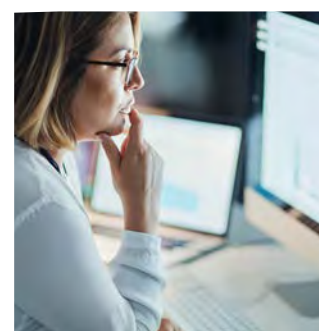


ESG 2022 ENVIRONMENTAL, SOCIAL AND GOVERNANCE ("ESG") REPORT



Nutrien[™]
Feeding the Future[™]



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ENVIRONMENT

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



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SOCIAL

How we work to keep people and communities safe, foster positive relationships with stakeholders, and ensure product safety. See **page 55**



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GOVERNANCE

How we develop and foster a strong culture and business practices to act as an ethical and responsible business. See **page 82**

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

ESG RATINGS PROFILE

Nutrien ESG Rating Profile

▲ 2021 Peer Average¹ ▼ 2019 Nutrien ▼ 2020 Nutrien ▼ 2021 Nutrien



NOTE: These ratings reflect the extent of our ESG disclosure, not the quality of disclosed information or our ESG performance. Where possible, we have addressed reporting gaps in this report. For disclaimers related to the use of ESG research rating logos, please see [page 121](#).

1 Peer groups: MSCI and FTSE = Specialty Chemicals; CDP, S&P and ISS = Chemicals; Sustainalytics = Agricultural Chemicals; Vigeo Eiris = Chemicals North America.

2 CDP Water not scored in 2019.

3 Peer average not available.

Moody's | ESG Solutions

#1 RANK

in Chemicals North America by
Vigeo Eiris/Moody's
ESG Solutions

MSCI
ESG RATINGS

CCC B BB BBB A AA AAA

MSCI ESG rating improved
from "A" to "AA"



Nutrien discloses both CDP
Climate and Water annually



FTSE4Good

2021 inclusion
in FTSE4Good index

A MESSAGE TO OUR STAKEHOLDERS

Welcome to Nutrien's 2022 Environmental, Social and Governance ("ESG") Report. If this past year has taught us anything, it's that our success as a business and our responsibility to make progress on ESG opportunities are interdependent.

We cannot feed a growing population and provide food security without also driving positive environmental outcomes, fostering equity, diversity and inclusivity, and supporting the ongoing sustainable production efforts of growers with new tools, technology, and practices. For Nutrien, evidence of this linkage was demonstrated clearly in 2021 – we had a banner year as a business financially, while building significant momentum behind our ESG efforts and maintaining our steadfast commitment to our core values of Safety and Integrity.



KEN SEITZ
INTERIM PRESIDENT &
CHIEF EXECUTIVE OFFICER
– NUTRIEN

Collaboration and Innovation

For me, two words best describe our efforts in 2021: collaboration and innovation.

An exemplary demonstration of collaboration has been our [Carbon Program](#), launched in late 2020. We've learned over the past year that building such a program requires partnership with our growers, suppliers, policymakers and even competitors. No single organization can be successful on its own, and Nutrien owes it to growers to utilize our size and scope to bring these important stakeholders together so that farmers can successfully navigate the complex landscape of capturing, measuring and quantifying carbon performance. That's why in June we announced a portfolio approach for our Carbon Program, leveraging Nutrien's unique end-to-end capabilities, while engaging a broad base of key industry partners and supply chain stakeholders across Canada and the US. To date, those partnerships have resulted in many successful pilots, expanding our initial 2021 goal of 100,000 North American acres to approximately 225,000 acres.

With regards to innovation, our production teams are leading the way. At our Rocanville, Saskatchewan Potash facility, we've begun the construction of self-generation units for power, with the goal of eventually becoming a cogeneration facility. At our Redwater, Alberta Nitrogen facility, approximately 380 tonnes per day of CO₂ is being sequestered deep underground through the Alberta Carbon Trunk Line. This is work that would not have been possible without the steadfast focus on innovation in the spirit of sustainability. In addition to exhibiting collaboration and innovation, these projects are excellent examples of areas

A MESSAGE TO OUR SHAREHOLDERS (CONTINUED)

“For me, two words best describe our efforts in 2021: collaboration and innovation. An exemplary demonstration of collaboration has been our Carbon Program, launched in late 2020.”

we’ve progressed towards meeting our Feeding the Future 2030 sustainability commitments.

There’s more great work I’d like to highlight here, which you can read about in detail throughout this report:

- Nutrien leadership approved \$50 million for several Scope 1 emissions reduction projects that are underway and will eliminate approximately 1 million tonnes of CO₂e by the end of 2023.
- A Collaboration Agreement with EXMAR to jointly develop and build a low-carbon, ammonia-fueled vessel. Through this effort, we aim to significantly reduce Nutrien’s maritime transportation emissions and enable the commercial development of an ammonia-fueled vessel, charting a path for broad adoption of low-carbon ammonia as a clean fuel for the maritime industry and creating potential future opportunity in other commercial applications for our Nitrogen business.
- The hosting of our first ever ESG Stakeholder Update. In an effort to boost the transparency of our sustainability efforts and our focus on long-term viability with investors and other important stakeholders, including our own employees, we intend to host an ESG Stakeholder Update annually.
- An important partnership with Radicle Growth to bring investment and awareness to groups that have historically been underrepresented in agriculture, including women entrepreneurs and Black, Indigenous and People of Color (“BIPOC”) entrepreneurs around the world. We will be selecting two ag-tech businesses to fund in this area via an Inclusion Challenge.
- The launch of our new safety playbook through which we continue to reinforce and define our safety and integrity core values. Our vision of *home safe, every day* delivers our Culture of Care strategy and “the Nutrien Way” brings this playbook to life, guiding our daily actions and behaviors.

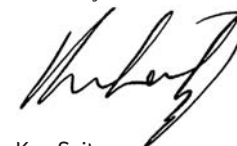
Building Momentum

Taking a step back to look beyond agriculture, 2021 was a rebound year for many industries as the world continued to manage the impacts of the COVID-19 pandemic. However, for Nutrien, the agriculture industry and growers, 2021 was about continuing to build a resilient supply chain that fed the world through the worst of the pandemic. We have been served a valuable reminder that ag is critical to our everyday lives and I believe, as a global leader in the industry, Nutrien can play an important role in our future. We can both deliver food security and drive progress in ensuring our planet will support society’s growing needs.

This past year was Nutrien’s first full growing season working towards our **Feeding the Future Plan**, within which we made six commitments to achieve by the year 2030. One of the most valuable aspects of our annual ESG reporting is the opportunity to see where we’ve made progress and where we need to do more. We talk a lot about our sustainability commitments, goals and targets, and this report contains the facts and figures supporting our progress and continued focus on sustainable and productive agriculture. It’s an excellent barometer of progress, and while the results are encouraging, they also show the importance of maintaining our focus and momentum in pursuit of our most critical ESG priorities.

I’m proud of our sustainability and ESG efforts and excited for what lies ahead – and I know our employees and customers are too. This is a team effort. We’re at our best when we give our employees, growers and partners the support they need to be successful – to better our livelihoods, our environment and our planet.

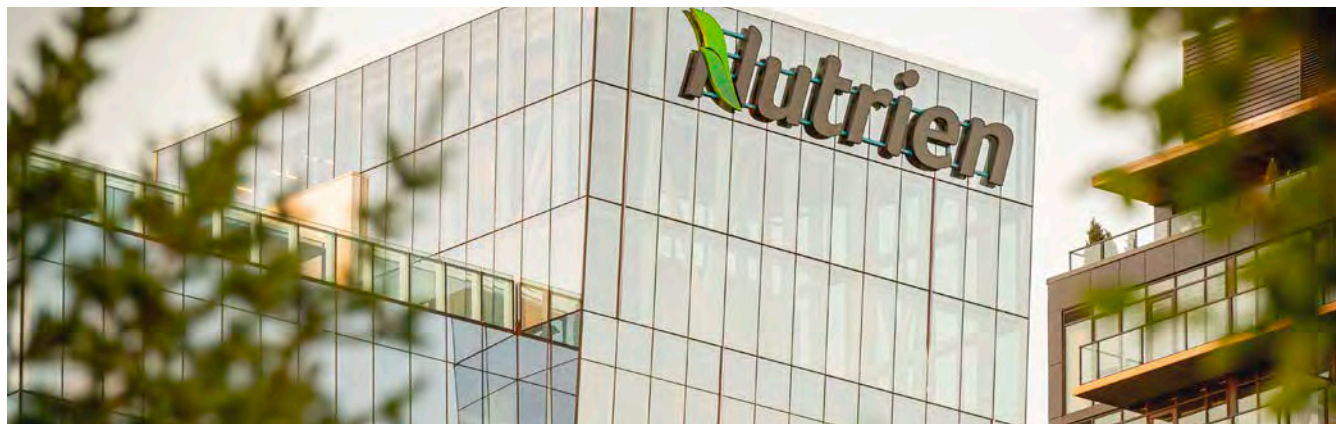
Sincerely,



Ken Seitz
Interim President & Chief Executive Officer
March 2022

ABOUT NUTRIEN

Nutrien is the world's largest provider of whole-acre crop inputs and services, playing a critical role in helping growers increase food production in a sustainable manner.



We have four reportable operating segments: Nutrien Ag Solutions ("Retail"), Potash, Nitrogen and Phosphate. The Retail segment distributes crop nutrients, crop protection products, seed and merchandise, and it provides services directly to growers through a network of farm centers in North America, South America and Australia. The Potash, Nitrogen and Phosphate segments are differentiated by the chemical nutrient contained in the products that each produces. In 2021, we produced and distributed 27 million tonnes of potash, nitrogen and phosphate globally and had Retail sales of \$17.7 billion at over 2,000 locations worldwide.

With this capability and our world-class retail network, we are well positioned to supply the needs of our customers. We operate with a long-term view and are committed to working with our stakeholders as we address economic, environmental and social priorities. The scale and diversity of our integrated portfolio provides a stable and resilient earnings base, multiple avenues for growth, and the opportunity to return capital to shareholders.

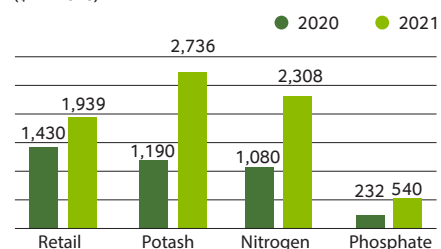
Significant Changes in 2021

- Nutrien achieved record financial results in 2021, resulting from organic growth supported by strong demand for crop inputs and services, continued growth in our proprietary product sales, and optimization and efficiency initiatives.
- Nutrien increased potash production by nearly one million tonnes in 2021 compared to expectations, in response to tightening global potash market conditions.
- We further increased our presence in Brazil with the acquisitions of Bio Rural and Terra Nova.
- Nutrien Soluções Agrícolas (our Brazilian Retail business) announced a five-year \$40 million sustainability-linked loan through Rabobank Brazil. The cost of this loan is tied to Nutrien's sustainability practices and goals in Brazil.

At Nutrien, our purpose is to grow our world from the ground up, and we're raising expectations of what an agriculture company can be.

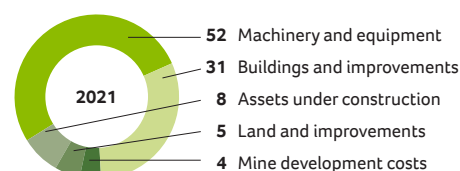
Nutrien is uniquely positioned with a world-class integrated network of production assets, distribution capabilities and a direct connection to the grower. Our business model and purpose-driven culture mean that, from the bottom of the mine to the top of the silo, our employees around the world are committed to feeding the future safely and with integrity each day. We are committed to continuous improvement of our environmental performance and we champion diversity and inclusive growth in the agriculture industry.

Adjusted EBITDA by Operating Segment (\$ millions)

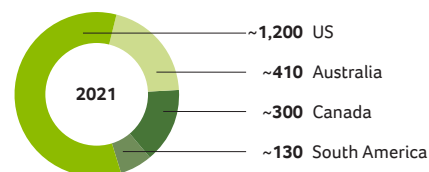


These numbers do not include Corporate and Others or Eliminations.

