard.
What have we done so far?	<p>Key components to date include</p> <ul style="list-style-type: none"> • approximately 685,000 pilot acres in 2022 across Canada and the US; • growers receiving incentive payments by Nutrien for climate-smart practice implementation or carbon and water outcomes, depending on the pilot; • our portfolio approach including three Canadian provinces and 15 US states, representing a variety of crops, soil types and climate zones. <p>Nutrien will continue to expand the Carbon Program in 2023 with a focus on nitrogen management practice improvements and resultant GHG emissions reduction outcomes, while incubating scalable options for soil carbon sequestration, advancing the build-out of our pilots in Australia and establishing pilots in South America.</p> <p>While we have made progress in developing our end-to-end approach to carbon, including significantly increasing acres enrolled in North America, building a partnership base with aligned objectives and strategies, working with leading modeling and validation/verification organizations, and pursuing verified Scope 1 offset and Scope 3 inset carbon outcomes to maximize value creation optionality, there are many challenges that need to be addressed to drive scalable solutions in carbon. We believe that Nutrien is uniquely positioned to address these challenges.</p>

Grower Solutions (continued)



Carbon Program learnings and developments

Our approach to the 2021 and 2022 Carbon Program pilots successfully progressed a pathway to scale agricultural carbon outcomes. Key learnings include:

- Our relationship with and trust from the grower, along with in-depth knowledge of farm operations, is critical to enable program participation.
- To reduce complexity, a full-service offering is important, including agronomic expertise, product technologies, soil sampling capabilities, and digital offering to streamline data collection and sustainability performance measurement.
- Continued iteration is needed with the protocols for soil carbon and nitrogen management. This is becoming more apparent to standards bodies as more projects are seeking validation and verification. Nutrien is engaging to improve the processes.

Soil carbon sequestration

We continue to adapt and evolve the program to leverage our core learnings and address several key scalability challenges. Although soil carbon sequestration is an important targeted outcome to generate incremental carbon removals in the agriculture sector, the opportunity for soil carbon is variable by region depending on the cropping system and climatic conditions. The cost and variability of soil carbon measurement is also a high barrier.

- In Australia, current agricultural practices, soil conditions and climatic patterns limit the potential for long-term soil carbon sequestration in most farming systems. As a result, we are focused on enabling farm businesses to manage climate risk via insetting and developing methods to monetize emission reductions in collaboration with supply chain stakeholders and government programs. In addition, we are evaluating other agricultural carbon sequestration opportunities, such as above-ground carbon removals through permanent plantings.
- In North America, different geographic and production cycle variables (including soil type, climatic differences, crop type and agronomic practices such as tillage) greatly impact the ability to sequester soil carbon, making the opportunity highly variable. In western Canada, a high rate of no-till adoption and questions about the additionality and the value of retaining and continuing to build carbon in these soils has been a barrier for generating verified

carbon impacts. These factors, combined with growers' preference for seasonal, short-term contractual agreements, the complexity and cost of practice adoption, soil carbon measurement and risk management, as well as the relatively low price of carbon, has resulted in a significant part of our program to be focused on GHG emission reductions through improving nitrogen management by leveraging a 4R Nutrient Stewardship approach and/or nitrogen rate reduction opportunities. Although we significantly grew our Carbon Program acres in 2022, enrollments were still challenging in certain geographies as growers weighed the value of carbon incentives with the impact of nitrogen rate reductions to yield in a turbulent crop and fertilizer commodity price environment.

Soil carbon improvements

We continue to assess and develop opportunities to generate soil carbon improvements and value; however, several key challenges make scalability difficult, including the following:

- **Cost of farm practice implementation:** Practices related to increasing soil carbon tend to have higher costs to implement and require a longer timeline to achieve a return or see changes in the field. They also tend to require increased or changed management approaches to be successful at a field level.
- **Technical requirements for validating/verifying carbon sequestered:** In the preliminary stages of the validation and verification process, sharing of in-depth technical details on all aspects of the program is required. This is a timely process and not well facilitated with digital connections, making it a slow process.
- **Post-practice monitoring and risk management:** Depending on the path for validation and verification, monitoring and reporting on practice implementation may be required for 30 to 100 years to ensure the sequestered soil carbon is not reversed (that is, emitted), and if reversals occur, that they are properly accounted for by the certification/verification entity that made the claim. This represents a large time and resource investment.
- **Resourcing and knowledge-gap at validation/verification and standards bodies:** Deep understanding of the available protocol requirements and the process of validation/verification is critical for standards bodies. To make this process more efficient, there needs to be an increase in the understanding of agricultural and soil science in these bodies.

Grower Solutions
(continued)

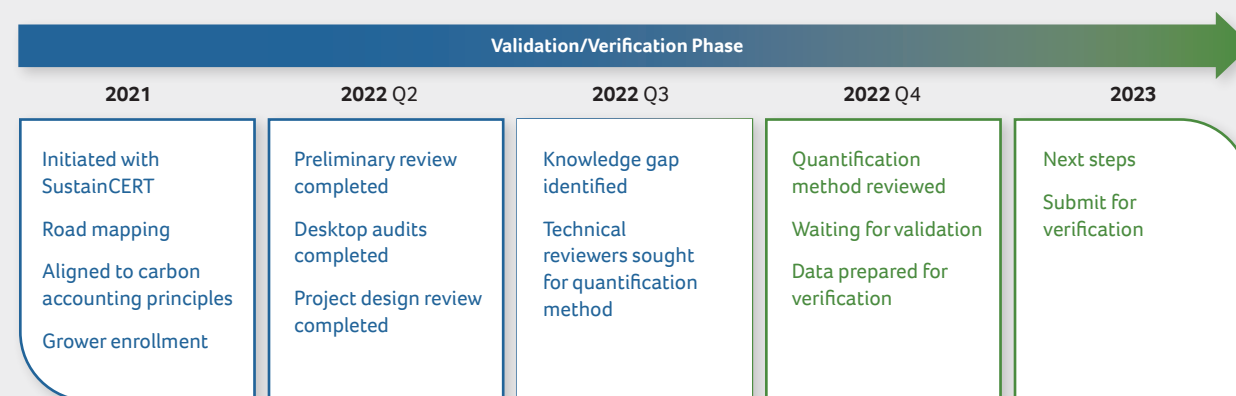


Taking Action: Nutrien Project Validation and Verification by SustainCERT

Nutrien is seeking third-party validation/verification of a supply chain project in Canada with SustainCERT. Project validation and verification by SustainCERT is a status achieved by only a handful of companies to date. SustainCERT’s comprehensive assessment of Nutrien’s model-based approach for calculating agricultural GHG emissions included external technical reviewers, as reflected in the timeline below.

Nutrien’s approach to supply chain projects places farmers at the center. Purchasers of agricultural goods can invest in projects that deliver payments to farmers, allowing food companies to claim GHG impacts within their supply chain. Nutrien is working with SustainCERT and the Value Change Initiative (“VCI”) to expand the scope of GHG claims to include emission reductions from fertilizer application. Through this process of co-creation and innovation, Nutrien expects to be able to account for verified GHG reductions from our Carbon Program in our own Scope 3 category 11 footprint.

SustainCERT PROJECT VALIDATION AND VERIFICATION TIMELINE



11 Sourcing and traceability program

Consumer demand for sustainable products is rising and ensuring brand integrity is top of mind for many consumer packaged goods (“CPG”) companies and retailers. As consumers more actively seek information on where and how their food and fiber were grown and sourced, the use of field-level, digitally engaged data will enable

growers to meet this demand. In 2022, Nutrien Ag Solutions increased its traceable crop offerings, supporting sustainably produced cotton and rice on over 100,000 acres.

Cotton remains one of the more complex crops when it comes to traceability, as it touches many hands from seed cultivation to fiber

Grower Solutions
(continued)

spinning and garment production. Nutrien Ag Solutions recently piloted Common Thread, a traceability project focused on a grower customer’s ginning facility in Georgia. We partnered with a provider of “track and trace” technology to assess the isotopic fingerprint of the cotton from the grower’s field through the entire ginning and garment manufacturing process so that increasingly conscious consumers can verify that a cotton garment was produced as advertised. [Learn more.](#)

performance and build solutions to meet their needs. Through our products, solutions and services, Nutrien Ag Solutions is supporting downstream organizations that are deploying sustainability measurement programs at the farm and field level.

Nutrien’s systematic approach to defining and implementing sustainability measurement programs includes program establishment, data collection, data analysis, data reporting and program refinement. From this field-level data, our agronomic field teams can continually work with growers to improve their sustainable scorecard through the recommendation of whole-acre solutions. We use our Agrible® platform and a wide range of data to calculate indicators or metrics developed by recognized industry standard organizations, which include land use, biodiversity, soil carbon and GHG emissions.

12 Measurement program

CPG companies and retail businesses are striving to characterize the sustainability of their supply chains and to influence them in ways that improve the level of sustainability over time. Farms can represent a large proportion of the environmental footprint of many consumer goods and, for Nutrien, this is an opportunity to engage with CPG and retail businesses to measure sustainability

Our Actions: Enablers of Sustainable Agriculture Summary

In addition to our whole-acre solutions (products, services and programs), we have internal capabilities and seek external partnerships that provide a foundation for a more sustainable agriculture sector.

These enablers create environmental, social and economic benefits, and include:

Brief Description and Key Benefits		Environmental	Social	Economic
1	Local expertise/agronomy Providing the best advice to growers considering their unique conditions and goals	■		
2	Nutrien Financial Providing customers with financial services that have the opportunity to optimize production while delivering innovative strategies for sustainable generational growth		■	■
3	Grower outreach Sharing agronomic information	■		■
4	Community and youth outreach Supporting youth and the next generation of farmers	■	■	
5	Research and development (“R&D”) Developing solutions to agronomic challenges	■		
6	Strategic partnerships Collaborating to achieve greater impact across our value chain and industry	■	■	■

Grower Solutions (continued)

Taking Action: Nutrien's Academic Council

Nutrien aims to provide science-based solutions to the agronomic challenges that agriculture and our growers face today and in the future. In 2022, Nutrien established an independent scientific advisory council of world-class academic leaders from Canada, the US and Australia that meets twice per year with our sustainable agriculture team to help steer research focus and peer review our data, results and approach to sustainable agriculture. [Learn more.](#)

1 Local expertise/agronomy

One of the greatest assets we have are the people at Nutrien who work to understand the individual challenges our growers face in order to deliver solutions. Through our retail business, Nutrien Ag Solutions, we have more than 4,000 agronomists and field experts working directly with growers from more than 2,000 global locations. In Australia, where mixed farming is common, we also have livestock and animal health experts.

Nutrien's field experts are trained in nutrient stewardship, crop protection, seed and best management practices to make recommendations that help drive crop production and sustainability for our growers. In 2022:

- We began training our North American crop consultants on soil health and biodiversity-related topics. Approximately 400 crop consultants have received training on impacts of soil biology on soil health and soil health metrics.
- Nutrien Soluções Agrícolas implemented a training program for the sales team and crop consultants in Brazil to support growers and promote sustainability in agriculture. The training topics include macro-trends in agriculture and sustainability, low-carbon agriculture, carbon markets in agriculture, recovery of degraded pastures, crop-livestock-forest integration, agroforestry systems green manure, and environmental and social legislation on rural Brazilian properties.

2 Nutrien Financial

We pair agronomic and financial expertise to help growers optimize production through convenient access to capital and innovative cash management strategies. Financing is often a key enabler to broad adoption of sustainable agricultural practices including climate-smart agricultural practices. Nutrien Financial provides financing options such as low-rate, extended credit terms for all sustainable supplier products sold by the organization including our suite of proprietary products, enabling growers to invest in the long-term environmental and social health of their business and land. We seek to better understand the needs of this market and find viable and attractive finance offerings that help accelerate growers' sustainability objectives and support positive

environmental outcomes. Nutrien is also committed to helping a diverse range of growers overcome credit and finance barriers, so they can access the working capital needed to secure our goods and services. [Read more.](#)

3 Grower outreach

Across North America, we offer various forms of training and educational materials to teach growers about our industry-leading portfolio of products and services using online training tools, including a wide range of educational videos. We actively listen to our customers' needs through feedback surveys to better understand future training needs. We also promote proper nutrient stewardship and best management practices through a variety of training activities for growers, including webinars, podcasts and live Certified Crop Advisor training sessions.

Nutrien's Model Farm and Agricultural Resource Centre in Trinidad and Tobago is a state-of-the-art 75-acre facility that offers free training to local farmers and students, with ongoing access to experts and best practices for sustainable crop production and profitable farm enterprises. In 2022, the Model Farm facilitated 42 virtual training courses with approximately 6,400 course participants.

Nutrien Soluções Agrícolas has opened 33 Nutrien Experience Centers to raise the bar on innovation and partnership with our growers in Brazil. These centers are designed to create an experience for connection and knowledge expansion, providing growers with support related to products, service, technology and financial management needs. For 2023, we expect an additional 41 Experience Centers to be opened or renovated. [Learn more.](#)

We also operate the Agrichem Nutrition Academy, which has classroom and online training for professionals and farmers on the topics of soil fertility, plant physiology, plant nutrition and crop management best practices. [Learn more.](#)

4 Community and youth outreach

At Nutrien, we aim to invest in the next generation of farmers and engage youth in agriculture. We promote agriculture and leadership skills development with our support of organizations like the National FFA Organization, Agriculture Future of America

Grower Solutions (continued)

Taking Action: Supporting Leading Harvest®

In 2022, Nutrien became a founding supporter of Leading Harvest®, a non-profit organization formed to advance sustainable agriculture by creating a scalable program for independently verifying sustainable farm management and ESG outcomes. With the goal of harmonizing reporting, improving outcomes and creating transparency, Leading Harvest® developed a Farmland Management Standard that identifies sustainable farming practices based on 13 principles, 13 objectives, 33 performance measures and 71 indicators across economic, environmental, social and governance issues. The organization has approximately 1.5 million acres of farmland across 30 US states enrolled and on the path to third-party certification, and also work in Australia and are expanding to Canada. [Learn more.](#)



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and National 4-H Council. Nutrien has provided scholarships for agricultural studies and funding for ag programs in secondary and post-secondary schools. In 2022, Nutrien partnered with 175 non-profit and community partners to reach more than one million youth around the world with agriculture sustainability education programs that are hands-on, and science- and curriculum-based. [Learn more.](#)

5 Research and development (“R&D”)

Nutrien’s R&D programs are designed to provide science-based solutions to the agronomic challenges that agriculture and our growers face today and in the future. Our R&D teams focus on innovative solutions for nutrient use efficiency, micronutrient deficiency, crop quality, sustainability and yield enhancement. Each R&D project meets the following criteria:

- **Superior science:** Technologies originated and advanced within our portfolio offer unique combinations of chemistry, biologicals, genetics or traits.
- **Differentiated functionality:** Products developed and commercialized have features and functionality differentiated from those of existing solutions.
- **Sustainable agriculture:** Technologies and products increase input efficiency, minimize nutrient loss, reduce environmental impact, and/or improve production agriculture and food safety.

In collaboration with our global marketing teams, our crop protection and nutritionals R&D group develops and tests innovative and sustainable products to provide value for growers globally. This includes enhanced nutrient use efficiency products, soil amendments, proprietary crop protection products, industry-leading adjuvant platforms based on our Leci-Tech® Technology, and drift and volatility reduction products.

Nutrien is well positioned with a network of owned and leased farm assets spanning more than 2,300 acres to test digital and crop input innovations that improve grower productivity, profitability and sustainability in a real farm operating environment. We use this network to support our seed breeding programs, crop protection and nutrition field trials, performance demonstrations of our full suite of third-party and proprietary products, and pilots of early-stage technologies.

We also sponsor and coordinate field research to study nutrient management with university, government and independent researchers. This research aims to determine nutrient best management practices; evaluate environmental impacts and proper use of our products and all nutrient sources to minimize negative impacts; and optimize growers’ return on investment with use of our products. Outcomes of this research are science-based recommendations, ongoing improvement in nutrient-management practices and elevation of nutrient stewardship across the entire fertilizer industry.

6 Strategic Partnerships

Strong partnerships are the base of achieving sustainable progress across the agricultural supply chain. The table on [page 33](#) summarizes some of our key partnerships relevant to our sustainability strategy. These are described in more detail on our [website](#).

Maple Leaf Foods Inc. continues to partner with Nutrien to engage growers within its Western Canada supply chain to generate carbon outcomes. The companies are working with SustainCERT to validate and verify the program and outcomes measured in fields. In 2022, the partnership engaged more than 100,000 acres and more than 30 growers, worked on validation and verification, and held a Carbon Summit with growers and crop consultants to provide updates on the carbon landscape and get feedback on the programs.

We also continued to partner with Ardent Mills in their North American Regenerative Ag Program, and increased coverage to approximately 355,000 acres and more than 30 growers. The program also expanded to measure sustainability metrics on winter wheat, spring wheat, durum wheat and chickpeas. Measurement projects characterize crops using a variety of sustainability metrics. On select acres we also integrated solutions projects that promoted soil health and improved 4R fertilizer management. Nutrien Ag Solution’s field analytics will be used to evaluate management practices and environmental factors that have significant effects on sustainability outcomes to inform and shape the North American Program and grow enrollment in carbon programs.

SUMMARY OF NUTRIEN'S STRATEGIC PARTNERSHIPS

PARTNERSHIP	PURPOSE
MULTI-STAKEHOLDER PARTNERSHIPS	
Field to Market	Work across the supply chain and with growers to establish guidelines for sustainability metrics calculations and reporting on crops in the US
Cool Farm Alliance	Work to calculate sustainability metrics for crops not included in the Field to Market platform and outside the US
Ecosystem Services Market Consortium ("ESMC")	Collaborate with the supply chain to establish a Scope 3 marketplace from growers in the US
Carbon Market Institute	Work with multiple stakeholders to advance high integrity carbon credit frameworks for agriculture
Leading Harvest®	Create a scalable program for independently verifying sustainable farm management and ESG outcomes
Potato Sustainability Alliance	Work with leading growers, processors and fresh potato marketers to improve the soil, water and biodiversity aspects of potato production in the US and Canada
WBCSD and the International Fertilizer Association	Create critical mass within the fertilizer sector to support the development of a Sectoral Decarbonization Approach ("SDA") following Science Based Targets initiative guidance
WBCSD Scaling Positive Agriculture Project	Maximize the positive potential of agriculture to provide solutions for achieving climate and nature goals and incentivizing and strengthening the role of farmers
Natural Climate Solutions Alliance	Ensure Natural Climate Solutions, including opportunities for managed agricultural lands, contribute their full potential to deliver on climate goals
Value Change Initiative ("VCI")	Pilot test the GHG-P Land Sector Removal Guidance Develop claims, accounting and information systems frameworks in a collaborative cross-sector approach, addressing relevant issues in the Ag Working Group
CONSUMER PACKAGED GOODS ("CPG") PARTNERSHIPS	
Maple Leaf Foods Inc.	Engage growers within their Manitoba supply chain to generate carbon outcomes that are intended to be independently verified by SustainCERT
Ardent Mills	Explore a more sustainable future for crop production
INNOVATION PARTNERSHIPS	
Radicle Growth	Provide funding to innovative Ag companies that also support a more inclusive Ag industry
Creative Destruction Lab – Rockies (Ag Stream)	Build solutions throughout the ag value chain by helping participants scale and commercialize their science- or technology-based start-up
Ag-Tech Garage	An agribusiness innovation hub in South America that connects companies and start-ups
AgNest	Create a technology and digital agriculture living-lab
R&D PARTNERSHIPS	
Decade of Ag movement, led by the U.S. Farmers and Ranchers in Action ("USFRA")	Create a shared vision for a resilient, climate-smart agricultural system that produces sustainable food, fiber and energy systems for the future
Midwest Row Crop Collaborative	Find sustainable solutions to agricultural challenges
Colorado State University ("CSU") College of Agricultural Sciences	Improve research capabilities, help students prepare for a career in the field of agriculture and use innovative technology
Sustainable Agriculture Advisory Council	Leverage world-class academic leaders in our research and approach
Global Institute for Food Security ("GIFS"), with the Government of Saskatchewan and the University of Saskatchewan	Discover, develop and deliver solutions for the production of globally sustainable food



Climate Change and GHG Emissions



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

The potential impacts from climate-related risks have been identified as a top ESG concern by our stakeholders. We are focused not only on reducing the carbon footprint of our fertilizer production (primarily nitrogen), but also on partnering with growers to reduce in-field GHG emissions and sequestering more carbon in the soil.



- Launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts
- Achieve at least a 30 percent reduction in GHG emissions (Scope 1 and 2) per tonne of our products produced, from a baseline year of 2018
- Invest in new technologies and pursue the transition to low-carbon fertilizers, including low-carbon and clean ammonia ¹

ESG Performance Goals/Targets

On track: Reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023 ²

On hold: Deploy self-generated wind and solar energy at four Potash facilities by the end of 2025

Analyst Corner

- TCFD Strategy a) b)
- TCFD Risk Management b)
- TCFD Metrics & Targets c)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2

Our Vision: Nutrien's Climate-Related Commitments and Areas of Focus

Nutrien's [Feeding the Future Plan](#) includes our commitment to reduce our GHG emissions (Scope 1 and 2) per tonne of product produced and helps address our key climate-related risks, as well as taking advantage of climate-related opportunities.

¹ Low-carbon and clean ammonia previously referred to as blue and green ammonia.

² On an intensity basis vs 2018 baseline emissions intensity.

Climate Change and GHG Emissions (continued)

Our Approach

Nutrien's climate-related actions are guided by our SHE Policy and international best practices and guidance. Nutrien's Climate Strategic Issue Teams provide cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company. Our commitments reflect three climate-related areas of focus:

Enabling emission reductions at the farm level: Nutrien's focus on sustainable agriculture helps us to identify and develop opportunities for growers to adopt improved nutrient and land management practices, and use advanced nutritional products and digital tools to measure the impact of sustainable solutions on GHG emissions at the farm level. Taking a whole-acre approach to sustainable solutions encompasses an improvement in soil quality and water management, making farms more resilient to weather extremes. The Carbon Program is one way Nutrien supports the use of products and practices that reduce emissions at the farm level and deliver more sustainable outcomes.

Reducing emissions from operations: We have committed to at least a 30 percent targeted reduction in Scope 1 and 2 GHG emissions intensity by 2030 from a baseline year of 2018, and Nutrien has forecasted to spend more than \$500 million in pursuit

of this target. Specific project execution will depend on a range of factors, including the final investment decision of the Geismar Clean Ammonia plant. Going forward, we expect to selectively execute emissions abatement projects as the compliance landscape evolves and the direct and indirect costs of carbon, as well as attractive opportunities to our business, justify incremental capital investment. Targeting emissions reduction also addresses a key transition risk in our fertilizer operations related to regulations and existing and potential regional carbon taxes.

Achieving the development of a Science Based Target that is appropriate and specific to the fertilizer sector: Nutrien reported our climate strategy in 2021 with clear short-term and mid-term reduction targets for Scope 1 and 2 GHG emissions, demonstrating our support of the Paris Agreement goals and our commitment to the Science Based Targets initiative ("SBTi") to set a science-based target. We continue to work with the WBCSD, fertilizer peers and the SBTi to produce a sectoral decarbonization approach ("SDA") for the fertilizer industry. An SDA is one of three possible methods for setting a science-based target. The role of nitrogen in food production, soil health and optimizing land use are unique attributes differentiating nitrogen fertilizer manufacturing from other chemical industries and these attributes need to be considered in developing the SDA process.

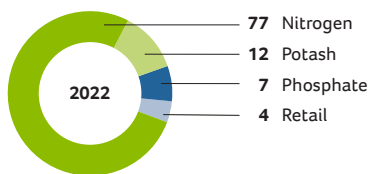
Analyst Corner

- TCFD Strategy a) b)
- TCFD Risk Management b)
- TCFD Metrics & Targets c)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2



Climate Change and GHG Emissions
(continued)

GHG Emissions by Operating Segment
(% of total Scope 1 and 2 emissions)



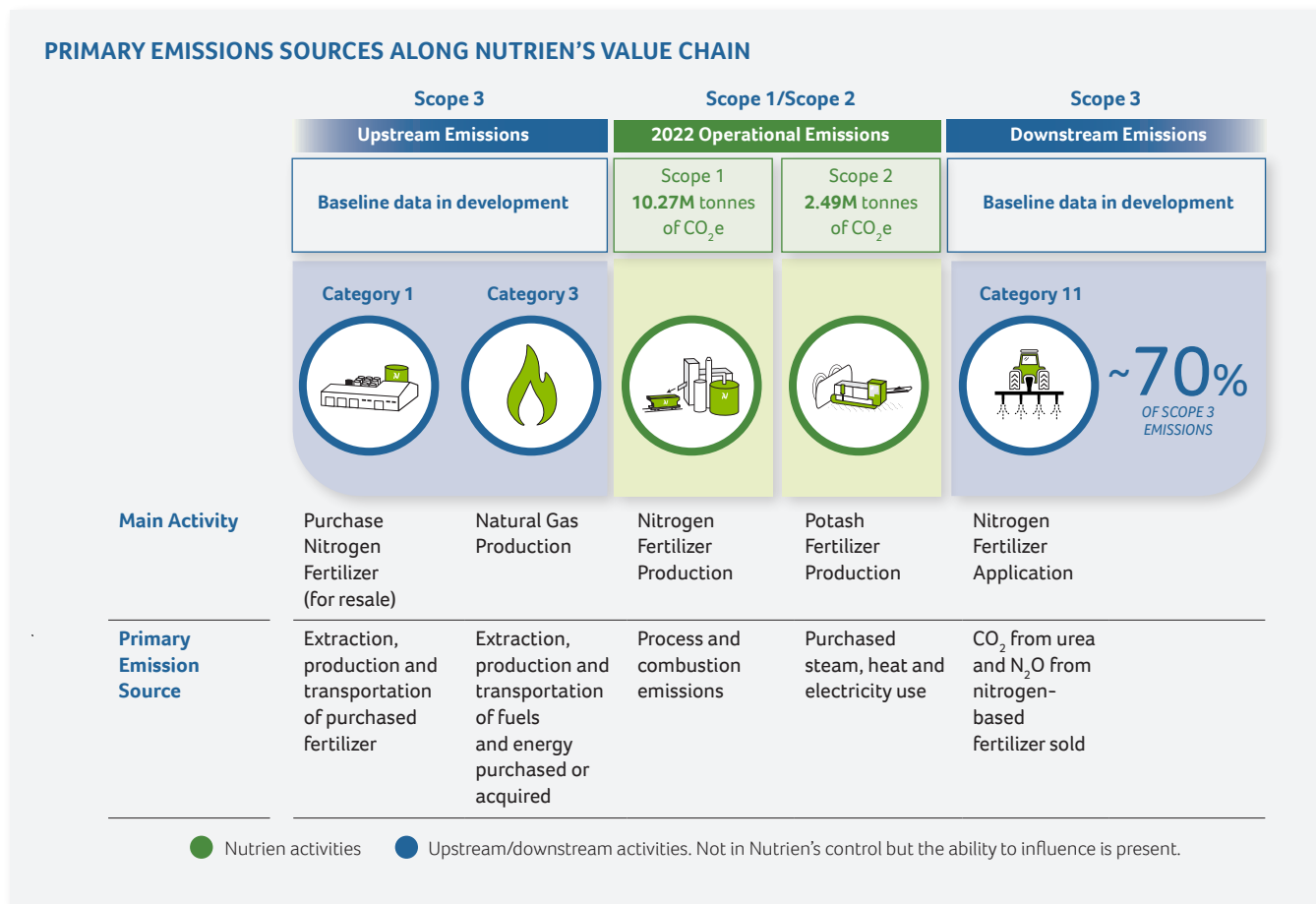
Our Nitrogen operating segment is the largest contributor to our overall GHG emissions and a key focus of our reduction initiatives.

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Analyst Corner

- TCFD Strategy a) b)
- TCFD Metrics and Targets b) c)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2

Our Impacts: Understanding GHG Impacts Across the Value Chain



Fertilizer production and use have complex and conflicting impacts on GHG emissions across the agricultural value chain. Fertilizer is critical for healthy crops, enhancing soil carbon (the level of carbon that is directly tied to the level of organic matter in the soil) and increasing yields, which helps to feed our growing population with the same amount of arable land, but nitrogen fertilizer also generates GHG emissions when it is produced and when it is applied to the soil.

Emissions Released During Production

Although we operate across the crop input value chain and produce many products, the manufacturing of fertilizer accounts for approximately 95 percent of our Company-wide direct (Scope 1) and indirect (Scope 2) emissions. Direct emissions are generated on site, from burning natural gas and other fuels, or from processes at our operations. Indirect emissions are from the off-site generation of purchased electricity, steam and heat. The sources of GHG

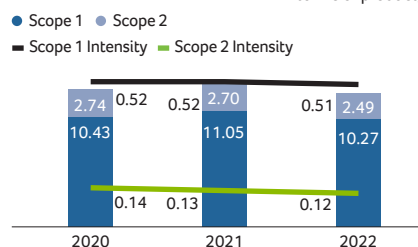
Climate Change and GHG Emissions (continued)



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GHG Emissions (million tonnes CO₂e)

GHG Intensity (tonnes of CO₂e per tonne of product)



Our absolute Scope 1 and 2 emissions and emission intensities decreased in 2022 due to the implementation of multiple emissions reduction initiatives across our operations, such as N₂O abatement projects at several of our nitric acid manufacturing plants. Annual variations in production volumes, facility maintenance activities and electricity grid emissions also contributed to the observed emission reductions. In addition to emissions reduction initiatives and energy efficiency projects, annual variations in our production volumes, relative production of products with differing GHG emissions intensities, facility maintenance activities and electrical grid decarbonization can affect the net emission intensity of our operations. For more details, please see the Performance Table on [page 106](#).

Analyst Corner

[GHG Emissions - Scope 1 and 2 Inventory Management Plan 2022 KPMG Independent Limited Assurance Report](#)

emissions related to the nitrogen, potash and phosphate fertilizer we produce are described in detail on our [website](#).

Scope 1 and 2 assessment: Nutrien reports our emissions following the GHG Protocol Corporate Accounting and Reporting Standard on an operational control basis. KPMG LLP provided limited assurance over our 2022 GHG emissions and their assurance report can be found [here](#). To understand Nutrien’s calculation methodology for reported Scope 1 and 2 GHG emissions, please see our [GHG Inventory Management Plan](#).

Emissions Released by Using Fertilizers

GHG emissions from fertilizer use occurs with nitrogen-containing fertilizers (as well as from organic sources of nitrogen). N₂O is the GHG of primary concern, although CO₂ is also directly emitted from urea forms of nitrogen. N₂O can be produced from nitrate-nitrogen under saturated soil conditions when there is an excess of nitrate-nitrogen in the soil and temperatures are warm enough for microbial activity. Microorganisms convert the nitrate to a variety of nitrogen gases, including small amounts of N₂O, which can then be lost from the soil to the atmosphere. N₂O can also be emitted in the nitrification step (conversion of ammonium to nitrate), which is also a biological process. [Learn more about the nitrogen cycle](#). For Nutrien, these emissions are significant as approximately 47 percent of the fertilizer we sell to our growers is nitrogen-based and has the potential to produce GHG emissions. Fertilizer management practices are an important way to reduce N₂O emissions and one of the reasons agronomists and field experts at Nutrien provide farmers with nutrient-management planning advice. [Read more about Nutrien’s Carbon Program](#), which is designed to support the agricultural industry through soil carbon sequestration and reduced GHG emissions.

Scope 3 assessment: Scope 3 includes indirect GHG emissions other than those covered in Scope 2, upstream and downstream from our business. Greater reporting and transparency are required from participants across the agricultural supply chain, and we are building a greater understanding of our broader climate change impacts by starting to quantify Nutrien’s Scope 3 emissions. Improved understanding is expected to enable collaboration and effective decision making that drives beneficial change.

In 2022, we engaged an external advisor and established both a cross-functional project team and a steering committee to develop a Scope 3 emissions data collection, quantification and reporting process. Building on the initial assessment completed in 2019, we conducted a GHG Protocol-aligned screening assessment that identified nine of 15 Scope 3 categories as being potentially material and requiring further evaluation.