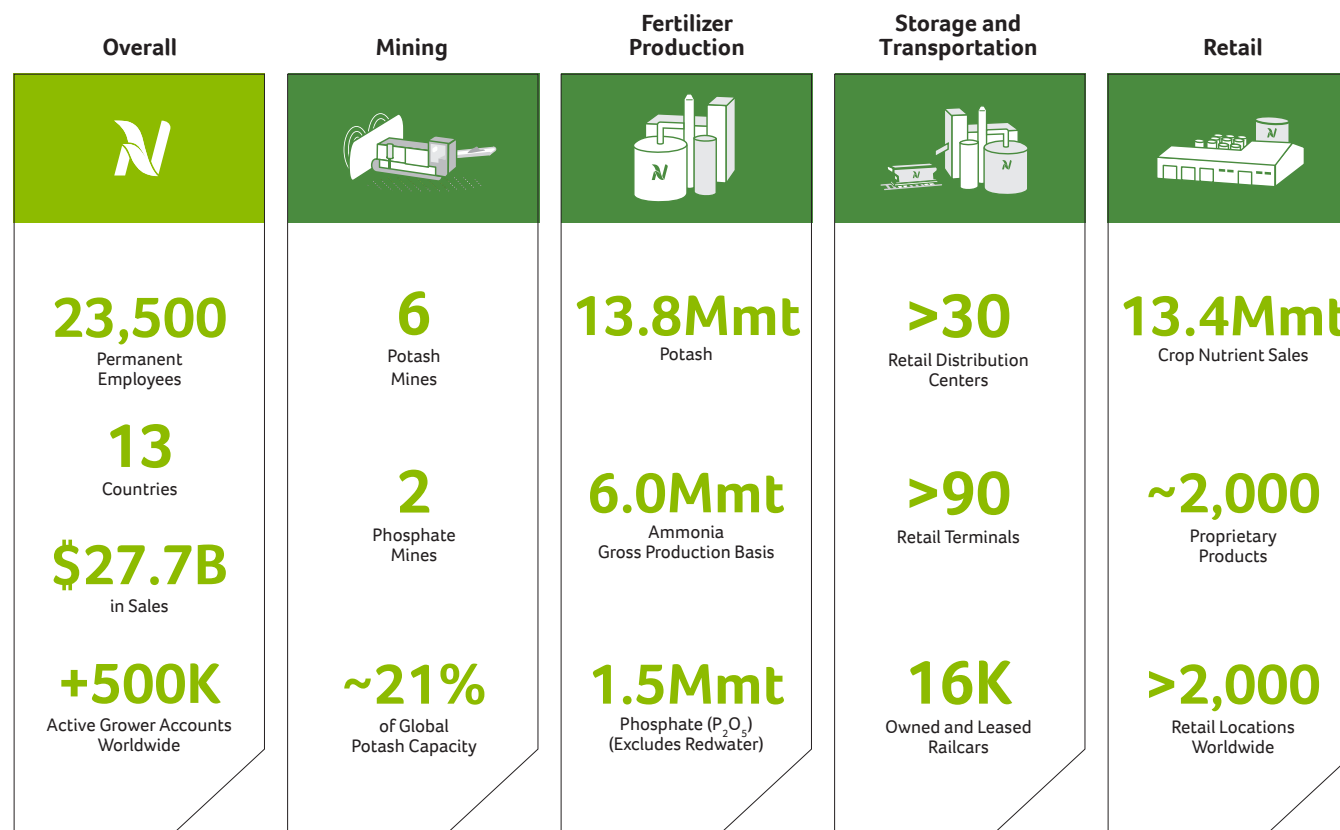
Property, Plant and Equipment (%)



Retail Locations (number of locations)



All figures as of December 31, 2021



+ Learn more about our corporate strategy in our [2021 Annual Report](#).
Learn more about [Nutrien's Purpose](#).

OUR 2030 SUSTAINABILITY COMMITMENTS

Our Feeding the Future Plan translates our goal to lead the next wave of agricultural evolution into six ambitious commitments.

The plan was published in April 2021 and outlines how we plan to drive systemic change across our company, industry and the world by the year 2030. Below is a summary of our six ambitious commitments. All of the commitments are on track and progressing as planned. [Learn more.](#)

Strategic Pillars	Feeding the Planet Sustainably		Environment and Climate Action
	Strengthen food security by scaling sustainable and productive agriculture.		Provide solutions and platforms to achieve emissions reductions in alignment with climate science.
Commitment	ENABLE	LAUNCH AND SCALE	ACHIEVE
	growers to adopt sustainable and productive agricultural products and practices on 75 million acres globally.	a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts.	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.
2021 Progress	We provide growers with whole-acre solutions that support sustainable and productive agriculture, while delivering nature-positive outcomes. In 2021, we developed a three-tiered approach to help define outcomes and measures to execute this target and support our Carbon Program commitment. 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 will aim to independently verify greenhouse gas ("GHG") emission changes through third-party verifiers such as SustainCERT, an official certification body of the Gold Standard®. By working with value-chain partners, we are collectively advancing global agriculture sustainability goals for the broader supply chain. As part of our initial work, by the end of 2021 we measured and documented approximately 545,000 sustainable and productive acres in North America.	We have a significant role to play in helping farmers deliver natural climate solutions and verified carbon assets. In 2021, we enabled North American pilots on approximately 225,000 acres, working with growers and collaborating with approximately 10 suppliers and downstream partners. Our whole-acre solutions approach accelerates our capabilities towards building a program that generates high-quality carbon assets 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 materially advanced our capabilities and generated key learnings from our 2021 pilots to support program expansion and focused on a practical and science-based approach to scale impacts. Our collaboration with growers and value-chain partners will remain foundational to our efforts as we build and scale our Carbon Program going forward.	We are reducing GHG emissions across our operations and are committed to setting science-based targets. In 2021, Nutrien initiated several projects to reduce emissions by mitigating Nitrous Oxide (N₂O) emissions from nitric acid production. Priority projects in this space are anticipated to be completed by the year 2023. There are also multiple initiatives to improve energy efficiency and emissions performance across our manufacturing facilities. To achieve our 30 percent operational emission intensity target from the 2018 baseline, we estimate total capital investment requirements in the range of \$500 million to \$700 million by 2030. Going forward, we may deploy additional emissions abatement projects as the compliance landscape evolves and the direct and indirect costs of carbon to our business, as well as attractive business opportunities, rationalize incremental capital investment.
	Learn more. Read more on page 18.	Learn more. Read more on page 26.	Learn more. Read more on page 33.

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. Our efforts connect to many of the goals and our primary focus is SDG 2: Zero Hunger through 2.4.1, sustainable and productive agriculture. Learn more about our contributions in our [SDG Impact Assessment](#).

Strategic Pillars	 Environment and Climate Action (continued)		 Inclusive Agriculture Support rural livelihoods and increase participation of underrepresented stakeholders in agriculture.
	INVEST in new technologies and pursue the transition to low-carbon fertilizers, including blue and green ammonia.	LEVERAGE our farm-focused technology partnerships and investments to drive positive impact in industry and grower innovation and inclusion.	CREATE new grower financial solutions to strengthen social, economic and environmental outcomes in agriculture.
2021 Progress	<p>We are exploring multiple opportunities for the responsible development of low-carbon fertilizers. Our near-term focus is on economically maximizing carbon capture, utilization and storage ("CCUS") using existing infrastructure, and supporting the growth of Nutrien's leading blue/low-carbon ammonia production. As of 2021, Nutrien has annual production capability for approximately 1 million tonnes of blue/low-carbon ammonia at our Geismar, Redwater and Joffre Nitrogen facilities. We have joined a joint industry study for ammonia as an alternative marine fuel. Nutrien has also announced a partnership with EXMAR to develop an ammonia-fueled vessel utilizing blue ammonia from our Geismar, LA facility. This is an important step forward for the wider adoption of low-carbon ammonia as a clean fuel for the maritime industry. In addition, Nutrien has partnered with the US Department of Energy ("DOE") and other industry partners to develop a green ammonia plant with technology developed from the Renewable Energy to Fuels Through Utilization of Energy-Dense Liquids ("REFUEL") program.</p>	<p>Nutrien's investments in cutting-edge technology, research and developments bring new solutions to advance the industry. Nutrien is increasing our focus on opportunities to partner with diverse businesses and start-ups and has launched an Inclusion Challenge with Radicle Growth that will take place in 2022. The challenge is a pitch competition where Nutrien and Radicle Growth partner to invest in the top diverse ag-tech innovators, such as women and BIPOC entrepreneurs around the world. Similar to supply chain diversity, applying an equity, diversity and inclusion ("EDI") lens to investments in innovation provides an opportunity for accelerating inclusion.</p>	<p>Our financing solutions play an important role in providing competitive product financing for our customers, supporting customer retention and business growth. Nutrien Financial's existing credit program operates in accordance with the Equal Credit Opportunity Act ("ECOA") and is inclusive for all applicants. We are building new partnerships with diverse grower groups such as the National Black Growers Council and through our relationships we hope to learn more about how we can meet the needs of diverse grower groups. In addition, we are exploring new finance program opportunities to promote sustainable agriculture and support positive environmental outcomes. In 2021, we created a Diversity Lending Steering Committee to explore and develop new opportunities.</p>
	Learn more. Read more on page 38.	Learn more. Read more on page 73.	Learn more. Read more on page 73.

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 within shorter time frames, focused on continuous improvement, and will be revised and updated as our operating context evolves. Here is a high-level summary:

★ Achieved ✓ On track ☹ Room for improvement

Focus Area	Goals and Targets	Progress to Date	2021 Progress	Read More
Climate Change	Reduce GHG emissions in nitrogen production by one million tonnes CO ₂ e by the end of 2023	✓	Our priority GHG reduction projects, headlined by our N₂O abatement projects, are on track to incrementally reduce emissions by approximately one million tonnes of CO₂e annually by the end of 2023. ¹ 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 37
	Deploy self-generated wind and/or solar energy at four Potash facilities by the end of 2025	✓	We have deployed renewable-based wind and solar meteorological energy resource data collection stations at two sites. In addition, we completed third-party engineering renewables modeling technical applications assessments for conceptual site locations; completed two Saskatchewan Ministry of Environment project planning pre-screening sessions; and drafted a stakeholder engagement plan and executed a Memorandum of Understanding with local Indigenous partners. We are currently processing proposals for installation contractors while consulting with SaskPower.	Page 39
Water	Complete a watershed risk assessment of our production sites in 2021 to inform context-based operational water targets by 2023	✓	We have completed a watershed risk assessment across North and South America for 27 of our manufacturing sites and terminals. We are now in the process of collecting baseline data and criteria to form context-based operational targets.	Page 46
Environmental Incidents	Develop Loss of Containment ² reduction strategy and provide related target by 2023	✓	The project team is gathering data and performing the required analysis to set a baseline, which will be used in the target setting phase of the project. We are also currently engaging manufacturing facility personnel to develop robust strategies to meet our reduction targets.	Page 59
Waste	Develop Retail's plastic recycling strategy and set a target by 2022	✓	We continue to implement plastic recycling programs, which are largely empty product containers returned to designated Retail locations. Each region has varying levels of recycling maturity. A global, cross-functional project team was formed to evaluate best practices, recycling partners and current impact to inform regional strategies and set a target by the end of 2022.	Page 53

1 On an intensity basis vs 2018 baseline emissions intensity.

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

ESG Performance Goals and Targets Summary

(continued)

★ Achieved ✓ On track — Room for improvement

Focus Area	Goals and Targets	Progress to Date	2021 Progress	Read More
Biodiversity	Determine how digital on-farm tools can identify and track opportunities to enhance biodiversity conservation on agricultural landscapes by 2023	✓	We have established a framework to characterize and baseline grower performance on various metrics developed by Cool Farm Alliance and Field to Market®. The Agribility® platform has integrated Field to Market's Habitat Potential Index ("HPI") to assess on-farm habitat for plants and animals. As part of initial work, by the end of 2021 we measured and documented approximately 545,000 acres in North America with various downstream partners, which included biodiversity metrics. Note, these acres are included in our 75 million acre commitment. We are in the process of developing an international strategy.	Page 18
Equity, Diversity and Inclusion	Women comprise no fewer than 30 percent of the Board of Directors (maintain annually)	✓	We are exceeding our target with 36 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 83
	30 percent women in leadership (director and above) by 2025	—	The percentage of women in senior leadership positions is 21 percent in 2021, a two-percentage-point improvement compared to 2020. To reach our 30 percent target by 2025, we will continue to expand leadership programs focused on women, explore new avenues to attract female talent and drive cultural change that fosters an inclusive workplace where all employees, including women, can thrive.	Page 71
	By 2025, 25 percent of local spend in our Potash business has direct Indigenous economic impact	✓	In 2021, our Potash business spent 23 percent of local spend with direct Indigenous economic impact. We also underwent a stakeholder engagement process to further refine our strategy.	Page 77
	Annually, 100 percent of potash suppliers contracted under a Master Supply Agreement ("MSA") have local Indigenous inclusion commitments.	★	In 2021, we stated expectations regarding EDI commitments for our potash suppliers, resulting in all suppliers with new MSAs executed in 2021 having commitments to Indigenous local content.	Page 74
Product Stewardship	Complete risk evaluation profiles of NPK (fertilizer) manufactured products by 2023	✓	In 2021, the Nutrien ESG Governance Working Group endorsed a hazard profiling and evaluation model to assess NPK products based on the Globally Harmonized System ("GHS") using the quantification of category 1 and 2 Human Health and Environmental hazards relative to revenue and tonnage. Product profile development and evaluations will be completed in 2022. This approach aligns with recognized frameworks for safety and environmental stewardship of chemical products. Currently 32 percent of our North American production and European distribution fertilizer-feed-industrial products revenue is obtained from GHS category 1 and 2 products.	Page 42

ESG Performance Goals and Targets Summary

(continued)

★ Achieved ✓ On track ⊖ Room for improvement

Focus Area	Goals and Targets	Progress to Date	2021 Progress	Read More
Workplace Safety	Achieve top-quartile safety performance across all business units by end of 2025	✓	In 2021, we achieved top-quartile Lost Time Injury ("LTI") performance across Retail, Nitrogen and Phosphate business units, reflecting our deliberate effort on Serious Injury and Fatality ("SIF") and severity elimination. Our Retail and Nitrogen business units surpassed top-quartile Total Recordable Injury ("TRI") performance while the Potash and Phosphate business units further evolved positive performance. Measuring against industry and globally recognized metrics ensures we evaluate our performance for Nutrien as an enterprise, as well as individual business units.	Page 63
	Zero Serious Injury and Fatality incidents annually ¹	★	In 2021, Nutrien achieved zero SIF incidents.	Page 67
	Expand safety coaching into performance conversations for all employees by 2022	★	This goal is complete and safety coaching remains a priority approach we continue to implement and improve upon. All business units have coaching built into their existing processes and procedures.	Page 65
Community Investment and Relations	Develop and implement a targeted approach to measure the impact of our sustainability and community investments by 2023	✓	We are working with a consultant to develop our impact measurement framework. We strive for continuous improvement on our community engagement tracking to ensure a targeted and consistent approach with the largest impact.	Page 80
	Employees volunteer at least 25,000 hours by 2025	⊖	Due to the pandemic, volunteering has become more difficult, but we increased our total annual volunteer hours by more than 4,000 hours, or 56 percent. In 2021, we continued to offer eligible employees five paid volunteer days or a chance to earn charitable reward dollars if volunteering outside of work hours.	Page 81
Integrity ²	All employees, directors and officers complete mandatory Code of Conduct training annually	★	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	★	In 2021, we hosted five sessions with over 260 attendees from internal and external stakeholder groups including customers, community non-profit partners and Women in Nutrien ("WIN"). 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 92

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 Our commitment to "zero-tolerance policy for corruption and bribery as well as anti-competitive practices" already exists within our Code of Conduct and is considered a part of our integrity approach.

2021 AT A GLANCE



MOODY'S | ESG Solutions

#1 RANK

in Chemicals North America
by Vigeo Eiris/Moody's
ESG Solutions



COLLABORATION AGREEMENT

with EXMAR to Jointly
Develop and Build a Low-Carbon,
Ammonia-Fueled Vessel



RECORD TRIF

Performance for Nutrien



225,000

Pilot Acres in North America
Enabled Under Our
Carbon Program



INTENSITY DECLINES

in Total Scope 1 + 2 Emissions,
Energy and Freshwater
Consumption Intensities



>1M

Youth Around the World Educated
on Agriculture Sustainability
Programs Through Nutrien

ESG MANAGEMENT APPROACH

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 116
GRI Index is included in Additional Content	page 118
TCFD disclosures are tagged throughout the report, with our consolidated reporting in the Governance section	page 120
The International Business Council <i>Stakeholder Capitalism</i> 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 believe that managing ESG impacts contributes to long-term value creation, builds our reputation with key stakeholders, mitigates risks, enhances our resilience and helps future-proof our business.

In 2021, we formalized our key ESG issues assessment process with annual assessment and governance oversight by both our Executive Leadership Team (“ELT”) and the Board. Integration of ESG into our daily operations continued to take shape as we created new cross-functional and regional issue teams to manage and develop strategy and action around water management, product stewardship and biodiversity. We continue to tie a component of leadership compensation directly to Nutrien’s ESG performance to support our focus on key ESG issues and progress across our sustainability strategic pillars. This report is designed to provide our investors and other stakeholders with information about how Nutrien manages relevant ESG topics. Our ESG management and reporting approach centers on six key principles:

Considering industry risks

We evaluate how industry risks can impact our success as a company. We participated 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 meant 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 Sustainability Accounting Standards Board (“SASB”) 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. Consolidation of key frameworks is expected in the future and Nutrien

will adapt reporting accordingly. Securities regulators have also published proposed mandatory climate change disclosure. We will monitor these developments and continue to comply with all legal requirements.

Focusing on material topics

We focus our reporting on the ESG topics representing the key material issues and opportunities for our business. Materiality is used in a sustainability context for this report and refers to our ESG priorities as determined within the frameworks used with input from our stakeholders and our enhanced materiality process discussed below. This is different than the manner in which materiality is defined for disclosure requirements under applicable securities laws.

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. Our ESG strategy supports the SDGs. [Read 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, 2021. Read about our most relevant [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.



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

ESG Management Approach (continued)

Material ESG Topics

We have developed an enhanced ESG materiality process that merges our strategic issues management with our existing Enterprise Risk Management ("ERM") processes, which includes a more formal and structured governance framework. Our process fuses internal and external stakeholder surveys, a suite of leading and lagging indicators, and trend analysis to help determine our material topics. The process leverages qualitative and digital tools such as artificial intelligence 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 metrics. Level 1 topics generally represent Nutrien's most significant ESG-related risks and opportunities, 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 2021, we began with our previous material ESG topics list and completed the following process:

STEP 1 Identify ¹		STEP 2 Assess and Prioritize		STEP 3 Validate	STEP 4 Communicate ESG Report Coverage	STEP 5
Stakeholder surveys and engagement Digital stakeholder and reputation monitoring ESG frameworks (SASB, TCFD) and surveys Megatrends analysis	<ul style="list-style-type: none"> Potential to affect Nutrien's value, reputation or operations Of interest to stakeholders Relevant across food, agriculture and mining industries Actionable by Nutrien 	<ul style="list-style-type: none"> SASB Five Factor test Regulatory environment Industry and peer benchmarking Cross-reference with Nutrien's ERM risk registry 	<div>LEVEL 1</div> <ul style="list-style-type: none"> Risks that can have broad impact on financial performance, operations or reputation or have legal implications Significant interest to stakeholders and opportunities for Nutrien for which we expect to set targets 	<ul style="list-style-type: none"> Internal cross-functional working group review Senior leadership review 	<ul style="list-style-type: none"> Extensive discussion of management approach Data in graphics Performance discussion 	Action on Identified Topics
			<div>LEVEL 2</div> <ul style="list-style-type: none"> Significant environmental or social impact resulting from Nutrien's operations Of high interest to stakeholders, lenders and potential investors 		<ul style="list-style-type: none"> Discussion of management approach Data Performance discussion 	
			<div>LEVEL 3</div> <ul style="list-style-type: none"> Additional or emerging topics where interest or impact are increasing Requested by frameworks or rating agencies but may not represent significant risks or opportunities 		<ul style="list-style-type: none"> Brief discussion of management approach Position or clarification Data in performance table only 	

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	Retail	Product Use	
Level 1	E	Climate-related risks	●		●	●		●	33
		GHG emissions and energy use	●		●	●		●	35
		Soil health						●	18
		Product stewardship	●		●	●	●	●	41
	S	Worker health and safety		●	●	●	●		59
		Equity, diversity and inclusion	●	●	●		●		71
		Responsible supply chain	●						75
	G	Integrity	●	●	●	●	●	●	87
Level 2	E	Water stewardship		●	●			●	45
		Biodiversity		●				●	48
		Waste, tailings and gypstacks		●			●		51
	S	Human capital		●	●		●		78
		Community relations		●	●		●		80
	G	Cybersecurity and data privacy					●	●	91
Level 3	E	Air quality			●				54
		Reclamation and remediation		●					54

ESG Management Approach
(continued)

Interactions With Stakeholders in 2021

We regularly engage with stakeholders to better understand factors they believe are critical for Nutrien and the agriculture industry. In June of 2021, we held our first ESG Stakeholder Update virtually for all stakeholders to openly attend, with Nutrien leaders speaking to our sustainability strategy, climate-related opportunities, commitments and action taken to date.





Stakeholder	Priorities and Themes Identified in 2021	How Nutrien Responded
Communities	<ul style="list-style-type: none"> COVID-19 pandemic, economic downturn and current socio-political issues in North America relating to EDI Nutrien regions facing environmental and other urgent issues Need to improve access to quality online educational resources on sustainability and agriculture 	<ul style="list-style-type: none"> We expanded our focus on food security and EDI in our communities through support and volunteering at local food banks, EDI training for employees, and developing procurement policies supporting local Indigenous communities. We contributed to organizations related to fire, flood and hurricane response as well as urgent support for farmer mental health. We transitioned the delivery of educational resources for children and youth to online to increase access.
Customers	<ul style="list-style-type: none"> Continued support for customer health and safety due to the COVID-19 pandemic Need for digital retail capabilities to educate and support delivery of products, services and solutions Rising demand for sustainability-focused products and services Inefficiencies due to the continued use of multiple legacy systems for processing orders and invoicing 	<ul style="list-style-type: none"> Throughout the COVID-19 pandemic, we prioritized safety for our customers and partners. Our Retail digital platform in North America experienced steady adoption, resulting in \$2.1 billion in sales in 2021, representing 17 percent of Retail sales in North America. In 2021, we continued to facilitate climate-smart products and sustainable practices. We rolled out an app to help our Retail Sales Managers in North America deliver better service to our customers across systems, plus a new online platform called 'Nutrien Experience' to allow seamless customer interactions.
Employees	<ul style="list-style-type: none"> Employee health and safety due to the COVID-19 pandemic 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 	<ul style="list-style-type: none"> Throughout the COVID-19 pandemic, we prioritized the safety and well-being of our employees and their families, both at the workplace and at home. EDI is a key part of Nutrien's sustainability strategy. We are working on EDI plans that will align with business unit and local area objectives. Nutrien's ELT hosted numerous virtual townhall sessions with live Q&A, along with an intranet page of common Q&As. We launched "We Are Nutrien," a grassroots campaign where employees share how they are impacting sustainability in their personal and professional lives. Significant training was provided to employees on safety, Indigenous awareness, unconscious bias and business ethics throughout 2021.
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 Need to improve environmental impacts well beyond GHG reductions in our own operations 	<ul style="list-style-type: none"> Nutrien's 2030 Commitments and ESG targets were set to achieve emissions reduction in alignment with climate science. Our executive compensation is tied to specific ESG targets. In 2021, 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 and carbon outcomes.
Society	<ul style="list-style-type: none"> Conducted third-party interviews with more than 25 stakeholders from non-governmental organizations ("NGOs"), civil society, academia and the private sector for their feedback and expectations 	<ul style="list-style-type: none"> The stakeholder input and insights helped shape our Feeding the Future Plan, which we released in April 2021 and contains ambitious commitments focused on long-term agricultural transformation, to achieve by the year 2030.
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 Supplier health and safety due to the COVID-19 pandemic 	<ul style="list-style-type: none"> We continued to support our suppliers in building meaningful relationships with Indigenous partners through our Indigenous Content Playbook. We maintain open channels of communication with our key suppliers and their key suppliers to ensure coordination during the COVID-19 pandemic. Throughout the COVID-19 pandemic, we prioritized the safety and well-being of our contractors, subcontractors, vendors and suppliers both at the workplace and at home.
Government/Regulators	<ul style="list-style-type: none"> Movement toward mandatory climate-related disclosures that provide consistent, comparable and decision-useful information to market participants 	<ul style="list-style-type: none"> Nutrien submitted comments in response to the Canadian Securities Administrators request for comment on Proposed National Instrument 51-107 <i>Disclosure of Climate-related Matters</i> and its companion policy that would introduce disclosure requirements regarding climate-related matters for reporting issuers (other than investment funds).

ESG Management Approach

(continued)

Megatrends Shaping Our Actions

As part of Nutrien's long-term vision and issues management, we actively track key environmental and social megatrends that could directly or indirectly affect the agriculture industry. These trends are interrelated and provide Nutrien with the opportunity to advance sustainable food production through our unique relationship with growers. For example, we can facilitate the adoption of new technologies and farming practices to increase yields, while also focusing on soil health, biodiversity and carbon sequestration.