We are currently developing GHG Protocol-aligned methodologies to quantify each material category based on the expected availability and quality of internal and external data. Due to the complexity and nascent nature of Scope 3 data, calculations and reporting environment, we expect the process of determining our indirect emissions and the quantities themselves to be iterative, and to improve and evolve over time.

The inherent complexity and expected evolution can be highlighted by category 11 (Use of Sold Products). Our preliminary analysis estimated downstream emissions related to this category to represent approximately 70 percent of our total Scope 3 emissions, the majority of which being related to nitrogen fertilizer use. This estimate was developed using a global Tier 1 approach with broadly applicable emission factors. This approach, generally used by agri-food value-chain companies, contains significant limitations as it does not account for parameters such as application methods, soil composition, crop type, agricultural practices or innovative products and, therefore, cannot measure or demonstrate the result of emissions reduction efforts by Nutrien. We are working with external GHG accounting experts and internal subject matter experts to explore a refined quantification methodology for category 11 that better represents the scope and nature of our operations and is aligned with accepted principles for GHG accounting. We are also working with growers through the Carbon Program to better understand and quantify potential emissions reductions through nitrogen management.

Climate-Related Risks and Opportunities

To understand our climate-related risks and opportunities, read our TCFD disclosures on [pages 99 to 102](#).

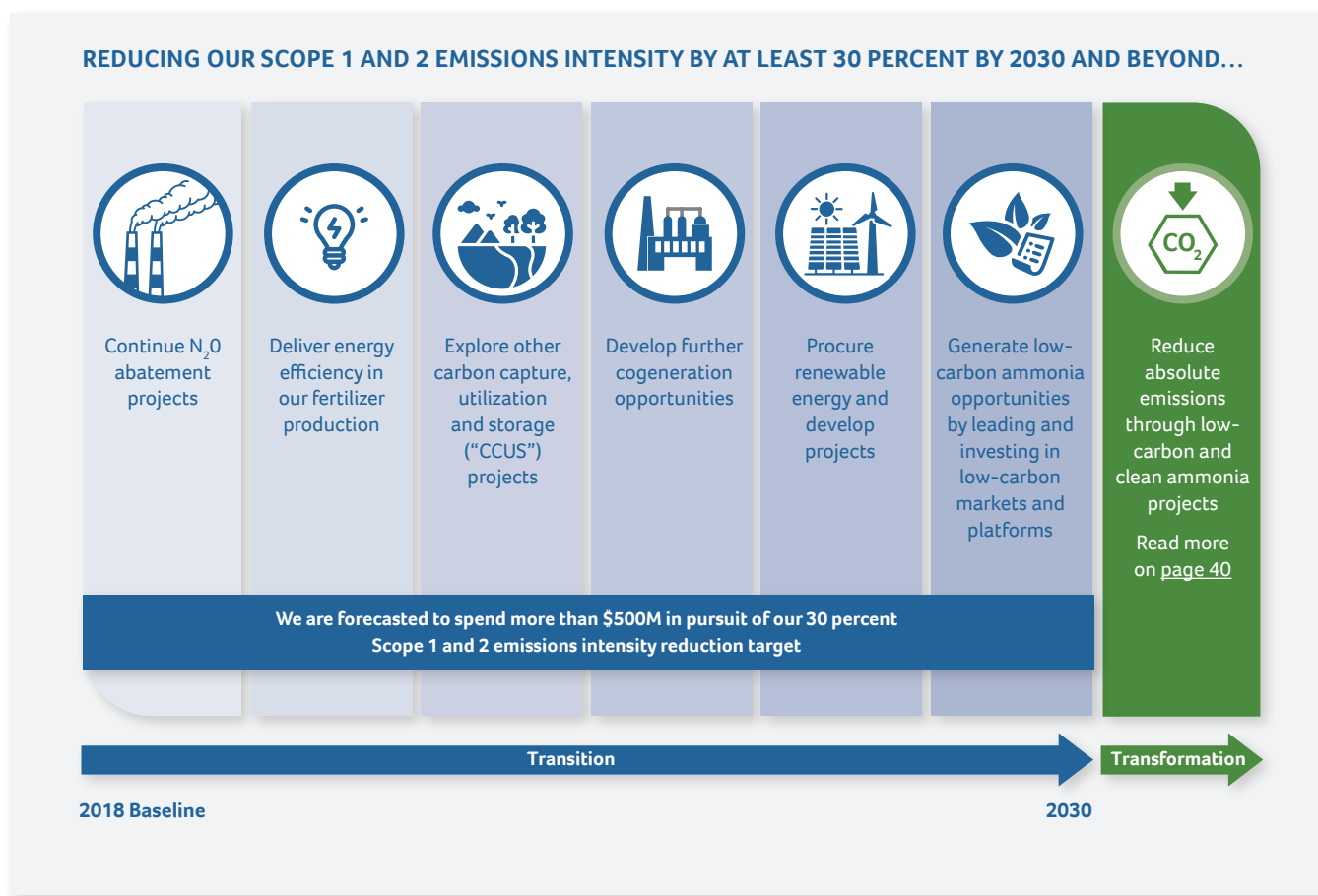
Climate Change and GHG Emissions
(continued)

Our Actions to Reduce GHG Emissions

We believe a combination of strategies will be needed to meet society’s decarbonization goals. Our reduction plans include activities to reduce the direct Scope 1 GHG emissions intensity at our manufacturing facilities and the indirect Scope 2 GHG intensity emissions from purchased energy, such as steam and electricity, while reducing other material emissions that are upstream and downstream of our operations. Nutrien is exploring multiple opportunities for the responsible development of low-carbon

ammonia and derivative fertilizers. We have dedicated support to the development of clear and transparent certification of low-carbon and clean ammonia.

In 2022, Nutrien continued to pursue opportunities to reduce emissions and expanded our Carbon Program. The graphic below outlines opportunities that continue to be developed as new technologies become technically and financially feasible.



Analyst Corner
• TCFD Risk Management a)

Climate Change and GHG Emissions (continued)

Scope 1 and 2 Initiatives

Nutrien's first phase of GHG emissions intensity reduction projects are on track for completion. By nature, achieving the anticipated GHG emissions reductions is highly dependent on changes in production, electrical grid intensity and project schedules.

1 Process improvements

We continually look for process improvements to reduce GHG emissions at our facilities. A few examples:

N₂O abatement: Nutrien has begun the process to install or upgrade N₂O¹ abatement technology at our Nitrogen sites, with three projects completed in 2022. This technology is able to remove over 90 percent of N₂O emissions from nitric acid production. Our identified N₂O projects are on track to contribute to our goal of reducing emissions by approximately one million tonnes of CO₂e annually by the end of 2023².

Reliability improvements: Reliability and plant turnaround schedules are important to our GHG emissions profile because plant start-ups and shutdowns result in higher GHG emissions compared with normal, continuous operations. This is particularly relevant in the case of our Nitrogen facilities since production interruptions result in non-routine process gas venting.

2 Energy efficiency and renewable energy

We aim to continually improve our energy efficiency, which directly reduces our GHG emissions and has the added benefit of improving the cost of production. Where possible, as equipment is replaced for upgrades or due to end of life, it is upgraded to a more efficient option such as using modern designs for steam turbines, compressors, heat exchangers and catalytic reactors. In addition to capital improvements, Nutrien has centralized all ammonia plant operating data and is using advanced analytical tools to ensure the ammonia plants and nitrogen facilities are running at the optimum efficiency points and minimizing emissions.

Reductions in Scope 2 emissions can be achieved at the point of energy production as well as at the point of consumption. Lower Scope 2 GHG emissions energy options for Nutrien include self-generated wind and solar energy projects; long-term Power Purchase Agreements ("PPAs") with third parties to either directly or virtually supply lower- or non-emission renewable sources of energy; and purchase of emissions offset credits or Renewable Electricity Certificates ("RECs").

In 2022, we advanced the research and planning of renewable energy projects related to our ESG target. Our Potash project team evaluated installation contractors, completed third-party environmental field surveys for the proposed site locations, performed five provincial Ministry of Environment project planning pre-screening sessions, hosted quarterly site stakeholder engagement sessions including engaging local Indigenous partners and participated in discussions with Saskatchewan's power utility provider, SaskPower. We have paused our onsite renewables program until 2024 to engage in further consultations with SaskPower related to their clean energy transition. In 2022, we expressed interest in SaskPower's Renewable Partnership Offering related to their proposed 100 MW solar facility. We are exploring the most feasible access to renewable energy whether that is onsite or offsite or a combination of both.

3 Cogeneration projects

Generating lower-carbon energy is one of the ways we can reduce our energy-related Scope 2 emissions. Two of our sites use cogeneration to efficiently combine heat and power generation, one at our Carseland, AB Nitrogen facility and one at our Cory, SK Potash mine. Nutrien is constructing a natural gas facility at our Rocanville, SK Potash mine site that is expected to meet the majority of that facility's power demand with lower-emission electricity than available from the grid. The Rocanville natural gas facility is expected to be commissioned in the back half of 2023.

Analyst Corner

- TCFD Strategy a) b)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2

¹ N₂O is a byproduct of nitric acid production. Because one tonne of N₂O is equivalent to 298 tonnes of CO₂, reductions in N₂O have the potential to significantly reduce GHG emissions.

² On an intensity basis vs 2018 baseline emissions intensity.

Climate Change and GHG Emissions
(continued)

Exploring New Markets for Ammonia

GHG emissions reduction opportunities for ammonia include fertilizer production, ammonia for industrial use, clean fuel for marine shipping, displacing coal in power generation and ammonia as a hydrogen carrier. [Learn about](#) the processes, technologies and markets we are leveraging today, to enable a net-zero future for ammonia tomorrow. We continue to collaborate with EXMAR to evaluate building a low-carbon, ammonia-fueled vessel. [Learn more.](#)

Analyst Corner

- TCFD Strategy a) b)
- SASB RT-CH-110a.2
- SASB EM-MM-110a.2

[Whitepaper: Transitioning to a Net-Zero Future for Ammonia](#)

4 Low-carbon and clean ammonia

Low-carbon and clean ammonia can be produced using one or a combination of technologies including carbon capture and/or renewable electricity. Carbon capture, utilization and storage (“CCUS”) provides a technical option for reducing GHG emissions. Captured CO₂ can be stored permanently underground using dedicated sequestration reservoirs or wells dedicated to enhanced oil recovery (“EOR”). Low-carbon ammonia production typically reduces direct emissions by approximately 60 percent but can achieve as much as an 80 percent reduction compared to a conventional process. It is typically manufactured by utilizing by-product hydrogen (for example, at our Joffre, AB plant) or employing CCUS (for example, at our Geismar, LA or Redwater, AB plants) at a conventional ammonia plant. Clean ammonia

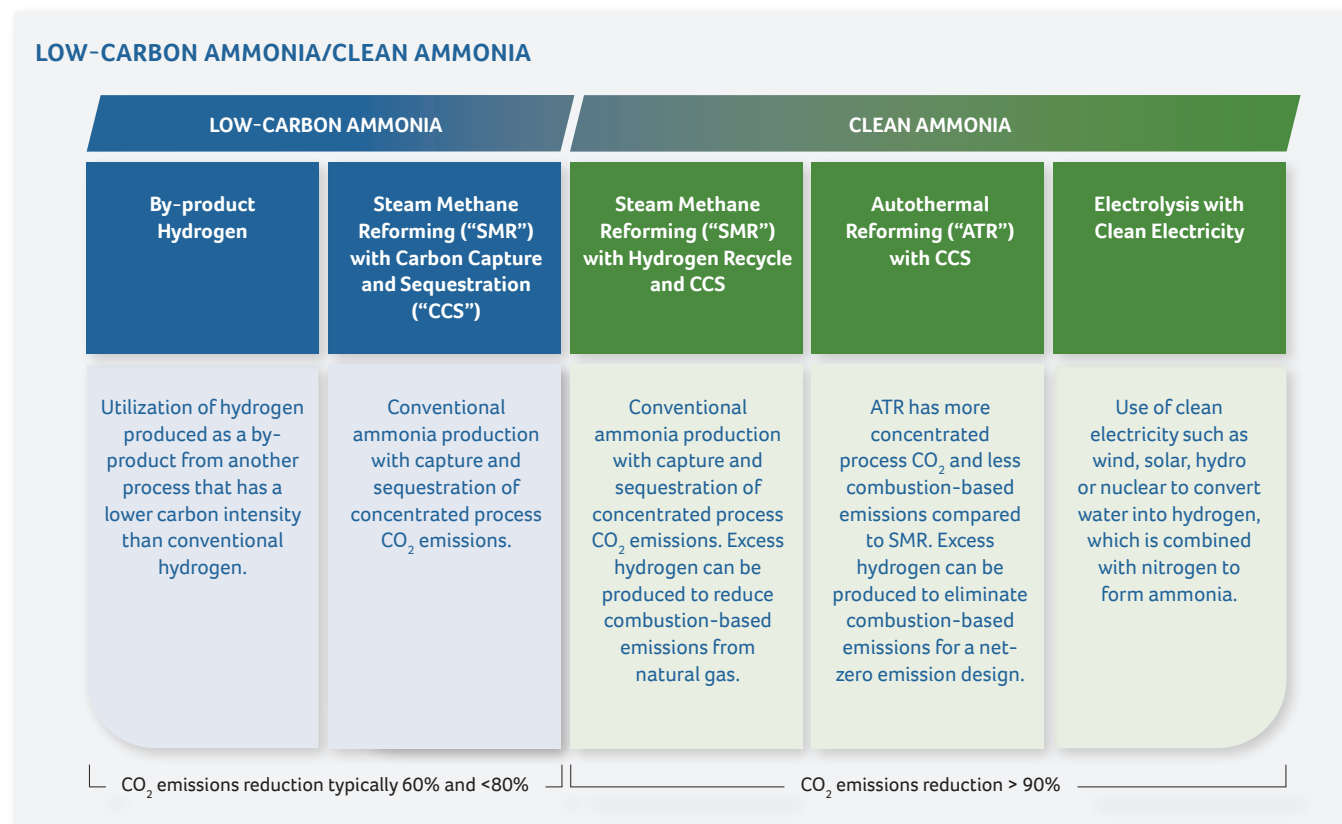
production requires a direct emissions reduction of at least 90 percent, necessitating the use of next generation of ammonia production technology such as autothermal reforming or electrolysis of water using renewable power.

As of 2022, Nutrien has annual production capability for approximately one million tonnes of low-carbon ammonia at our Geismar, LA, Redwater, AB, and Joffre, AB Nitrogen facilities. Nutrien’s Redwater Nitrogen facility participates in the Alberta Carbon Trunk Line project.

Nutrien continued our partnership with the US DOE and other industry partners to develop a clean ammonia plant with technology developed from the REFUEL program. [Learn more.](#)



LEARN MORE
on our website



Climate Change and GHG Emissions (continued)

5 Nutrien Ag Solutions fleet electrification

We are exploring ways to reduce the carbon footprint of our North American Nutrien Ag Solutions fleet, consisting of more than 30,000 assets of trucks, forklifts, tractors, fertilizer and seed applicators, and other moving equipment. In 2022, we studied the financial, operational and environmental benefits of fleet electrification and developed our North American electric vehicle (“EV”) strategy. In 2023, we plan to analyze the feasibility

of transitioning our light-duty trucks, consisting of more than 12,000 vehicles, from internal combustion engine to EV, including a pilot of two EVs in California to determine asset effectiveness and charge coverage. We expect to incrementally invest in and expand our light-duty EV fleet year over year, dependent upon the availability, to reduce our carbon impact and to meet regulatory requirements in the jurisdictions where we operate.

Scope 3 Initiatives

1 Nutrien’s comprehensive Carbon Program

Nutrien’s pilot programs partner with growers, value-chain stakeholders, governments and NGOs to develop and scale a Carbon Program that is designed to support the advancement of a carbon market for the agricultural industry through soil carbon sequestration and reduced GHG emissions. [Read more.](#)

2 Supply chain

Nutrien’s Transportation, Distribution and Logistics (“TD&L”) operations are important in our Scope 3 GHG emissions profile. While using rail to transport our products, we strive to meet

continually fluctuating demands to position our products where they are needed in a safe, timely and cost-effective manner. Since 2021, Nutrien’s TD&L team has shared railcars among all three of our nutrient lines rather than dedicating them to a specific nutrient or fleet, as previously done. Through this effort, we increased the miles a railcar travels under load and reduced the empty miles, thus increasing the usage of railcars and moving our products more quickly and efficiently. In addition to freight and storage cost savings, fleet sharing reduces congestion on rail systems and lowers Nutrien’s TD&L carbon footprint. The fleet sharing initiative has been very successful and continues to be an opportunity.



Taking Action: Geismar, a Potential Clean Ammonia Hub

Nutrien’s Geismar, LA Nitrogen facility currently makes two grades of ammonia: conventional and low-carbon ammonia. In 2022, we announced our intention to evaluate a project to build potentially one of the world’s largest clean ammonia plants at Geismar with an expected annual production capability of 1.2 million tonnes. The new plant is expected to use innovative autothermal reforming technology that allows for at least 90 percent of the CO₂ to be captured, with the ability for up to 100 percent CO₂ capture with future modifications. CO₂ from the new plant will be sequestered permanently in wells constructed and managed by our project partner. The new Geismar plant is expected to supply the emerging low-carbon fuels market and existing industrial and agricultural customers. [Learn more.](#)



Product Stewardship



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Reducing potential impacts from the agricultural products we manufacture and sell is one way we can help our customers manage increasing environmental and societal pressures. From product development, feedstock sourcing and manufacturing, to distribution, sales and use, we strive to minimize product risk, while maximizing the health, safety, environmental and social benefits of our products. Nutrien is committed to the safe, responsible and sustainable handling and use of our products throughout their lifecycle.

ESG Performance Goals/Targets

Revised goal: Complete risk evaluation profiles of NPK (fertilizer) manufactured products by 2023¹

Our Approach

Product stewardship means minimizing the risk while maximizing the health, safety, environmental and social benefits of a product throughout its lifecycle. We strive to improve our product sustainability profile across procurement, product development, manufacturing, distribution and end-use application.

We have a Product Stewardship Strategic Issue Team (“PS-SIT”) to provide cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company across all product categories. The PS-SIT’s objectives include demonstrating alignment, leadership, and a commitment to product quality and safety, along with promoting a product risk reduction and sustainability enhancement approach across Nutrien. To achieve these objectives, the PS-SIT collaborates with employees, customers, suppliers, governments and communities.

Nutrien’s Safety, Health and Environment (“SHE”) Management System integrates product stewardship-related topics of

regulatory compliance, chemical classification, supply chain risk, environmental and sustainability impacts, and safe use information. We collaborate with our internal SHE and operational teams, the Ag industry, and our stakeholders to demonstrate transparency, best practice sharing, learning, minimization of health impacts and promotion of sustainable solutions. Our approach in the fertilizer manufacturing sector is recognized under the International Fertilizer Association Protect and Sustain program. [Learn more.](#)



[LEARN MORE on our website](#)

Our Actions

Our product stewardship approach seeks to address product safety, environmental and social areas of concern over the entire lifecycle of each product. Nutrien determines product suitability using scientific evidence, effectiveness, regulatory guidance and sustainability impact.

Analyst Corner

- SASB RT-CH-410b.2

¹ Goal has been revised to be completed by 2024.

Product Stewardship (continued)

Circularity: We specifically aim to foster circularity in the nutrient lifecycle from production to harvest, which is where we have the largest influence. Within the nutrient lifecycle, the largest risk of losses occurs when nutrients are applied to fields. We promote the 4Rs program, which makes a positive contribution to product effectiveness, reducing losses to the environment, and keeping nutrients in the soil for crops to grow. To further explore nutrient circularity, in 2022, Nutrien became a member of the Sustainable Phosphorus Alliance (“SPA”), an organization whose mandate is to be North America’s central forum and advocate for the sustainable use, recovery and recycling of phosphorus in the food system. [Learn more.](#)

Product risk rating profiles: In 2022, we compiled hazard classification values for our wholesale NPK (fertilizer) products and reviewed a number of best practices to identify information categories that will form the basis for our product risk profiles. We continue to consolidate and evaluate this information, which is expected to allow us to identify types of risk across our portfolio, develop clearer options for improving product safety and sustainability, and expand our scope of product-related ESG metrics reporting by 2024.

We are considering the following five categories for inclusion in our risk profile evaluation:

- Globally Harmonized System (“GHS”) chemical hazard classifications, sourced from product Safety Data Sheet (“SDS”) documents
- Presence of regulated banned or restricted chemical ingredient listings
- Presence of regulated chemical product impurities
- Presence of chemical categories known to cause persistent environmental or health impairment
- Product potential for unintended or illegal use that causes harm to society or environment

Classification and labeling of chemicals: We are progressing our alignment with the SASB Standards for Chemicals framework for our NPK (fertilizer) manufactured products target, which suggests using GHS classification and labeling of chemicals in categories 1 and 2 related to health and environmental hazardous substances. We report on these hazard classifications for North American and European Union manufactured NPK products and are working towards including North American NPK products sold through our Nutrien Ag Solutions division.

Impact Management Across Our Value Chain

Nutrien promotes best practices that are designed to improve crop yields and farming economics while reducing impacts.

1 Crop inputs management

We seek to promote sustainable nutrient management for increased food production in an economically viable way while retaining the ecological integrity of food systems. [Read more.](#)

2 Evidence-based decisions

We aim to consider the social impacts on human health and the environment of our products from development, to point of

sale, to safe use and disposal. To make informed decisions about product suitability and use, we monitor research closely and follow product and ingredient reviews by regulatory agencies, including toxicology and environmental impact studies, chemical hazard classification reviews, substances of very high concern bulletins, government chemical risk assessment reports, and regional and global environmental impact reports. Nutrien may use animal-based testing to confirm human health safety assurance only on rare occasions when scientifically valid alternative methods are not available or if required by law. Read our [Animal Testing Statement](#) for details.

Analyst Corner

- SASB RT-CH-410b.1
 - SASB RT-CH-410b.2
 - SASB RT-CH-410c.1
- [Animal Testing Statement](#)



LEARN MORE
on our website

Product Stewardship
(continued)

Genetically modified organisms (“GMOs”): Nutrien is directly involved in breeding canola, cotton, rice, wheat and soybean seed using native and GMO traits, and we sell genetically modified seeds for many crops. Research conducted by national and international scientific authorities has concluded that GMO food crops do not pose additional risk to people, animals or the environment. GMO crops provide benefits for growers, food security through higher yields, improved disease tolerance, insect resistance and better tolerance in drought conditions, as well as land use efficiency. In some cases, studies have shown that there are reduced GHG impacts from using such seeds because of the associated reductions in other required inputs. We continue to monitor GMO technology development and impact studies regarding health and environmental impacts when making future product decisions. [Learn more.](#)

Pesticides and pollinators (neonicotinoids): Pesticides, specifically the sub-class of chemicals known as neonicotinoids, continue to draw public concern regarding their safety and potential impacts on bees and other pollinators. Based on available evidence, we believe that by strictly adhering to the approved label uses and applications of these products, growers can continue the use of neonicotinoid products for pest management to sustainably produce food. Governmental agencies such as Health Canada and the US Environmental Protection Agency (“US EPA”) provide regulatory oversight for the safe use of these products. We support studies evaluating the possible impacts to non-target species and the modification of product labels to provide clear information regarding the prohibited uses of and the directions for the effective use of the products to users. Of our total crop protection product sales, only a very small percentage are neonicotinoids.

Performance	2022	2021	2020	2019	2018
Percentage of Nutrien seed sales that contain GMOs ¹	86%	86%	82%	86%	89%
Percentage of total Nutrien sales that contain GMOs ¹	5%	6%	7%	7%	8%

3 Safe product handling and application

Nutrien’s products are developed for specific applications. Product use outside of the mandated scope as defined on the label, in contravention of regulatory standards or crop advisor guidance, or due to misuse in general, have the potential to cause negative impacts. We promote the safe and legal use of Nutrien products with product disclosures, manufacturing and retail systems that help enforce regulatory standards, and training employees and contractors who handle and apply our products.

Disclosure and transparency:

- SDSs accompany all chemical products that Nutrien manufactures and sells. SDSs contain essential information about the properties of each chemical including any physical,

health and environmental health hazards in addition to any safety precautions required for handling, storing and transporting the chemical. SDSs are available at our production facilities, during product transport and at our retail locations, and are accessible on our website or through third-party providers for our customers and the general public 24 hours a day.

- Our product labels and SDSs are compliant with the local laws and regulations where we sell our products (for example, the US EPA, Canada Pest Management Regulatory Agency (“PMRA”), European REACH, Fertilizer Act and Chemical Labelling and Packaging (“CLP”), Canadian Food Inspection Agency (“CFIA”), and the US Occupational Safety and Health Administration (“OSHA”).

¹ 2018 includes only US and Canada. Since the publication of our 2022 ESG Report, reported 2021 figures have been restated for consistency.

Analyst Corner
[GMO Position](#)
[Pesticides Position](#)
[Existing and Emerging](#)
[Product Technology Position](#)

Product Stewardship (continued)

- We provide online and telephone technical support for retailers, customers and employees on the interpretation of SDSs and labels, on the appropriate use of products (for example, reactivity with other chemicals, storage and disposal methods) and for any first aid measures required in an emergency situation.
- Our product stewardship team continuously reviews and updates the information on our labels and in our fertilizer manufacturing and retail data systems to ensure regulatory compliance and safe use of our products.

Safe application of agricultural products: Pesticides and herbicides are highly regulated products in the markets where we operate. We comply with regulations applicable to our business and have policies and procedures for the safe and appropriate use of the products we sell. Some of these policies and procedures include:

- A retail system in North America (within the US and Canada) ensuring license and certification for pesticide product handling and use. This system regulates which pesticide products can be

sold in which regions, which Nutrien Ag Solutions locations are certified to sell which products, and which customers have the appropriate license or permit to purchase a product.

- Formalized process for monitoring regulatory change and participation in industry-regulator working groups.
- Appropriate job descriptions to clearly identify regulatory compliance responsibilities.

Training: We require that our applicator employees, contractors and contracted service providers have the required industry and regional training and qualifications to handle and apply our products (for example, Pest Control Advisor, Qualified Applicator License or Certificate), and our technical services include training and advice on best practices for products sold through our Nutrien Ag Solutions operating segment.





Water Stewardship



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Water is an essential input to our operations, especially in mining and fertilizer production, and waterways are a crucial natural infrastructure asset for transport of our product to markets. As it is a shared resource, it is important for Nutrien and our growers to use water efficiently and protect water quality, helping to maintain positive environmental impacts and ensuring long-term operational stability and viability. Agriculture is also highly dependent on water, but localized challenges exist regarding availability and quality, which can vary significantly by region, and are often intensified by the effects of climate change.

ESG Performance Goals/Targets

Achieved goal and set a new target: Complete a watershed risk assessment of our production sites in 2021 to inform context-based operational water targets by 2023

New target: Reduce annual freshwater use in current operations at higher-risk and higher-use manufacturing facilities by 3.0 million cubic meters by 2025, which cumulatively is expected to reduce freshwater use by 30 million cubic meters by 2030¹

Our Approach

Nutrien’s water stewardship actions are guided by our SHE Policy and international best practices and guidance, such as the Alliance for Water Stewardship (“AWS”) [International Water Stewardship Standard](#). Nutrien’s Water Strategic Issue Team (“W-SIT”) provides cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company. The W-SIT’s objectives are to review Nutrien’s water footprint, identify water-related risks and opportunities across our value chain, and develop context-based water targets that are most relevant and impactful to our business and the environment.

We take a watershed perspective across our operations to help us look outside our operational boundaries and understand the many environmental and social aspects of the watersheds in which we operate. Communities with whom our operations share watersheds

rely on access to sufficient quantities of clean water for health, quality of life, economic well-being and local environmental preservation. Nutrien is committed to working collaboratively to address shared water-related challenges and opportunities. We support water stewardship in agriculture, starting at the farm field, through use of practices, products and digital tools that support sustainable agriculture and water stewardship in the entire agri-food value chain. [Read more.](#)

In 2021, Nutrien volunteered to pilot a new program being developed by The Water Council seeking to accelerate corporate water stewardship performance. During the pilot testing phase, we helped refine this program, which was officially launched in February 2022 and branded as “WAVE: Water Stewardship Verified”. WAVE is a framework that guides companies through a water use, impact and risk assessment.

¹ Improvement is on an intensity basis versus 2018.

Analyst Corner

- SASB RT-CH-140a.1
- SASB RT-CH-140a.3
- SASB EM-MM-140a.1

[Water Position](#)

Water Stewardship
(continued)



Nutrien is certified as conforming to The Water Council’s WAVE (Water Stewardship Verified) (Version 1.0, January 2022). Nutrien has assessed water-related risk across the Company, identified the highest water-related impacts using credible water-related data and implemented best practice in improving water stewardship performance.

<2%
Water Intake in Regions With High or Extremely High Baseline Water Stress

We participate in The Water Council’s WAVE program to improve our stewardship practices. It involves:

WAVE METHODOLOGY	NUTRIEN’S ACTION
Approve a corporate water stewardship policy	Nutrien’s Global Position on Water is reviewed annually and updated as necessary. It describes Nutrien’s approach to water stewardship and water management in our operations.
Understand our water uses, impacts and risks	We completed: <ul style="list-style-type: none"> • A review of our water-related practices enterprise-wide to understand current water data needs, constraints and gaps; understand and document applicable best management practices at different levels (for example, site, operating segment, company-wide, etc.); and identify how to fill gaps and reduce water-related risk. • A watershed risk assessment in 2021 for our manufacturing sites and terminals across North and South America using the World Resources Institute’s (“WRI”) Aqueduct™ Water Risk Atlas to determine overall current-year water risk and baseline water stress, along with baseline water stress forecast for 2040. • A review of outcomes from the watershed risk assessment with Nutrien’s ERM and SHE teams to provide site-specific context, which is supplemented with desktop research and discussions with external stakeholders for an overall screening of potential high-risk sites.
Prioritize sites where water-related risks can be mitigated	Sites are prioritized based on the watershed risk assessment, regulatory considerations such as water discharges, financial factors including production volumes, and opportunities for water-risk mitigation.
Communicate our corporate action plan, goals and timeline	Sites are ranked and evaluated for disclosure based on SASB guidance to disclose locations assessed at “high” or “extremely high” Baseline Water Stress. Use of water-related reporting and disclosures such as CDP Water are used, and corporate goals and targets will aim to align with the UN SDGs as part of our Feeding the Future Plan .

In 2022, Nutrien became one of the first companies to achieve **external verification for the WAVE program**. This demonstrates our commitment to water stewardship and gives external confirmation that we have assessed water-related risk across the

Company, identified the highest water-related impacts using credible water-related data and implemented best practices in improving water stewardship performance.

Our Actions: Site-Based Water Management in Our Operations

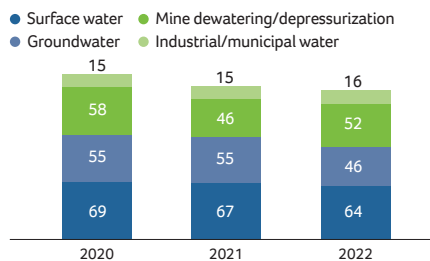
Our primary uses of water are for producing nutrients, such as milling in mining operations, steam generation and process cooling at our fertilizer production facilities. Water is also used to produce some of our liquid products. The majority of our fertilizer production facilities use freshwater resources (for example, rivers or groundwater) to supply the water needed for operations. At some locations we use alternative water sources, including gray

water or ocean water. We recycle water where possible to reduce freshwater use and increase production efficiencies. For example, in our Potash operations, excess liquid from tailings piles (that is, saturated brine) is reused in the production process where possible, and in our Phosphate operations, process water is reused in phosphoric acid production.

Water Stewardship (continued)

Freshwater Intake by Source

(million m³)



Our freshwater intake has stayed relatively consistent over the years. Mine dewatering and depressurization volumes are dependent on a number of factors related to mine conditions including but not limited to the location, surface area and direction of active mining operations.

We manage our operations with permits to protect receiving waters, lands and public works. We care for water quality by managing:

Water discharges: We protect water quality thresholds for our facility water discharges through engineering controls, testing and monitoring programs, and treatment if required. Where needed, we incorporate water treatment technologies and best practices to minimize impacts on water quality.