	 Food Security	 Climate Change	 Data, Technology and Transparency	 Changing Farm Socioeconomics
What is the trend?	An estimated 2 billion people could be added to the global population over the next 30 years; producing enough nutritious and accessible food is expected to strain existing resources. Current food system transformation efforts are focused on the dual challenge of producing more food while protecting and restoring natural ecosystems.	Weather patterns are increasingly difficult to predict, and extreme weather events are becoming more frequent and severe, while regulatory policy and technological responses are rapidly evolving. Societal decarbonization goals to mitigate climate change put pressure on Nutrien and our growers to reduce GHG emissions.	Agriculture and food systems are undergoing rapid technological changes. Individuals and businesses have access to unprecedented amounts of data and information. Stakeholders increasingly expect companies to be transparent regarding their cybersecurity and data-related practices.	Highly variable yields and commodity prices can cause financial uncertainty for growers. Growers have little influence over the macroeconomics and weather patterns that affect their operations, making decisions about crop planning critically important to mitigate risks and maximize profit during swings in agricultural commodity prices.
What is the risk or opportunity?	Risk: If current production systems are not able to increase agricultural yields to meet future food demand without expansion of agricultural land, we will place increased pressure on global ecosystems and could further affect our ability to achieve food security. Opportunity: We can use our expertise, products and influence to assist in the transition to a food system that protects biodiversity, nourishes soil, sequesters carbon and stewards water resources while boosting crop yields.	Risk: Climate-related factors associated with temperature and precipitation volatility and other adverse weather events can physically impact our operations, supply chain and customers. Regulatory changes to reduce carbon emissions from industrial activity could have financial and operational implications for our company and our customers. Opportunity: We can leverage our expertise, products and services to support growers in facing regulatory changes and societal expectations around climate and in becoming more resilient to weather changes. A suite of services and products that support better climate outcomes can create new sources of revenue for our company.	Risk: Digital services being offered by Nutrien Ag Solutions for growers in North America will result in increased data management and digital interactions. The increasing need for improved data and supportive technological infrastructure requires rapid development, implementation and end-user uptake. The supply chain, from growers to consumers, will require sufficient incentives to adopt new practices and develop the infrastructure to credibly make sustainability claims. Opportunity: We can work with industry partners and performance data to develop leading technologies and support for our growers to boost productivity and profitability and measure progress, while providing increased transparency in the supply chain. Our Carbon Program and its associated digital capabilities are also expected to support our growers and supply chain partners in this effort.	Risk: Farmers are dealing with increasingly complex operations. In addition, new labor and regulatory requirements such as potential nutrient application regulations may be barriers for applying best practices to optimize yields. Opportunity: We can work with our growers to increase crop input efficiency and implement best-in-class agronomic practices to achieve optimal productivity and sustainable grower economics. We can improve financial performance with technical and financial options that help them adapt to changing market and regulatory conditions.
What are we doing?	Through our digital technology, agronomic experts and services, and wide breadth of products, we help growers increase input use efficiency and boost yields, potentially reducing production variability and increasing the reliability of food supply. Our sustainable solutions and carbon pilot projects are designed to develop customized, scalable solutions.	<ul style="list-style-type: none"> We launched an on-farm Carbon Program and provide products, management practices and services that enable soil carbon sequestration and reduce field-level GHG emissions. For our operations, we set a Scope 1 and 2 GHG intensity reduction target of 30 percent by 2030 compared to our 2018 baseline. We have on-staff meteorologists who provide growers and employees with world-class weather reports and forecasts to manage climate-related impacts on grower operations. We also offer digital technology that helps growers monitor and track sustainability outcomes. 	<ul style="list-style-type: none"> Our growers can use Nutrien's digital solutions to inform their decisions and communicate soil and production data to value-chain partners. We engage with stakeholders through local partnerships and have created youth education programs to teach the public about sustainable agriculture and environmental stewardship. Given the increased level of digital interaction, we continue to invest in cybersecurity and data protection, and provide regular training and awareness. 	Our Retail business provides agronomic expertise and options to manage a grower's risk, maximize productivity, and support transitions through demographic and global shifts. We are enhancing our service offerings to focus on efficient application of inputs. We also provide grower credit through Nutrien Financial.
ESG Topics	Grower solutions, climate-related risks, biodiversity and water stewardship	Grower solutions, climate-related risks, GHG emissions and energy use, and soil health	Grower solutions, cybersecurity and data privacy, integrity, and community relations	Grower solutions and product stewardship

ENVIRONMENT

TOPICS IN THIS SECTION

- 18 Grower Solutions
- 33 Climate Change and GHG Emissions
- 41 Product Stewardship
- 45 Water Stewardship
- 48 Biodiversity
- 51 Waste and Tailings
- 54 Additional Environmental Topics

2021 Highlights

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

~545K

Sustainable and Productive Acres
Measured in North America

7%

Decline in Scope 2
Emission Intensity Since 2018

For Every Wetland Acre Impacted,

UP TO 2

Wetland Acres Restored/Created

GROWER SOLUTIONS



2030 Commitments

Enable growers to adopt sustainable and productive agricultural products and practices on 75 million acres globally by 2030

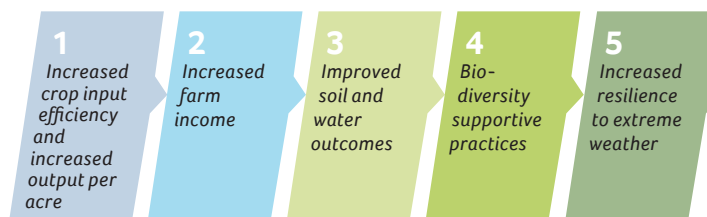
—
Launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts

Why is this topic relevant to our business?

Feeding a growing population requires the agriculture sector to be a sustainable producer. We offer growers whole-acre solutions that consider a production acre to be a managed resource 365 days a year. We begin the process by developing year-round farming plans with the grower that include customized products and services, incorporate on-farm cultural practices, and provide options to implement new farm technologies, that can lead to measurable and sometimes verifiable environmental outcomes. By leveraging our global scale, distribution networks, agronomic expertise, innovative offerings and direct grower relationships, we are positioned to lead and transform the agriculture industry.

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. Productive and sustainable agriculture is enabled by data-driven agronomics and precision agriculture, and has the following dimensions:



At Nutrien, we succeed when growers succeed. In today's world, growers must thrive in ever-changing and unpredictable environments. The solutions we offer growers are in sync with four global megatrends and aim to: strengthen food security; advance climate-smart agricultural practices; enhance our technological capabilities and those of our growers; and address changing farm socioeconomics. [Read more.](#)

To achieve our goal 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 Agribile® to track and measure outcomes such as yield, soil health, water quality and biodiversity outcomes to support precision agriculture.
- **Most advanced:** Verification of GHG emission estimates through third-party verifiers such as SustainCERT and/or verified by our execution partners using the most recent established protocols from government programs and standard bodies.



Analyst Corner

- ✓ SASB RT-CH-110a.2
- ✓ SASB EM-MM-110a.2
- ✓ SASB RT-CH-140a.3
- ✓ SASB EM-MM-160a.1

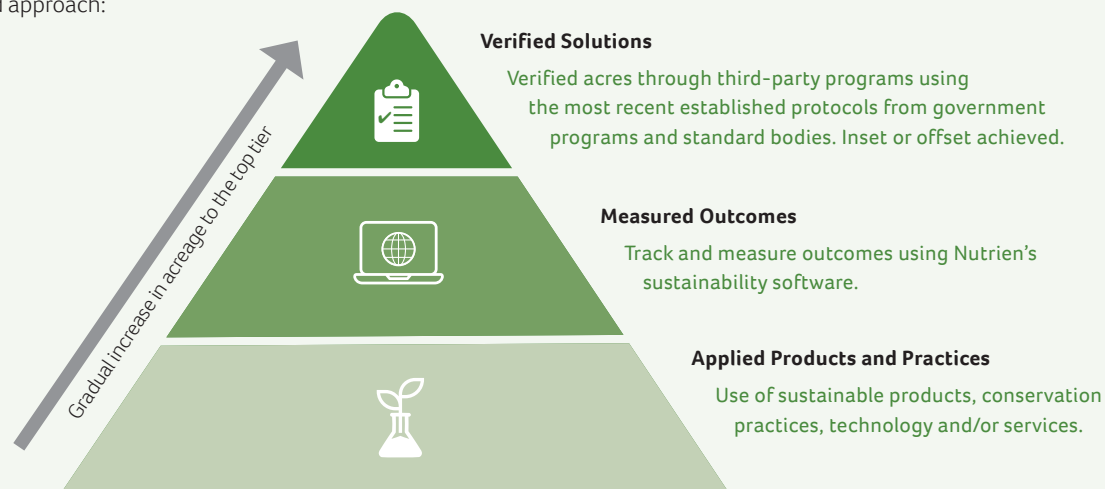
[Grower Support Position](#)
[Soil Health Position](#)

Grower Solutions (continued)

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.

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:



As part of initial work, by the end of 2021 we measured and documented approximately 545,000 sustainable and productive acres in North America. 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.

Our Whole-Acre Solutions

Farming is complex. There is no easy, one-size-fits-all answer. Every farm is different because every acre is unique, and solutions need to be tailored to meet the specific environmental needs of each local geography, climate, soil and agricultural market. Our experts provide agronomic advice throughout each growing season. Our whole-acre solutions begin with 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.

Whole-acre solutions can improve soil health, protect natural carbon sinks, increase soil carbon sequestration, optimize nutrient-use efficiency and retain water while conserving and restoring biodiversity. As a result, crop yields can increase, which further builds soil organic matter and reduces the pressure to convert additional land to food production.

Grower Solutions (continued)

Our Impacts

The need to feed a growing population while minimizing the environmental and social impacts of agriculture is an opportunity for Nutrien to provide the right solutions for growers' most pressing challenges: maximizing nutrient-use efficiency, minimizing nutrient loss to air and water, increasing crop quality and yields, and safe and responsible product use.

The main sources of impacts related to the application of crop inputs at the farm level are

Emissions to air: Volatilization is the loss of nitrogen to the atmosphere in the form of ammonia, primarily from urea-based fertilizers. In certain conditions (warm temperatures, moist soil, surface application) up to 40 percent of nitrogen can be lost to volatilization within hours of application. Additionally, under certain conditions (primarily anaerobic, warm conditions), nitrogen is subject to microbial conversion in the soil, which converts it to N_2O , a potent GHG (1 tonne of N_2O is equivalent to 298 tonnes of CO_2) that is released into the atmosphere. We address these two loss pathways through slow-release nitrogen products and nutrient stewardship practices, both of which form part of the approach for our Carbon Program.

Loss to water: When fertilizers containing nitrogen and phosphorus are improperly applied to crops, some nutrients may leach into groundwater or reach surface water by runoff. Nutrient enrichment of water bodies contributes to algae growth and reduced oxygen availability, which can adversely affect water quality and aquatic life. Runoff or overapplication of crop protection products can also impact ground and surface waters. We promote improved management practices, and products and technologies where appropriate, to minimize the risk of runoff and leaching.

Impacts to land: Growing healthy crops is one of the best ways to maintain soil health on farmland. Nutrients in excess or deficit can weaken crops and reduce yields. Nutrien's agronomists and crop advisors recommend the optimal balance of macro- and micronutrients to support soil and crop health. Utilization of precision agricultural technologies enables growers to better match requirements by field to improve yields and soil health, while reducing nutrient loss to the environment.

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](#)



Products, Services and Programs Summary

Here are 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	Crop 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	●		●		●
	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		●		●	●
Services	4	Digital solutions and agronomy	Our digital platform combines Agribile®, soil testing and other data technologies to measure the impacts of agricultural practices and recommend customized solutions to each grower	●	●	●	●	●
	5	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	●	●	●	●	●
	6	Nutrient management	Our recommendations include following best practices in nutrient application (such as 4Rs and Fertcare®)	●	●	●	●	●
	7	Irrigation management and water conservation practices	Our team designs systems to optimize irrigation, especially in dry zones (for example, Australia)		●			
Programs	8	Carbon Program	Nutrien’s Carbon Program is expected to help growers implement best practices and measure outcomes to support soil carbon sequestration and reduce GHG emissions, which can be verified by third parties and create a new source of income for growers	●		●		●
	9	Sourcing and traceability program	Our collaborations are exploring traceability in the agriculture supply chain, from the farm field through to finished consumer product	●	●	●	●	●
	10	Measurement program	Our sustainability measurement programs use the Agribile® platform and a wide range of data to calculate indicators or metrics developed by recognized industry standard organizations	●	●	●	●	●

Grower Solutions (continued)

Products

1 Advanced plant nutrition

Nutrients are essential for growing healthy crops. We have numerous enhanced nutritional products that also improve the environmental performance, including

- Nitrogen inhibitors and stabilizers are synthetic or biofertility products that are combined with nitrogen-based fertilizers to minimize nitrogen loss and maximize utilization. Nutrien's ESN® is a urea granule contained within a flexible polymer coating that protects the nitrogen from loss into air or water and releases nitrogen at a rate that is controlled by soil temperature and matches the nitrogen demand of the growing crop. Environmental benefits of these products include reduced nitrous oxide emissions from applied fertilizer, reduced leaching to ground and surface waters, reduced ammonia loss to air, and improved nitrogen-use efficiency.
- Loveland Products C² Technology contains unique carbon components that drive chemical and biological activity in the soil and promote better soil structure to improve nutrient uptake, use efficiency, increased drought tolerance and enhance soil microbial activity.
- Agricen's biocatalyst technologies are based on proprietary biological extraction processes that yield highly active microbial metabolites and other compounds proven to enhance soil and plant function. By utilizing biological extraction, rather than chemical, we can offer our customers naturally derived end products with superior functional, handling and compatibility characteristics.

solutions to manage pests in an environmentally sound way, including preventive practices, identification and monitoring of pests, interventions to reduce crop losses, and record keeping for planning purposes.

Pest management products are part of the solution for many of our customers. We continue to focus on innovation of ag biological products that are derived from naturally occurring microorganisms and provide environmental benefits. We carry a complete line of products from leading crop protection manufacturers, including Nutrien's Loveland Products. They include the following:

- Herbicides, insecticides and fungicides.
- Biological pesticides and organic pest management products that provide plant protection using natural materials or biocontrol mechanisms, such as beneficial insect release.
- Adjuvant products that improve the performance of a pesticide, generally leading to better plant absorption and more efficient use of the pesticide. They improve environmental safety through drift reduction and removal of pesticide residues from spray tanks. Loveland Products is an industry leader in the development, manufacturing and marketing of lecithin-based adjuvant products.

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 focus on habitat, pollinator and beneficial insect protection and promote the safe and responsible use of our products by providing information to customers on appropriate use, handling and application. [Read more](#). Learn more about Nutrien's position regarding [pesticides](#) and genetically modified organisms ("GMOs").

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



Analyst Corner

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

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. Between 26 and 40 percent of the world's potential crop production is lost annually because of weeds, pests and diseases.¹ We incorporate a variety of strategies to effectively evaluate the economic threshold and risk of impact and offer

¹ OECD/FAO (2012), OECD-FAO Agricultural Outlook 2012, OECD Publishing, Paris, https://doi.org/10.1787/agr_outlook-2012-en.

Grower Solutions (continued)

\$2.1B

Retail Digital
Platform Sales

Waypoint Analytical

LARGEST SOIL SAMPLING COMPANY

in North America

Nutrien deliver increased yield and yield stability to our customers.

Untreated seed can be vulnerable to seed- and soil-borne disease. Nutrien uses innovative seed treatment technologies that help increase yields and ensure a more sustainable approach to crop production. Seed treatments offer a precise mode of product application, which minimizes potential off-target exposure and impacts on the environment. Utilizing treated seed may reduce the need for farmers to apply products over the entire field. In combination, seed treatments, biologicals and nutritionals aid in early season plant establishment, enhance control of pests and diseases very early in the growing season, and help ensure crops develop to their full potential. Through Nutrien's seed breeding programs for select crops, we maintain seed genetic diversity and strive to develop disease-resistant varieties and hybrids. By providing built-in protection against pests and diseases, we can help reduce the need for additional disease and pest management tools. Some of our research and development ("R&D") investments target improved yield stability of seeds in challenging conditions, including resistance to drought.

In 2021, Nutrien Soluções Agrícolas established a new partnership with a leading global supplier of biological products, and joined forces to add Saori, a biological soy seed treatment product, to Nutrien's product portfolio. Saori helps control Asian soybean rust, a devastating disease that can damage up to 90 percent of the crop and make plants resistant to other crop protection measures. This partnership is an important step towards positioning Nutrien as a leader in the ag market with more sustainable and innovative solutions. [Learn more](#). In addition, Retail established a research and commercial development partnership with Elemental Enzymes, 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 2022, Loveland Products will launch a novel biofungicide called Aura, targeting citrus greening, which causes over \$400 million in farm gate losses per year.

Services

4 Digital solutions and agronomy

Our digital platform experienced significant acceleration of adoption and usage in 2021, surpassing \$2.1 billion in sales, representing 17 percent of total Retail sales in North America.

The digital platform combines location, agronomic information (crop physiology, soil characteristics, and pest or disease impact), environmental data (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. The platform also enhances data traceability and connectivity to leading agricultural, food and consumer products companies that want to measure the environmental impact of agriculture in their supply chain, providing access to additional market opportunities and incentives for growers. The metrics can be anonymized and aggregated for these partners. We intend for our digital platform to also be instrumental in maintaining soil data related to carbon sequestration and providing growers the required documentation for carbon credit markets. [Learn more](#).

Agrible®: A key component of the digital platform is Agrible®, which has significant data science capabilities to measure, benchmark and empower sustainable crop production. Agrible® combines field, weather and agronomic data to provide field-level predictive analytics and enables farmers to track improvements in nutrient efficiency, soil health and environmental impact. With this information, growers can improve operational efficiency and potentially generate new revenue streams from sustainability programs. [Learn more](#).

Soil testing: Soil testing enables us to make specific recommendations for growers with products and application rates that supplement and optimize nutrient balance in the soil. We have invested in R&D to ensure we are providing the most up-to-date soil analytical techniques to our customers. Nutrien has nine agricultural labs across our North American operations to test field samples including soil, plant tissue and water, including our majority ownership of Waypoint Analytical. We also have one agricultural lab in Australia and five in South America.

Grower Solutions (continued)

eKonomics™
THE BUSINESS OF CROP NUTRITION

>109K
eKonomics users
in 2021

NutriScript™: This is a complete nutritional prescription service that takes soil, water and tissue analysis data and creates agronomically correct and field-specific fertilizer recommendations. NutriScript has been specifically designed to provide useful information to the grower as a way to help resolve nutrient-related production problems.

5 Precision agriculture

Precision agriculture uses 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. Digital agronomy combines location, agronomic information (crop physiology, soil characteristics, pest/disease impact), environmental data (precipitation, temperature), weather forecasting and data science to advise grower decisions. Our crop advisors work with growers to create a precise picture 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.

Echelon™: As Nutrien's precision agriculture platform, Echelon™ provides growers with a unique model for using Variable Rate Technology ("VRT"). VRT is replacing traditional grid soil sampling with proven imagery analysis to create a variable rate recommendation that is based on a grower's field history. This new and unique approach to variable rate is part of the Nutrien Ag Solutions commitment to continual innovation in technology.

The Echelon-guided platform offers full farm management capabilities, variable rate services, data management and hands-on support. We use the latest science and technology to customize fertility and seeding recommendations for each field, including using over 10 years of accurate satellite imagery to gain a solid understanding of a grower's soil history. [Learn more.](#)

6 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 minimize nutrient runoff and leaching. Nutrient management helps optimize the efficiency of crop inputs and minimize environmental impacts. We specifically aim to foster circularity in the nutrient lifecycle from production to harvest, which is where we have the largest influence. We provide a variety of services and products to deliver farm-specific nutrient management programs through precision agriculture and controlled-release fertilizers, reducing risks to water quality on and around farms.

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. Where appropriate, the 4Rs include conservation practices like reducing tillage, planting cover crops and structural waterway protection.

Our eKonomics™ website provides easy-to-understand summaries of the latest academic research and nutrient management information, including easy-to-use nutrient and profitability calculation tools to inform grower decisions. The tools allow growers to calculate nutrient needs and return on investment. The eKonomics site had more than 109,000 users in 2021. [Learn more.](#)

Healthy plants and root systems improve water infiltration and soil moisture holding capacity, reducing the risk of nutrient runoff to surface water. Nutrien's crop advisors promote services and advice that improve water use efficiency and reduce potential nutrient loss to groundwater and surface water. Our recommendations may include water and land management strategies like use of storage ponds and drought-tolerant vegetation to optimize crop productivity, and how to mitigate risks to water quality. Conservation practices such as reducing tillage, planting cover crops and structural waterway protection to mitigate runoff and erosion, and keeping moisture and nutrients in the field are other possible recommendations.

Grower Solutions (continued)

7 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.

Effective on-farm water management is crucial in a country as dry as Australia. Nutrien owns the largest retail water business in Australia, known as Nutrien Water. This is a diverse business with specialized services for Australia:

- Our team specializes in the design, supply, installation and maintenance of the most suitable and cost-effective on-farm water infrastructure solutions, such as irrigation.
- Nutrien Water's Engineering Team provide water treatment solutions for human and stock consumption and domestic, industrial and mining wastewater management. Our West Australian business is exploring specialized solutions for remote locations.

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, including

- providing our growers direct access to innovative technology, products and diagnostics, along with a leading team of experts committed to advising them;
- supporting sustainable agricultural production by measuring water use efficiency and offering our growers solutions with less impact on water;
- offering drought-tolerant crops that help with soil health and water use efficiency;
- supporting water stewardship in watersheds where we operate;
- improving water use efficiency in our operations;
- promoting agronomic practices, like 4Rs, and products to optimize soil health to help improve water quality and increase drought resilience; and
- driving nitrogen reduction as well as conservation practices such as no-till and planting cover crops on the farm through our Carbon Program.

Analyst Corner

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



TAKING ACTION: Nutrient Management – Protecting the Great Barrier Reef

The coast of Queensland, Australia is home to both the Great Barrier Reef and large fields of sugar cane and horticultural crops. Heavy rainfall common in this area makes nutrient (specifically phosphorus and nitrogen) loss through runoff into the coral reef a significant risk. The Queensland government has imposed strict guidelines on the use of these nutrients. Nutrien has a team of agronomists in North Queensland that have been government approved to create specific Nutrient Management Plans for canegrowers. These farm-specific Nutrient Management Plans encompass soil testing and geospatial mapping to apply the correct amount of nutrients to the crop to ensure maximum yield while complying with government regulations to reduce nutrient runoff into the Great Barrier Reef lagoon system.

Grower Solutions (continued)

With our carbon, traceability and measurement projects, we have partnered across the agricultural supply chain to build connections and drive farm productivity, profitability and natural resource management.

~545K

Acres Enrolled/Tracked

22

Projects in 15 US States and
3 Canadian Provinces

14

Supply Chain Partners



Analyst Corner

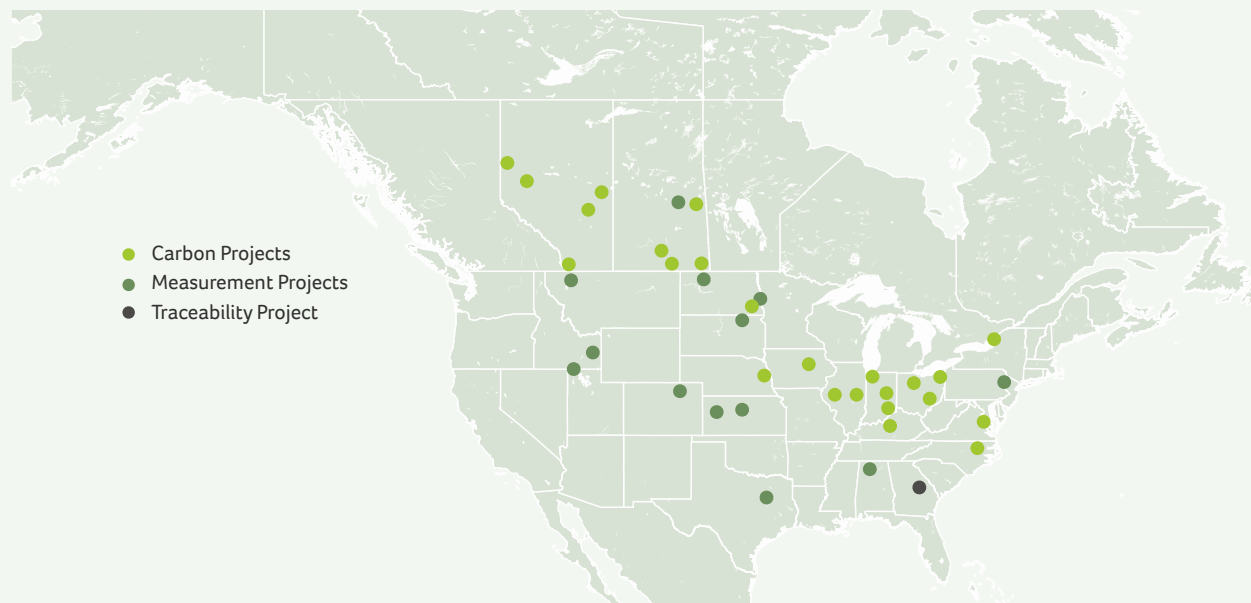
- ✓ TCFD Strategy a) b) c)
- ✓ SASB RT-CH-110a.2
- ✓ SASB EM-MM-110a.2

Programs

With our sustainable agriculture programs, Nutrien is creating 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 growers, downstream partners and third-party experts to determine and incentivize optimal practices and products for continuous improvement.

Nutrien's 2021 Sustainable Agriculture Program Locations



8 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 asset market for the agricultural industry through soil carbon sequestration and reduced GHG emissions.

Carbon Program approach and value to the grower

Our program is unique in several key areas:

- trust-based advisory planning and long-term relationships with the grower;
- grower-specific carbon recipes leveraging Nutrien's leading portfolio of products and technologies, including a full suite of

proprietary crop inputs and digital crop planning capabilities using farm and field-level data; and

- year-round on-farm agronomy support, advice and services; in-house agronomic and soil science expertise, including proprietary digital tools to support the necessary data collection, validation of practice implementation, carbon outcome measurement and verification; and broader sustainability analytics.

Grower Solutions

(continued)

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. Soils naturally store carbon through vegetation. Human activities can either negatively affect this process (which results in carbon loss) or positively impact this process by improving carbon sequestration. One way to improve this process is to increase the level of organic matter in the soil, since soils with higher levels of organic matter can retain more water and nutrients, and also store more carbon.</p> <p>Growers have the ability, through the use of best practices, to increase and maintain optimal levels of organic matter in their soil and optimize the application and efficiency of nitrogen fertilizer to reduce or sequester up to one tonne of carbon equivalent per acre per year with potential for further increases with new technology over time. As a result, agriculture is positioned to become a leading driver of climate action and a significant source of monetizable carbon assets.</p>
What do we intend to do?	Our goal is to help growers generate high quality carbon assets (offsets or supply chain inventions) that are verifiable based on industry best practices and protocols.
Benefit to the grower	<p>Nutrien's Carbon Program has the ability to generate long-term value for growers by making each acre more profitable and developing an incremental revenue stream tied to sustainable farming practices, driving long-term agriculture sustainability leadership and building operational resiliency to satisfy rapidly evolving compliance and regulatory 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; and • improve GHG, soil, biodiversity and water outcomes.
Benefit to Nutrien	We anticipate that this program could represent a significant source of revenue for our company over time as our program scales. It is also possible that Nutrien will purchase carbon assets generated in the program and apply them against our own emissions footprint.
How will we do it?	<p>We primarily use our Agrible® platform to track and measure the results that growers share. Carbon assets will be generated using existing and under development protocols/frameworks to independently verify and validate carbon performance, leveraging proven agronomic modeling and soil sampling methods to generate high-quality assets.</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 2022. • In Canada: We have worked with SustainCERT to understand options for project designs that can be scaled in the future for Carbon Insets within the agri-food value chain. Additionally, we have gone through mock-verification for both a regulated pathway and a voluntary insetting value-chain approach to test our processes, while staying engaged at the federal and provincial levels on the evolution of regulated pathways. • The market and protocols for agricultural systems remain immature and we expect to continue our work in 2022 to evolve these protocols following a science-based and practical approach to scale the industry's positive global impact.
What have we done so far?	<p>Nutrien's program is currently in development with an anticipated growth and larger-scale implementation in North America and other geographies beginning in 2022. Key components to date include</p> <ul style="list-style-type: none"> • approximately 225,000 pilot acres in 2021 across Canada and the US; • growers receiving incentive payments 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 look to expand the Carbon Program in 2022 with a focus on nitrogen management practice improvements and resultant emissions outcomes, continuing to incubate scalable options for soil carbon sequestration, and establishing pilots in South America and Australia.</p>