Storm water: Rainwater can transport materials into surface water bodies. Some of our operations are engineered to handle large rain events during which excess storm water is managed with diversion channels and directed to storm or tailings ponds, permitted injection wells and/or storm water discharge facilities. We also divert clean off-site storm water to natural drainage channels and prevent it from entering our sites where possible.

Gypstack water discharge and treatment: Process water within our gypstacks (stockpiles of phosphogypsum from phosphoric acid production), and storm water runoff that comes into contact with

open gypstacks may be acidic. When gypstacks are formally closed per approved closure plan, Nutrien limits storm water infiltration by surface grading the gypstacks, and placement of appropriate cover systems. Non-contact storm water, or water that does not infiltrate the closed gypstack, is managed per permit and/or agency approvals. Process water that drains from closed gypstacks is collected and treated, or alternatively managed (reused), according to regulatory requirements before final discharge or disposition.

Phosphate mine reclamation: As part of current reclamation practices, the material that is removed from the upper layers of the mine (overburden) is backfilled. If the naturally occurring metals in the overburden materials come into contact with water from precipitation (as was allowed in legacy practices), the metals can begin to leach, negatively impacting nearby surface water and groundwater. We seek to preserve surface water quality through proper phosphate mine reclamation including installation of low permeability caps as necessary on overburden materials.

[Read more.](#)

Our Actions: Water Stewardship in the Agri-Food Value Chain

With Nutrien’s extensive retail network and on-the-ground agronomic expertise, we are well positioned to connect farmers with current and future sustainability opportunities,

including implementing agricultural water stewardship through management practices that create positive outcomes for water, land, air and biodiversity. [Read more.](#)



Lake Winnipeg Water Stewardship Project

In 2022, Nutrien joined others to launch the Lake Winnipeg Water Stewardship Project. This project is focused on generating and measuring the potential water quantity and quality benefits of various water stewardship interventions on four potato farms within the Lake Winnipeg basin. The project is led by ALUS (originally “Alternative Land Use Services”), a charitable organization with an innovative community-developed and farmer-delivered program that produces, enhances and maintains ecosystem services on agricultural lands, working across six provinces in Canada. Participating farmers create water stewardship plans with support from project partners that will allow them to track impacts over time and help their operation become more resilient to changes in water availability. [Learn more.](#)



Biodiversity



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Agriculture is dependent on healthy ecosystems to sustain our global food supply. Supporting solutions that protect ecosystems is paramount to meeting this demand. Biodiversity and biodiversity gains provide a buffer against variability in farm productivity, improve crop pollination, and increase natural resistance to weed, pest, and disease invasions.

ESG Performance Goals/Targets

On track: Determine how digital on-farm tools can identify and track opportunities to enhance biodiversity conservation on agricultural landscapes by end of 2023

Our Approach

Nutrien is committed to helping protect biodiversity by contributing to the next wave of innovation and sustainability in agriculture. We support sustainable practices across our sites, operations and communities. We consider impacts to biodiversity directly at our operation sites, and indirectly through our agricultural products and services.

Nutrien's Biodiversity Strategic Issue Team ("B-SIT") provides cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company. The B-SIT's objectives include a comprehensive review of Nutrien's biodiversity footprint and identification of biodiversity-related risks and opportunities across our value chain. These incorporate a strategic look at innovative biodiversity solutions, biodiversity-positive production (which means positive impacts on the variety of ecosystems and living things caused by farming outweigh the negative impacts), and on- and off-farm conservation efforts such as reforestation, reclamation and restoration. While Nutrien

maintains a strategic focus on the impacts we can facilitate through our business, the B-SIT's scope also includes deforestation as it is a shared challenge across the industry that must be addressed through collaborative leadership within the agriculture sector. Read Nutrien's [Deforestation Position](#).

Our Actions

Collaboration: We believe that solving some of our biodiversity challenges will require collaboration inside and outside our industry. Two of our key biodiversity-related partnerships are:

- Nutrien is one of 23 WBCSD member companies participating in the Taskforce for Nature-related Financial Disclosures ("TNFD") pilot program. TNFD is an emerging framework, following in the footsteps of TCFD, that can provide guidance for businesses to meet the growing expectation of nature-related risk and opportunity disclosures and encourage finance flows to improved environmental outcomes. Our role is to provide feedback from an agriculture perspective into the development

Analyst Corner

- SASB RT-CH-140a.3
 - SASB EM-MM-160a.1
 - SASB RT-CH-410b.2
- [Deforestation Position](#)

Biodiversity (continued)

Taking Action: Encouraging Employee-Led Efforts

To encourage continual improvement in environmental performance, Nutrien introduced an Environmental Improvement Recognition Program in 2022. It recognizes workers at our Nitrogen, Phosphate and TD&L facilities for completed environmental improvement activities and requires annually setting a project target for the applicable operating segment.

Nutrien joined the
**TNFD PILOT
PROGRAM**

of the TNFD beta framework before its expected final release in September 2023. [Learn more.](#)

- Nutrien participates in the Natural Climate Solutions Alliance, which aims to scale up affordable natural climate mitigation solutions for achieving the goals of the Paris Agreement. Natural climate solutions include reforestation; protection and conservation; livestock, animal and land management; and coastal wetland and peatland restoration, among others.

Impact assessment: In 2023, we expect to complete a company-wide assessment to understand nature-related dependencies, impacts, risks and opportunities in our operational footprint and downstream value chain. This work will inform Nutrien's own goal and target setting.

Nutrien recognizes the intrinsic value of protected areas and legally recognized areas of high biodiversity, and we are committed to being in regulatory compliance. In the normal course of operations, if a planned project may impact a protected species, or is subject to a regulatory review (for example, the Impact Assessment Act in Canada or the National Environmental Policy Act in the US), we work through proper permitting including measures to minimize potential impacts. Nutrien protects non-agricultural production lands through conservation, and the reclamation and remediation of lands where Nutrien has, or has had, operations. We work with environmental authorities and properly restore land (post-mining) using local and native plant varieties, which can often enhance biodiversity.

Wetland restoration: Wetlands play an integral role in improving water quality and supporting biodiversity. Nutrien successfully creates, restores and enhances wetlands at our Aurora, NC and White Springs, FL Phosphate mine sites. For every wetland acre impacted, we are required to restore or create up to two wetland acres that are often more diverse and productive than prior to disturbance. Areas restored to wetlands are either marginal agricultural lands or monoculture pine plantations that are restored by planting a wide variety of native wetland trees and shrubs, to support biodiversity. Since the late 1970s, we have reclaimed nearly 30,000 acres of mined land and restored 10,000 acres of off-site wetlands at both mine sites, planting approximately 30 million trees. The Aurora site has also permanently protected approximately 3,330 acres of natural uplands and wetlands in the surrounding area to preserve native plant and animal habitat. Nutrien has earned federal and state awards for wetland restoration surrounding Aurora. [Learn more.](#)

Biodiversity at the farm level: Our products and services improve yields on existing agricultural land, reducing the need to convert more land for agricultural purposes, and many of them protect our natural carbon sinks and biodiversity. We use Agrible® to document sustainable and productive acres in the US that also include biodiversity metrics. [Read more.](#)

Supporting efforts against deforestation in Brazil

Nutrien opposes illegal deforestation and is committed to helping protect forests. Illegal deforestation continues to be a concern across the world, and especially in Brazil. In 2022, Nutrien demonstrated this commitment by sponsoring a Brazilian study, coordinated by CEBDS (Brazilian Business Council for Sustainable Development), in partnership with Imaflora, that analyzed the

relationship between agri-food chains and deforestation. We also are taking steps to help address illegal deforestation by using a third-party tool to screen both new and existing grower customers for indications that they may be engaged in illegal deforestation activity. [Learn more](#) about our commitment to helping protect the Brazilian rainforest.

BIODIVERSITY HIGHLIGHTS

Since 2012, our donation has helped protect

650
acres of wetland on
3,700 acres of total habitat



Legacy Wetland Restoration Program

Nutrien supports Ducks Unlimited Canada's® ("DUC") Legacy Wetland Restoration Program, which restores wetlands and degraded habitat and uses conservation easements to protect the land in perpetuity before re-selling it back into the community. Since 2012, our cumulative donation of \$1.15 million has been continually reinvested in Western Canada, protecting approximately 650 acres of wetlands on more than 3,700 acres of total habitat.

Since 2021,
40 acres
of pollinator seed
blend have been planted



Pollinator Support

In the last few years, we have protected pollinators and supported biodiversity by adding honeybee hives to the reclaimed phosphogypsum stack at Fort Saskatchewan, AB and safely moving a swarm of bees from our Redwater facility to a more suitable hive. Learn more about [Fort Saskatchewan](#) and [Redwater](#). Since 2021, we have planted 40 acres of grasses and a wildflower pollinator blend to foster biodiversity as part of our legacy gypstack reclamation efforts near Conda, ID. [Read more.](#)

Since 2010
217,000
acres have been converted to
perennial cover, which serves as
nesting habitat for waterfowl



Forage Program

Supported by Nutrien Ag Solutions, the Forage Program is one of the primary ways DUC works with landowners to restore vital waterfowl nesting habitat while restoring forages across the Canadian prairies. The program provides an incentive for landowners to convert cultivated land to perennial cover, which provides nesting habitat and grass for the beef industry. Since 2010, DUC has converted more than 217,000 acres and engaged more than 1,800 landowners.

23
gopher tortoises
protected



Threatened species protection in Florida

Nutrien's White Springs Phosphate mining operations in northern Florida is home to the gopher tortoise, a threatened species. As White Springs' operations have expanded, the site's environment team has been working alongside state officials in relocating gopher tortoises to a protected on-site location – a reclaimed phosphate mine that is ideally suited to their habitat preferences, which currently accommodates 23 tortoises and is permitted to accommodate up to 80 tortoises. The 58-acre site is protected through a conservation easement and will forever be a home for the tortoises. Nutrien's onsite Environmental Supervisor is certified as an authorized agent to handle tortoise relocations in house, ensuring they can be moved safely and set up to thrive. [Learn more.](#)



Waste and Tailings

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Managing waste from our operations in a way that minimizes the impact on the surrounding environment reduces costs along with regulatory and reputational risk. We are committed to an overall reduction of our environmental impact by creating and implementing stewardship systems across our operations and communities.

ESG Performance Goals/Targets

Original goal: Develop Nutrien Ag Solutions' plastic recycling strategy and set a target by 2022. This has not been met and has been revised

Revised goal: Nutrien Ag Solutions will continue to broaden and implement our Global Waste Minimization Standard, with a focus on improving our data management system and analytics with an aim to set a target by 2025

Our Approach

In support of Nutrien's SHE Policy, our **Global Waste Minimization Standard** communicates non-mining waste management requirements for all Nutrien operating segments and locations. Each site must conduct a biennial non-mining waste review and use it to develop a site-specific waste minimization strategy, considering, in order of preference, reduction, reuse and recycling of materials.

Since mining activities can generate large volumes of tailings and waste, we pay special attention to the management of our Potash and Phosphate operations. Our tailings management areas ("TMAs") and gypstacks (stockpiles of phosphogypsum from phosphoric acid production) comply with applicable laws, regulations and environmental standards.

Our Actions

At the end of 2022, all of our North American manufacturing, retail and corporate sites have completed their initial waste reviews as required by Nutrien's Global Waste Minimization Standard and have implemented strategies best suited to reducing waste at their locations.

The amount of waste and other materials generated can vary from year to year due to production and projects that include construction, demolitions, turnarounds and clean-ups. Nutrien's waste management practices fall into four main categories:

1 Hazardous waste management

The hazardous waste we generate in our manufacturing operations includes, but is not limited to, waste chemicals, solvents, paint and spent catalyst. In order to manage hazardous waste properly, we work with our waste management suppliers to verify that the materials are transported, treated, and recycled or disposed according to applicable regulatory requirements.

Waste and Tailings (continued)



Taking Action: Digital Innovation and Waste Reduction

Herbicides used in vegetation management are traditionally supplied as concentrates in non-returnable containers. Two of our Nutrien Ag Solutions (a division of our Nutrien Ag Solutions segment) facilities now produce custom-blended herbicide products in returnable/refillable containers using a “closed chain of custody” system. The system is closed in terms of ownership as both the product and container are tracked through the supply chain using bar-coded containers and a digital app. The closed delivery system protects both the applicator and the environment and reduces waste by managing rinsates and reusing containers. The container disposal reductions equate to about 25,000 15-gallon drums per year that are refilled repeatedly for customers across the US.

2 Non-hazardous waste management

Our non-mining non-hazardous waste typically consists of certain process wastes, and construction and demolition debris such as scrap metal, concrete, bricks and wood. Municipal waste, paper, cardboard and plastic are also common waste materials. We pursue waste-reduction and reuse opportunities first and then recycle when possible. However, there are commodity and geographical constraints that are prohibitive for certain materials and/or locations.

Retail packaging and plastic waste

Plastic is an ideal material for packaging our crop protection and seed products because it is inert (it doesn’t react with our products), lightweight and cost effective. We understand the growing global concern with single-use plastics, strengthened by the recent Single-use Plastics Prohibition Regulations in Canada, and are exploring ways to either reduce plastic packaging or increase its reuse and recycling.

In 2022, we developed a global waste management strategy for our Nutrien Ag Solutions operations with a focus on our largest non-hazardous waste, which is plastic chemical containers and totes. To inform the strategy, a cross-functional working group evaluated waste management best practices, peers and recycling partners. Improved data collection and analytics was identified as a necessary next step for benchmarking before a waste target can be set for Nutrien Ag Solutions.

Each country where we operate has varying levels of waste management maturity, government regulations, barriers and opportunities, which were considered in our ongoing efforts to manage our waste responsibly and look for opportunities to reduce, reuse or recycle our non-hazardous waste. In North America and Australia, we offer a value-added service at select locations for growers to return plastic chemical containers, and in South America we provide information on designated drop-off locations. In addition, we are collaborating with growers and industry partners on advancing, measuring and improving a circular economy for plastic chemical containers.

In the US, Nutrien became a member of the Ag Containers Recycling Council (“ACRC”) in 2021 with the purpose of increasing recycling of agrichemical plastics and to support the responsible end of life management of industry containers. The ACRC has recycling programs that support thousands of farmer and applicator participants nationwide. Through ACRC recycling programs, we recycled almost 470,000 pounds of plastic containers in 2022. Due to program limitations associated with capacity and availability, not all sites participate; therefore, we will often leverage other vendors to recycle significant volumes of additional plastic jugs, drums and totes. We aim to increase the recycling of plastic containers by streamlining the recycling request process, identifying local vendors and identifying geographic areas with the opportunity to increase participation.

In Australia, 100 percent of our Nutrien Ag Solutions locations participated in a plastic recycling program. As a result, 70 percent of our crop protection and plant nutrition proprietary brands sold in 2022 were shipped using large returnable containers. In support of this we own more than 98,000 reusable drums and participate in a drum leasing program to further minimize the total number of product containers in circulation across the country. We continue to explore the possibility of using reusable containers that have been made from recycled plastics. We also actively participate in the drumMUSTER program, which is an industry program that collects small pack drums (under 20 liters) for plastics recycling, and in 2023 will be participating in the bagMUSTER pilot program that collects and recycles plastic bag waste.

In Canada, over 80 percent of our Nutrien Ag Solutions locations participated in an industry-wide program called Cleanfarms that collects a variety of used agricultural packaging. In 2022, over 10,700 pesticide and fertilizer one-way drums and totes were recycled from Nutrien locations through Cleanfarms. Additionally, nearly 485,000 pesticide and fertilizer jugs, totaling approximately 170,000 kilograms of plastic, were recycled from Nutrien locations across the country. Nutrien also participates in Cleanfarms program for seed, pesticide and inoculant bags and returned nearly 5,500 kilograms of this material for energy recovery.

Waste and Tailings
(continued)

In addition, Nutrien is switching from using single-use bulk bags for storage and transportation of seed products to reusable seed boxes for employee safety, customer convenience and waste reduction. Large, single-use plastic bags are commonly used to store and transport seed but create a waste stream and pose a safety risk. The transition to the boxes is expected to take about three years to deploy across our North American retail operations. [Learn more.](#)

3 Potash mining


We have six active potash mines with tailings management systems. Potash tailings, consisting primarily of clay and salt, are byproducts of the potash mining process. Our management approach for potash tailings is described in detail on our [website.](#)



4 Phosphate operations

Phosphate fertilizer is produced by reacting sulfuric acid with phosphate rock to produce phosphoric acid (liquid fertilizer), a portion of which is then reacted with ammonia to produce granulated ammonium phosphate fertilizer (granulated fertilizer). This process also produces phosphogypsum at a finished product ratio of approximately five to one. Learn more about how we manage phosphogypsum on our [website.](#)

Analyst Corner
[Nutrien's Tailings Safety Disclosure](#)



Taking Action: Building Forests From Phosphogypsum

Typically, phosphogypsum stack (gypstack) reclamation involves contouring the piles, covering them with soil and seeding them to a grass mixture. However, we have found that trees grow extremely well in phosphogypsum at our Fort Saskatchewan, AB site.

In mid-2022, reclamation work began on a new 58-acre area consisting of two remaining legacy gypstacks and a phosphate cooling pond. Water was pumped out and the pond was filled with gypsum from the nearby stacks. In spring 2023, we plan to plant approximately 23,000 hybrid poplar trees. This project demonstrates the site's proactive environmental efforts and continues to contribute to the overall goal of turning the site from a historically unusable area into a productive forest. [Learn more.](#)

This new project adds to our 44 acres of thriving and healthy forests that have replaced visually unappealing gypstacks and cooling ponds. Since 2015, the cooling ponds have been filled with phosphogypsum, topped with a layer of topsoil and tilled. At the end of 2021, nearly 41,000 trees had been successfully planted. The site is also home to a large garden and two honeybee hives. We have observed an improvement in soil and groundwater quality and an increase in wildlife.

Forest on a gypstack that was planted with tree cuttings in 2016.



Additional Environmental Topics

Air

Our operations generate emissions of carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulates, volatile organic compounds (“VOCs”), and ammonia from process and combustion emission sources. Nutrien continues to look for opportunities to reduce emissions through continuous

improvement in plant reliability and changes in operation or physical emission control upgrades during plant expansions and modifications. In 2021 and 2022, we completed equipment upgrades at two Canadian nitrogen facilities with lower-NO_x alternatives. Data on our releases of air emissions are available on [pages 106 to 107](#).

Reclamation

The reclamation process is important to our mining operations. Nutrien has a legal obligation to reclaim land used for operations and return it to a beneficial use. We work with environmental authorities to verify that land is properly restored post-mining, using local and native plant varieties. This can often support efforts to increase biodiversity.

1 Asset retirement obligations

Each year, we estimate the cost and timing of future environmental obligations, including gypstack closure and land reclamation expenditures. At the end of 2022, our discounted asset retirement obligations (“AROs”) were \$1.2 billion. For phosphate sites, the majority of these costs are expected to be paid over the next 18 years, while costs for potash are expected to be paid after that time. We have spent \$170 million towards our AROs over the last two years.

2 Reclamation projects

Nutrien’s Phosphate operations are currently mining at a combined rate of approximately 895 acres per year, and we reclaim land

continuously as our mining operations progress. In the past three years, we have successfully returned more than 3,500 acres of land back to productive use after phosphate rock mining:

- At our Aurora, NC Phosphate operation, we stack phosphogypsum and also use a portion to reclaim adjacent mined lands as permitted by regulatory authorities. We have pioneered a land reclamation process that has earned state and national awards over the years. We reclaimed about 1,400 acres in the last three years. During this time, we planted approximately 470,000 trees. The most recent area being reclaimed is 1,165 acres in size, which includes a 645-acre lake that will be up to 50 feet deep, surrounded by vegetated uplands and planned for public recreational use.
- At our White Springs, FL Phosphate mine, we strive to reclaim more land than we mine on an annual basis. In 2022, we reclaimed 850 acres, adding to the nearly 1,290 acres reclaimed in 2021 and 2020. Over the three-year period, we planted more than 800,000 trees.

Analyst Corner

- SASB RT-CH-120a.1
- SASB EM-MM-120a.1

Additional Environmental Topics (continued)

Remediation

At the end of 2022, we had accrued environmental costs of approximately \$450 million for costs associated with site assessment and remediation related to the clean-up of impacted sites currently or formerly associated with Nutrien or our predecessors' businesses. At that time, the current portion of these costs totaled \$69 million. A few examples of our remediation work are:

- **North Maybe Mine, ID:** In 2022, the United States Forest Service recorded a Record of Decision ("ROD") at the former North Maybe Mine in Idaho. The ROD specifies the construction of our recommended remedy, which includes placing a geosynthetic cap system over 80 acres on an overburden pile. The overburden pile was originally created as part of a legacy phosphate mining operation from a predecessor company in the 1980s. We will follow the regulatory process to prepare, and receive approval for, the final design and expect to complete the remedial action by 2025. We expect the remediated site to return the area to a stable, vegetated condition. We completed a similar project for the South Maybe Mine, ID in 2017 that resulted in a hundredfold reduction of selenium concentrations in surface water and earned Nutrien an Environmental Excellence Award from the American Exploration and Mining Association. [Learn more.](#)
- **Geismar:** Nutrien has been actively closing the gypstack system at our former Phosphate operations in Geismar, LA. The project includes stack capping, wastewater treatment and reducing phosphate discharges to the Mississippi River in accordance with discharge permit limitations. [Learn more.](#)
- **Cassidy Lake, NB:** Nutrien's Cassidy Lake Potash mine in New Brunswick, Canada was closed in 1997 and has been an active remediation site since. At the end of 2022, we successfully removed the surface tailings pile, and have progressed the tailings management closure plans for the site.



Taking Action: From Beet Lime and Phosphogypsum to Grasses and Wildflowers

Nutrien generates phosphogypsum from our phosphate fertilizer production. In North America, phosphogypsum is primarily stored in engineered stacks referred to as phosphogypsum stacks or gypstacks.

Our reclamation activities for Nutrien's legacy gypstacks in Conda, ID, involved developing, testing and choosing a blend of amendments that would promote vegetation growth. Phosphogypsum is acidic and, traditionally, pH is brought to near-neutral levels using agricultural lime, which is very expensive. However, we identified an innovative and cost-effective solution by incorporating beet lime (precipitated calcium carbonate) from local sugar beet processors. Beet lime is an alkaline byproduct created during the sugar extraction stage of sugar beet processing. It is a fine-grained material that incorporates into the soil more readily than most ground lime products, improving general soil structure and health and providing some fertilizer benefits.

After thorough assessment and independent testing to ensure the beet lime would sustain yearly growth and not cause adverse impacts to the environment, the final blend of amendments, along with beet lime, was selected. Since 2021, a 40-acre section of the Conda gypstack has been amended using beet lime and planted with a blend of grasses and wildflower pollinator seed. The result was successful and we plan to use this solution for the remainder of the gypstack at Conda.



2022 Highlights

We shared with our employees our new

Strategic Inclusion Plan

We awarded

\$500,000

to two Ag start-ups as part of the “Radicle Inclusion Challenge by Nutrien”

We held our first

SIF Prevention Day

which included a company-wide virtual broadcast focusing on “doing safety differently”

Social

As part of Nutrien’s purpose-driven culture, we strive to uphold the highest safety standards, develop respectful and positive relationships with our employees and external stakeholders, promote responsible procurement, and contribute positively to society as a whole.

TOPICS IN THIS SECTION

- 58 Safety, Health and Wellness
- 68 Equity, Diversity and Inclusion
- 74 Responsible Supply Chain
- 77 Human Capital
- 80 Community Relations



Safety, Health and Wellness



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Safety is one of Nutrien’s core values along with integrity, inclusion and results. Nothing is more important than the safety, health and wellness of our employees, our contractors and the communities we serve. Leading safety standards and programs help us maintain our reputation as an industry leader and responsible employer while reducing our legal and financial exposure.

ESG Performance Goals/Target:

On track: Achieve top-quartile safety performance across all operating segments by end of 2025

Not achieved: Zero Serious Injury and Fatality (“SIF”) incidents annually¹

Achieved: Expand safety coaching into performance conversations for all employees by 2022

Achieved goal and set a new target: Develop Loss of Containment (“LOC”) ² reduction strategy and provide related target by 2023

New target: Reduce the three-year moving average LOC Index³ from 1.52 in 2022 to 1.25 by 2030

Our Performance

Tracking our performance, setting targets and benchmarking holds us accountable and drives improvement. Nutrien achieved top-quartile Lost Time Injury (“LTI”) and Total Recordable Injury (“TRI”) performance across Nutrien Ag Solutions, Nitrogen and Phosphate operating segments due to our employees’ and contractors’ motivation, communication and effort over the last two years to focus collectively on SHE performance.

Since Nutrien is the only publicly traded company with operations across the agriculture value chain, comparing our company-wide

safety data with single-industry chemical peers or benchmarks can be misleading. Nutrien’s business comprises four distinct operating segments and we compare our safety performance against peer and/or safety data in those industries:

- **Nutrien Ag Solutions:** represents approximately 58 percent of Nutrien’s total workhours. We market crop inputs and provide agronomic application services for growers through more than 2,000 retail locations with approximately 30,000 vehicles and application equipment.

¹ Target includes work-related fatality or life-altering injury/illness experienced by an employee or directly supervised contractor conducting work on behalf of Nutrien.
² An unplanned release of material from its process that has the potential to impact human health and/or the environment.
³ LOC Index is calculated from the number of LOC incidents and normalized to production/sales data.

ANALYST CORNER

- SASB RT-CH-320a.1
- SASB RT-CH-320a.2
- SASB RT-CH-540a.1
- SASB EM-MM-320a.1

[SHE Policy](#)

Safety, Health and Wellness
(continued)

Safety is a core value at Nutrien

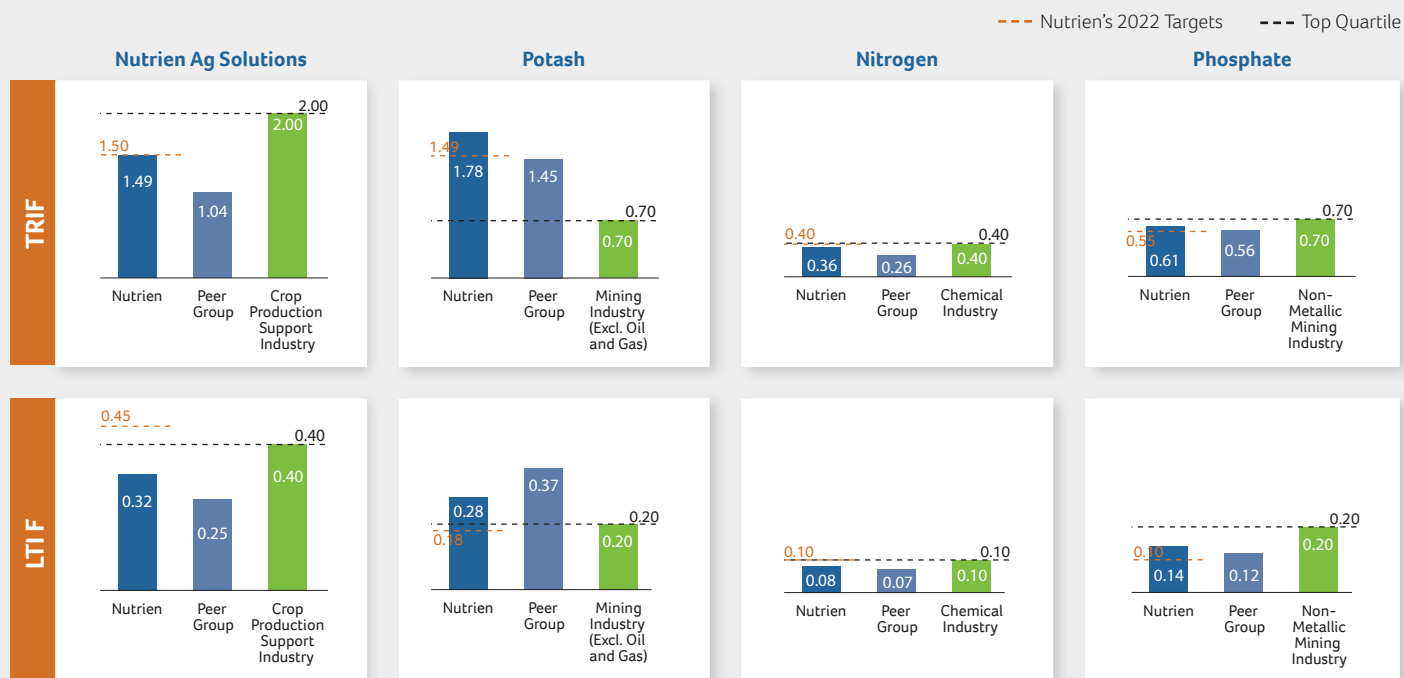
In 2022, Nutrien had five SIF incidents. No incidents resulted in a fatality. Each incident was actioned immediately by response teams. All SIF were investigated, and actions were taken based on the investigation outcome. In addition, debriefs with lessons learned were held with relevant stakeholders to review the findings of each investigation and opportunities for process improvements, policies, procedures, and training programs were identified. Resources were deployed accordingly. Our Culture of Care strives to create a safe environment.

Analyst Corner

- SASB RT-CH-320a.1
- SASB EM-MM-320a.1

- **Potash:** includes a six-mine network, each with surface processing operations. These operations represent approximately 13 percent of Nutrien’s total workhours.
- **Nitrogen:** represents approximately 16 percent of Nutrien’s total workhours. We produce nitrogen at nine strategically located facilities.
- **Phosphate:** represents approximately eight percent of Nutrien’s total workhours. We operate two integrated phosphate mines and mineral processing facilities plus four product upgrade facilities.
- **Corporate:** represents approximately five percent of Nutrien’s total workhours.

NUTRIEN 2022 HEALTH AND SAFETY PERFORMANCE COMPARED TO PEERS AND INDUSTRY



Peers: Based on results for Bunge (2022), ADM (2021) and Deere & Co. (2021)

Industry Data: US Dpt. of Labor Statistics (Support Activities for Crop Production – 2020)

Peers: Based on 2022 average performance of Saskatchewan Mining Association companies

Industry Data: US Dpt. of Labor Statistics (Mining excl. Oil and Gas – 2020)

Peers: Based on 2021 results for CF, Yara and Nova Chemicals

Industry Data: US Dpt. of Labor Statistics (Chemical Manufacturing – 2020)

Peers: Based on 2021 results for Mosaic, OCP and BHP

Industry Data: US Dpt. of Labor Statistics (Non-metallic Mineral Mining and Quarrying – 2020, all sizes)

In 2022, we achieved top-quartile LTI performance across our Nutrien Ag Solutions, Nitrogen and Phosphate operating segments, reflecting our deliberate effort on SIF and severity elimination. Further, our Potash segment made positive progress towards achieving top-quartile LTI performance.

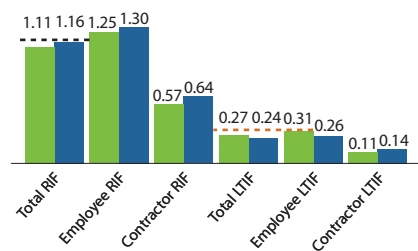
Safety, Health and Wellness

(continued)

Safety Rates

(incidents*200,000 hours/total actual hours)

● 2021 ● 2022 -- Target Total RIF -- Target Total LTIF



RIF: Recordable Injury Frequency
LTIF: Lost-Time Injury Frequency

Nutrien continued to achieve positive safety performance in 2022.