Grower Solutions (continued)

Agriculture has the potential to be a leading source of carbon assets

Up to
1mt

CO₂e/acre per year¹ GHG emissions reduced and carbon sequestered, depending on grower practices adopted – an incremental revenue stream that is expected to grow as voluntary and compliance market values grow

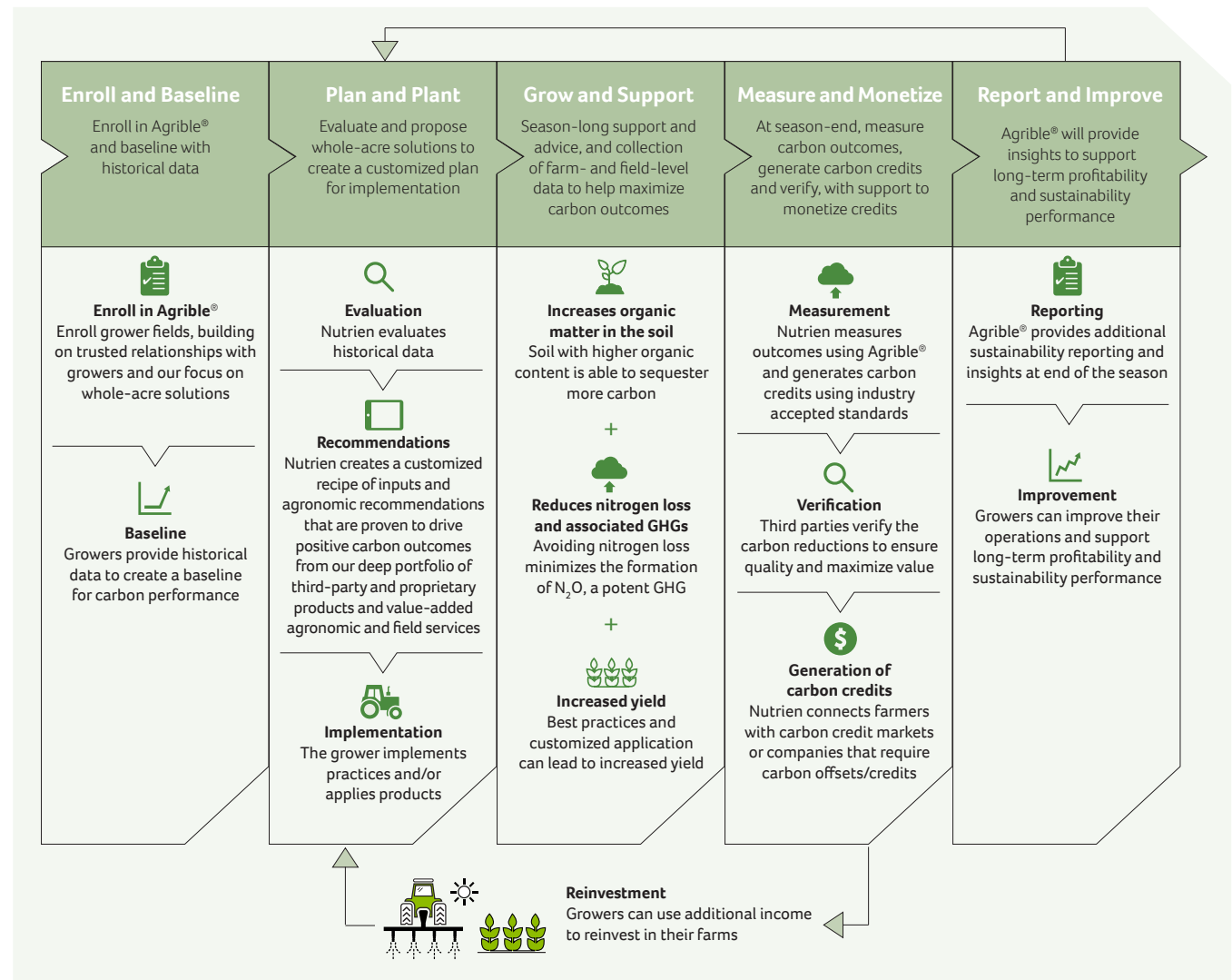
Analyst Corner

- ✓ 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

¹ Run-rate improvement and highly variable depending on crops grown, soil characteristics, weather conditions and various other factors

How our Carbon Program works

Agriculture has the potential to be a leading source of carbon assets. By supporting growers to adopt best practices, leverage digital technology (which can measure and analyze impact) and use crop inputs that support sustainability, we can drive emission improvements throughout the entire agricultural value chain. Supporting the development of a carbon credit market to pay growers for every tonne of reduced emissions and sequestered carbon is key to achieving our overall objectives.



Grower Solutions (continued)

9 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. There is a need for farmers to tell their sustainability story with science-based metrics that can differentiate them in a globally competitive marketplace. At Nutrien, we can support farmers to meet this demand, scale innovative solutions, and create new and more resilient revenue sources for our customers.

In 2020 and 2021, Nutrien Ag Solutions collaborated with partners on a proof-of-concept fiber traceability project. 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. The project produced over 3,000 hoodies that were sourced and manufactured in the Southeastern US.

10 Measurement program

In response to market forces, 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 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. We use our Agribile® platform and a wide range of data to calculate indicators or metrics developed by recognized industry standard organizations, which include

- land use
- biodiversity
- soil conservation
- soil carbon
- irrigation water use
- water quality
- energy use
- GHG emissions

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	Helping growers invest in their operations and endure unanticipated events		●	●
3	Grower outreach	Sharing agronomic information	●		●
4	Community and youth outreach	Supporting youth and the next generation of farmers	●	●	
5	Research and development	Developing solutions to agronomic challenges	●		
6	Strategic partnerships	Collaborating to achieve greater impact across our value chain and industry	●	●	●

Grower Solutions (continued)

1 Local expertise/agronomy

The greatest asset 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 approximately 3,900 agronomists and field experts working directly with growers from over 2,000 global locations.

Nutrien Ag Solutions has a diverse team of field experts to help growers select and implement the optimal agronomic solutions. Our local industry expertise, on a global scale, positions Nutrien Ag Solutions to meet the needs of every customer. Nutrien's field experts are trained in nutrient stewardship, crop protection, seed and best management practices to make recommendations to help drive crop production and sustainability for our growers. They use our industry-leading tools, combined with grower goals and the evaluation of field capability, to recommend supplementary crop inputs when and where needed. Through the digital platform, our field experts can access location, data science and agronomic information (soil and water tests, tissue samples) to provide the best advice to growers regarding which products to apply based on current and predicted conditions. These crop management solutions help growers maximize product efficiency and minimize environmental impact.

2 Nutrien Financial

We also realize that financing is often a key enabler of sustainable acres to increase soil carbon sequestration, productivity, profitability and resiliency. Nutrien Financial provides financing for our growers, enabling them to invest in the long-term environmental and social health of their business and land. [Learn more.](#) Nutrien is also committed to inclusive financing and helping diverse growers access working capital needed to purchase 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. In 2021, Nutrien created a sustainable agriculture podcast series for growers and partners to share insights on sustainable ag market opportunities, practices, products and programs from the front lines. "The Future. Faster." airs every other week to share company, industry and partner updates, plus engage with agricultural and environmental professionals to generate dialogue about sustainable agriculture. [Learn more.](#)

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 2021, the Model Farm facilitated 23 virtual training courses with more than 2,100 course participants.

Nutrien Soluções Agrícolas officially opened the first 10 Nutrien Experience Centers in 2021 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, and will provide growers with support related to products, service, technology and financial management needs. We plan to open 50 more Experience Centers in 2022. [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.](#)



Grower Solutions (continued)

~\$100M
Spent on R&D in 2021



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 and National 4-H Council. In 2021, Nutrien partnered with over 150 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

We create superior value for our stakeholders through the products and solutions we provide. 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 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.

Our seed breeding programs are dedicated to developing elite hybrids, varieties and traits for growers with a focus on high-yielding and yield-stable varieties across geographies. Seed breeding is the process of combining the traits of different seeds to produce improved characteristics in crops for specific environments or conditions. Nutrien currently has four seed breeding programs in North America (canola in Canada, cotton in Texas and Mississippi, rice in Texas, and cereals in Montana). We have an additional canola breeding program in Australia. Our R&D locations in Costa Rica and

Chile provide contra-seasonal research and seed production to accelerate development and reduce time to market.

Nutrien is uniquely 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.

6 Strategic partnerships

Strong partnerships are the base of achieving sustainable progress across the agricultural supply chain. Nutrien Ag Solutions is working with our growers and ag industry partners to meet diverse sustainability goals. Nutrien Ag Solutions has the tools and knowledge to support our customer's and supply chain partner's journey in sustainability.

We collaborate with multiple partners to help growers achieve positive environmental outcomes. Our portfolio approach to the 2021 North American carbon pilots leverages Nutrien's unique end-to-end capabilities while engaging a broad base of supply chain stakeholders and key industry partners across Canada and the US.

Supplier partnerships

Nutrien's strong supplier partnerships are expected to enable future carbon improvement opportunities across supply chains and serve as a model for supporting climate action by investing in agriculture. We are partnering with other agriculture companies in numerous pilot projects across the US.

CPG company partnerships

Maple Leaf Foods is partnering with Nutrien to engage growers within its Manitoba, Canada supply chain to generate carbon outcomes that are intended to be independently verified by SustainCERT. The partnership is expected to enable future carbon improvement opportunities across Maple Leaf's entire Canadian supply chain and serve as a model for Scope 3 emissions interventions in the food and ag value chain.

Grower Solutions (continued)

We also partnered with Ardent Mills in their North American Regenerative Ag Program, which spans approximately 150 growers and 250,000 acres to explore a more sustainable future for wheat production. Measurement projects characterize wheat crops using a variety of sustainability metrics and 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.

Innovation partnerships

Our research teams work across disciplines internally and externally with our innovation partner companies, as well as in partnership with leading research universities. Collaborating with third parties that have expertise in specific fields is a cornerstone of the Nutrien Ag Solutions R&D strategy. For example:

- Nutrien and Colorado State University ("CSU") College of Agricultural Sciences have developed a strategic partnership aimed at feeding the world through sustainable, innovative and inclusive practices. Nutrien's 10-year partnership and ongoing investments will improve research capabilities, help students prepare for a career in the field of agriculture and use innovative technology. [Learn more.](#) Since 2019
 - Nutrien scholarships have supported 40 students.
 - Nutrien Undergraduate Research Fellowships have been awarded to 18 students.
 - Nutrien Distinguished Faculty Scholars have supported four College scientists.
 - CSU hosted the first joint Nutrien Innovation Symposium.
 - Nutrien supported the annual AgInnovation Summit.
- In 2021, Nutrien partnered with World Agri-Tech to sponsor an innovation challenge for ag-tech start-ups from around the world. Nutrien's challenge sought new input technologies that improve nitrogen and water use efficiency and increase soil carbon. The winner, CoteX Technologies, offers affordable soil-degradable polymer-coated fertilizers, which evolve nutrient slow and

controlled-release nitrogen fertilizer products, offering significant potential cost savings at scale. It has the flexibility to adapt both the composition and design of polymer coatings to improve in-field product performance, optimizing uptake of nitrogen by the crop and minimizing environmental loss and impact.

- In 2021, Nutrien Soluções Agrícolas signed a partnership with AgTech Garage, an agribusiness innovation hub in South America that connects companies and start-ups. The partnership will allow Nutrien to explore new and existing challenges faced by customers and share solutions through our Experience Centers and the digital platform when it is launched in the region in 2022. The partnership includes an annual Pitch Day, in which start-ups from all over Brazil present their solutions for a pre-defined challenge, and a Nutrien channel on AgTech Garage's platform for ongoing exploration of innovative ideas in which we may invest.
- In 2021, we announced the Nutrien-Radicle Inclusion Challenge, a competition where Nutrien and Radicle partner to invest in the top ag-tech entrepreneurs in underrepresented groups. [Read more.](#)
- In 2021, Nutrien renewed our commitment to the Global Institute for Food Security ("GIFS"). Nutrien joined forces with the Government of Saskatchewan and the University of Saskatchewan nine years ago to create the GIFS, a Saskatoon-based innovation catalyst dedicated to the discovery, development and delivery of solutions for the production of globally sustainable food, and our commitment to global food security has only grown stronger. [Learn more.](#)



2030 Commitments



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 blue and green ammonia



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



Why is this topic relevant to our business?

The potential impacts from climate-related risks are significant to Nutrien and 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 partnering with growers to sustainably increase crop yields while reducing in-field GHG emissions and sequestering more carbon in the soil.

ESG Performance Goals/Targets:

★ Achieved ✓ On track ⚪ Room for improvement

- ✓ • Reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023
- ✓ • Deploy self-generated wind and solar energy at four Potash facilities by the end of 2025

Climate Governance and Risk Management

We have used the TCFD recommended disclosures to report on our climate strategy and performance. To read about our climate governance and risk management, please see pages [94 to 102](#). For further information on Nutrien's climate strategy, please see our [2021 CDP Climate response](#).

Nutrien's Climate-Related Commitments and Areas of Focus

Nutrien's Feeding the Future Plan includes our commitment to reduce our GHG emissions and helps address our key climate-related risks, as well as taking advantage of climate-related opportunities. The commitments cover our GHG emission value chain with a focus on decreasing emissions directly related to our operations while supporting growers with products and services that help reduce their in-field emissions and store more carbon in their soil. As a diversified company both globally and in the products and services we sell, making these commitments further supports our resiliency and is intended to drive long-term value for all stakeholders. To learn more read [Nutrien's Feeding the Future Plan](#). Our commitments reflect three climate-related areas of focus:

Enabling climate resilience at the farm level: By helping growers focus on sustainable agriculture, we reduce their exposure to impacts from climate change by supporting the adoption of practices that increase soil health and crop resilience to extreme weather events.

Reducing emissions from operations: We have a 30 percent targeted reduction in operational GHG emissions intensity by 2030 from a baseline year of 2018. To achieve this target, we estimate capital investment requirements in the range of \$500 million to \$700 million by 2030. Going forward, we may deploy additional emissions abatement projects as the compliance landscape evolves and the direct and indirect costs of carbon as well as attractive

Climate Change and GHG Emissions (continued)

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.

Supporting sectoral decarbonization and global goals: Nutrien is committed to GHG emissions reduction and supports the goals of the Paris Agreement. This is demonstrated through our commitment to the Science Based Targets initiative (“SBTi”). To set a science-based

target, Nutrien has engaged with the WBCSD and industry peers to develop a Sectoral Decarbonization Approach (“SDA”). 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 need to be considered as part of the SDA process. Nutrien is also actively analyzing a pathway for low-carbon nitrogen fertilizer production.

Primary Emissions Sources Along Nutrien's Value Chain

	Scope 3		Scope 1/Scope 2		Scope 3
	Upstream Emissions		2021 Operational Emissions		Downstream Emissions
	Baseline data in development		Scope 1 11.05M tonnes of CO ₂ e	Scope 2 2.70M tonnes of CO ₂ e	Baseline data in development
	Category 1 and 2	Category 3			Category 11
					 ~70% OF SCOPE 3 EMISSIONS
Main Activity	Purchase Nitrogen Fertilizer (for resale)	Natural Gas Production	Nitrogen Fertilizer Production	Potash Fertilizer Production	Nitrogen Fertilizer Application
Primary Emission Source	Extraction, production and transportation of purchased fertilizer	Extraction, production and transportation of fuels and energy purchased or acquired	Process and combustion emissions	Purchased steam, heat and electricity use	Volatilization of nitrogen fertilizer sold

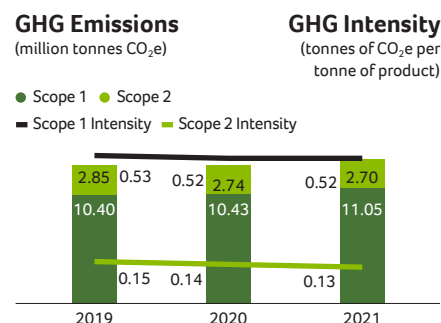
● Nutrien activities ● Upstream/downstream activities. Not in Nutrien's control but the ability to influence is present.

+ Analyst Corner

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

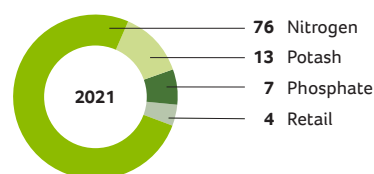
[GHG Emissions - Scope 1 and 2 Inventory Management Plan](#)
[2021 KPMG Independent Limited Assurance Report](#)

Climate Change and GHG Emissions (continued)



Our absolute Scope 1 emissions increased slightly in 2021 as a result of annual variations in production volumes and facility maintenance activities that can impact emissions. Scope 2 emissions decreased slightly due mainly to year-over-year improvements in electricity grid emissions. Overall, our absolute Scope 1 and 2 emissions have remained relatively stable, with positive reduction in total emission intensities. While there may be year-to-year anomalies in emissions due to a variety of factors, our emissions reduction initiatives are in early stages of implementation and remain on track supported by capital allocations and a defined project pipeline. For more details, please see the Performance Table on [page 109](#).

GHG Emissions by Business Unit (% of total Scope 1 and 2 emissions)



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

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 organic 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 during production 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.

GHG emissions related to the three types of fertilizers we produce come from the following sources:

- Nitrogen:** Nitrogen fertilizer is produced by reacting hydrogen, primarily from natural gas, with nitrogen from the air to produce ammonia (NH₃), the basic building block of all nitrogen fertilizer. Approximately 95 percent of the natural gas we consume is in the production of ammonia, with two-thirds of this natural gas used as hydrogen feedstock in this process. The main Scope 1 GHG emission sources are CO₂ from fuel combustion, industrial process CO₂ as a byproduct of hydrogen generation and nitrous oxide (N₂O) emissions generated as a byproduct of nitric acid production.
- Potash:** Potash is mined underground, hoisted to the surface, then crushed and purified with electric-powered equipment to remove rock particles and salt before being dried. Potash operations result in Scope 1 emissions from operation of gas-fired boilers and dryers, as well as mobile equipment. Scope 2 emissions are primarily associated with purchased electricity required to operate processing equipment in our mills.
- Phosphate:** The production process for phosphate can generate GHG emissions in two ways. Entrained carbonates (dissolved CO₂ in the phosphate rock) are released into the air as CO₂ through a chemical reaction, and GHGs can also be released through the use of fossil fuels to calcine phosphate rock feedstock or dry fertilizer products. Purchased electricity required to operate processing equipment also contributes to Scope 2 emissions in phosphate production.

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 2021 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 occur with nitrogen-containing fertilizers (as well as from organic sources of nitrogen). Nitrous oxide is the GHG of primary concern, although some carbon dioxide is also directly emitted from urea forms of nitrogen. The conversion of nitrate-nitrogen to nitrous oxide occurs under saturated soil conditions when there is an excess of nitrate-nitrogen in the soil and temperatures are warm enough for microbial activity as the microorganisms convert the nitrate to nitrous oxide. Significant N₂O is also 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 45 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 that nitrous oxide emissions can be reduced and this is one of the reasons why 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 advancement of a carbon asset market for the agricultural industry through soil carbon sequestration and reduced GHG emissions.

Climate Change and GHG Emissions (continued)

Scope 3 assessment: Scope 3 includes indirect GHG emissions other than those covered in Scope 2. We completed a preliminary assessment of our Scope 3 emissions inventory and determined that the most material emissions in this scope were: emissions from purchased goods and services (category 1), capital goods (category 2), upstream fuel- and energy-related activities (category 3) and use of sold products, mostly through fertilizer application (category 11). We continue to further refine our Scope 3 estimate and develop our understanding to better realize opportunities related to reducing these emissions.

In our preliminary analysis, downstream emissions related to the use of sold products (category 11) represent approximately 70 percent of our total Scope 3 emissions. This was estimated using a global Tier I approach with broadly applicable emission factors. The majority of Scope 3 emissions are from nitrogen fertilizer after it is applied to soil. This estimation 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 produce a refined quantification method 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.

Upstream Scope 3 GHG emissions are also an important contributor to Nutrien's Scope 3 emissions, specifically those related to purchased goods and services, capital goods and upstream fuel- and energy-related activities (categories 1 to 3). We are working with supply chain partners to better understand their impact on our Scope 3 emissions and finding opportunities to reduce their carbon footprints. In 2022, we will look to further develop understanding of our Scope 3 emissions baseline for 2018 and annual numbers thereafter for purposes of improved climate disclosure, further enhancement of climate strategy already discussed and possible future targets.

Our Approach to Reducing 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 GHG emissions at our manufacturing facilities and the indirect 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- and zero-carbon ammonia.

In 2021, Nutrien approved its climate strategy, set key targets and pursued initial opportunities to reduce emissions, including the launch of our Carbon Program. The graphic on the next page outlines opportunities that continue to be developed as new technologies become technically and financially feasible.



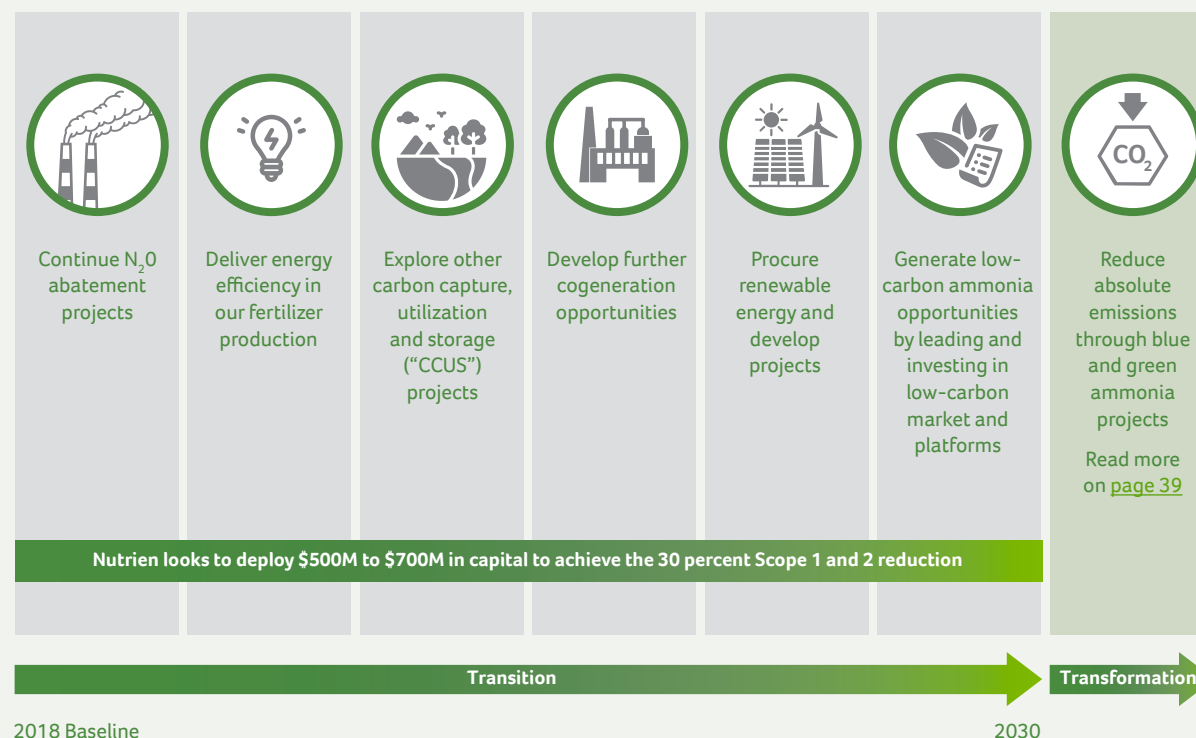
Analyst Corner

✓ TCFD Risk Management a)

Climate Change and GHG Emissions (continued)

Priority GHG reduction projects are **targeting an incremental ~1Mmt CO₂e abated by end of 2023**

Reducing our Scope 1 and 2 emissions intensity by 30 percent by 2030 and beyond...



Scope 1 and 2 Initiatives

a. Process improvements

We are working on the following process improvements to reduce GHG emissions at our nitrogen facilities:

N₂O abatement: 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. Nutrien has begun the process to install or upgrade N₂O abatement technology at multiple plants by 2023 and we are already abating emissions at our Redwater, AB, Geismar, LA

and Augusta, GA Nitrogen facilities. This technology is able to remove as much as 90 percent of N₂O emissions from nitric acid production. Our identified N₂O projects at other facilities are on track to incrementally reduce emissions by approximately 1 million tonnes of CO₂e annually by the end of 2023.

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.

Analyst Corner

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

Climate Change and GHG Emissions (continued)

b. Energy efficiency initiatives

Nitrogen: Approximately two-thirds of our natural gas consumption is as hydrogen feedstock in our Nitrogen operations. The remaining one third is used as fuel to provide heat for the ammonia production process. We continue to seek opportunities to improve our energy efficiency, which also helps to reduce our emissions and operating costs. Nutrien has energy efficiency projects at various stages of development across the entire Nitrogen business. Projects scheduled for completion in 2022 are expected to reduce annual natural gas consumption and eliminate as much as 98,000 tonnes of CO₂e, which is equivalent to removing more than 21,000 cars from the road.¹

Potash: Approximately 45 percent of Nutrien's total Scope 2 emissions are related to electricity consumption at our Potash operations. Electricity to power equipment for potash processing represents approximately 15 percent of Nutrien's potash production costs. This is a significant cost and source of energy consumption, and we are evaluating options to reduce energy consumption, as well as renewable energy opportunities as described below.

c. Carbon capture, utilization and storage ("CCUS")

CCUS provides another technical option for reducing GHG emissions. Captured CO₂ can be used for enhanced oil recovery ("EOR"), a process where CO₂ is permanently injected into underground geological formations to maximize recovery and extend the life of oil reservoirs. Nutrien participates in two such projects at our Redwater, AB and Geismar, LA facilities. In 2021, our Geismar facility captured and diverted 248,000 tonnes of CO₂. Our Redwater facility started capturing previously vented CO₂ in December 2019 for injection into the Alberta Carbon Trunk Line. The Redwater facility sent approximately 139,000 tonnes of CO₂ to the Alberta Carbon Trunk Line in 2021. Learn more about the [Alberta Carbon Trunk Line project](#).