Analyst Corner

- SASB RT-CH-320a.1
- SASB EM-MM-320a.1
- SASB RT-CH-540a.1

Performance	2022	2021	2020	2019	2018
Internal SHE Audits ¹	674	695	667	655	27
Percentage of Nutrien Ag Solutions facilities enrolled in ResponsibleAg ² (US)	90	91	94	98	98
Percentage of Nutrien Ag Solutions agricultural chemical centers accredited by Agsafe (Australia)	100	100	100	100	100
Tier 1 Process Safety Incidents ³ (count)	9	3	9	6	NPR
Tier 2 Process Safety Incidents ⁴ (count)	11	25	24	23	NPR
Tier 1 Process Safety Total Incident Rate ³ (incidents*200,000 hours/total actual hours)	0.04	0.01	0.04	0.07	NPR
Tier 2 Process Safety Total Incident Rate ⁴ (incidents*200,000 hours/total actual hours)	0.05	0.12	0.12	0.27	NPR
Total environmental incidents	35	24	23	24	20
Reportable quantity releases ⁵	35	22	20	22	18
Non-compliances	0	0	0	0	1
Enforcement actions	0	2	3	2	1
Environmental incident frequency (incidents*200,000 hours/total actual hours)	0.09	0.07	0.07	0.07	0.07
Non-accidental ammonia release rate ⁶ (releases per thousand railcar movements)	0.04	0.00	0.00	0.00	0.07

NPR = not previously reported

- 1 Increase in 2019, 2020 and 2021 is due to the scope of corporate auditing expanding to include the Nutrien Ag Solutions operating segment.
- 2 Due to the three-year cycle of certification and re-certification, a facility may be enrolled in ResponsibleAg and be certified, audited and awaiting certification, or awaiting audit. Due to COVID-19 travel restrictions, many sites were unable to complete the ResponsibleAg certification process in 2020 as planned. We changed this metric in 2021 and restated data for 2020, 2019 and 2018 to better reflect our participation in the program.
- 3 Includes Tier 1 process safety events (that is, loss of primary containment with the greatest consequence) as described in the American Petroleum Institute Recommended Practice 754. 2020 incidents include Nutrien Ag Solutions US, Nitrogen and Phosphate, while 2019 incidents include only Nitrogen and Phosphate.
- 4 Includes Tier 2 process safety events (that is, loss of primary containment with moderate consequence) as described in the American Petroleum Institute Recommended Practice 754. 2020 incidents include Nutrien Ag Solutions US, Nitrogen and Phosphate, while 2019 incidents include only Nitrogen and Phosphate.
- 5 Restated 2018-2020 as a result of changes to classification of incidents.
- 6 A non-accidental ammonia release ("NAR") is the unintentional release of ammonia while in transit, including loading and dispensing of the product, which is not caused by a derailment, collision or other rail-related accident.

Safety, Health and Wellness
(continued)

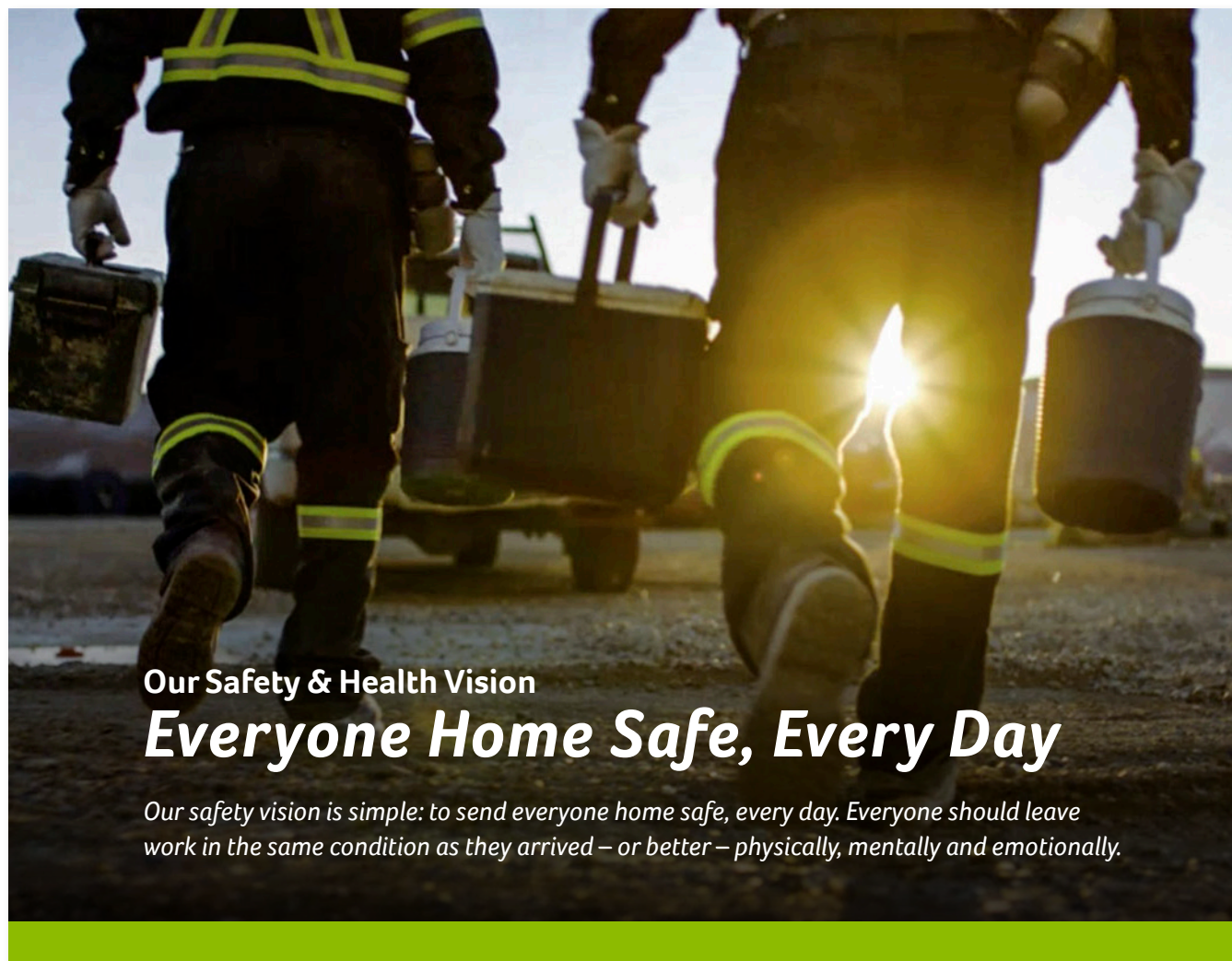
Our Vision

Nutrien’s safety vision is Everyone Home Safe, Every Day. Achieving our safety vision is an ongoing journey, not a destination. It takes all of us showing up, caring and taking action, each and every day. Nutrien

recognizes vulnerability, psychological safety and mental wellness as critical safety, health and environmental elements we continue to improve.

Our Loveland Products manufacturing site in Kwinana, Australia achieved accreditation for

ISO 9001,
ISO 14001
and
ISO 45001
in 2022.



Our Safety & Health Vision

Everyone Home Safe, Every Day

Our safety vision is simple: to send everyone home safe, every day. Everyone should leave work in the same condition as they arrived – or better – physically, mentally and emotionally.

Safety, Health and Wellness (continued)

Nutrien's SHE MANAGEMENT SYSTEM

is described in more detail
on [our website](#).



HOW DOES
Nutrien manage
this topic?

Our Approach

To achieve our vision, our safety strategy focuses on enhancing and integrating a Culture of Care across Nutrien by demonstrating deliberate, principled behaviors and actions. Our Culture of Care demonstrates care for ourselves and each other, includes all levels of the organization from our Board of Directors to our individual sites, and extends beyond Nutrien to our communities, growers, contractors, industry members and other partners.

We integrate our Culture of Care through formal policies and systems, goal setting, and never settling for the status quo.

- **Integrating safety through policies and systems:** Safety and wellness are integrated into our operations through our Code of Conduct, SHE Policy, safety vision and strategy, and SHE Management System elements including global, operating segment and site standards. Our SHE Management System outlines the expectations of our global operations and provides tools to support a positive, proactive, risk-based structure for company-wide execution of our safety strategy. The system is a framework for consistent protection of employees, contractors, environment and assets. Its structure reflects the uniqueness of each site and operating segment by assessing risks and controls based on each specific workforce, operation and geography. [Learn more.](#)
- **Setting goals and targets:** Nutrien's ESG goals and targets include several workplace health and safety targets that support our 2030 Commitments and drive progress towards the achievement of our safety vision. To maintain focus on each operating segment's unique risks and needs, we set annual safety targets at the corporate level that are combined with operating segment-specific safety goals, which cascade further to facilities, regions, divisions and sites depending on business structure. We set targets each year for both leading (proactive) and lagging (reactive) consolidated safety indicators, which are tied to executive compensation. Learn more in the [2022 Proxy Circular](#).



- **Never settling:** Though we recognize successes and performance, we can never stop focusing on safety. We can always be better and perform work safer as we evolve trust, accountability and responsibility for ourselves and others. We continue to enhance company-wide programs for common activities across Nutrien while evolving specific practices to target key safety risks unique to each of our operating segments.

Safety, Health and Wellness
(continued)

Our Actions

The Nutrien Way defines how we “do” safety. It is our daily playbook and action plan to support and sustain our Culture of Care. The Nutrien Way is made up of programs and practices that any and every

employee and contractor can engage in to make our workplace, homes and communities safer and bring our Culture of Care to life. [Learn more.](#)

OVERVIEW OF THE NUTRIEN WAY

Vision: Everyone Home Safe, Every Day				
Strategy: Our Culture of Care (Lead, Collaborate, Challenge, Trust)				
Action Plan: The Nutrien Way				
1 Leadership and Accountability	2 Employee Engagement	3 Structured Systems and Stewardship	4 Serious Injury and Fatality (“SIF”) Prevention	5 Programs and Initiatives
At Nutrien, everyone is a safety leader, regardless of position. We are all accountable and have a role to play in keeping each other safe.	Engagement means that we each contribute in our own way to improving safety outcomes, by taking simple, positive actions, to help everyone go home safe, every day.	We aim to protect our people, communities and the environment. This means keeping chemicals contained and handling products safely. We set high standards and aim to meet or exceed regulatory requirements.	Preventing serious and life-altering incidents is possibly the most important work we do. Across our diverse operations, we are constantly assessing our highest-risk work.	Our business practices keep our facilities safe and ensure our operations are executing the practices that have been proven to keep us safe and sustain our Culture of Care.
<ul style="list-style-type: none"> • Leader visibility • Safety leadership coaching • Recognition • Psychological safety • Supporting frameworks: <ul style="list-style-type: none"> - Data and analytics - Responsibility and accountability framework - Governance - Community outreach 	<ul style="list-style-type: none"> • Stop work authority • Hazard identification • Peer-to-peer observations • Frequent and structured pauses • Team engagement: <ul style="list-style-type: none"> - Safety meetings and moments - Daily safety update - SHE Summit and events 	<ul style="list-style-type: none"> • Process safety • Environmental stewardship • Product stewardship 	<ul style="list-style-type: none"> • “SIF-in-the-Routine” • SIF prevention projects • Incident investigation • Innovation • Life Critical Standards 	<ul style="list-style-type: none"> • Site assessments • Asset and facility care • Emergency preparedness and response • Health and mental wellness

Learn more: [The Nutrien Way](#). Read more: 2022 activities are included below

Safety, Health and Wellness
(continued)



1 Leadership and accountability

A comprehensive discussion of Nutrien’s safety systems and stewardship activities is available on [our website](#). Here are some new and notable safety leadership and accountability initiatives and activities in 2022:

- **Enhanced Data Analytics:** We aim to be one of the leading technology-driven companies for SHE in the agriculture industry. In 2022, we initiated various collaborative projects in the predictive and prescriptive SHE analytics area to:
 - Develop an advanced machine learning and artificial intelligence system to analyze text from incident reports and investigations in order to manage and reduce risk, allocate resources more effectively, and evaluate the efficacy of mitigation efforts.
 - Conduct research on the use of leading indicators and human factors to identify focus areas for training and coaching, and establish partnerships with universities for advanced analytics research.

Nutrien named a 2022
5-STAR ENERGY AND RESOURCE COMPANY
by Canadian Occupational Safety magazine



- Increase internal reporting capabilities for inspection management, enhance the analysis of corrective action management and, in 2023, develop improved tracking tools to control workflow more effectively and reduce repeat incidents.
- **Increased Customer Outreach:** We share our safety training and programs with growers to promote safety across our industry. In 2022, Nutrien Ag Solutions created a new position with responsibilities to increase customer outreach, provide increased support, and oversee internal training and programs for our working farms (that is, Nutrien’s network of owned and leased farm assets where we test digital and crop input innovations). In 2022, we collaborated with a large citrus grower in the US to develop their comprehensive safety program and train them on safe operations.

2 Employee engagement

A comprehensive discussion of Nutrien’s safety systems and stewardship activities is available on [our website](#). Here are some new and notable ways that Nutrien’s employees and contractors engaged in safety in 2022:

- **Increased safety communication across Nutrien Ag Solutions:**
 - We launched our “HomeSafe” SHE collaboration platform, providing safety and other information for our Nutrien Ag Solutions operations and sites across North America. HomeSafe provides a consistent link to central SHE information, Nutrien Ag Solutions operating standards and key metrics.
 - We developed a consistent database of shared knowledge and resources such as weekly tailgate topics using learnings from past Nutrien and industry incidents.

3 Structured systems and stewardship

A comprehensive discussion of Nutrien’s safety systems and stewardship activities is available on [our website](#). In 2022, new initiatives and notable activities include:

- **Enhanced Internal SHE Audit Function**
Historically, Nutrien’s Internal SHE Audit (“ISA”) team has completed independent audits for SHE, Process Safety Management (“PSM”) and ResponsibleAg¹ across the Company. In 2022, to align



¹ ResponsibleAg is an industry-led initiative committed to helping agribusinesses properly store and handle farm input supplies in compliance with environmental, health, safety and security regulations. Nutrien’s ISA team includes credentialed ResponsibleAg auditors who perform these audits at our Nutrien Ag Solutions sites.

Safety, Health and Wellness

(continued)

Taking Action: Continuous Improvement Mindset

One of Nutrien's Safety Coordinators at our Carseland Nitrogen facility developed a pre-job hazard assessment ("PJHA") process based on the fundamentals of a job safety analysis and hazardous energy recognition. The PJHA creates a systemic hazard recognition structure consistent for every job or scope of work. In addition to focusing on task-specific hazards such as welding or grinding, the PJHA process also accounts for the type of energy exerted in each step of the task – for example, chemical, electrical, ergonomic, gravity, mechanical, motion, pressure, radiation, sound and/or thermal energy. As part of the process, a multidisciplinary group composed of a facilitator, subject matter expert, operators and representatives for the trades, safety and engineering thoroughly reviews the scope of the job and energy type at each stage to identify and mitigate potential hazards.

Since implementing the process in 2020, the team at Carseland has achieved more than three years without a Lost Time Injury. This reflects more than 3.5 million hours worked by both employees and contractors at the site since the last Lost Time Injury. The solution also earned a Nutrien Safety Coordinator recognition as one of the National Safety Council ("NSC")'s 2022 Rising Stars of Safety. [Learn more.](#)

differences in auditing procedures across Nutrien, and to help ensure that we perform better than legislation and meet best practice while exploring risk-based auditing, we enhanced our ISA function in the following ways:

- Undertook an external audit of the ISA program, people, structure and focus to promote continual improvement and identify strengths and opportunities for improvement.
- Improved ISA governance by aligning audit manager responsibilities and sharing accountability with SHE Leadership Team.
- Extended the audit program to include mergers and acquisitions.
- Reviewed South American operations, programs and practices to explore regional best practices and potential for further alignment.
- Used technology, data and analytics to improve ISA risk focus and maximize efficient use of onsite resources.

- **Enhanced Chemical Facilities Anti-Terrorism ("CFAT") Preparedness**

Chemical facilities are critical infrastructure subject to malicious intent and potential harm to people and environment resulting from deliberate acts of theft, sabotage and other release of chemicals. In 2022, Nutrien established a new position of CFAT Preparedness Manager who coordinates the identification, evaluation, maintenance, reporting, registration and regulatory interaction of sites with chemicals of interest.

- **Set Loss of Containment Target:** As a follow up to our previous target, Nutrien set a new target in 2022 to reduce the three-year moving average LOC Index from 1.52 in 2022 to 1.25 by 2030.

Our target is supported by Nutrien's LOC reduction strategy, which is expected to help reduce Nutrien's environmental impact and environmental risks associated with releases. The strategy includes enhanced training for operations personnel, new maintenance and reliability standards, improved equipment inspection tracking software, improved preventive maintenance

programs, capital projects, incident management improvements, program effectiveness reviews, analytics, equipment upgrades, and increased process monitoring.

- **Promoted safe handling of ammonia:** Ammonia is one of the more hazardous materials that we produce and distribute. In 2022, we:
 - Updated standard operating procedures for ammonia storage and handling, which are supported by nine training modules.
 - Implemented a spring or fall pre-startup ammonia safety review and held Ammonia Safety Days at Nutrien Ag Solutions locations that handle ammonia.
 - Gave growers access to our ammonia storage and handling training program using an external link to our Learning Management System ("LMS") and invited our customers to the Ammonia Safety Day in their area.
- **Collaborated on industry safety training:** We believe in sharing our safety practices to enhance safety for all. In 2022, we:
 - Worked with ResponsibleAg to create a shared library of farm input storage and handling safety standards and training for US agribusinesses.
 - Developed an agricultural hazardous materials course and trained emergency first responders in more than 10 pilot training sessions in North Carolina and Georgia.
 - Piloted two powerline electrical safety demonstrations for our employees and local farming communities in collaboration with an electric co-op company.

Safety, Health and Wellness (continued)



4 SIF Prevention

A comprehensive discussion of Nutrien’s safety systems and stewardship activities is available on [our website](#). In addition to our existing programs and activities to prevent SIFs, in 2022 we:

- **Potential SIF (“PSIF”) actions in Nutrien Ag Solutions:**

- Made the significant investment to switch from using bulk seed bags for the storage and transportation of seed products to using seed boxes at our North America sites. The seed bags have the potential to tilt and fall, and are susceptible to punctures from forklifts, while seed boxes are sturdy and can be stacked and transported more securely. The transition to boxes is expected to take about three years. [Learn more.](#)
- Nutrien Ag Solutions in Australia had a strong focus on SIF reduction activities focused on upgrading of machinery guarding systems, removal of work-at-heights risks, and replacing dated safety equipment with modern, safer equipment.

- **SIF Prevention Day:** We held our first SIF Prevention Day, which included a company-wide virtual broadcast with senior executives and a guest keynote speaker who highlighted the importance of “doing safety differently”. The intent was to spark conversations and empower workers to challenge the way we do things, ultimately enhancing our Culture of Care.

- **Emergency response:**

- Nutrien’s Nitrogen and Phosphate manufacturing sites hone their safety skills by participating in an annual, in-house Emergency Response Competition. First held in 2008, the 2022 competition featured scenarios that could actually happen at our sites, including confined space, fire, firefighter combat challenge, hazmat, high-angle rescue and medical, along with a proficiency exam. Each team also received specialized rope rescue training this year. [Learn more.](#)
- Nutrien’s Potash mine rescue safety teams practice regularly and compete often in preparation for real emergencies. In 2022, one of Nutrien’s Safety Facilitators competed with a Nutrien-sponsored all-women Canadian mine rescue team in the International Mines Rescue Competition. Twenty-two teams from eight countries competed in five team events: Mine Rescue Simulation, Firefighting, First Aid, Theory Examination & Technician, and either High Angle Rope Rescue or Mine Rescue Skills. [Learn more.](#)

- **Driving safety:** With Nutrien’s large fleet of commercial trucks, forklifts, tractors, and fertilizer and seed applicators, driving safety remains a top priority, especially in our retail locations, where most drivers are based.



Taking Action: White Springs SIF Elimination Efforts

Nutrien’s White Springs Phosphate operations have taken SIF elimination beyond internal expectations by combining their site Exposure Based Safety (“EBS”) Steering Committee with the SIF-in-the-Routine Team for enhanced SIF identification, evaluation and action. This EBS/SIF Team consists of 60 members from across the site and is a single point of contact for any PSIF hazards related to tasks, near misses, incidents, industry information and conversations with employees, including those from procedural drift, complacency and routine work. The EBS/SIF Team performs SIF assessments on all area Standard Operating Procedures involving subject matter experts, and trains workers across the site to engage them in SIF identification, evaluation and action. Through 2022, White Springs Phosphate operations identified and took action on more than 90 significant PSIF situations.

Safety, Health and Wellness (continued)

Taking Action: Next Generation Potash

Nutrien's "Next Generation Potash" initiative continues to develop, evaluate and deploy technology and process-based solutions to further our autonomous mining operations capabilities. We are investing in initiatives focused on autonomous mining, tele-remote mining and other advanced technologies, to continue to improve our safety performance, reduce our environmental impact, lower our production costs and optimize throughput. We are making these improvements from mine to mill.

Next Generation Potash is designed to make our assets safer and more efficient. Autonomous and remote mining helps remove employees from the active mining face, which supports safer operations. In 2022, we expanded remote mining by outfitting an additional three mining machines at our Lanigan, Cory, and Allan, SK mines with remote operation capabilities, for a total of six. We cut over six million ore tonnes in 2022 using automation technologies, an approximate 50 percent increase from 2021. We have also completed additional advanced process control projects at our mine sites to optimize product quality and reduce our environmental footprint.

Nutrien has various measures in place to support safe driving practices. In 2022, we:

- Piloted inward- and outward-facing camera technologies in North America to protect our workers from injury and monitor the traveling public, protecting Nutrien from inaccurate claims against our drivers. This technology monitors vehicle and driver actions, prompting in-cab alerts and reinforcement of behavior if warranted. During the pilot, we experienced an approximate 51 percent reduction in total monitored safety events (includes driving and policy-related), a 49 percent reduction in distracted driving, and a 44 percent reduction in speeding. We are exploring further integration and we plan to implement across all of our Nutrien Ag Solutions commercial fleet going forward.

- **Heavy mobile equipment safety:**

- Heavy mobile equipment refers to large haul trucks, bulldozers and other equipment used in our Phosphate operations. In 2022, we implemented technologies to reduce SIF potential, including the use of remote control equipment to reduce worker proximity to hazards and enhanced proximity detection with warning lights to improve hazard awareness of nearby equipment.

5 Programs and initiatives

A comprehensive discussion of Nutrien's safety systems and stewardship activities is available on [our website](#). In 2022, we focused on the following new initiatives and notable activities:

- **Enhanced mental wellness training:** In Nutrien's Culture of Care, employee safety, health and mental well-being are paramount. In 2022, we:

- Developed and delivered mental health training to 3,770 individuals across our North American operations. Courses included: Introduction to Mental Health, Mental Health Training for Leaders and Managers, and Mental Health Crisis Support. As well, psychological safety and related topics have been added into workshops for leaders and employees across the business.
- Continued to promote psychological safety for our Australian employees with a focus on reporting all incidents, open and

confidential communication channels, staff welfare visits, and education.

- Continued to promote our Employee Assistance Program and regularly feature mental health in company communications.

- **Improved contractor safety management:**

- We use ISNetwork, an online contractor and supplier management platform, to collect and verify key onsite contractor information, including their SHE performance. In our Nitrogen and Phosphate operating segments, we updated our contractor matrix system to view contractor certifications, which helps us exceed compliance. In our Potash operating segment, we reviewed contractor safety management and development processes to drive consistency among the sites, expand communication among the safety, procurement and project management functions, and improve the quality of work and safety performance. We also worked with Nutrien's procurement team to review lifecycle contractor safety performance as part of contract approval and renewal.

- Our Phosphate operations at Aurora, NC and White Springs, FL held perception surveys asking contractors to evaluate Nutrien's SHE practices. The process reinforces areas of strength, solidifies our partnerships and demonstrates Nutrien to be a collaborative organization. This, along with previous contractor feedback, indicates that we are viewed as having mature (above benchmark) SHE commitments, expectations, processes and tools, and are excelling in areas of competency and hazard awareness. Areas for continued improvement include communication, accountability and incident reporting and investigation.

- **Continued safety campaigns:** Nutrien participates in and hosts industry-wide and internal safety campaigns on a variety of topics. In 2022:

- The Phosphate operating segment developed and implemented hand injury prevention training. All Phosphate employees have completed the training and it has been added to contractor orientations at all Phosphate locations. Phosphate has experienced a 24 percent reduction in hand injuries from 2021 to 2022.



HOW DOES
Nutrien manage
this topic?



Equity, Diversity and Inclusion



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Promoting EDI enhances Nutrien’s organizational strength, reflects the diversity of our stakeholders and creates more just communities. Nutrien has opportunities to contribute to more equitable outcomes through our workforce, supply chain, community relations and investment, and industry leadership. We are committed to providing all employees with a respectful and inclusive workplace. We aim to create meaningful impact by increasing participation, engagement and equity for underrepresented groups across our value chain.



- Create new grower financial solutions to strengthen social, economic and environmental outcomes in agriculture
- Leverage our farm-focused technology partnerships and investments to drive positive impact in industry and grower innovation and inclusion

ESG Performance Goals/Target:

Achieved: Women comprise no fewer than 30 percent of the Board of Directors (maintain annually)

Room for improvement: 30 percent women in leadership (director and above) by 2025. The percentage of women in senior leadership positions is 21 percent in 2022, which is the same percentage as 2021. Progress is required to reach the target.

On track: By 2025, 25 percent of local spend in our Potash business has direct Indigenous economic impact

Achieved: Annually, 100 percent of potash suppliers contracted under a Master Supply Agreement (“MSA”) have local Indigenous inclusion commitments

ANALYST CORNER

- SASB EM-MM-210a.3 [Respect in the Workplace Policy](#)
[Inclusive Workforce](#)

Our Approach

We are prioritizing and building our Strategic Inclusion capability across our Company and value chain. At Nutrien, Strategic Inclusion goes beyond inclusion to include equity and diversity.

- **Equity** refers to working towards fair outcomes for people or groups by engaging them in ways that address the unique barriers they face. Equity is not only about policy and process; it is a mindset that,

Equity, Diversity and Inclusion
(continued)

Inclusion is a Core Value

In 2022, inclusion was elevated from a guiding principle to a core value at Nutrien, furthering our Culture of Care. We continue to challenge ourselves to do all we can to ensure that inclusion is embedded in our culture, in our ways of thinking and ways of working. Our Strategic Inclusion Plan continues to focus on increasing gender diversity and match-to-market representation of visible minorities, racialized people, Indigenous People and veterans in our workforce.

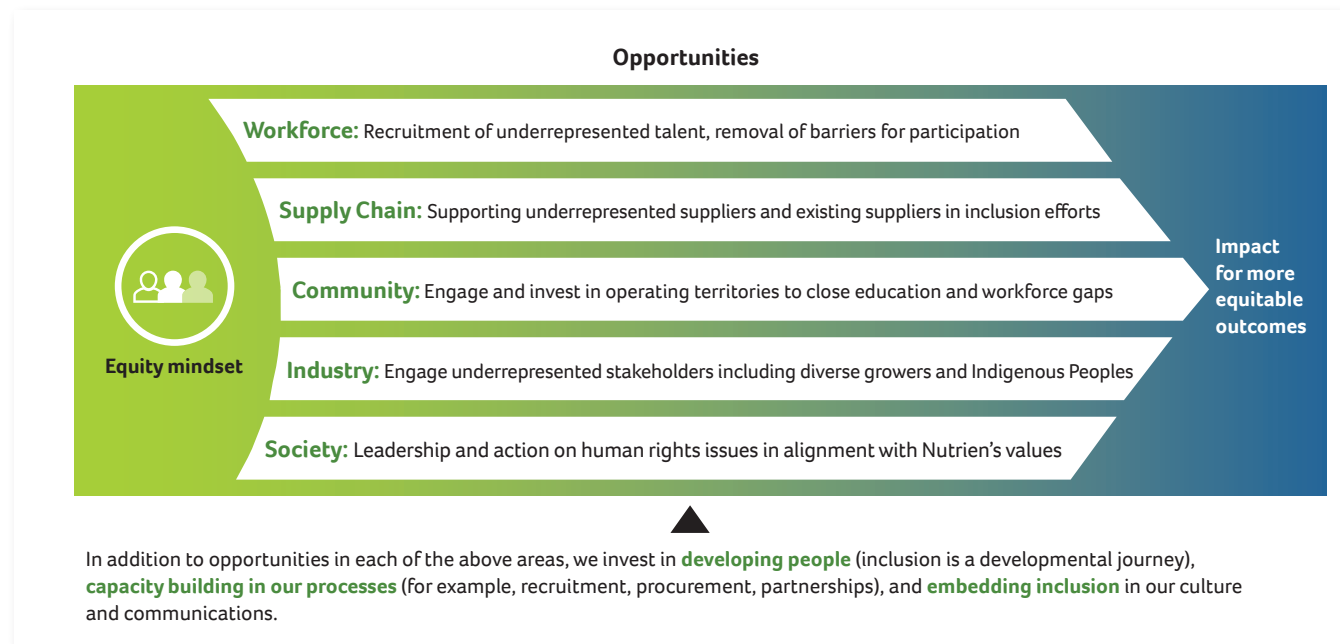
when developed and embedded within the organizational culture, allows us to identify equitable outcome opportunities, realizing tangible business value for all stakeholders.

- **Diversity** refers to people with a variety of unique backgrounds, experiences, qualities and skill sets and includes factors related

to age, gender, gender expression, geographic origin, ethnicity, culture, religion, disability and sexual orientation.

- **Inclusion** is defined as bringing people together to understand, involve, respect and embrace the differences that make each of us unique.

The following summarizes our Strategic Inclusion approach:



Our Strategy

We are committed to a Nutrien where we all belong and, together, we all grow. Inclusive agriculture is a primary focus area in our [Feeding the Future Plan](#). In 2022, we evolved our approach and launched a new Strategic Inclusion Plan to focus on our unique opportunities across our global operations and value chain to achieve equitable outcomes, address gaps and disparities.

Our Actions: Promoting EDI Internally

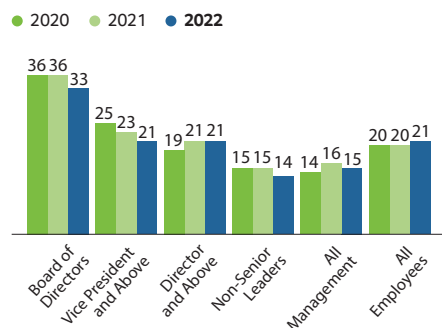
We are focused on becoming representative of the local market across all job categories in our workforce while increasing inclusive practices and our employees' sense of belonging.

To further promote EDI, we are combining the use of data-driven insights with a human-centric approach that emphasizes employee experience, purpose and belonging, and enhances external partnerships and opportunities across our value chain.



Equity, Diversity and Inclusion
(continued)

Women at Various Levels
(%) Across all operating segments



In 2022, we maintained gender diversity across all employees. There is room for improvement to increase the representation of women at various levels.

ANALYST CORNER

[Code of Conduct](#)
[Respect in the Workplace Policy](#)
[Inclusive Workforce](#)

Our ongoing effort spans the breadth of our organization, brand, culture, processes, recruitment, rewards programs, performance management and facilities. We benchmark our inclusion maturity through ongoing monitoring of internal employment trends such as new hires, promotions and turnovers for employee groups. Cascading accountabilities are integrated into our processes, and we compare our practices to the Global Diversity and Inclusion Benchmark model for continuous improvement.

In 2022, we increased our communication efforts internally to promote EDI. Nutrien’s ELT hosted numerous virtual townhall sessions supported by intranet resources. We also highlighted EDI observances, initiatives, Indigenous relations strategies and the work of our Employee Resource Groups (“ERGs”).

1 Governance and policies

Nutrien’s Strategic Inclusion actions are guided by our Code of Conduct, Respect in the Workplace Policy, and Equal Employment and Affirmative Action Policy. Our global Inclusion Council of senior operational and functional leaders from each operating segment and geography is sponsored by our President & CEO and chaired by our Chief Human Resources Officer. It has the mandate and accountability to enable the Strategic Inclusion Plan and champion EDI tactics throughout the organization. The Strategic Inclusion team supports our operating segments and corporate functions in the development of equity measures and provides resources to improve our Company culture across the organization. Executives, managers and supervisors are responsible for increasing diversity, incorporating equity measures, and providing a work environment free from discrimination, bullying, and harassment, including sexual harassment, and workplace violence. Management follows an open-door policy to encourage employees to discuss workplace issues.

Our compensation philosophy is to pay competitively, fairly and equitably. Nutrien continuously assesses pay equity in the organization by considering both internal and external equity when we set employee compensation such as for hiring and promoting. Nutrien complies with all applicable laws, rules and regulations. We have a formal analysis planned for 2023.

2 Tailored operating segment action plans

Each operating segment is developing its unique action plan to deliver on opportunities that align and support priorities within our Strategic Inclusion Plan. Nutrien’s Strategic Inclusion team supports our operating segments in the implementation of leading best practices in EDI and in achieving their internal EDI goals. Operating segment action plans consider EDI maturity and opportunities for making a positive impact. Our Nutrien Ag Solutions operating segment has unique regional diversity considerations with operations across the US, Canada, South America and Australia. In South America, our EDI strategy and guide were launched in 2022.

3 EDI focused programs, resources and education

We continue to build understanding and cultural competency of EDI through education, training, resources and ERGs. Nutrien’s talent development programs support the attraction, retention, development, and career progression of diverse talent. Initiatives include:

- The Emerging Talent Program is a newly developed three-year rotational program for post-secondary graduates to build a diverse and effective talent pool poised for accelerated development to leadership and manager roles within our Nutrien Ag Solutions operating segment. There were 11 participants in 2022. Consideration when selecting applicants was given to age, ethnicity and gender diversity.
- Nutrien Academy is a leadership development program for women to help build business competency. In 2022, 25 women from our North American operations participated.
- The Women’s Leadership Mentoring Program in Australia helped equip 12 professionals to transition into management positions. This is a key part of our commitment to help women develop their skills to progress their careers and participate at senior leadership levels.
- The Women in Trades Program builds a qualified talent pool of women for trades and technical positions, specifically at Nutrien’s Nitrogen operations in Alberta, Canada. This program includes structured recruitment partnering with trade schools

Equity, Diversity and Inclusion (continued)

and provides scholarships, professional development, mentoring, networking events and community engagement. Twelve women participants were hired in 2022.

- Our EDI learning platform includes micro-learning for Nutrien employees, beginning with foundational content and then building skills to promote ongoing engagement. In 2022, we had over 1,900 registered users, over 8,500 completed courses and over 40,500 micro-learning.
- Leadership learning and development continues to incorporate EDI competency in Nutrien leaders by incorporating EDI concepts into leadership education programs.
- ERGs act as inclusion networks and remain active in the areas of support for women, women in non-traditional environments and roles, members of the LGBTQ+ community, young professionals, Black employees, and military members. We

support ERGs in building community internally and engaging community externally.

4 Accessibility

We are intentional in creating equitable, inclusive, barrier-free workspaces and environments where everyone can thrive as part of our Strategic Inclusion Plan and Culture of Care. We have improved accessibility in our operations considering disabilities and gender. For example:

- When planning Nutrien's new corporate head office in Saskatoon, SK, we had a specific workstream for inclusive features, specifically around accessibility. The building has received Rick Hansen Foundation Accessibility Certification, which measures and certifies the level of meaningful access to buildings and sites. [Learn more.](#)

South America's Local Strategic Inclusion Plan Launched



Nutrien Soluções Agrícolas developed and launched a local inclusion plan that advances Nutrien's Strategic Inclusion Plan. A few highlights include:

- Inclusion strategy: The South America EDI strategy aligns with our Corporate Strategic Inclusion Plan and provides local context-based content. We respect the uniqueness of our employees and strive to provide a work environment free from prejudice, stereotypes and discrimination. [Learn more.](#)
 - Inclusion guide: A guide was created to provide knowledge for our employees and promote best practices about diversity inside and outside of Nutrien.
 - Family leave policy: The extension of employee maternity and paternity leave reinforces the importance of family and supports different family situations.
- Entry-level programs: We developed entry-level programs to enhance diverse participation in our Company. In 2022, the following programs supported our EDI efforts:
 - Ser Especial (Be Special) provides career opportunities for people with disabilities to learn and develop social and technical skills. We had approximately 20 employees participate.
 - Agro Solutions Promoter Program provides young and diverse groups with leadership opportunities.
 - Agronomist Internship Program provides intern opportunities for collegiate agronomy students.
 - Corporate South America Internship Program provides intern opportunities for collegiate students to support corporate functions.

Equity, Diversity and Inclusion (continued)

- We are currently undergoing upgrades to our Potash mine sites to ensure our surface facilities are not only universally accessible, but also barrier-free. Improvements have been made such as providing gender-appropriate PPE and an updated parental leave policy.

5 Diverse and inclusive recruitment

In 2022, we continued to evolve our recruitment processes to attract and promote a more diverse selection of candidates, including encouraging the use of diverse images in campaigns and utilizing more inclusive wording in our job postings. All Nutrien

recruiters are trained in considering inclusivity when recruiting and an inclusive interview training kit for leaders is also available. We maintain partnerships with diversity-supportive organizations such as National Black MBA Association and Indigenous career and student centers at post-secondary institutions. To better promote Nutrien job opportunities to women and underrepresented groups, our recruiters participated in and/or hosted various diversity-related career events in 2022. For example, we continue to support the Mining Introduction Pre-Employment Program at the Saskatchewan Indian Institute of Technologies and attend various women in agribusiness and women in trades events.

Our Actions: Promoting EDI Externally

1 Leveraging Nutrien Financial

We offer growers financing options for purchases such as seed, fertilizer and crop protection. Nutrien Financial's existing credit program operates in accordance with the [US Equal Credit Opportunity Act \("ECOA"\)](#) and is inclusive for all applicants. ECOA is a US federal law with the aim of giving all individuals an equal opportunity to obtain credit. The ECOA makes sure that there is no discrimination when it comes to credit and lending.

Nutrien Financial is committed to promoting financial inclusion and we aim to ensure that individuals and businesses can attain insightful financial information that encourages sound economic actions. During 2022, Nutrien Financial embarked on its first informational campaign aimed at delivering meaningful content to the agriculture market, specifically for young or new growers. By sharing important financial literacy topics such as cash management strategies, we can empower growers to make better-informed financial decisions.

Simplifying access to financial products is essential to our financial inclusion goals. During 2022, Nutrien Financial formally launched an online credit application process, which affords growers a

safe and secure way to apply for credit while preserving the confidentiality of sensitive information. By augmenting the ways to apply for credit, we facilitate easier credit access for those in search of input financing. We continue to search for and invest in ways to design financial platforms and grower solutions that advance our financial inclusion goal, which can also lead to the improved financial resilience of our customer base.

Screening investments using an inclusion lens: Inclusive investment is a way of rethinking what we value as we invest and who is participating as an investor to bring about systems-level change. This innovative way of doing business is how we can help drive change across the industry. In 2022, we launched the "Radicle Inclusion Challenge by Nutrien" where we invested \$500,000 in ag-tech entrepreneurs committed to EDI. [Read more.](#)

2 Engaging Indigenous People in Canada

With a large operating base in Canada, we understand and act on our responsibility to Indigenous reconciliation. We strive to engage early, often and authentically through a value-chain approach for positive impact on our own workforce along with Indigenous communities, economies and institutions.

ANALYST CORNER

- SASB RT-CH-210a.1
- SASB EM-MM-210b.1
- SASB EM-MM-210a.3

Equity, Diversity and Inclusion

(continued)

Taking Action: Radicle Inclusion Challenge by Nutrien

Nutrien increased our focus on opportunities to partner with diverse businesses and start-ups by launching the “Radicle Inclusion Challenge by Nutrien”. Women and BIPOC are generally less represented in venture capital investments. This challenge was created by Nutrien, in partnership with Radicle Growth, to offer an inclusive venture capital investment opportunity for underrepresented entrepreneurs around the globe who specialize in sustainable agriculture technology. In 2022, over 130 entrepreneurs from 40 countries entered, and the top four finalists presented their ideas and business goals to a panel of industry experts. Agtools Inc. and FA Bio Ltd. are the winners of the Inclusion Challenge, each securing a \$250,000 investment from Nutrien, plus access to mentorship and networking opportunities. This landmark initiative provided insights on the state of inclusion and diversity in ag-tech, and helps address the imbalance in access to capital investment, networks and knowledge experienced by women and BIPOC entrepreneurs within the ag-tech industry. [Learn more.](#)

Workforce: We are committed to being representative across all job categories; providing Indigenous People access to career opportunities in our operations, not simply low-skilled roles. We also provide ongoing learning and development for employees to learn the shared history in Canada, the impacts of colonization and opportunities to engage in acts of reconciliation.

Community: We invest in community organizations supporting Indigenous People and advancing reconciliation efforts. For example, we support the Saskatoon Survivors Circle, which provides a safe space to heal and share stories; provide nutrition programming and garden boxes for Indigenous agriculture teachings in schools; and invest in Science, Technology, Engineering and Math (“STEM”) and career programs in Indigenous schools. We partner with and invest in Indigenous institutions by providing scholarships, mine tours, career presentations, internships, practicums and secondments.

Supply chain: We also support our supply chain in their inclusion and reconciliation efforts. We provide awareness training in partnership with the Saskatchewan Industry Mining Supplier Association to our supplier network. The Nutrien Indigenous Content Playbook has served as a catalyst in setting Indigenous inclusion priorities in our Potash operating segment and outlining expectations for our external supply network. This tool has created a foundation for Indigenous engagement to grow over time. In 2022, a Potash Indigenous Supply Chain Strategy was developed to continue building capacity internally within our teams and externally through our supplier network to support deepening our commitment to long-term, authentic, and intentional engagement with Indigenous businesses and people. Our Indigenous targets are industry-leading and have had a tangible impact on the Saskatchewan potash industry.

Nutrien has made considerable progress towards greater inclusion of Indigenous suppliers through our Potash operating segment. We continue to engage suppliers who have local, relevant spend that has a direct Indigenous economic impact. All of our contracted potash suppliers have local Indigenous inclusion commitments in the areas of direct employment of diverse/Indigenous candidates; subcontract commitments with local diverse/Indigenous

companies; education and training support, which could be in the form of scholarships, bursaries, internships, or apprenticeships; and community investment donations, sponsorships and volunteerism. In 2022, Nutrien’s Potash operating segment exceeded our target of 25 percent of local relevant spend having direct Indigenous economic impact with approximately CAD\$270 million in successful contracts awarded to Indigenous-owned suppliers and suppliers who commit to 15 percent or more full-time Indigenous employment. Our focus moving forward will be sustaining this spend year over year.

As an international company, we acknowledge the diversity in the regions where we operate. We understand the importance of recognizing the unique histories of each operating territory and how it has influenced our contemporary context. While our past efforts have focused on engaging the Indigenous community in Canada, we commit to learning and exploring how Nutrien can contribute positively to Indigenous communities across our operations.

3 Supplier diversity

Nutrien believes our supply chain should be as diverse as the communities we serve. Our goal is to give diverse suppliers and their communities the opportunity and support they need to thrive as vital contributors to Nutrien’s success. We have established a supply chain Strategic Inclusion Plan.

We work to minimize and eliminate barriers and biases to supplier engagement and leverage supplier diversity and supply chain accountability to amplify our impact by engaging and supporting our suppliers in their own inclusion efforts. We have a Procurement Diversity and Inclusion Procedure and an Indigenous Content Playbook that is an evolving resource to provide guidance on how Nutrien incorporates Indigenous participation and content into our business practices and supply chain.

4 Community investment

Nutrien supports economic and social equity of underrepresented groups through strategic partnerships, scholarships, donations and sponsorships. One new community partner that supports our EDI efforts is the [National Black MBA Association](#). [Read more.](#)



Responsible Supply Chain

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

A responsible supply chain of business partners that share our commitment to doing business with integrity is essential to maintain our reputation and mitigate operational risks. It helps us uphold our values, build resilience, and address environmental, social, political or other factors affecting our operations.

Our Approach

Nutrien is committed to responsible sourcing. Our Supplier Code of Ethics (“Supplier Code”) supplements our Code of Conduct and applies to suppliers that provide products or services to Nutrien around the world. It includes requirements related to human rights, labor, and health, safety and environment, and others. We are also committed to supporting diversity and inclusion throughout the procurement process. Our procurement policies and procedures are designed to ensure that fair consideration is given to all potential suppliers.

The Procurement Systems and Governance team is responsible for high-level guidance and governance structure as well as systems that enable our supply chain to adhere to Nutrien’s policies. This team updates and adjusts based on business needs, with oversight provided by our ELT through the Finance and Corporate functions and our operating segments.

Our Actions

We strive to build a responsible supply chain by working with suppliers that uphold our standards. We require supplier acknowledgment of our Supplier Code, screen potential suppliers using key criteria, perform detailed supplier reviews on a risk basis, review supplier programs and performance, and have a due diligence process for high-risk suppliers.

potential supplier a pre-tier level, allowing for identification of potential risks or benefits in line with our criteria before awarding a contract.

Nutrien’s potential top-tier suppliers must complete an onboarding evaluation to meet our basic requirements, including corporate social responsibility and a commitment to excellence in health and environmental practices. These potential suppliers must review and agree to Nutrien’s Supplier Code. We use a risk-based approach to identify those suppliers that warrant more detailed reviews. Our risk evaluation of potential top-tier suppliers includes financial,

1 Supplier and contractor evaluation

Supplier screening: We evaluate potential suppliers based on industry, geographic region, government interaction and expected annual spend. We use a data-based approach to assign each

ANALYST CORNER

- SASB EM-MM-510a.1 [Supplier Code of Ethics](#)

Responsible Supply Chain (continued)

cybersecurity, environmental and ethical supply chain ratings to enhance supplier screening.

Supplier performance management: Nutrien's current supplier tiers are based on annual spend, risk of interruption of supply and geographical footprint. Tier 1 suppliers work across our global operating segments and have the highest annual average historical spend and/or highest potential of supply risk and impact to our business. We reevaluate current supplier tiers regularly to enable appropriate performance management based on historical spend and relevant changes. A data-based approach is being designed to evaluate current supplier tier levels, allowing adjustments to be made on a more regular basis.

Our supplier evaluations examine factors related to product integrity and overall supplier integrity, including whether they are in regions with political, economic and social instability. Our evaluations also encompass commercial factors and various aspects of risk considerations, technical capacity and innovation, and schedule certainty among other critical items.

Our supplier risk module for monitoring existing suppliers was enhanced and tested throughout 2021 and 2022. Enhancements include the ability to segment suppliers during the engagement period of the supply chain process. Once the tool has been integrated into Nutrien's supply chain process, Tier 1 suppliers will be required to respond to multiple questionnaires assessing different areas of risk that have been identified during the early engagement process. This tool will allow for a deeper risk-based evaluation of Nutrien's current supply chain in areas of legal, environmental, financial, cybersecurity, product safety, supplier sustainability and integrity.

Product ingredient and feedstock evaluations: Nutrien only sources plant protection ingredients from suppliers that are certified by the local certifying agency where they are sold and/or distributed (for example, EPA in the US). Plant protection ingredients sourced from non-US sources are purchased only from manufacturers that are EPA approved. Nutrien plant protection products are tested frequently at our formulation sites to confirm the supplier ingredient or feedstock meets our specifications.

Our Product Stewardship and Procurement teams are working together to operate and expand a joint feedstock evaluation process to confirm regulatory status, origin and manufacturing quality of materials and chemicals before approval for incorporation into Nutrien's manufactured finished products. We are evaluating the integration of sustainability factors into this approval process.

Contractor management: Our operating segments have varying on-site contractor needs. For instance, our Nutrien Ag Solutions facilities have few contractors on site while, at our Nitrogen, Potash and Phosphate sites, contractors represent between 20 and 60 percent of the hours worked. On-site contractors must be registered and in compliance (that is, with an A or B rating) with ISNetworld, an online contractor and supplier management platform that collects and verifies key contractor information, including SHE performance. These standards are required by any contractor entering into a work area within a Nutrien facility, representing approximately 2,700 contractors and suppliers across Nutrien's manufacturing operations.

2 Contractual obligations

Suppliers are required through the contract process to comply with our Supplier Code, which includes expectations for nondiscrimination, a commitment to compliance with human rights laws, and the avoidance of forced labor, child labor, and human trafficking. We do not knowingly procure materials from conflict zones, which is prohibited by our Supplier Code.

Commitment by our suppliers to the principles of the Supplier Code is significant in Nutrien's decision-making process. Where suppliers refuse to follow the principles of the Supplier Code or show signs that they are not committed to improving their practices to comply with its principles, Nutrien will review its relationship with the supplier. Where contractual commitments and local law permit, this review may include termination of our relationship with the non-compliant supplier.

Responsible Supply Chain (continued)

3 Diversity in our supply chain

Nutrien believes that a commitment to EDI in our supply chain encourages innovation. We are proud of the journey that has led us to a comprehensive and integrated supply chain EDI strategy with a clear purpose that is understood and accepted as part of our culture of integrity.

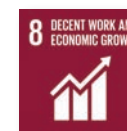
We focus on identifying opportunities where we can create socioeconomic impact through inclusive-driven efforts in employment, subcontract engagements, education and training opportunities, and community investments. Nutrien expects the same commitment from our suppliers through their own network. Our aim is to build authentic relationships with qualified local contractors and suppliers, and engage in meaningful dialogue about building and supporting a business environment that appropriately reflects the diversity of the communities in which we operate.

As a global company with significant operations in Western Canada, we have a prioritized responsibility to grow opportunities for Indigenous communities, individuals and businesses throughout our supply chain. We believe that their meaningful economic participation creates benefits for society and building relationships with Indigenous communities and peoples provides sustainability and stability in the local economy. Over the last decade, Nutrien has emphasized the value of including and supporting Indigenous-owned suppliers by sharing realistic sample strategies, goals and targets through our Indigenous Content Playbook. We encourage competitive bids, safe project delivery and sustainable growth. Our Indigenous suppliers have created measurable benefits and are consistently unlocking the potential for true competitive advantages. [Read more.](#)



ANALYST CORNER

- SASB EM-MM-210a.3
[Indigenous Content Playbook](#)



Human Capital

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Ensuring that Nutrien employees feel valued, respected and engaged in their own success is essential in attracting and retaining the talented people who will help us achieve our purpose of *Feeding the Future*.

Our Approach

To safeguard the long-term achievement of our strategy and attract and retain our people, we invest in the employee experience

and engagement, develop the best talent, and employ effective succession management processes.

Our Actions

1 Employee experience and engagement

Employees who have positive experiences at work are more likely to be engaged in working safely and collaboratively towards our shared Company goals. We promote employee engagement by focusing on the overall employee experience: gathering feedback by listening, providing the right rewards, and supporting mental and physical well-being.

Employee listening: Listening to our employees helps us identify ways we can improve the employee experience and increase talent retention. In 2022, we:

- Held global town halls where we collected post-event feedback about our response to keeping our employees safe, various topics of interest, and support that we can provide moving forward.
- Engaged in more “just-in-time” listening activities to gain a pulse on the employee experience within Nutrien. These activities ranged from detailed surveys to focus groups over a wide range of topics to employee sentiment check-ins.

- Conducted employee “stay” (in addition to common exit) interviews and Human Resource (“HR”) surveys to proactively address talent concerns stemming from “The Great Resignation” and to inform our efforts to win in the “War for Talent”. We gathered more than 400 unique responses that we can use to better understand Nutrien’s position within the competitive talent landscape.
- Completed employee focus groups in North America, Australia and South America, an external listening activity using our social media channels, and a survey of approximately 11,000 external North American applicants to Nutrien. This information is being used to inform our Employee Value Proposition.
- Continued our standard listening activities, including requesting feedback from new hires, employees with service milestones, and employees who voluntarily left Nutrien.

ANALYST CORNER

[Code of Conduct](#)

Human Capital (continued)

In 2022, Nutrien provided a one-time discretionary

FINANCIAL AWARD TO THANK ELIGIBLE EMPLOYEES

for their dedication, hard work, and focus on safety and integrity.

ANALYST CORNER

- SASB EM-MM-310a.1

Nutrien continues to use our listening activity results and implement enhancements such as rolling out targeted career development resources, enhancing Nutrien's Learning Management System ("LMS"), and providing educational opportunities for employees to learn more about owning their career.

Total rewards: Nutrien provides a competitive, equitable and inclusive total rewards program guided by our core values to attract, retain and engage diverse talent. We provide attractive and market-based compensation packages as well as localized benefit and retirement programs that demonstrate our care for the health and well-being of our employees and their eligible family members.

Nutrien offers resources that support physical, emotional and financial well-being, including comprehensive benefits and valuable savings plans and retirement programs. Our paid time-away-from-work policies include vacation time, sick time, personal days and parental leave. Additional resources may include Employee Assistance Programs, subsidies for employees learning another language, fitness classes, discount programs, scholarships and more. Eligible employees can also take care of their community with our matching gift program and paid volunteer days.

Though we aim to provide one suite of programs to our employees, in some circumstances plans vary by operating segment and/or geography to remain competitive in local markets.

Employee support programs: In Nutrien's Culture of Care, employee safety, health and mental well-being are paramount. We continued to promote our Employee Assistance Program and regularly feature mental health in company communications, and in 2022, we delivered targeted programming to support employee mental health. [Read more.](#)

2 Investing in our HR digital transformation

Nutrien has developed a digital HR roadmap and invested in technology to enable global, timely and self-serve technology and data. We aim to create consistent experiences at key points in the employee lifecycle with supporting data. In North America, we recently launched master data recruitment, and onboarding modules in our HR management platform to supplement the

existing performance management, career development and succession planning modules and increase our HR digital footprint.

3 Developing the best talent

Supporting the career development of our employees is a key driver of employee engagement and essential for employee retention at Nutrien. We strive to empower employees to own their career, with Nutrien's support in their growth and development.

Learning Management System: Nutrien's LMS is available for our North American and Australian employees. This centralized location for learning and development creates an improved educational experience and has greatly expanded the learning opportunities and development paths available to employees. The LMS houses an array of learning content, including soft skills training, that will continue to be updated into 2023. Benefits of the LMS include personal dashboards for employees and leaders, the ability to self-assign courses, and leader insights into training needs with the ability to track and report on training.

Performance management: At Nutrien, performance management is a continuous process of coaching and communication between team leaders and team members, focusing on individual objectives and behaviors that support the strategic objectives of the Company. Nutrien's process is designed to enable and elevate employee performance. In 2022, Nutrien increased the availability of our online performance management process to more than 17,000 employees, or about 90 percent of employees, with the remaining employees using a paper-based process to complete their performance reviews. We plan to continue expanding the online performance management tool availability across Nutrien as our HR systems are brought into alignment.

Learning and development: Every Nutrien employee has access to a suite of professional development courses and content available through virtual eLearnings as well as in-person training. In 2022, more than 740 individuals participated in the first workshop of the Nutrien Leadership Development Program, a multi-day program covering topics such as establishing trust, performance management, EDI, and mental health for frontline leaders. We also provided global access to a new Authentic Leadership Program for

Human Capital (continued)

Nutrien won
**GREAT PLACES
TO WORK**
awards in Canada and Australia,
with an 81 percent engagement
score for our Canadian, US and
Australian employees

all Nutrien employees, with more than 290 participants in 2022. In addition, a cohort of 25 women participated in Nutrien Academy, a program aimed to further develop business acumen and leadership capability within Nutrien's up-and-coming diverse talent, and 31 of our women employees in Australia participated in accelerated leadership and mentorship programming in 2022.

Career development planning: We have a suite of materials to support employees and leaders in career development planning. We also have a system to gather information from our employees on their prior experience, career aspirations and personal interests to enable greater internal talent mobility. Currently, we have career development plans in place for approximately 10 percent of our North American and Trinidad and Tobago employee population, with the intention of increasing this number in 2023. In 2022, of the roles posted within Nutrien's applicant tracking system, 25 percent of open positions were filled by internal candidates.

Leadership development: In 2022, Nutrien invested in specialized resources for senior and executive leadership assessment and development and business performance excellence through the creation of an internal High Performance and Well-Being Institute, which we expect to implement in 2023. Through this Institute, we aim to focus initially on the leadership development of our top 100 leaders, and progressively expand to our top 500 leaders. In 2023, Nutrien plans to introduce an executive coaching program to support customized career planning and developmental coaching, leveraging scientifically based assessments to inform succession planning.

4 Succession management

Our succession management program enables the retention of talent, identification of talent gaps and creation of succession plans, aligning organizational needs with employee expertise and career aspirations. Succession planning also provides Nutrien with a forward-looking roadmap to support continuity within our operations when changes occur.

At senior leadership levels, our succession planning process has evolved to manage internal talent pools of high-potential individuals rather than 1:1 replacement planning. Within our operating segments, Nutrien identifies roles most critical to the achievement of our business strategy, while further identifying

a high-potential talent pool to accelerate development and proactively manage diversity. For these critical roles, an internal talent pool and pipeline is also developed. We intend to leverage the data and insights from our employees' career development profiles to better match employee aspirations to vacant roles. Throughout 2022, we continued to identify key positions within mid-level leadership roles along with highly specialized roles and difficult-to-fill positions and began succession planning accordingly. We currently have more than 1,100 unique positions, or 5 percent of our roles, within our North American and Trinidad and Tobago operations that have an identified successor. Within the population of succession candidates, we have identified more than 1,600 employees as successors for a targeted role. Our intention is to continue to sustain and further to expand on this process in 2023.

We continue to use real-time dashboards to provide executives and HR access to important metrics such as employee turnover and workforce demographics. This information allows us to continuously monitor our organizational health.

5 Talent attraction

We aim to attract the best talent to help us achieve our purpose. In 2022, Nutrien's talent attraction and sourcing group hired approximately 3,500 people and had a 93 percent acceptance rate on all employment offers.

6 Collective bargaining, unions and labor relations

Nutrien supports freedom of association and values, effective communication, collaboration with unions, and dispute resolution procedures for grievance processes. Maintaining positive relations with unions is important to our business. Our employees can join an employee association or labor union, consistent with national or regional laws and practices. We strive for productive relationships with the unions representing our employees. Nutrien has entered into 13 collective bargaining agreements with labor unions representing 20.5 percent of our total employees. In jurisdictions such as Italy, Australia and Brazil, employees are self-represented through other forms of collective bargaining such as enterprise award agreements or work councils. Of our non-North American employees, 34 percent are covered by these types of arrangements.



Community Relations



WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Positive and transparent community relationships are essential to the successful operation of our business, especially in smaller communities where we have a more prominent operational footprint. Strong connections in our communities provide opportunities for employee attraction, engagement and retention. Community stakeholder relationships contribute to business risk mitigation and reputation management through increased communication and collaboration. Above all, Nutrien can make a positive impact and help advance sustainability priorities in the communities where we do business.

ESG Performance Goals/Targets

On track: Employees volunteer at least 25,000 hours by 2025

On track: Develop and implement a targeted approach to measure the impact of our sustainability and community investments by 2023

Our Approach

Nutrien builds relationships in the communities where we operate by engaging and investing. Our presence in these communities is guided by our sustainability priorities, with oversight by the Executive Community Investment Committee. Nutrien's Community Relations Position outlines our strategy and approach. [Learn more.](#)

Community engagement is supported by a company-wide internal network of local representatives and central governance. Activities and investments are customized to the community and business priorities of the location and are supported by training, information sessions, communications, employee resource groups and community relations committees. Partner organizations are vetted and must be a registered charity or non-profit to be eligible for funding. Strategic evaluation of funding requests and basic impact monitoring are in place to facilitate consistency and integrity in our community outreach. Investments are guided by company-wide criteria. [Learn more.](#)

Analyst Corner

- SASB RT-CH-210a.1
- SASB EM-MM-210b.1

[Community Relations Position](#)
[Community Investment](#)

Our Actions

1 Engaging community partners

Nutrien representatives participate in community-based meetings or events with Community Advisory Panels, industry associations and Chambers of Commerce, and volunteer with charitable and non-profit organizations and Local Emergency Planning Committees where they operate. Our participation with these groups varies by location but the main goals are two-way information sharing and offering assistance. At our Lima, OH facility, for example, employees participate in a Local Emergency Planning Committee, a County Environmental Citizens Advisory Committee and an Agricultural Advisory Committee. Similarly, employees from the Geismar, LA site attend the Greater Baton Rouge Industry Alliance, monthly City Council meetings as well as a Community Advisory Panel.

Community Relations

(continued)

\$33M

invested in
communities in 2022

2 Educating youth

Today's youth are tomorrow's decision-makers and agriculture advocates, and they play a crucial role in our industry's future and our planet. Nutrien's education programs are available or implemented in communities where we operate and raise awareness about sustainable agriculture, safety in agriculture and environmental stewardship. [Learn more.](#)

For example, Nutrien's Caring for our Watersheds® ("CFW") program supported approximately 3,300 youth in Canada, US and Argentina in their awareness of environmental issues and actions that can be taken to improve their local watersheds. CFW contributes to many of the SDGs through the diverse environmental solutions that students implement in their communities and beyond. [Learn more.](#)

3 Investing in communities

In 2022, Nutrien invested \$33 million in communities around the world. We focused on initiatives that address existing needs in local communities and create positive impact in the areas of food and sustainable agriculture, the environment and EDI. We also support communities in emergency situations. In addition, Nutrien supports causes important to employees through a matching gift program and paid volunteer time for eligible employees. Many of our offices and facilities participate in annual United Way campaigns, where employee donations are matched by Nutrien 1:1.

We increased our community investment spend this year with a special one-time supplement to projects aligned with our priorities in Canada, US, Brazil, Argentina, Trinidad and Australia.

Our Community Relations program included the following highlights in 2022:

- Increased internal collaboration and corporate funding to support community relations in retail communities across North America.
- Introduction of the employee match program in Australia.
- Implementation of a volunteer program for employees in Brazil and Argentina and held more than 30 volunteer events.
- Provision of emergency support for flood-affected communities in Australia with a donation of AUD\$150,000 for the Foundation for Rural and Regional Renewal and AUD\$50,000 for Rural Aid.

Initiatives in 2022 in our three priority sustainability areas included:

Sustainable Agriculture and Food Solutions

- **Food solutions and food banks:** Nutrien maintained support of food security initiatives around the globe, reaching almost 200 food agencies in seven countries.
- **Agricultural innovation:** In Canada, we support the University of Calgary Creative Destruction Labs (Agriculture stream), which helps to bring agricultural innovation to scale and commercialize new science and technology.
- **Grower wellness and support:** In the US, Nutrien provided funding for the AgriSafe Network to support a crisis line for farmers, along with Farm Rescue, which helps farm and ranch families facing a major injury, illness or natural disaster. In Canada, Nutrien supported Do More Ag, an organization championing the mental well-being of producers. In Australia, we supported a new partnership with CareFlight, a critical care aeromedical service and charity to bring emergency trauma skills training to 180 regional communities.

Environmental Stewardship

- **Watershed stewardship:** In Saskatchewan, we support Wascana & Upper Qu'Appelle Watersheds Association Taking Responsibility, a non-profit organization with a focus on promoting watershed stewardship through communications and programming initiatives.
- **Wetland restoration:** Nutrien supports DUC Legacy Wetland Restoration Program, which restores wetlands and degraded habitat and uses conservation easements to protect the land in perpetuity before re-selling it back into the community.
- **Amazon sustainable development:** Nutrien Soluções Agrícolas is partnering with 4H Brazil and others, with the aim of establishing the 4H Amazon Unit for Agro Ecological Education to educate and create social impact in support of sustainable development in the Amazon.

Equity, Diversity and Inclusion

- **Supporting minorities:** We continue to support Minorities in Agriculture, Natural Resources and Related Science and began a new partnership in 2022 with the National Black MBA

Community Relations
(continued)

Association to promote academic and professional advancement by empowering minorities in agriculture and related fields. We continue to support and engage with the National Black Growers Council for information sharing and advancing sustainable agriculture practices.

- **Supporting women:** We provide engagement and financial support for women’s professional development through organizations such as Aspire to Grow, Women in Mining

and Women in Nuclear Saskatchewan Inc., and Women in Agribusiness.

- **Supporting Indigenous Peoples:** We invest in STEM programming for elementary school children, career programming and bootcamps for high school youth, and scholarships for learners transitioning into post-secondary education with a variety of Indigenous institutions. We also invest in the Wanuskewin Heritage Park. [Learn more.](#)



Community Consultation and Engagement in Geismar

In preparation for our proposed Clean Ammonia project, we consulted and engaged the communities in and around our Geismar facility in many ways. Nutrien’s local and corporate leaders hosted or participated in regular meetings with state and local government representatives regarding the project, and we provided information and opportunities for discussion with local citizens and other stakeholders. Geismar’s Community Relations and Investment team works closely with stakeholders in local government, civic and industry groups, community organizations and schools to encourage EDI to be a prioritized consideration in activities such as hiring, project or program development, and communications. As part of our regular community engagement activities, Nutrien employees participated in many local volunteer events. Some community engagement highlights in 2022 included:

- Providing EDI-focused scholarships for local students through Louisiana State University, Southern University and River Parishes Community College.

- Supporting career readiness and skill development programs through organizations such as Junior Achievement of Greater Baton Rouge.
- Establishing an on-the-job training program designed to provide skills, experience and opportunities for employment to local residents.
- Focusing talent attraction and recruitment efforts on underrepresented local populations.
- Investing in safety and health by supporting local fire departments and the Women’s Hospital.
- Contributing to food security programs such as food pantries through the Greater Baton Rouge Food Bank.
- Completing a state-wide school tour of Nutrien’s Seed Survivor program, which educates youth about the importance of agriculture and where food comes from.

Performance	2022	2021	2020	2019	2018
Community investment ¹	\$ 33M	\$ 19M	\$ 18M	\$ 17M	\$ 17M
Community partnerships (count)	3,000	>2,700	>2,500	>2,300	>2,500
Employee volunteering (hours)	17,580	11,460	7,360	NPR	NPR

NPR = not previously reported

¹ In 2022, Nutrien allocated additional funds on a one-time basis to advance our strategic priorities.

2022 Highlights

We published
**Environmental
Global Standards**

We started
linking a component
of compensation to
**cybersecurity
performance**

100%
attendance
at all 2022 Board
Committee meetings

Governance

We embed strong corporate governance systems and principles in our business to place the interests of our stakeholders at the center of every decision we make. These include oversight from our Board of Directors, a culture of integrity that informs our activities, and the appropriate systems for cybersecurity and data privacy.

TOPICS IN THIS SECTION

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- 85 Governance of ESG Risks
- 88 Integrity
- 92 Cybersecurity and Data Privacy
- 95 Additional Governance Topics
- 96 Nutrien TCFD Disclosures

Corporate Governance

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Our governance is aligned with Nutrien's Purpose and facilitates risk management for value preservation and long-term value creation through the pursuit of Nutrien's strategic objectives.

Performance 2022¹

BOARD AND GOVERNANCE INFORMATION

Total number of directors	12
Number of independent directors	11
Separate Chair and CEO	Yes
Independent Chair (required)	Yes
Annual board evaluation process	Yes

BOARD RENEWAL AND DIVERSITY

Annual election of directors	Yes
Average age of directors	60
Retirement age	72
Average director tenure	10 yrs ²
Women Board members	33%
Board Diversity Policy	Yes

SHAREHOLDER RIGHTS

Proxy access	Yes
Say on pay advisory vote	Yes
Votes in favor of compensation approach at the 2022 AGM	93.4%

¹ Information presented as of December 31, 2022 except where indicated.

² The following directors previously served as a director of one of Nutrien's legacy entities commencing in the following years: Mr. Burley (2009); Ms. Clark (2016); Mr. Girling (2006); Ms. Hubbs (2016); Ms. Laberge (2003); Ms. Madere (2014); Mr. Martell (2007); Mr. Regent (2015).

Our Approach

Nutrien's governance structure and committed leadership support the development of a cohesive ESG strategy and the integration of ESG practices across our Company, including actions supporting Nutrien's Feeding the Future Plan.

Nutrien's governance systems include policies and processes that define the roles and responsibilities of the Board and the ELT. The Board oversees prudent management of Nutrien's business including oversight of ESG issues.

Board Diversity

Having Board directors from varied backgrounds and with a diverse range of perspectives and insights fosters enhanced decision-making capacity and promotes better corporate governance. Our Board Diversity Policy includes a target that women comprise no fewer than 30 percent of the Board members. Nutrien is also a member of the 30% Club, an international group of Chairs and CEOs promoting gender diversity on boards and senior management teams. Our Board diversity criteria formally acknowledge the groups designated under recent amendments to the Canada Business Corporations Act, including women, Indigenous Peoples, persons with disabilities and members of visible minorities, and confirms our commitment to diversity in recruitment practices.

As of December 31, 2022, of our directors, four self-identify as women (33 percent of the total number of directors), one self-identifies as an Indigenous person (8 percent of the total number of directors) and one self-identifies as a member of a visible minority (8 percent of the total number of directors). None of our directors self-identify as a person with a disability.

Board Renewal and Skills

While director term limits can assist with Board refreshment, there may be circumstances where the Board does not want to lose the deeper business knowledge and experience of a longer serving director. Nutrien therefore does not limit the term that a director can serve on the Board, and may request a director extend their term of service beyond the general retirement age of 72.

The Board regularly reviews the Board skills matrix for skills and experience. As of the time of our last assessment (May 17, 2022), 63 percent of our Board members had sustainability-related skills or experience. For more information, see Nutrien's [2022 Proxy Circular](#).

Executive Compensation

Since 2020, a component of executive short-term compensation has been tied to demonstrated ESG performance to support our focus on key ESG topics and progress across our sustainability strategic pillars, including the addition of progress on GHG emission projects and diversity-related metrics in 2021.

Nutrien's compensation framework is based on a pay-for-performance philosophy, with the majority of compensation being at-risk for the CEO and other named executives. Currently, 88 percent of CEO compensation was at-risk, and 77 percent of other named executive officers' compensation was at-risk.

In 2022, restricted share units ("RSUs") were added to the long-term incentive mix for executives. Additionally, the performance share units ("PSUs") included a second performance metric, Return on Invested Capital ("ROIC"), which links a portion of long-term compensation to Nutrien's stewardship of investor capital. We include an advisory "say on pay" vote at our annual meetings (in line with 2019 amendments in the Government of Canada's Bill C-97).

Governance of ESG Risks

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Addressing ESG risk and opportunities is core to our near- and long-term operational success, and incorporating them into our strategic and business planning activities helps enhance our planning, decision making and resilience. Understanding emerging ESG trends, related regulations and societal expectations allows us to capitalize on opportunities for growth and mitigate potential risk.

Our Approach

Risk management is governed by our Board and Board committees, who oversee our ELT and ensure that the principal risks to our business, including ESG risks, are being appropriately identified, assessed and addressed. The Board Safety and Sustainability Committee (“S&S Committee”) has responsibility for oversight of Nutrien’s activities as they relate to ensuring that appropriate policies, systems and personnel are in place to support safe and sustainable operations and the long-term viability of the Company, including its consideration of stakeholders relevant to the creation and preservation of long-term value. It directly reports to and advises the Board on these matters. For additional information

on our S&S Committee as well as our governance structure see Nutrien’s [2022 Proxy Circular](#).

Responsibility and accountability for risk management is embedded in all levels of our organization, and we strive to integrate risk management into key decision-making processes and strategies. By considering risk throughout our business, we seek to effectively manage the risks that could have an impact on our ability to deliver on our strategy. Our sustainability function is incorporated under the external affairs and legal portfolio and closely connected with the business units, other corporate functions and the Corporate Development and Strategy team.

Our Actions

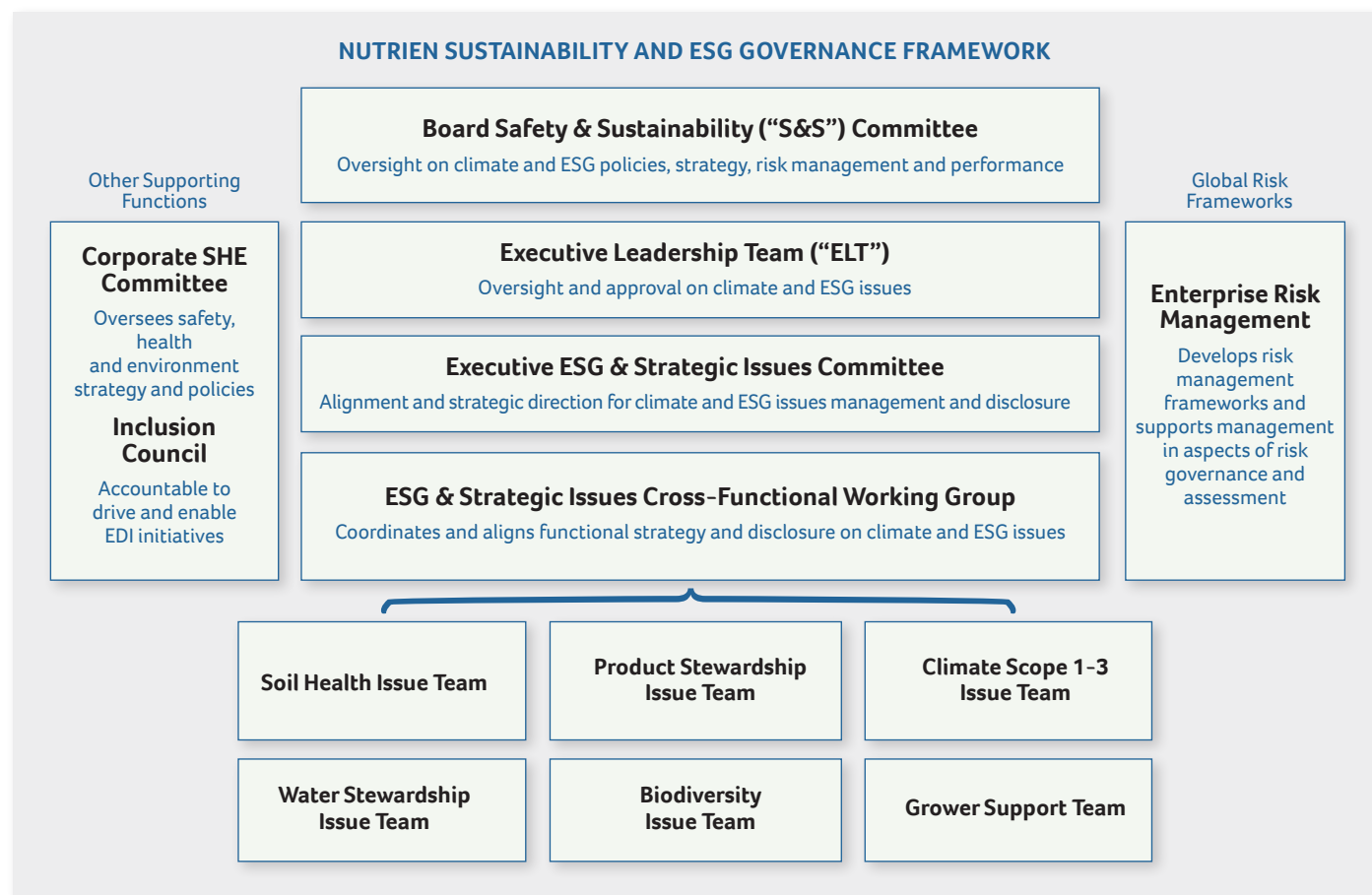
To demonstrate our commitment to sustainability, we took further steps to improve upon our ESG governance in 2022:

- We published progress updates for our 2030 Commitments and key ESG targets and goals in our 2022 ESG Report, helping to drive short- and medium-term actions and support for Nutrien’s Feeding the Future Plan.
- We held an Investor Update for shareholders and other stakeholders in June, with leaders speaking to our sustainability strategy, climate-related opportunities, commitments and actions taken to date.
- We created an ESG compliance team to support the development of annual integrated reporting while considering possible future mandated ESG reporting requirements from global regulators.

ANALYST CORNER

- TCFD Governance a) b)

Governance of ESG Risks
(continued)



Board Oversight and Activities

The S&S Committee has responsibility for the highest level of oversight of Nutrien’s activities as they relate to sustainability. This oversight includes the ongoing monitoring and development of the Company’s ESG strategy and incorporates topics such as safety, environmental stewardship, health (physical and mental), climate change-related risks and opportunities, cybersecurity, and data privacy, among others.

In 2022, as part of the mandate to oversee significant policies and management systems, the S&S Committee:

- Oversaw the evaluation of the safety and sustainability programs and initiatives based on five key areas of safety (Leadership

Engagement and Accountability, Employee Engagement, Process Safety and Environmental Stewardship, SIF Prevention and Hazard Identification, and site SHE Programs and Initiatives).

- Reviewed the Process Safety Management program and new safety leading indicator process.
- Oversaw the Nutrien Way playbook and Global 2022 SHE Virtual Summit.
- Reviewed safety and sustainability performance summaries to identify any performance issues.
- Oversaw policies relating to safety and sustainability and progress towards sustainability goals.
- Attended three safety-focused site visits.

ANALYST CORNER

- TCFD Governance a) b)

Governance of ESG Risks

(continued)

We published
**ENVIRONMENTAL
GLOBAL
STANDARDS**
in 2022

- Oversaw Nutrien's Feeding the Future Plan and Nutrien's 2022 ESG Report and supporting ESG targets and goals.
- Reviewed safety and sustainability audit plan for the current and upcoming year, including Nutrien's COVID-19 safety protocols.
- Reviewed with management the safety and sustainability emergency response planning processes.

In 2022, as part of the risk and compliance requirements of its mandate, the S&S Committee:

- Reviewed the Company's remediation projects, environmental provisions, and significant legal and regulatory developments respecting safety, sustainability and process safety management matters.
- Reviewed the risks, strengths and opportunities relating to safety and sustainability, including insurable risks, as well as potential climate-related impacts to the Company and our operating environment.
- Reviewed disclosure containing significant information within the committee's mandate.
- Oversaw cybersecurity controls and risk in conjunction with the Audit Committee.
- Worked in conjunction with stakeholders including the ELT, Crisis Management Team, Cybersecurity Team and the Major Incident Team to assess cybersecurity incidents, responses, recovery and training.
- Oversaw Nutrien's approach to data privacy and governance.

Executive Leadership Oversight and Activities

Under the oversight of the S&S Committee, Nutrien's ELT has the responsibility of ensuring our material ESG- and climate-related risks are being appropriately addressed and for performance related to ESG strategy, commitments and targets.

Key groups that play an important role in the management of ESG-related risks include:

Enterprise Risk Management: responsible for establishing frameworks and facilitating processes to support risk identification and assessment across the entire organization.

Executive ESG & Strategic Issues Committee: responsible for the materiality assessment of ESG issues, oversight of risk mitigation for ESG matters, and developing appropriate ESG-related disclosures and communications to stakeholders.

Climate/Carbon Program Steering Committee: oversees the strategic management of risks and opportunities related to the reduction of Nutrien's GHG emissions and alignment of targets and performance metrics.

Strategic Issue Teams: oversee the strategy and implementation of action on the key ESG issues of climate, soil health, water, biodiversity, product stewardship and grower support.

Inclusion Council: accelerates diversity and inclusion initiatives of our EDI strategy.

Corporate SHE Committee: provide oversight of the SHE strategy for the care and protection of our people, environment, community and customers. Safety, health, environment, process safety and product stewardship are key areas of focus for the Committee. Nutrien's SHE Management System provides a framework, direction, governance and tools that support our collective goal of excellence in these areas across our operations and supply chain.

Environmental Global Standards

In 2022, Nutrien published Environmental Global Standards to establish a framework and minimum expectations for managing Nutrien's environmental risks. The Environmental Global Standards were developed with substantial support from cross-functional teams representing corporate functions and operating segments, reflecting Nutrien's values and SHE vision, strategy and actions for managing environmental risk. The Environmental Global Standards are based on legacy company environmental standards and informed by external environmental management best practices including ISO, US EPA, IFA, and others. The published Environmental Global Standards include:

- Environmental Leadership
- Environmental Sustainability, ESG, Footprint and Data Management
- Environmental Risk Management
- Environmental Operations Management
- Environmental Global Waste Minimization
- Environmental Agency Inspections, Investigations and Enforcements
- Environmental Regulatory Change Management and Compliance Calendar
- Environmental Training, Awareness and Competence
- Environmental Incident Management, Reporting and Investigation
- Environmental Audit and Compliance Assurance

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- TCFD Risk Management a) b) c)



Integrity

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

Our reputation as a company doing business with integrity is essential to building and maintaining trusting relationships with stakeholders, as well as reducing our legal and financial risks.

ESG Performance Goals/Targets

Achieved: All employees, directors and officers complete mandatory Code of Conduct training annually

Our Approach

Integrity is one of our core values at Nutrien. We are guided by our Code of Conduct (“the Code”) and several supporting policies including our Respect in the Workplace Policy, Competition Law Policy, Anti-Corruption Policy, Gift and Entertainment Policy, Conflict of Interest Policy, Privacy & Cookies Statement, and others.

Across the organization, various committees facilitate discussions that identify and address issues to uphold our value of integrity. These include our Audit Committee of the Board of Directors, our ELT, and our network of Integrity Officer-led committees at global, regional or country levels. Our Integrity Group formally shares insights on a regular basis with senior leaders across our operating segments to ensure they have the knowledge and tools to appropriately address risks in a timely manner.

Our Commitments

Human rights: Respect in the workplace is the foundation for doing business with integrity. This is important both for our employees as well as our business partners, such as our suppliers. We are committed to respecting and observing all human rights, in accordance with applicable law and the principles set forth in applicable international standards, including the Voluntary Principles on Security and

Human Rights and the core conventions of the International Labor Organization (“ILO”) and the United Nations (“UN”), such as the UN’s Universal Declaration of Human Rights, the UN’s Declaration on the Rights of Indigenous Peoples, and the UN’s Guiding Principles on Business and Human Rights.

Anti-competitive behavior: For a business the size and scale of Nutrien, anti-competitive behavior can expose individuals and our business to significant penalties and impair our reputation in the marketplace. We are committed to the principles of fair competition and compliance with all antitrust and competition laws applicable to our operations around the world. Anti-competitive behaviors with competitors or customers and other third parties (for example, governments) are prohibited, including price fixing, agreements to limit production, exchanging competitive information and predatory pricing. Our Competition Law Policy outlines Nutrien’s strict expectations of all employees, officers and directors, as well as third parties such as distributors, agents, resellers and contractors.

Bribery and corruption: Nutrien conducts business around the world, including in geographies that face higher levels of corruption. We are committed to doing business the right way. Our Anti-

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- SASB EM-MM-510a.1 [Code of Conduct Integrity](#)

Integrity (continued)

Corruption Policy sets forth the acceptable behaviors for interacting with government officials and commercial partners. We have a zero-

tolerance policy for bribery, whether our own employees are involved or third parties who are acting on our behalf.

Our Actions: Nutrien's Integrity Program

Nutrien's Integrity Program provides the knowledge and tools for all employees to achieve business results the right way – with integrity. This program consists of four pillars: risk intelligence, learning, speaking up and investigations. We have a dedicated Integrity Program page on our global intranet to ensure all employees have access to information and resources in each of these pillars.

Foundational to our Integrity Program, we have a dedicated Policy Portal on our global intranet that allows employees to find the current policies that apply to their activities based on their role and location in the Company. The Portal also contains guidance on when a policy is needed and the process for review, approval and publication. We continually review and, where necessary, update our policies to provide clarity and guidance around our expectations for doing business with integrity.

1 Risk intelligence

Nutrien's risk intelligence activities include assessment and mitigation tools for human rights, compliance, integrity and legal factors that are available to employees on a risk basis considering their specific role and, sometimes, location. These tools include trade sanctions due diligence, customer and supplier reputation due diligence, and our ERM program.

Human rights and anti-corruption: Nutrien identifies and assesses human rights-related risks annually as part of our global ERM process and through our ESG material topic analysis. Nutrien has no fertilizer production operations in countries with high levels of corruption risk as determined by Transparency International's Corruption Perception Index (that is, the countries that are part of the 20 lowest rankings).

Mergers and acquisitions: Nutrien continues to grow through acquisitions. We integrate compliance and integrity assessments and training into our due diligence and integration process for

new acquisitions to verify that our growing Company continues to build and maintain a culture of integrity in line with our core values. These activities also serve to mitigate legal and financial risks as the business grows, such as those related to bribery and corruption. Compliance and integrity integration activities are risk-based and range from deployment of Nutrien policies, alignment of key processes with Nutrien's programs and provision of training.

Third-party due diligence: In 2022, we developed updated legal and compliance risk assessment tools that are being further integrated into the supplier evaluation, onboarding and monitoring processes across the Company. Our Integrity Group also worked closely with Nutrien's operating segments and provided guidance on the often-fluid changes in trade sanctions regarding Russia and Belarus due to the war in Ukraine.

Integrity culture questionnaire: In 2022, we continued an initiative started in 2021 that regularly and anonymously surveys a representative sample of employees across Nutrien about our integrity culture, including psychological safety. The monthly survey responses enable us to understand what we are doing well and where we have room to improve by region, operating segment and corporate function. The results are used to create a dashboard for our Integrity Group, Human Resources and SHE function to take action, such as to deploy targeted training that addresses emerging issues.

2 Learning

Training and communications: All employees, directors and officers must complete mandatory Code of Conduct training annually. The 2022 training included Nutrien's purpose and values; fostering our "speaking up" culture; cybersecurity; data privacy; respect in the workplace (including anti-harassment, discrimination, inclusion, unconscious bias, microaggressions and

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- SASB EM-MM-510a.1
- SASB EM-MM-510a.2

Integrity (continued)

psychological safety); conflicts of interest; gifts and entertainment; careful communications; and safety. We update and rotate topics from year to year as part of our risk-based training strategy. We also provide refresher training on a periodic basis to address new or changing legal and compliance risks. For example, in 2022, we provided in-person, targeted, risk-based training for employees regarding respect in the workplace. Over 500 employees in operations roles received this tailored, live training. In addition, we trained the Human Resources department in all our geographic regions on our recently refreshed Conflicts of Interest Policy and disclosure process.

In 2022, approximately 400 employees in higher-risk roles received tailored live training on fair competition and more than 400 employees in higher-risk roles received tailored live or online training on anti-corruption. An extensive targeted anti-corruption and fair competition training roll-out is planned for the first half of 2023. Employees traveling to countries that were ranked high risk for corruption (according to Transparency International's Corruption Perception Index) received a pre-travel advisory with anti-corruption refresher training.

We revised our training content in the areas of anti-corruption and fair competition based on the training needs assessment conducted in 2021. This leveraged newly developed decision tree resources that outline employees' training requirements based on specific day-to-day business activities.

We developed one-page awareness resources on speaking up, anti-corruption and conflicts of interest that were distributed by email to leaders, made available on the Company intranet and shared with employees as needed throughout the year.

Integrity Moments: Integrity Moments involve sharing stories that show integrity in action (personal or otherwise) at the start of meetings. Integrity Moments help to foster and normalize discussions about our core value of integrity in our everyday work. In 2022, we incorporated details about the integrity aspects of safety in the Daily Safety Update employees receive by email. For example, if an employee stopped work because of a perceived safety issue, doing so demonstrated a commitment to doing work with integrity, even if that meant a short-term negative impact

on production. We continue to encourage employees to share an Integrity Moment at the beginning of every meeting, as well as at Nutrien Board meetings.

3 Speaking up

One of the most important ways to do business with integrity is to speak up by asking questions and reporting concerns about situations that may violate the Code or an associated policy. Among several other options for speaking up (for example, in-person, email, instant messaging, direct phone calls), Nutrien also provides an externally administered Integrity Helpline for employees and anyone outside Nutrien to ask questions and report integrity concerns, with service available in seven languages.

Speaking up is promoted throughout the year with various communications on Nutrien's intranet, in townhall sessions, through memos, during integrity and safety shares, and via training. Leaders are also expected to adhere to and promote our "open door" policy. This means that they are available to anyone with integrity concerns, questions or complaints, and they encourage an environment where our employees feel comfortable speaking up. We always strive to protect the identity of anyone who raises a concern regarding suspected misconduct. A reporter can choose to remain anonymous when they report a concern, whether through the Integrity Helpline or any of our other reporting methods. There is zero tolerance for any retaliation against someone who raises a concern or otherwise participates in the investigation process in good faith.

Nutrien tracks the number of concerns raised, the rate of concerns per 100 employees (or "compliance reporting rate" - a common benchmark used to assess the health of organizational "speaking up" culture), and the level of substantiation, which is the percent of those concerns that were shown to be breaches of the Code following an investigation. We continue to review these and other factors, to assess how well our Integrity Program is identifying, assessing, and addressing issues and risks related to doing business with integrity.

Nutrien's compliance reporting rate has increased compared to last year. Concerns related to workplace conduct were most common in 2022, as is typical with most of our peer companies. Read more on [page 111](#).

Integrity
(continued)

4 Investigations

We strive to maintain a speaking up culture where all concerns related to the Code (as well as an associated policy) will be investigated under the oversight of the Integrity Group. All questions and concerns are taken seriously and handled promptly, confidentially and professionally, in accordance with our compliance investigation principles, which are described on [our website](#).

All necessary and appropriate actions are taken based on investigation findings. On a quarterly and annual basis, we provide reports on investigation statistics and other data to the operating segment leadership teams and the Audit Committee of the Board of Directors. These reports are the basis for regular discussions regarding any trends and insights that lead to process or other improvements to our Integrity Program.

Key Integrity Metrics	2022	2021	2020	2019	2018
Employees who have completed Code of Conduct training	All	All	All	All	All
Employees who have received live anti-corruption training	317	202	390	1,010	580
Employees who have received live fair competition training	394	305	410	610	500
Total Compliance Reporting rate (reports per 100 employees)	0.77	0.74	0.67	0.66	0.71





Cybersecurity and Data Privacy

WHY IS THIS TOPIC RELEVANT TO OUR BUSINESS?

The trend towards increasing digitization and advances in technology afford us significant business opportunities. However, our interconnectedness and reliance on digital systems also expose us to the potential for digital piracy and the release of sensitive information.

ESG Performance Goals/Targets

Achieved: Host quarterly education and training on cybersecurity for our community partners and stakeholders

Our Approach

At Nutrien, we are building a culture of cybersecurity. To supplement our Code of Conduct, which outlines expectations for the appropriate use of Nutrien assets and management of personal information and Company records, Nutrien has a global Cybersecurity Policy to inform Nutrien users of their responsibilities for protecting the technology and information assets of the Company. In addition, our global Privacy & Cookies Statement describes the personal information that Nutrien collects from or about individuals, and how we use and to whom we disclose that information. We also developed supporting policies, standards

and guidelines designed to protect Nutrien systems, services, data and information, based on recognized best practices including the National Institute of Standards and Technology (“NIST”) Cybersecurity Framework, applicable privacy legislations, and appropriate records management.

Oversight of Nutrien’s cybersecurity system and data governance is provided by our ELT and S&S Committee of the Board of Directors. Cybersecurity and data privacy are managed in accordance with Nutrien’s ERM system.

Our Actions

1 Cybersecurity

Our continued focus on and investment in our cybersecurity program has increased our overall system control maturity

and decreased cyber risk in critical areas. We focus on the fundamentals: protecting our systems, assets, data and identities, and making modifications as the cyberthreat landscape changes.

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[NIST Cybersecurity Framework](#)

Cybersecurity and Data Privacy
(continued)

Performance	2022 ¹
INFORMATION SECURITY RISK OVERSIGHT	
S&S Committee independence (responsible for information security)	100%
Number of times senior leadership briefed the Board S&S Committee on information security matters	4
Number of directors with innovation/ technology and security (including cybersecurity oversight) skills	4
INFORMATION SECURITY RISK MANAGEMENT	
Approach for identifying and mitigating information security risks disclosed	Yes
Information security breach in the last three years	No material breaches
Information security insurance policy obtained	Yes
External evaluation against top information security standards	Yes (NIST framework)
Information security training and compliance program implemented	Yes
Time since the most recent information security breach	No material breaches

¹ Information presented as of December 31, 2022.

Specific activities to maintain and enhance cybersecurity include:

Robust systems: Our cybersecurity systems and processes follow the NIST framework, a voluntary framework created by industry and the US government to promote the protection of our infrastructure from cybersecurity risks. The system is assessed annually by a third party.

Cyber risk identification and preparedness: We continue to enhance our risk assessment framework and work with our operations and employees to identify risks by conducting cybersecurity reviews of new initiatives and cyber process hazard assessments for Nutrien’s mining and fertilizer manufacturing sites. We integrate cybersecurity into the major project development process by requiring Threat Risk Assessments be completed as early as possible and conducting “cyber-health checks” at later stages in the process.

Cyber response exercises: In addition to responding to cybersecurity events, our Cybersecurity team actively prepares other Nutrien teams to respond to such events using an established framework. In 2022, we conducted three tabletop exercises with key business leaders and technical teams to simulate real events, test our readiness and enhance their preparedness. We also conduct threat modeling to simulate potential threats and inform changes that are expected to make business processes more resilient to cyberattacks.

Training: Our training on managing digital risks includes a cybersecurity module in our mandatory annual Code of Conduct training, regular phishing campaigns of our staff, and focused training for groups with higher-risk business processes. Our Cybersecurity team hosts multiple education sessions during our annual Cybersecurity Awareness Month to provide information and resources for Nutrien staff, enabling smart decisions while at work or home.

Linking Nutrien’s Performance Incentive Plan (“NPI”) to cybersecurity performance: To track our performance, we developed an internal cyber score for employees and contractors based on their interactions with phishing tests, along with training completion and awareness session attendance. Our cyber score is monitored company-wide and at team and individual levels. Our Cybersecurity team drives engagement on this topic and enables

improvement with global webcasts, training, data, leader tracking of team performance and follow up. To emphasize the importance of cybersecurity, the Company-wide cyber score metric is included in the NPI, which is a component of compensation for eligible employees.

Reducing risk after acquisitions: Nutrien is heavily focused on growth by acquisition. To protect the organization, our Cybersecurity team is among the first Nutrien business functions to evaluate newly acquired assets to review their current cybersecurity systems and status. We look for compromised systems, remediate high-risk areas and implement Nutrien’s baseline cybersecurity controls prior to IT systems integration.

Partnering with communities and stakeholders: Keeping our identities, data and families safe online is important to Nutrien, our customers, our supply chain partners and our surrounding communities. Nutrien has strong cybersecurity programs and performance and we share our awareness of cybersecurity fundamentals with our key customer, supplier and community member stakeholders through training sessions to decrease our shared cyber risk. In 2022, we exceeded our target to host quarterly cybersecurity education and training for our community partners and stakeholders with five sessions completed. Our aim in 2023 is to continue to grow this program globally by hosting sessions for our Australian and South American external stakeholders. During 2022, Nutrien’s Cybersecurity team met with two of our customers who suffered cyber incidents to help them implement improvements.



Cybersecurity and Data Privacy
(continued)

Key Cybersecurity Metrics	2022	2021	2020	2019	2018
Participants in online cybersecurity refresher (as part of Code of Conduct)	25,740	22,850	23,900	20,770	19,120
Tabletop exercises to practice responding to cybersecurity events	3	2	2	3	1
Participants in focused cybersecurity training for higher-risk business areas	24,600	8,310	8,750	7,900	6,700
Participants in an online data privacy refresher (as part of Code of Conduct)	25,740	22,850	23,900	20,770	NPR

NPR = not previously reported

2 Data privacy

Nutrien respects the privacy of individuals with whom we interact. We take technical, contractual, administrative and physical steps to protect against unauthorized access to and disclosure of personal information of employees and customers and other third parties that we possess.

We stay informed of trends and developments in data privacy laws, and update our privacy policies and practices at global, national and regional levels for the protection of personal information in our possession. For example, in 2022, we introduced a new global

Employee Privacy & Cookies Statement. In addition to periodic communications and the online data privacy refresher as part of the Code of Conduct training for all employees, in 2022 we provided tailored communication and training to over 200 employees in privacy-sensitive or privacy-impacting roles (for example, Human Resources and IT). We review and conduct privacy impact assessments on projects involving personal information to help ensure good privacy practices are designed-in from the start (“privacy by design”).



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[Privacy & Cookies Statement](#)
[Employee Privacy & Cookies Statement](#)

Additional Governance Topics

Tax Policy

At Nutrien, we invest in our business and the communities in which we operate to create sustainable value for all of our stakeholders. We believe that tax regimes should be stable, efficient and competitive to attract and promote this investment and value creation. Nutrien's operating segments pay a significant amount of tax across multiple jurisdictions, including income taxes, potash production taxes, royalties, property taxes and indirect taxes. In

addition, Nutrien collects and remits employment taxes from our more than 24,700 permanent employees.

Nutrien's Tax Policy is available on our [website](#).

Income tax expense increased in 2022 compared to 2021 due to significantly increased earnings in all jurisdictions.

Income Taxes, Earnings and Cash Taxes Paid by Country

(\$ million)

Country	Income tax expense (recovery) ¹			Earnings (loss) before income taxes ²			Cash taxes paid (recovered)		
	2022	2021	2020	2022	2021	2020	2022	2021	2020
Canada	1,539	513	67	5,707	1,884	525	1,005	(8)	30
United States	785	287	(184)	3,447	1,319	(506)	569	262	55
Australia	77	60	28	263	204	83	88	51	44
Trinidad	181	90	(15)	487	256	(44)	147	73	2
Other	(23)	40	27	343	505	324	74	57	26
Total	2,559	989	(77)	10,246	4,168	382	1,882	435	156

¹ Income tax expense (recovery) included in net earnings from continuing operations.

² Earnings from continuing operations before income taxes.

Political Advocacy

Whether at local, regional or national levels, Nutrien participates in policy and political discussions that impact employees, stakeholders, shareholders and the communities where we operate. Nutrien advocates for free and fair competition in marketplaces, for safety, and for sustainable solutions to global challenges.

Our senior leaders and designated employees engage government officials to understand and share observations about policies that may impact our employees, our customers and our communities, and to seek policy certainty where such policies have the potential to impact our investment decisions and business operations. Specifically in the US, Nutrien has established the Nutrien Ag Solutions Employee Citizenship Fund Political Action Committee ("Nutrien Citizenship Fund PAC") to build relationships with lawmakers who

share our company's policy objectives. The Nutrien Citizenship Fund PAC is a "political action committee" as defined by the US Federal Election Commission ("US FEC"), and is a voluntary, non-partisan, non-profit, unincorporated entity. The Nutrien Citizenship Fund PAC is regulated by the US FEC and adheres to all reporting and compliance requirements.

Nutrien is committed to participating ethically, openly and responsibly in democratic public policy development and decision-making processes. We publicly disclose all donations or benefits to political parties or candidates according to the regulations of the jurisdictions where we operate. See Nutrien's political donations reported by year in the Performance Table, [page 113](#). Nutrien Citizenship Fund PAC donations are also available by year at the [US FEC website](#).

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[Tax Policy](#)
[Political Advocacy Statement](#)

Nutrien TCFD Disclosures

Nutrien's climate-related disclosures are guided by the Task Force on Climate-related Financial Disclosures ("TCFD") framework. This framework is intended to help companies provide consistent and comparable information about their material climate-related risks

and opportunities. This information is intended to help companies more effectively evaluate climate risk, assist in strategic planning and provide better information to support informed capital allocation in the transition to a low-carbon economy.

Our Progress Towards Meeting the TCFD Recommendations

In 2022, Nutrien conducted further preliminary climate scenario analysis, and we have started assessment and development of Scope 3 emissions baselines for material categories of both upstream and downstream emissions. This work will build on our existing 2030 sustainability commitment initiatives to support our grower customers, develop further supply chain engagement on emissions reduction and drive potential future emissions reduction targets.

We recognize that regulators and standard setters have proposed rules, regulations and standards requiring various climate-related disclosures. These draft climate and general sustainability reporting regulations and standards are based on the recommendations of the TCFD.

Governance of Climate-Related Risks and Opportunities

Board Oversight

Risk management is an integral part of doing business and is governed by our Board and Board committees. The Board S&S Committee has oversight of Nutrien's climate-related risks and opportunities. The S&S Committee generally meets on a quarterly basis and covers many sustainability-related issues within its mandate, including those related to climate. Specifically, the S&S Committee's role includes overseeing policies relating to sustainability and progress towards sustainability goals; approval of Nutrien's ESG Reports; reviewing progress against Nutrien's Feeding the Future Plan and associated ESG targets and goals; and review of Nutrien's climate-related risks and opportunities. This committee directly advises the Board on these and other sustainability matters including safety.

Management's Role

Nutrien's ELT has the responsibility of ensuring the Company's material risks, including climate-related risks, are being appropriately identified, assessed, managed and reported. ELT members and executive-level committees play different and important roles in the monitoring of climate-related risks including:

- **The Chief Executive Officer** provides leadership and strategic direction for our business' climate-related risks and opportunities in the effort to reduce our GHG emission footprint and improve the resilience of the business model, as well as meeting our commitments with key external stakeholders.
- **The Executive Vice President, External Affairs & Chief Sustainability & Legal Officer** reports directly to the CEO and has a direct link to the S&S Committee. They provide executive-level oversight, strategic vision and leadership for sustainability-related matters, including climate. They also help to develop and monitor climate performance objectives for the Company and provide direction to the Executive ESG & Strategic Issues Committee.
- **The Executive ESG & Strategic Issues Committee** provides executive-level oversight of external disclosures for material ESG- and climate-related matters and the support and direction of any required strategic, process or resource requirements related to these disclosures.

For more information on Nutrien's Governance, please see the [Governance of ESG Risks section](#).

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- TCFD Governance a) b)

Nutrien TCFD Disclosures (continued)

Identification and Assessment of Climate-Related Risks

Risk management is an integral part of Nutrien's activities and decision-making processes and is integrated into the structure, operations and processes of the organization.

Roles and Responsibilities

We identify and assess climate-related risks using our global risk management framework, which requires the identification, assessment and monitoring of risks to be embedded in business activities across the organization and updated at least annually. These risks are reviewed by operating segment executives and senior leadership for completeness. Our Executive ESG & Strategic Issues Committee, ESG & Strategic Issues Cross-Functional Working Group and ERM teams are involved in the escalation of climate-related risks and opportunities to our ELT and the Board.

Risk Identification

Our identification and assessment of climate-related risks is an integrated process that includes critical input from our enterprise risk assessment process, subject matter experts, specialized working groups and our ESG material topic analysis, which brings in critical perspective and information on stakeholder expectations and external context related to climate matters. For completeness, we also cross-reference our identified risks with SASB Standards for Chemicals and Metals and Mining, along with TCFD recommendations.

Our ESG material topic analysis accounts for climate-related risks and the potential impacts of those risks as perceived by our stakeholders through megatrends research, global stakeholder reputation surveys, materiality frameworks, digital stakeholder monitoring and climate research. We consider potential transition and physical risks and impacts associated with climate change across a wide spectrum of environmental, meteorological, human health, societal and financial domains.

Risk Assessment

We characterize a significant risk as a risk or combination of risks that could threaten the achievement of our vision, business model,

future performance or ability to deliver on our strategy. Risks are assessed using our common enterprise risk methodology based on their likelihood or probability of impacting our business and the potential severity of impact. Our assessment criteria are embedded in our global risk management framework allowing comparability to other non-climate-related risks.

Criteria includes financial, reputational, and safety, health, and environmental impacts:

- **For financial impacts**, adjusted earnings before interest, taxes, depreciation and amortization ("EBITDA") is used as a key quantifiable indicator. Financial impact may be assessed at the corporate level and/or at the individual segment level, depending on the nature of the climate-related risk.
- **Reputation impacts** are based on a number of factors with the key drivers being stakeholder or media attention/concern, legal concerns, effect on corporate value and potential credit rating impacts.
- **SHE impacts** are based on the potential for safety or health impacts to our employees or communities and/or the potential impact to the environment.

As climate change can pose unique and longer-term risks to our business, we also assess physical and transitional climate-related risks by building climate models and using scenarios to understand potential financial impacts, better insight on time horizons and possible pathways from the outcomes. We create specialized working groups and leverage knowledge from subject matter experts to provide expertise and review when assessing climate-related risks and developing scenarios. Additionally, when assessing physical climate risks, we look at the exposure and vulnerability from weather variability and climate factors and assess how future climate change could impact our sites.

An overall risk assessment is determined for each risk in accordance with our enterprise risk framework, prioritized using a risk matrix, and managed by the organization accordingly.

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- TCFD Risk Management a) b) c)

Nutrien TCFD Disclosures *continued*)

Climate-Related Scenarios

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- TCFD Strategy c)

We continued progress on a multi-year analysis of how different hypothetical climate scenarios may impact our Company. We anticipate using climate-related scenarios to explore and develop an understanding of the potential range of implications for Nutrien,

and as a potential tool for the assessment of risks and opportunities on several dimensions. The scenarios are not intended to be used as forecasts or predictions.

	TRANSITION SCENARIOS	PHYSICAL SCENARIOS
Scenario Models	International Energy Agency (“IEA”) Scenarios: <ul style="list-style-type: none"> • Announced Pledges Scenario (“APS”) • Sustainable Development Scenario (“SDS”) • Net Zero Emissions (“NZE”) by 2050 	The Intergovernmental Panel on Climate Change (“IPCC”) Sixth Assessment Report (AR6): <ul style="list-style-type: none"> • SSP 1-2.6 • SSP 5-8.5 • SSP 2-4.5 A combination of IPCC AR6 scenarios may be best suited for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty
Time Horizons	Impact models cover the time horizon over the next 30 years to 2050	Scenario models are focused primarily between 2030- and 2050-time horizons as these relate to key milestones for global emissions reductions
Potential Key Inputs	<ul style="list-style-type: none"> • Key internal inputs include production estimates, emissions factors and discount rates • External inputs include carbon prices and CO₂ emissions assumptions based on the IEA’s 2021 World Energy Outlook 	<ul style="list-style-type: none"> • Key internal inputs include our global operational footprint, grower regional locations, historical sales, acreage and yield data • External inputs include historical and projected acres data, inflation rates and the latest IPCC climate datasets covering flood depth, extreme wind, extreme rainfall, wildfire, drought, hail and thunderstorm, heat and cold hazards
Key Areas of Our Organization to Be Considered	<ul style="list-style-type: none"> • Nitrogen, Potash and Phosphate operating segments, which account for most of our Scope 1 and 2 GHG emissions profile • Retail growers as nitrogen fertilizer application accounts for a significant portion of Scope 3 GHG emissions 	<ul style="list-style-type: none"> • Nutrien Ag Solutions with its direct connection to grower customers • Wholesale production operations and key transportation, storage and distribution sites
Potential Climate-Related Risks and Opportunities	<ul style="list-style-type: none"> • Carbon pricing mechanisms • Growers expected to reduce emissions • New technologies or products risk • New strategies and technologies to reduce GHG emissions • New markets for ammonia • Helping growers reduce emissions from agriculture 	<ul style="list-style-type: none"> • Physical risk to growers • Physical risks to our supply chain and TD&L network • Helping growers deal with chronic impacts of climate change

Nutrien TCFD Disclosures (continued)

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- TCFD Strategy a) b)

Climate-Related Risks and Opportunities

In 2022, we continued to examine our list of current and emerging climate-related risks and opportunities. These risks were identified over various time frames and will be monitored, evaluated and updated as necessary. For our time horizons, short-term timelines are up to three years, medium-term timelines are three to 10 years and long-term timelines are 10 to 30 years from today. These time horizons are representative of timelines associated with our short-term climate-related targets, our medium-term 2030

commitments on emissions reductions and discussions for longer-term 2050 climate-related strategies.

The list below captures our top climate-related risks and opportunities but is not a complete list of all possible issues. A listing of all our significant risk factors, including climate-related risks, can be found in our [2022 Annual Information Form](#).

Transition-Related Risks				
1 Carbon pricing mechanisms	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Current: Short-term	Virtually certain	Increased costs, capital expenditures or emissions limits	Low
	Emerging: Medium-term	More likely than not		Medium to High
What is the risk?	<p>Current: Our Canadian manufacturing facilities located in the provinces of Alberta and Saskatchewan are subject to a variety of federal and provincial requirements to reduce GHG emissions ranging from carbon taxes to emissions intensity reduction requirements.</p> <p>Emerging: Changes in regulations in the countries or jurisdictions where we operate, such as the implementation of new carbon taxes, increases in existing carbon pricing, or the establishment of absolute emissions limits, could negatively impact our business.</p> <p>Current and emerging emissions regulations may impact our operations by:</p> <ul style="list-style-type: none"> • requiring changes to our production processes; • increasing raw material, energy, production or transportation costs; • additional costs in the form of taxes, emission allowances or other carbon pricing mechanisms; or • increased input costs and compliance-related costs for agricultural customers. 			
What are we doing about it?	<p>Existing: We attempt to minimize our Canadian compliance costs through the implementation of various efficiency and emissions reduction projects, including cogeneration at our Carseland, AB Nitrogen facility and at our Cory, SK Potash mine and carbon capture, utilization and storage ("CCUS"). We supply CO₂ from the Redwater, AB Nitrogen facility to the Alberta Carbon Trunk Line.</p> <p>Emerging: We are working to reduce Scope 1 and 2 GHG emissions intensity at our operations. Key initiatives include N₂O abatement technologies, energy efficiency improvements, expanding our use of CCUS technology, renewable energy options and low-carbon and clean ammonia development. For more information refer to "Our Actions to Reduce GHG Emissions" on page 38 of this report.</p>			
2 Expectations to reduce emissions from fertilizer use	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	Medium-term	More likely than not	Reduced demand for our current offerings	Medium
What is the risk?	<p>The world is transitioning to lower-carbon options for consumer products, including food. Consumer and societal expectations are high for growers to drastically reduce emissions from agriculture. Meeting these expectations could increase costs for our growers and for our Company. Failure to meet these expectations can negatively impact the reputation of our Company and our customers. Government mechanisms intended to support decarbonization goals might put additional pressure on growers or our industry.</p>			

Transition-Related Risks continued...

What are we doing about it? Nutrien is partnering with growers, value-chain stakeholders, governments and NGOs to support the advancement of a carbon market for the agricultural industry. Growers have the ability, through the use of best practices, to increase and maintain soil organic matter levels and optimize the application and efficiency of nitrogen fertilizer to reduce GHG emissions and sequester carbon with verifiable outcomes. Nutrien’s carbon-focused solutions are positioned to help growers implement these best practices and measure outcomes, which could be verified or certified by third parties and could create a new source of income for growers. For more information read more about our [Carbon Program](#).

3 New technologies or products that could displace current Nutrien products or services	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Medium-term	About as likely as not	Reduced demand for current offerings	Medium

What is the risk? The advancement and adoption of technology and digital innovations in agriculture and across the value chain has increased and is expected to further accelerate as grower demographics shift and pressures from consumer preferences, governments and climate change initiatives evolve. The development of seed traits, biological products and/or advancements in precision agriculture that materially improve nutrient use efficiency has the potential to adversely affect the demand for fertilizer.

What are we doing about it? Our Nutrien Ag Solutions business is focused on providing the agronomic solutions to growers to enhance sustainable productivity and profitability and will adapt to the changing technological landscape. We also have a low-cost fertilizer production base with a diversified product portfolio including enhanced efficiency fertilizers and non-agricultural products. Key initiatives include:

- **Research and development:** Nutrien’s R&D programs are designed to provide science-based solutions to the agronomic challenges that agriculture and our growers face. Our R&D teams focus on innovative solutions for nutrient use efficiency, crop quality, sustainability and yield enhancement.
- **Digital solutions:** Our digital solutions combine location, agronomic information, environmental data, weather forecasting, and data science to make field-specific recommendations for growers. They also enhance data traceability and connectivity to leading agricultural, food and consumer products companies that want to measure the environmental impact of agriculture in their supply chains. We intend for our digital tools to be instrumental in maintaining soil data related to carbon sequestration and providing growers the required documentation for carbon credit markets.

Physical Risks

1 Physical risk to growers due to chronic changes in precipitation patterns and variability in weather patterns	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Long-term	Likely	Reduced demand or margins	Medium

What is the risk? Our grower customers are impacted by changing regional weather factors, primarily increasing temperatures and volatile precipitation. Chronic changes in regional weather may affect the availability and suitability of arable land, including crop quality and soil health. They could also contribute to loss of biodiversity and unpredictable shifts in the average growing season, types of crops produced and/or crop yields. Individually or together, these impacts could affect the long-term demand for our products and services.

What are we doing about it?

- **Weather analytics:** Through atmospheric science, we are able to provide new perspectives for growers and crop consultants throughout the agriculture cycle to help manage weather risk.
- **Whole-acre solutions:** Our whole-acre solutions and continued investment in technology can help improve soil health, increase soil organic carbon sequestration, optimize nutrient-use efficiency, reduce GHG emissions, improve water quality and retain water while conserving and restoring biodiversity. See [page 21](#) for more information on Nutrien’s whole-acre solutions.
- **Financial flexibility:** We currently offer flexible financing solutions to our US, Canada, Brazil and Australia customers in support of Nutrien Ag Solutions agricultural product and service sales, and provide grower credit through Nutrien Financial. Financing is often a key enabler to broad adoption of sustainable agricultural practices. These offerings can help growers endure difficult years and unanticipated climate-related events.

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- TCFD Strategy a) b)

Physical Risks continued...

2 Physical risks to supply chain and transportation, distribution and logistics network	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Medium- to long-term	More likely than not	Inability to get inputs or deliver products timely or cost effectively	Medium-low

What is the risk? Extreme weather events can strain our upstream or downstream supply chains and disrupt our distribution and logistics network of railcars, marine vessels and trucks, and therefore our connection between our Potash, Nitrogen and Phosphate businesses with our customers and/or Nutrien Ag Solutions network.

What are we doing about it? We have contingencies in place to ensure we can continue production if our key suppliers experience disruptions due to extreme weather. We mitigate this risk by ensuring we have multiple suppliers in different locations for critical feedstocks and by using our diverse retail distribution network and expansive fertilizer terminal network to effectively manage product logistic challenges.

Transition-Related Opportunities

1 New strategies and technologies to reduce our Scope 1 and Scope 2 GHG emissions	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Medium-term	Likely	Reduced emissions, carbon taxes and operating costs	Medium

What is the opportunity? The energy transition is accelerating the development of technologies that can support our GHG emissions reduction efforts. Market-driven advancements and government incentives are helping these technologies become more accessible and achieve faster commercialization. Nutrien can take advantage of a variety of programs and/or technologies that are available and under development to reduce our Scope 1 and 2 emissions.

What are we doing about it?

- **Carbon capture:** CCUS provides a significant opportunity for reducing GHG emissions from our manufacturing facilities. Nutrien participates in two carbon capture projects at our Redwater, AB and Geismar, LA facilities and we are evaluating future opportunities.
- **Nitrous oxide (N₂O) abatement:** We are implementing N₂O abatement technologies that could remove more than 90 percent of N₂O emissions from nitric acid production. We expect the use of N₂O abatement technologies to be instrumental in achieving our target reduction of one million tonnes of CO₂e by the end of 2023. Because N₂O has a global warming potential of 298 times that of CO₂, reductions in N₂O have an outsized positive impact in overall GHG emissions reductions.
- **Renewable energy:** Incorporating renewable energy sources into our production process can help reduce our Scope 2 emissions. We are exploring self-generated wind and solar energy projects; long-term Power Purchase Agreements (“PPAs”) with third parties to either directly or virtually supply lower- or non-emission renewable sources of energy; and purchase of emissions offset credits or Renewable Electricity Certificates (“RECs”).

2 Low-carbon and clean ammonia opportunities	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Long-term	More likely than not	Decreased costs, new markets	Medium-high

What is the opportunity? The development and use of both low-carbon and clean ammonia has the potential to reduce the carbon intensity of our fertilizer production and provide other opportunities including ammonia for industrial use, clean fuel for marine shipping, displacing coal in power generation and ammonia as a hydrogen carrier.

What are we doing about it? We continue to explore opportunities for the responsible development of low-carbon ammonia and derivative fertilizers. Current initiatives include evaluating the possible construction of a new clean ammonia facility and continued collaboration with EXMAR to develop and build a low-carbon ammonia powered vessel, which could help support wider adoption of low-carbon ammonia fuel for the maritime industry.

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Transition-Related Opportunities

3 Helping growers reduce emissions from agriculture	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Medium-term	Likely	Increased demand, new revenue sources; reduced Scope 3 emissions	Medium
What is the opportunity?	Reducing our growers' carbon footprint from the agricultural products we manufacture and provide can help manage the increasing environmental and societal pressures we all face. We can offer growers products and services and promote sustainability programs that can facilitate the wider adoption of sustainable agronomic best practices and improve environmental outcomes, while supporting soil health, crop production and yields.			
What are we doing about it?	<ul style="list-style-type: none"> • Carbon program: Nutrien is partnering with growers, value-chain stakeholders, governments and NGOs to scale a Carbon Program that is designed to support the advancement of a carbon market for the agricultural industry through soil organic carbon sequestration and reduced GHG emissions. • Advanced plant nutrition: We develop enhanced nutritional products for growers that also improve environmental performance. We provide nitrogen inhibitors and stabilizers and Environmentally Smart Nitrogen® that help minimize nitrogen loss to the environment and associated GHG emissions. We also sell advanced naturally derived products (such as C₂ Technology and biocatalysts) that enhance soil and plant function via increased nutrient availability. • Precision agriculture and nutrient management: We provide digital precision agriculture services to our grower customers that include specific variable rate recommendations to help improve yields and soil health, while reducing nutrient loss to the environment. We provide advice to growers that is aligned with the 4R Nutrient Stewardship System in North America and Fertcare® in Australia. 			

Physical Opportunities

1 Helping growers deal with chronic impacts of climate change	Time horizon	Likelihood of the impact	Primary impact	Magnitude of impact
	Medium- to long-term	Very likely	Increased demand or margins for products and services	Medium
What is the opportunity?	As weather patterns change, the ideal window of time to seed a crop and apply fertilizer can become more variable, making the selection of seed or other crop inputs especially important. Chronic impacts from climate change may also affect the availability and suitability of arable land, including crop quality and soil health, shifts in the average growing season and types of crops produced. Through specialized product development and our data-based, expert-provided service offerings, we can help growers use the right product at the right time and are positioned to adapt our offerings as growers adapt to impacts from climate change.			
What are we doing about it?	<p>Leveraging soil sampling to improve soil health: We provide growers with extensive soil sampling services via Waypoint Analytical and we combine the results with expertise in atmospheric science and agronomy to understand impacts of crop production and soil health to deliver actionable decision support for growers. Through improved soil health, we believe we can enable climate resilient crop production with reduced environmental burden.</p> <p>Optimizing our seed portfolio and Research & Development: Through our internal breeding program along with major R&D partners, we have access to the latest germplasm, trait technology and performance data across major row crops. Combining access to this product technology with our environmental data assets allows us to make recommendations for all growers' fields that optimize agronomic, economic and environmental decision making.</p> <p>Improving our understanding of atmospheric science: By investing in agricultural-focused atmospheric science, we are able to provide new perspectives for growers and crop consultants throughout the agriculture cycle. Understanding historic weather on a field provides a probabilistic approach to crop planning, while in-season local weather forecasts help optimize field logistics and create real-time alerts for weather hazards. Our global short-term and long-term forecasts help growers understand agriculture markets to better plan commodity marketing strategies.</p>			

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- TCFD Strategy a) b)

Nutrien TCFD Disclosures
(continued)

Climate-Related Metric and Targets

We continue to enhance our understanding of climate-related risks and opportunities in the development of our ESG targets.

The table below summarizes our commitments and targets that measure our progress in reducing transition risks or physical risks (for example, water scarcity) as well as how we are taking advantage of transition-related opportunities.

Emission Commitments and Targets		Read more
Achieve at least a 30 percent reduction in GHG emissions intensity (Scope 1 and 2) per tonne of our products produced, by 2030		Page 7
Reduce GHG emissions in nitrogen production by one million tonnes CO ₂ e by the end of 2023 ¹		Page 9
Deploy self-generated wind and/or solar energy at four Potash facilities by the end of 2025		Page 9
Commitments and Targets associated with climate-related risks and opportunities		
Enable growers to adopt sustainable and productive agricultural products and practices on 75 million acres globally, by 2030		Page 6
Launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration, while rewarding growers for their efforts, by 2030		Page 6
Invest in new technologies and pursue the transition to low-carbon fertilizers, including low-carbon and clean ammonia, by 2030		Page 7

¹ On an intensity basis vs 2018 baseline emissions intensity.

Historical GHG emissions data			
Year	Scope 1 (million tonnes CO ₂ e)	Scope 2 (million tonnes CO ₂ e)	Scope 1 and 2 (million tonnes CO ₂ e)
2022	10.27	2.49	12.76
2021	11.05	2.70	13.75
2020	10.43	2.74	13.17
2019	10.40	2.85	13.25
2018	11.19	3.05	14.24

Scope 3 GHG Emissions

We continue to advance our climate strategy. Greater reporting and transparency are required from participants across the agricultural supply chain, and by quantifying Nutrien’s Scope 3 GHG emissions, we are building a greater understanding of our broader climate change impacts. Improved understanding is expected to enable collaboration and effective decision making that drives beneficial change.

In 2022, we engaged an external advisor and established both a cross-functional project team and a steering committee to develop a

Scope 3 GHG emissions data collection, quantification and reporting process. Building on the initial assessment completed in 2019, we conducted a GHG Protocol-aligned screening assessment that identified nine of 15 Scope 3 categories as being potentially material and requiring further evaluation. We are currently developing GHG Protocol-aligned methodologies to quantify each material category based on the expected availability and quality of internal and external data, and we plan to start the data collection and quantification process in 2023. [Read more.](#)

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- TCFD Metrics and Targets a) b) c)



Additional Content

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About This Report

This report is dated March 7, 2023, and focuses on Nutrien's material ESG topics, performance and key initiatives for 2022.

- Performance for the year ended December 31, 2022 is included, unless otherwise noted, for Nutrien Ltd., and our subsidiaries. Any exceptions are explicitly noted with the relevant data. When available, historical data is provided for comparison.
- For any asset we acquire, environmental, safety and community performance data are first provided for the year after acquisition to enable full integration of data systems.
- We continually strive to better define performance indicators and improve our measurement systems. Any reporting limitations and exceptions are noted with the data.
- Financial data in this report is stated in US dollars, unless otherwise stated, and product and environmental data are stated in metric units. Please refer to our [2022 Annual Report](#) for more details on our financial performance.
- References to Nutrien, our, we or the Company mean Nutrien Ltd., and its subsidiaries, unless the context indicates otherwise.
- Please see the cautionary statement on forward-looking information on [page 118](#).
- Materiality is used in a sustainability context for this report and refers to our ESG priorities determined with input from our stakeholders and is different than how we address materiality for disclosure requirements under securities laws or accounting standards.
- Non-financial data subtotals may not add to total figures due to rounding.

Terms and Measures

Scientific Terms

KCl	potassium chloride
P ₂ O ₅	diphosphorus pentoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CH ₄	methane
N ₂ O	nitrous oxide
CO	carbon monoxide
NOx	nitrogen oxides
SOx	sulfur oxides
PM ₁₀	particulate matter that is 10 micrograms per cubic meter or less in diameter
VOCs	volatile organic compounds
NH ₃	ammonia (anhydrous)
GHG	greenhouse gas
Scope 1	direct greenhouse gas emissions produced by Nutrien owned or controlled facilities
Scope 2	greenhouse gas emissions resulting from the generation of purchased or acquired electricity, heating, cooling and steam consumed by Nutrien owned or controlled facilities
Scope 3	indirect greenhouse gas emissions not included in Scope 1 or Scope 2 emissions occurring as a consequence of the activities of Nutrien, from sources not owned or controlled by Nutrien, including both upstream and downstream emissions
Low-carbon ammonia	ammonia made with direct GHG emissions typically reduced by approximately 60% but up to 80%, produced primarily utilizing carbon capture, utilization and storage ("CCUS") or other low-emission production technologies; this definition does not include end product use
Clean ammonia	ammonia made with direct GHG emissions reduced by at least 90%, produced from hydrogen obtained using the next generation of ammonia production technology such as autothermal reforming or water electrolysis with renewable power; this definition does not include end product use

Product Terms and Measures

tonne, mt	metric tonne
Mmt	million metric tonnes
gigajoule	one billion joules
terajoule	one trillion joules
petajoule	one quadrillion joules
MAP	monoammonium phosphate
UAN	urea ammonium nitrate solution
CAD	Canadian dollar
AUD	Australian dollar
USD	United States dollar

Performance Table

Environmental	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Emissions								
GHG – Total Scope 1 Direct	million tonnes CO ₂ e	10.27	11.05	10.43	10.40	11.19	Direct (Scope 1) emissions occur from sources such as combustion in owned or controlled facilities or fleet or emissions from chemical production. We apply the operational control approach to define our organizational boundary. Emissions are quantified in accordance with requirements in applicable regulatory quantification and reporting programs, including the Alberta Technology Innovation and Emissions Reduction (“TIER”) Regulation, the Canada Greenhouse Gas Reporting Program (“GHGRP”) and US EPA 40 CFR Part 98 Mandatory Greenhouse Gas Reporting. Emission quantification for facilities not under a regulatory reporting scheme follow similar quantification protocols. Reported emissions include CO ₂ , CH ₄ and N ₂ O. Emissions exclude CO ₂ produced in the ammonia production process and subsequently captured and used to produce urea or transferred to a third party. Global Warming Potentials used are from the Intergovernmental Panel on Climate Change (“IPCC”) Fourth Assessment Report (AR4). Our inventory excludes nitrogen trifluoride (NF ₃), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF ₆) as they are immaterial to Nutrien’s operations. To understand Nutrien’s calculation methodology for reported Scope 1 and 2 GHG emissions, please see our GHG Inventory Management Plan . Reported emission intensities have been re-calculated to integrate previously segregated “Specialty” and “TD&L” facilities into the Nutrien Ag Solutions, Nitrogen, Potash and Phosphate operating segments.	RT-CH-110a.1 EM-MM-110a.1
GHG – Scope 1 Direct by type	million tonnes CO ₂	9.40	9.48	9.11	9.30	9.99		
	thousand tonnes CH ₄	5.78	4.93	2.67	4.94	2.82		
	thousand tonnes N ₂ O	2.44	4.85	4.20	3.30	3.80		
GHG Intensity – Scope 1 (company-wide)	tonnes CO ₂ e per tonne product (weighted average)	0.51	0.52	0.52	0.53	0.53		
Potash GHG Intensity – Scope 1	tonnes CO ₂ e per tonne KCl produced	0.04	0.04	0.04	0.04	0.04		
Nitrogen GHG Intensity – Scope 1	tonnes CO ₂ e per tonne NH ₃ produced	1.52	1.58	1.48	1.45	1.53		
Phosphate GHG Intensity – Scope 1	tonnes CO ₂ e per tonne P ₂ O ₅ produced	0.48	0.47	0.47	0.43	0.35		
Scope 1 Emissions Covered Under Emissions-Limiting Regulations	percent	28	26	27	27	NPR	RT-CH-110a.1 EM-MM-110a.1	
GHG – Scope 2 Energy Indirect	million tonnes CO ₂ e	2.49	2.70	2.74	2.85	3.05	Indirect (Scope 2) emissions relate to emissions from the generation of purchased electricity, heat or steam. We apply the operational control approach to define our organizational boundary. Scope 2 emissions reported are location-based emissions. Emission factors for imported electricity are region-specific as published in the most recent Canadian National Inventory Report (“NIR”), the US EPA Emissions & Generation Resource Integrated Database (“eGRID”), and other country or regional published grid averaged emission factors. Emission calculations include CO ₂ , CH ₄ and N ₂ O. Global Warming Potentials used are from the IPCC Fourth Assessment Report (AR4). To understand Nutrien’s calculation methodology for reported Scope 1 and 2 GHG emissions, please see our GHG Inventory Management Plan .	
GHG Intensity – Scope 2 (company-wide)	tonnes CO ₂ e per tonne product (weighted average)	0.12	0.13	0.14	0.15	0.14		
CO ₂ Captured and Sold	million tonnes CO ₂ e	1.1	1.1	1.0	1.2	1.1	At some Nitrogen facilities, a portion of the industrial process CO ₂ generated in ammonia manufacturing is captured and exported for commercial application (methanol production, industrial gas products or enhanced oil recovery). The CO ₂ captured and sold is net against Scope 1 process emissions.	
Criteria Air Contaminants:							Includes CO, NOx, SO ₂ , particulates and VOCs as required by the Canadian National Pollutant Release Inventory.	
Carbon monoxide	thousand tonnes	7.9	8.3	6.6	8.6	8.0	EM-MM-120a.1	
Oxides of nitrogen	thousand tonnes	7.4	7.8	7.4	7.7	8.8	RT-CH-120a.1 EM-MM-120a.1	
Sulfur dioxide	thousand tonnes	3.4	3.8	3.6	3.4	6.9	Sulfur dioxide emissions declined following 2018 due to production changes at our Redwater, AB facility that shut down one of the two sulfuric acid production units in 2019. RT-CH-120a.1 EM-MM-120a.1	
Total particulate matter	thousand tonnes	7.3	7.4	7.7	7.0	8.3	EM-MM-120a.1	
Volatile organic compounds	thousand tonnes	2.0	2.0	2.2	1.5	1.6	RT-CH-120a.1 EM-MM-120a.1	

Environmental (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Other Air Emissions	thousand tonnes	9.1	9.7	10.1	10.2	11.7	Includes air emissions reported to the National Pollutant Release Inventory ("NPRI") or Toxic Release Inventory ("TRI"), that are not considered Criteria Air Contaminants ("CACs") or Hazardous Air Pollutants ("HAPs") including ammonia, nitric acid and sulfuric acid. Emissions are determined for each emission source at each manufacturing facility using either source emission tests, published emission factors or engineering estimates. In 2018, Hazardous Air Pollutants were included in "Other air emissions."	
Hazardous Air Pollutants	thousand tonnes	1.5	1.6	1.5	1.6	NPR	Includes substances classified as EPA Hazardous Air Pollutants. In 2018, Hazardous Air Pollutants were included in "Other air emissions."	RT-CH-120a.1
Energy								
Total Energy Use	petajoules	273.3	281.1	279.2	283.9	290.7	Includes natural gas, fuel and electricity use at our facilities. The majority of our energy use is from natural gas as feedstock.	RT-CH-130a.1, EM-MM-130a.1
Natural gas consumed as feedstock	petajoules	143.2	146.1	146.0	152.3	156.9		
Fossil fuels consumed	petajoules	110.1	114.3	112.3	111.5	114.1		
Electricity purchased	petajoules	16.3	16.7	16.8	16.2	15.3		
Imported steam	petajoules	3.6	4.0	4.1	4.0	4.4		
Self-generated	petajoules	1.3	1.3	1.3	1.3	1.3	Electricity generated from waste heat in manufacturing operations. The associated energy input used to generate the electricity is included in "Fossil fuels consumed" above.	RT-CH-130a.1
Renewable energy	terajoules	7.3	19.0	0	0	NPR	Renewable energy consumption represents biomass combustion at our Brazil operations.	RT-CH-130a.1, EM-MM-130a.1
Energy Intensity (company-wide)	gigajoules per tonne of product (weighted average)	13.6	13.2	13.9	14.3	13.7		
Water								
Total Water Intake	million m ³	219	233	237	217	208		RT-CH-140a.1
Freshwater Intake, by Source:								EM-MM-140a.1
Groundwater	million m ³	46	55	55	48	33		
Mine dewatering/depressurization	million m ³	52	46	58	47	48		
Surface water	million m ³	64	67	69	59	75		
Industrial/municipal water	million m ³	16	15	15	16	18		
Non-Freshwater Intake, by Source:								
Ocean water	million m ³	40	50	41	47	34		
Water Intake in Regions With High or Extremely High Baseline Water Stress	million m ³	3.1	4.0	4.0	3.4	3.8		RT-CH-140a.1, EM-MM-140a.1
Percentage Water Intake in Regions With High or Extremely High Baseline Water Stress	percent	1.4	1.7	1.7	1.6	1.8		RT-CH-140a.1, EM-MM-140a.1

Environmental (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Total Water Consumed	million m ³	279	298	362	NPR	NPR	We define water consumed as water withdrawn from surface water, groundwater and/or third-party sources that is not discharged back into the environment or to a third party. For larger sites, includes an estimate of precipitation within the organizational boundary. The large surface area of our Phosphate mining operations as well as the relatively high precipitation that falls in these areas result in a high volume of water that requires on-site management. Our water consumption is all freshwater. Reported freshwater consumption intensities for previous years have been re-calculated to use production volumes for ammonia, potash, and phosphate (as P ₂ O ₅) in the intensity calculation denominator. Reported freshwater consumption intensities have been re-calculated to integrate previously segregated "Specialty" and "TD&L" facilities into the Nutrien Ag Solutions, Nitrogen, Potash and Phosphate operating segments.	RT-CH-140a.1, EM-MM-140a.1
Percentage Water Consumed in Regions With High or Extremely High Baseline Water Stress	percent	1.1	1.4	1.1	NPR	NPR		
Freshwater Consumption Intensity – Company-wide	m ³ per tonne product (weighted average)	13.9	13.9	18.0	NPR	NPR		
Potash freshwater consumption intensity	m ³ per tonne KCl produced	0.4	0.6	0.7	NPR	NPR		
Nitrogen freshwater consumption intensity	m ³ per tonne NH ₃ produced	5.5	5.5	5.9	NPR	NPR		
Phosphate freshwater consumption intensity	m ³ per tonne P ₂ O ₅ produced	180	168	219	NPR	NPR		
Total Water Discharge, by Destination	million m ³	199	279	249	224	262		
Surface water	million m ³	198	278	248	223	261		
Municipal treatment	million m ³	1	1	1	1	1		
Effluents and Waste								
Discharges to On-Site Disposal Wells	million m ³	22	15	18	15	15		
Total Non-Hazardous Waste:								
Mining waste or byproducts disposed	million tonnes	27	29	27	26	31	Includes potash mining tailings and phosphogypsum.	EM-MM-150a.1 EM-MM-150a.2
Non-mining waste disposed	thousand tonnes	97	113	119	123	90		
Hazardous Waste Disposed	thousand tonnes	3	7	4	7	5		RT-CH-150a.1
Recycled Materials	thousand tonnes	35	38	28	35	39	Includes hazardous and non-hazardous materials.	
Environmental Incidents								
Total Environmental Incidents	count	35	24	23	24	20		
Reportable quantity releases	count	35	22	20	22	18	Includes release quantities that exceed the US Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") thresholds and, in Potash, any release in exceedance of the Saskatchewan Environmental Code.	RT-CH-140a.2 EM-MM-140a.2
Water-related reportable quantity releases (included in reportable quantity releases above)	count	0	0	0	1	NPR		
Non-compliances	count	0	0	0	0	1	Includes non-compliance incidents that exceed \$10,000 in capital and/or non-manpower fixed costs to prevent, correct or mitigate the non-compliance incident.	
Enforcement actions	count	0	2	3	2	1	Includes enforcement actions with monetary fines exceeding \$1,000.	RT-CH-140a.2 EM-MM-140a.2
Water-related enforcement actions (included in enforcement actions above)	count	0	0	2	0	NPR		
Environmental Incident Frequency	per 200,000 hours worked (employee + contractor)	0.09	0.07	0.07	0.07	0.07	Includes the total of Environmental Incidents (Reportable Quantity Releases, Non-compliances, and Enforcement Actions) multiplied by 200,000 hours worked per total actual hours worked by employees and contractors.	

Environmental (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Non-Accidental Ammonia Releases Rate	releases per thousand railcar movements	0.04	0.00	0.00	0.00	0.07	Includes the unintentional release of ammonia while in transit, including loading and dispensing of the product, which is not caused by a derailment, collision or other rail-related accident.	
Environmental Fines and Penalties	\$ thousand	1,682	743	142	176	441	Amounts settled in a particular year often relate to activities in prior years.	
Environmental Remediation Liabilities	\$ million	449	505	550	544	534	Calculated on a discounted basis.	
Internal SHE Audits	count	674	695	667	655	27	Increase following 2018 is due to the scope of corporate auditing expanding to include the Nutrien Ag Solutions operating segment.	
Social								
Workplace								
Total Employees	count	26,800	25,600	25,600	22,540	22,060	Includes full-time and part-time permanent, temporary and casual employees as of December 31.	
Permanent employees	count	24,700	23,500	23,100	22,300	20,300		
Temporary and casual employees	count	2,100	2,100	2,500	240	1,760		
Permanent Employees by Region:	count						Previous years are restated to align with other reporting.	
North America	count	18,750	18,050	18,000	17,700	17,750		
South America	count	2,800	2,450	2,000	1,200	950	Includes Trinidad and Tobago.	
Australia	count	3,100	2,950	3,050	3,350	1,550		
Europe	count	50	50	50	50	50		
Total Employee Turnover Rate	percent	12	15	13	13	14	The number of permanent employees who left the Company due to voluntary and involuntary terminations, including retirements and deaths, as a percentage of average permanent employees for the year.	
Voluntary employee turnover rate	percent	9	12	9	9	9	The number of permanent employees who left the Company due to voluntary terminations as a percentage of average permanent employees for the year. Includes voluntary retirements and resignations.	
Involuntary employee turnover rate	percent	3	4	4	4	5		
Employee Learning and Development:								
Average learning and development spend	\$ per employee	838	517	380	435	300	Fluctuations in spend due to proportional changes in internal and external training during and post-COVID-19 pandemic, along with increased vendor costs in 2022. 2022 to 2019 data includes all operating segments globally, while 2018 data is limited to North American Nutrien Ag Solutions and manufacturing. Figures based on permanent employee count.	
Average hours of training	hours per employee	22	32	26	18	NPR	Increase in 2021 and 2020 is due to more internal virtual training and expanded reporting by Nutrien Ag Solutions. Figures based on permanent employee count.	
Employee Engagement	percent	N/A	N/A	89	N/A	N/A	In 2020, represents the average response to five engagement questions. The participation rate was 48%.	
Total Employees Covered by Collective Bargaining Agreements	percent	20.5	20.1	19.3	16.7	16.5	Based on permanent full-time and part-time employees as of December 31.	EM-MM-310a.1
Employees represented by third-party trade unions	percent	16.1	15.9	15.4	NPR	NPR	Based on North American permanent full-time and part-time employees as of December 31. Includes employees represented by a formal third-party organization authorized to act on behalf of employees regarding wages and other working conditions of employment.	EM-MM-310a.1
Employees represented by another form of collective bargaining (not involving third-party trade unions)	percent	34.4	34.3	34.5	NPR	NPR	Based on non-North American permanent full-time and part-time employees as of December 31. Includes employees covered by a representative body or work council to negotiate wages and/or working conditions that are legally binding agreements between the employer and employees.	EM-MM-310a.1

Social (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Diversity								
Women at Various Levels:		Based on permanent full-time and part-time employees as of December 31.						
Board	percent	33	36	36	33	33		
Vice President and above	percent	21	23	25	25	19		
Director and above	percent	21	21	19	15	17		
Non-senior leaders	percent	14	15	15	16	10	Scope of reporting is North America and Trinidad and Tobago only.	
All management	percent	13	16	14	14	11	Scope of reporting is North America and Trinidad and Tobago only.	
All employees	percent	21	20	20	19	17		
Permanent Employee Age Profile:		Based on permanent full-time and part-time employees as of December 31.						
Under 25	percent	7	5	5	5	6		
25–34	percent	24	23	23	22	21		
35–44	percent	25	25	25	24	23		
45–54	percent	22	22	22	23	22		
55–64	percent	18	19	20	21	22		
Over 65	percent	4	4	5	5	6		
Safety								
Total Recordable Injury Frequency	incidents * 200,000 hours / total actual hours worked	1.16	1.11	1.13	1.29	1.38		RT-CH-320a.1
Employee Recordable Injury Frequency	incidents * 200,000 hours / total actual hours worked	1.30	1.25	1.30	1.46	1.62		
Contractor Recordable Injury Frequency	incidents * 200,000 hours / total actual hours worked	0.64	0.57	0.41	0.69	0.49		
Total Lost Time Injury Frequency	incidents * 200,000 hours / total actual hours worked	0.24	0.27	0.26	0.31	0.37		
Employee Lost Time Injury Frequency	incidents * 200,000 hours / total actual hours worked	0.26	0.31	0.30	0.38	0.44		
Contractor Lost Time Injury Frequency	incidents * 200,000 hours / total actual hours worked	0.14	0.11	0.09	0.07	0.08		
Employee Lost Time Days Rate	Lost-time days * 200,000 hours / actual hours worked	7.60	7.14	7.66	12.72	10.46	Rates may change as the number of days lost can be incurred outside of the calendar year.	
Serious Injury and Fatality Incidents (employee and contractor)	count	5	0	1	1	2		
Employee Fatalities	count	0	0	0	1	0		RT-CH-320a.1, EM-MM-320a.1
Contractor Fatalities	count	0	0	0	0	0		RT-CH-320a.1, EM-MM-320a.1

Social (continued)		Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Tier 1 Process Safety Incidents	count		9	3	9	6	NPR	Includes Tier 1 process safety events (that is, loss of primary containment with the greatest consequence) as described in the American Petroleum Institute Recommended Practice 754. 2020 incidents include Nutrien Ag Solutions US, Nitrogen and Phosphate, while 2019 incidents include only Nitrogen and Phosphate.	RT-CH-540a.1
Tier 2 Process Safety Incidents	count		11	25	24	23	NPR	Includes Tier 2 process safety events (that is, loss of primary containment with moderate consequence) as described in the American Petroleum Institute Recommended Practice 754. 2020 incidents include Nutrien Ag Solutions US, Nitrogen and Phosphate, while 2019 incidents include only Nitrogen and Phosphate.	RT-CH-540a.1
Tier 1 Process Safety Total Incident Rate	incidents ÷ 200,000 hours/total actual hours worked		0.04	0.01	0.04	0.07	NPR	The 2019 rate includes Nitrogen and Phosphate exposure hours while 2020, 2021 and 2022 includes exposure hours for Nutrien Ag Solutions (North America), Nitrogen and Phosphate.	RT-CH-540a.1
Tier 2 Process Safety Total Incident Rate	incidents ÷ 200,000 hours/total actual hours worked		0.05	0.12	0.12	0.27	NPR		
Stewardship of Chemicals									
Percentage of products by revenue that contain Globally Harmonized System of Classification and Labeling of Chemicals ("GHS") Category 1 and 2 Health and Environmental Hazardous Substances	percent		32	32	32	33	N/Av.	Includes Nutrien North American manufactured fertilizer-feed-industrial and European distributed fertilizer products. Our fertilizer-feed-industrial Category 1 and 2 products generally fall into the corrosive (acids and ammonia) or irritancy (urea, UAN, nitrate solutions, polyphosphates) categories.	RT-CH-410b.1
Percentage of GHS 1 and 2 products by revenue that have undergone a hazard assessment	percent		64	62	58	59	N/Av.	Includes Nutrien North American manufactured fertilizer-feed-industrial and European distributed fertilizer products.	RT-CH-410b.1
Percentage of products by revenue that contain genetically modified organisms ("GMOs")	percent		5	6	7	7	8	2018 includes only the US and Canada. 2021 is restated to reflect improvements in data collection and increased data granularity.	RT-CH-410c.1
Governance									
Integrity									
Net Production in Countries With High Levels of Corruption Risk	tonnes, saleable		0	0	0	0	0	High levels of corruption risk as determined by Transparency International's Corruption Perception Index (countries in the 20 lowest ranks).	EM-MM-510a.2
Total Compliance Reporting Rate	reports per 100 employees		0.77	0.74	0.67	0.66	0.71		
Total Compliance Reports	count		207	190	172	164	156	Compliance report categories were changed in 2021 to better align with the issue types used for internal reporting. As a result, the number of 2020, 2019 and 2018 reports by category do not sum to the total.	
Business practices	count		20	36	9	6	11		
Discrimination	count		20	14	24	22	21		
Environmental	count		0	0	NPR	NPR	NPR		
Financial matters	count		15	30	12	2	3		
Harassment	count		27	24	25	32	14		
Labor and employment	count		11	12	NPR	NPR	NPR		
Retaliation	count		6	2	NPR	NPR	NPR		
Worker safety and health	count		16	22	NPR	NPR	NPR		

Governance (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Workplace conduct	count	79	46	NPR	NPR	NPR		
Other	count	13	4	14	19	11		
Participants in Anti-Corruption Training:								
Live	count	317	202	390	1,010	580		
Online course	count	97	44	40	130	30		
Online refresher	count	5,028	22,850	3,930	20,770	19,120	In 2022, new hires and return-from-leave employees received a refresher on Anti-Corruption as part of the Code of Conduct training.	
Participants in Fair Competition Training:								
Live	count	394	305	410	610	500		
Online course	count	0	N/A	N/A	N/A	N/A		
Online refresher	count	5,028	22,850	3,930	20,770	NPR	In 2022, new hires and return-from-leave employees received a refresher on Fair Competition as part of the Code of Conduct training.	
Participants in Data Privacy Training:								
Live	count	102	135	39	165	NPR		
Online refresher (as part of Code of Conduct training)	count	25,740	22,850	3,930	20,770	NPR		
Targeted email refresher	count	116	107	105	NPR	NPR		
Cybersecurity								
Tabletop Exercises to Practice Responding to Cybersecurity Events	count	3	2	2	3	1		
Participants in Online Cybersecurity Refresher (as part of Code of Conduct training)	count	25,740	22,850	23,900	20,770	19,120		
Participants in Focused Cybersecurity Training for Higher-Risk Business Areas	count	24,600	8,310	8,750	7,900	6,700		
Cybersecurity Education and Training Sessions Held for Our Community Partners and Stakeholders	count	5	5	NPR	NPR	NPR		

Governance (continued)	Units	2022	2021	2020	2019	2018	Footnote	SASB Ref.
Economic								
Economic Value Generated:							Other value generated is not material (such as earnings of equity accounted and dividends).	
Sales	\$ million	37,884	27,712	20,908	20,084	19,636	Represents revenue from customers and other sources. For 2018, includes \$6,410 million in proceeds from the sale of investments. See Nutrien's 2018 Annual Report, Note 10. Certain immaterial figures have been reclassified for 2019.	
Economic Value Distributed:								
Operating costs	\$ million	24,240	19,426	15,911	15,547	13,355	Represents costs and expenses incurred during the period excluding specific costs presented separately. Includes freight, transportation and distribution, cost of goods sold, selling expenses, general and administrative expenses, additions to property, plant and equipment and intangibles, and other expenses. Excludes depreciation and amortization expense and impairment of assets.	
Wages and benefits	\$ million	2,968	3,007	2,455	2,205	1,949	Includes salaries and wages, employee benefits, and share-based compensation. See the nature of expenses note in our annual report. Certain immaterial figures have been reclassified for 2019. In 2018, wages and benefits include gain on curtailment of defined benefit pension and other post-retirement benefit plans.	
Interest payments, dividends declared and share repurchases	\$ million	6,078	2,764	1,709	3,186	3,663	Includes finance costs, dividends declared and share repurchases on accrual basis.	
Taxes and royalties paid	\$ million	3,917	1,776	286	628	1,614	Includes corporate income, property, sales, excise and production taxes.	
Community investments	\$ million	33	19	18	17	17	Represents cash disbursements, matching of employee gifts and in-kind contributions of equipment, goods and services, and employee volunteerism (on corporate time). In 2022, Nutrien allocated additional funds on a one-time basis to advance our strategic priorities.	
Coverage of Defined Benefit Retirement Obligations	percent	89	87	83	79	79	Calculated on an accounting basis for registered defined benefit pension plans, and other post-employment benefit plans.	
Employees who are active members of defined benefit pension plans	percent	9	14	13	19	22	For North America, the remaining eligible employees can participate in a defined contribution retirement plan.	
Political Donations in Canada	\$ CAD	10,500	11,500	6,000	8,000	14,450		
Political Donations in US	\$ USD	40,250	17,000	52,500	0	34,250		
Political Donations in Australia	\$ AUD	0	0	NPR	NPR	NPR		
Number of Community Partners	count	3,000	>2,700	>2,500	>2,300	>2,500	Represents unique charitable and not-for-profit organizations within a community or region.	
Company Context							All figures are provided on a gross production basis.	
Potash Production (KCl tonnes produced)	thousand tonnes	13,007	13,790	12,595	11,700	12,842		
Nitrogen Production (NH ₃ tonnes produced)	thousand tonnes	5,759	5,996	6,063	6,164	6,372		
Phosphate Production (P ₂ O ₅ tonnes produced)	thousand tonnes	1,351	1,518	1,444	1,514	1,551	Excludes Redwater. 2018 figures were restated to exclude Redwater.	

N/A not applicable NPR not previously reported N/Av. not available

SASB Index

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RT-CH-120a.1	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds ("VOCs"), and (4) hazardous air pollutants ("HAPs")	106-107
EM-MM-120a.1	Air emissions of the following pollutants: (1) CO, (2) NO _x (excluding N ₂ O), (3) SO _x , (4) particulate matter (PM ₁₀), (5) mercury (Hg), (6) lead (Pb), and (7) VOCs	106-107
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RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	46-48
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EM-MM-160a.1	Description of environmental management policies and practices for active sites	49-51*
EM-MM-160a.3	Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	(not available)
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RT-CH-410b.1	(1) Percentage of products by revenue that contain Globally Harmonized System of Classification and Labeling of Chemicals ("GHS") Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products by revenue that have undergone a hazard assessment	111
RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	42-45

* Partially meets the disclosures suggested by the SASB Standards

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RT-CH-320a.2	Description of efforts to assess, monitor and reduce exposure of employees and contract workers to long-term (chronic) health risks	58-67
EM-MM-320a.1	(1) MSHA all-incidence rate, (2) fatality rate, (3) near miss frequency rate (“NMFR”) and (4) average hours of health, safety and emergency response training for (a) full-time employees and (b) contract employees	110*
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* Partially meets the disclosures suggested by the SASB Standards

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* Partially meets the disclosures suggested by the GRI Standards

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Forward-Looking Statements

Certain statements and other information included in this document, including within the “Our 2030 Sustainability Commitments”, “ESG Performance Goals and Targets Summary” and “ESG Performance Goals/Targets” sections, constitute “forward-looking information” or “forward-looking statements” (collectively, “forward-looking statements”) under applicable securities laws including the U.S. Private Securities Litigation Reform Act of 1995 (such statements are often accompanied by words such as “anticipate”, “forecast”, “expect”, “believe”, “continue”, “may”, “seek”, “might”, “plan”, “predict”, “project”, “target”, “will”, “would”, “should”, “estimate”, “intend”, or the negative of these terms or other similar words). All statements in this document, other than those relating to historical information, facts or current conditions, are forward-looking statements, including, but not limited to: Nutrien’s business strategies, plans, prospects, opportunities and its sustainability, climate change and ESG plans, initiatives and strategies; Nutrien’s ESG opportunities and expectations and the risks related thereto; expectations regarding Nutrien’s Feeding the Future Plan and its 2030 commitments and ESG performance targets; Nutrien’s 2030 GHG emissions reduction commitment, including its plans, expectations and strategies with respect thereto and anticipated capital expenditures required to achieve such commitment; the potential deployment of additional emissions abatement projects; Nutrien’s initiatives to promote sustainable and productive agriculture and food production and its commitments and goals related thereto; our ability to integrate energy efficiency initiatives throughout our operations; expectations regarding global population growth; expectations regarding operational water use; our commitment to invest in new technologies to support a transition to low- and zero-carbon fertilizers, including blue and green ammonia and the launch of Retail products reducing packaging and plastic waste and/or increasing plastic reuse; our initiatives relating to the reduction of Scope 1 and 2 GHG emissions and assessments of Scope 3 GHG emissions, including, but not limited to, process improvements at Nutrien’s nitrogen facilities, energy efficiency initiatives for its nitrogen and potash operations, cogeneration projects and plans related thereto and the availability of energy from renewable sources; Nutrien’s near-term focus on economically maximizing CO₂ capture and sequestration; Nutrien’s pursuit of opportunities relating to its blue/low-carbon ammonia, including evaluation of the Geismar clean ammonia facility project, and other opportunities for reducing GHG emissions associated with ammonia production; the implementation of our Carbon Program and the anticipated benefits to Nutrien and growers therefrom; Nutrien’s ability to implement technology to reduce GHG emissions and leverage data analytics in our pursuit to meet our ESG commitments; our commitment to leverage partnerships and investments to drive innovation and inclusion and the anticipated benefits thereof; our commitment to create new financial solutions to strengthen social, economic and environmental outcomes in agriculture; our equity, diversity and inclusion initiatives and expected timing thereof; our expectations regarding future ESG reporting, including ESG ratings; our strategies, plans, opportunities and initiatives relating to the decarbonization priority project areas and related expectations; Nutrien’s ability to successfully reclaim land and its asset retirement obligations, including the cost, timing and anticipated results of future reclamation expenditures; expected market and industry conditions with respect to planted acres; our ability to implement changes to make our business processes more resilient to cyberattacks; expectations regarding our health and safety initiatives, including the future reporting of results and performance in connection therewith; Nutrien’s community investment initiatives, including its ability to implement its strategic sustainability priorities and the impact therefrom; and expectations in connection with our ability to deliver long-term value for all stakeholders. These forward-looking statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from those expressed, implied or anticipated by such forward-looking statements. As such, these statements are inherently uncertain and undue reliance should not be placed on these forward-looking statements.

All of the forward-looking statements are qualified by the assumptions that are stated or inherent in such forward-looking statements, including the assumptions referred to below and elsewhere in this document. Although we believe that these assumptions are reasonable, having regard to our experience and our perception of historical trends, the assumptions set forth below are not exhaustive of the factors that may affect any of the forward-looking statements and the reader should not place undue reliance on these assumptions and such forward-looking statements. Current conditions, economic, geopolitical and otherwise, render assumptions, although reasonable when made, subject to greater uncertainty.

In respect of our GHG emissions reduction commitment and other sustainability and climate-related initiatives and targets, we have made assumptions with respect to, among other things: that such target is achievable by deploying capital into N₂O abatement at our nitric acid production facilities, energy efficiency improvements, carbon capture, utilization and storage, the use of natural gas to generate electricity and waste heat recovery; our ability to successfully deploy capital and pursue other operational measures, including the successful application to our current and future operations of existing and new technologies; the successful implementation by Nutrien of proposed or potential plans in respect thereof; projected capital investment levels, the flexibility of Nutrien’s capital spending plans and the associated sources of funding; our ability to otherwise implement all technology necessary to achieve our GHG emissions reduction commitment and other sustainability and climate-related initiatives and targets; and the development, availability and performance of technology and technological innovations and associated expected future results.

Additional key assumptions that have been made in relation to the operation of our business as currently planned and our ability to achieve our business objectives include, among other things: assumptions with respect to our ability to successfully complete, integrate and realize the anticipated benefits of our already completed and future acquisitions and divestitures, and that we will be able to implement our standards, controls, procedures and policies in respect of any acquired businesses and realize the expected synergies; that future business, regulatory and industry conditions will be within the parameters expected by us, including with respect to prices, margins, demand, supply, product availability, supplier agreements, availability and cost of labor and interest, exchange, inflation and effective tax rates; the receipt, in a timely manner, of regulatory and third-party approvals; assumptions with respect to global economic conditions and the accuracy of our market outlook expectations for 2022 and in the future; our expectations regarding the impacts, direct and indirect, of the COVID 19 pandemic on our business, customers, business partners, employees, supply chain, other stakeholders and the overall economy; our expectations regarding the impacts, direct and indirect, of the conflict between Ukraine and Russia on, among other things, global supply and demand, energy and commodity prices, global interest rates, supply chains and the global macroeconomic environment, including inflation; the adequacy of our cash generated from operations and our ability to access our credit facilities or capital markets for additional sources of financing; our ability to identify suitable candidates for acquisitions and divestitures and negotiate acceptable terms; our ability to maintain investment grade ratings and achieve our performance targets; our ability to

successfully negotiate sales contracts; our ability to successfully implement new initiatives and programs; Nutrien's ability to successfully deploy capital and pursue other operational measures, and the anticipated benefits therefrom; the successful implementation by Nutrien of proposed or potential strategies and plans in respect thereof; projected capital investment levels; the flexibility of Nutrien's capital spending plans and the associated source of funding; and the development and performance of technology and technological innovations and the future use and development of technology and associated expected future results. Additional key assumptions relating to the operation of Nutrien's business as currently planned and the ability to achieve its business objectives are detailed from time to time in Nutrien reports, including its 2022 annual report dated February 16, 2023 and its annual information form dated February 16, 2023 for the year ended December 31, 2022, filed with the Canadian securities regulators and the Securities and Exchange Commission in the US.

Events or circumstances could cause actual results to differ materially from those in the forward-looking statements.

Such events or circumstances include, but are not limited to: (i) with respect to Nutrien meeting its 2030 climate and GHG emissions reduction commitment, including: our ability to deploy sufficient capital to fund the necessary expenditures to implement the necessary operational changes to achieve this commitment; our ability to implement requisite operational changes; our ability to implement some or all of the strategy and technology necessary to efficiently and effectively achieve expected future results, including in respect of such GHG emissions reduction commitment; the availability and commercial viability and scalability of emission reduction strategies and related technology and products; the development and execution of implementing strategies to meet such GHG emissions reduction commitment; (ii) in respect of Nutrien's other 2030 commitments, including: our ability to deploy sufficient capital to fund the necessary expenditures to implement the necessary operational changes to achieve these commitments; our ability to implement requisite operational changes; our ability to implement some or all of the technology necessary to efficiently and effectively achieve and measure expected future results; the availability and commercial viability and scalability of required technology and products; development and growth of end market demand for sustainable products and solutions; the performance of third parties; the development and execution of implementing strategies to meet such commitment; and (iii) with respect to Nutrien's business generally and its ability to meet its other targets, commitments, goals, strategies, and related milestones and schedules disclosed herein: general global economic, market and business conditions; failure to complete announced and future acquisitions or divestitures at all or on the expected terms and within the expected timeline; the successful and timely implementation of capital projects; climate change and weather conditions, including impacts from regional flooding and/or drought conditions; crop planted acreage, yield and prices; the supply and demand and price levels for our products; governmental and regulatory requirements and actions by governmental authorities, including changes in government policy (including tariffs, trade restrictions and climate change initiatives), government ownership requirements, changes in environmental, tax and other laws or regulations and the interpretation thereof; political risks, including civil unrest, actions by armed groups, or conflict and malicious acts including terrorism; the occurrence of a major environmental or safety incident; innovation and cybersecurity risks related to our systems, including our costs of addressing or mitigating such risks; counterparty and sovereign risk; delays in completion of turnarounds at our major facilities; interruptions of or constraints in availability of key inputs, including natural gas and sulfur; any significant impairment of the carrying amount of certain assets; risks and uncertainties associated with obtaining regulatory, third-party and stakeholder approvals outside of Nutrien's control for its operations, projects, initiatives and activities and the satisfaction of any conditions to such approvals; the impact of technology and risks associated with developing and implementing new technologies; the accuracy of cost estimates; risks related to reputational loss, including failure to achieve goals, targets or commitments with respect to ESG matters; certain complications that may arise in our mining processes; the ability to attract, engage and retain skilled employees; labour strikes or other forms of work stoppages; the COVID 19 pandemic, including variants of the COVID-19 virus and the efficacy and distribution of vaccines and treatments in respect thereof, and its resulting effects on economic conditions, fiscal and monetary responses by governments and financial institutions and disruptions to global supply chains; the conflict between Ukraine and Russia and its potential impact on, among other things, global market conditions and supply and demand, energy and commodity prices; and other risk factors detailed from time to time in Nutrien's reports, including its 2022 annual report dated February 16, 2023 and its annual information form dated February 16, 2023 for the year ended December 31, 2022, filed with the Canadian securities regulators and the Securities and Exchange Commission in the US, which should be read in addition to this report for a more complete understanding of such risk factors.

In light of the significant uncertainties in these forward-looking statements, investors should not regard these statements as a representation or warranty by Nutrien or any other person that Nutrien will achieve its objectives and plans in any specified time frame or at all. The forward-looking statements in this document are made as of the date hereof and Nutrien disclaims any intention or obligation to update or revise any forward-looking statements in this document as a result of new information or future events, except as may be required under applicable Canadian securities legislation or applicable US federal securities laws.

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We welcome and value your feedback on this report and all of our sustainability and ESG initiatives.

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