At our Joffre, AB Nitrogen facility, hydrogen is acquired from a nearby industrial producer as a byproduct. Since 1987, we have been sourcing hydrogen directly from a neighboring company,

allowing us to eliminate the GHG-intensive step of processing natural gas into hydrogen. This results in an approximate 15 to 20 percent lower GHG intensity per tonne of ammonia compared to a typical steam methane reforming facility. There are no direct emissions as hydrogen is input directly into the synthesis loop of the production process for ammonia.

As of December 31, 2021, Nutrien has annual production capability for approximately 1 million tonnes of blue/low-carbon ammonia at our Geismar, Redwater and Joffre Nitrogen facilities.

d. Cogeneration projects

Generating lower-carbon energy is one of the ways we can reduce our energy-related Scope 2 emissions. We have two cogeneration projects that efficiently combine heat and power generation. These facilities use natural gas to generate electricity using an efficient gas turbine, and waste heat from the exhaust is recovered to make valuable steam. The emissions reduction is significant as we are eliminating the requirement for coal-fired grid power to our facilities and associated transmission and distribution losses of electricity over long distances.

At our Carseland, AB facility, we partner with TC Energy Corporation to generate steam for our operations from waste heat from their natural gas-fired power plant. This efficient process reduces the required natural gas boiler firing at our site. We use more than 75 percent of the electricity generated, which has a significantly lower emissions intensity than grid electricity. At our Cory Potash mine in Saskatchewan, we consume steam from a SaskPower cogeneration facility, reducing some of our natural gas requirements. Further, 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. It is being designed with the capability to provide steam, offsetting a portion of the steam supply we currently generate using gas-fired boilers. The Rocanville cogeneration facility is expected to be commissioned in mid-2022 with the addition of cogeneration at other Potash sites expected as early as 2024.



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

¹ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Climate Change and GHG Emissions (continued)

Targeting Deployment
of Self-Generated

WIND AND SOLAR

Energy at Four Potash Facilities
by End of 2025

e. Renewable energy

Scope 2 emissions are primarily generated where energy is produced upstream and accounted for at the point of consumption. Reductions in Scope 2 emissions can be achieved at the point of energy production as well as at the point of consumption. Lower GHG emissions energy options for Nutrien include

- self-generated wind and solar energy projects that are located on fertilizer production sites, such as our Potash operations;
- 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”).

f. Low- and zero-carbon options for ammonia

To achieve further emissions reduction in ammonia production, end markets for low-carbon products must continue to emerge and technology will need to advance. Overall, the economics of these opportunities must align in order to drive adoption. Available low-carbon options that Nutrien is considering include both blue and green ammonia production. These pathways represent a range of technologies and processes to reduce the carbon intensity of ammonia production over the medium and long term.

In 2021, Nutrien partnered with the US DOE and others to explore flexible zero-carbon ammonia production. Nutrien is one of 15 organizations involved in the DOE-funded Renewable Energy to Fuels Through Utilization of Energy-Dense Liquids (“REFUEL”) integration and testing program. Led by RTI International, the partners are working to develop a one metric tonne-per-day, zero-carbon ammonia facility, and use the resulting ammonia for agriculture, electricity generation and/or as a fuel. [Learn more.](#)

In 2021, we also announced a collaboration agreement with EXMAR to jointly develop and build a low-carbon, ammonia-fueled vessel. Ammonia can be produced, stored and shipped around the globe, and it is an emerging energy source of choice for the shipping industry to transition away from conventional fuels and reduce GHG emissions. Nutrien’s collaboration with EXMAR is an

important step in this journey, providing a repeatable pathway for wide adoption of low-carbon ammonia as a clean fuel for the maritime industry. In addition to the EXMAR collaboration, Nutrien is working with a number of companies to develop a better understanding of the practical realities involved in using ammonia as a fuel source for ships. [Learn more.](#)

Low- and Zero-Carbon Ammonia Solutions Explained

Blue ammonia is made of hydrogen obtained from fossil fuels and primarily via a process that captures and permanently sequesters the carbon dioxide produced rather than releasing it into the atmosphere. It can also be made from hydrogen obtained as a byproduct from other industries.

Green ammonia is made of hydrogen obtained through a process that uses 100 percent renewable and carbon-free sources, most commonly via electrolysis of water using renewable electricity.

Scope 1 and 2 Next Steps and Short-Term Priorities

In the short term, Nutrien’s key priorities to lower the GHG emissions associated with ammonia production are to

- deliver on our commitments by executing our first phase of GHG reduction projects;
- progress development and execution of the next phase of priority emissions reduction projects;
- scope and potentially invest in transformational low-carbon production pathways, including industry/technology partnerships, engineering studies and pilot projects to enable future commercial scale-up; and
- position Nutrien to scale low-carbon ammonia production as end markets continue to develop, providing a step-improvement in our long-term emissions profile.

Climate Change and GHG Emissions (continued)

Challenges in accelerating progress on Scope 1 and 2 emissions reduction include the following:

- current technological limitations to reducing emissions,
- capital returns required to invest in new technologies,
- uncertainty around policy and carbon prices in the jurisdictions where we operate, and
- limitations imposed by original plant design and age of facilities due to life spans often more than 40 years.

Scope 3 Initiatives

a. Nutrien's comprehensive Carbon Program

Nutrien is partnering 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 asset market for the agricultural industry through soil carbon sequestration and reduced GHG emissions. [Read more.](#)

b. Supply chain engagement

Indirect emissions related to purchased goods and services and capital goods are the second highest Scope 3 emission categories for Nutrien. Some of the highest emissions in purchased products are related to nitrogen fertilizer purchased by our Retail business unit. Several industrial products used in our manufacturing processes, as well as in our annual capital expenditures, have upstream emissions. Fuel- and energy-related activities and transportation emissions for both upstream and downstream activities are also material to Nutrien. We are evaluating our supplier ESG and climate-related practices.

Climate-Related Risks and Opportunities

To understand our climate-related risk and opportunities, read our [TCFD disclosures on pages 94-106.](#)



Analyst Corner

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



TAKING ACTION: Next Generation Potash

We are investing in initiatives focused on autonomous mining and tele-remote mining, and other advanced technologies, to continue to reduce our environmental impact, and improve our safety performance, lower our production costs, and optimize throughput. We are making these improvements from the mine face right through to the mill.

Our “Next Generation Potash” initiatives are expected to make our assets safer, more efficient, and more flexible. We advanced autonomous and remote mining by outfitting three mining machines with surface remote operation capabilities at our Lanigan and Cory, SK mines. Autonomous and remote mining helps remove our employees from the active mining face, which supports safer operations. Progress was also made on machine vision capabilities at now 47 strategic locations, which enhances remote monitoring capabilities to support predictive maintenance initiatives and improve reliability. We also completed additional advanced process control projects at our mine sites to optimize product quality and improve our environmental footprint.

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 the increasing environmental and societal pressures they face. 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/Target:

★ Achieved ✓ On track ➔ Room for improvement

- ✓ • Complete risk evaluation profiles of NPK (fertilizer) manufactured products by 2023

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.

Nutrien upgraded its product stewardship approach in 2021 by establishing 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. Strategic Issue Teams are a key component of Nutrien's ESG Governance Framework, supporting the collective goal of Nutrien to conduct business with integrity in our operations, in all countries where we operate. 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 seeks out collaboration with employees, customers, suppliers, governments and communities to work together and find more sustainable solutions.

Nutrien's Safety, Health and Environment ("SH&E") Management System integrates product stewardship-related topics of regulatory compliance, chemical classification, supply chain risk, environmental and sustainability impacts, and safe use information. We have a product stewardship management standard that guides our activities. Our approach in the fertilizer manufacturing sector has been recognized under the International Fertilizer Association Protect and Sustain program. [Learn more.](#)



Analyst Corner

✓ SASB RT-CH-410b.2

Product Stewardship (continued)

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. Closing the loop through the 4R

Nutrient Stewardship, or “4Rs” (Right Source of plant nutrients at the Right Rate, Right Time and Right Place), for example, reduces losses to the environment and keeps nutrients in the soil for crops to grow.

Our Actions

Our product stewardship approach seeks to address product environmental, safety 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.

Product risk rating profiles: We are developing a holistic product risk rating approach that can be used to create future product risk profiles. Each profile may incorporate information such as ingredient origin, regulatory compliance, product chemical hazard classification (for example, not hazardous, toxic to the environment, corrosive), sustainability (for example, potential to contribute to ecosystem degradation, conflict material rating) and supply chain risk factors (for example, security potential for illegal use). These profiles can be used to help inform other decisions such as environmental and social impact product evaluations.

Classification and labeling of chemicals: We are striving to align with the Sustainability Accounting Standards Board (“SASB”) Chemicals framework for our NPK (fertilizer) manufactured products target, which suggests using the Globally Harmonized System (“GHS”) of classification and labeling of chemicals in category 1 and 2 related to health and environmental hazardous substances. We have completed an inventory list of North American and European Union manufactured NPK products and are reviewing each for potential GHS category 1 and 2 hazardous classifications. The net revenue for products within each classification was compared to total Nutrien revenue. The next phase of the review is to extend the hazard assessment to North America Retail NPK products with GHS health or environmental category 1 or 2 classifications relative to their revenue.

Our Impacts

We acknowledge stakeholder concerns related to the necessary use of chemicals in agriculture. Consumer demand for sustainably sourced food is on the rise and producing enough nutritious and accessible food for the world’s growing population puts a strain on existing land and water resources. We collaborate with our suppliers and registrants of active ingredients to develop and implement best practices that minimize food residues and impacts to the environment. This challenge requires science-based solutions, including the responsible use of chemicals, to increase production on existing land while protecting people and the environment.

We make informed decisions about product suitability and application using available science and empirical evidence. We promote the safe and responsible use of our products through our labels and product bulletins, which provide information on the appropriate use, handling and application of the products we sell. We have a strong and continually evolving product stewardship program to manage the environmental and safety impact of our products while maintaining their functionality. Our recent acquisitions and innovations have increased our biological-based products to diversify our portfolio. [Read more.](#)



Analyst Corner

- ✓ SASB RT-CH-410b.1
- ✓ SASB RT-CH-410b.2

Product Stewardship (continued)

Impact Management Across Our Value Chain

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

1 Crops Inputs Management

We 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 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 in rare occasions when scientifically valid alternative methods are not available or if required by law. Read our [Animal Testing Statement](#) for details.

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. 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 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.

3 Safe Product Handling and Application

Nutrien’s products are developed for specific applications. Use outside 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

Analyst Corner

✓ SASB RT-CH-410c.1

[Animal Testing Statement](#)

[GMO Position](#)

[Pesticides Position](#)

[Existing and Emerging Product Technology Position](#)

Performance	2021	2020	2019	2018
Percentage of Nutrien seed sales that contain GMOs ¹	84%	82%	86%	89%
Percentage of total Nutrien sales that contain GMOs	10%	7%	7%	8%

¹ 2018 includes only the US and Canada.

Product Stewardship (continued)

Nutrien and EPA Resolution

In 2021, Nutrien Ag Solutions agreed to settle claims made by the EPA, that the Nutrien Ag Solutions located in Galva, KS: (1) applied over-the-top dicamba in wind speeds higher than permitted, and (2) failed to keep records in acceptable condition. Nutrien Ag Solutions agreed to pay \$668,100 and has taken the additional steps of conducting trainings on chemical application; working with applicators to comply fully with label requirements; and improving recordkeeping practices. Nutrien Ag Solutions operates roughly 1,530 chemical applicators and treats millions of acres per year. This incident involved four applicators at the Galva, KS location. Nutrien Ag Solutions strives to apply chemicals correctly and to minimize error, and we hope to use investments in technology as they continue evolving to diminish the risk of error.

contractors who handle and apply our products.

Disclosure and transparency:

- Safety Data Sheets ("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 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").
- 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 periodically 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) that enforces licensing and certification for pesticide product handling and use. This system regulates which pesticide products can be sold in which regions, which Retail 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 Retail business unit.



WATER STEWARDSHIP



Why is this topic relevant to our business?

To meet growing global needs, current and future agricultural production must be managed safely and sustainably. Agriculture is 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. Water is also an essential input to our operations, especially in mining and fertilizer production. 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.

ESG Performance Goals/Target:

★ Achieved ✓ On track ⚡ Room for improvement

- ✓ • Complete a watershed risk assessment of our production sites in 2021 to inform context-based operational water targets by 2023

Our Approach

Nutrien's water stewardship actions are guided by our SH&E Policy. Nutrien's Water Strategic Issue Team ("W-SIT") was established in 2020 to provide cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company. Strategic Issue Teams are a component of Nutrien's ESG Governance Framework, which supports the collective goal for Nutrien to conduct business with integrity in all aspects of our operations, in all countries where we operate. 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 partnered with The Water Council to pilot the Corporate Water Stewardship Accelerator ("CWSA"). Through our piloting of the CWSA, Nutrien was able to understand, build and communicate our path forward on water stewardship. This pathway includes setting meaningful goals and context-based targets for site-based water management in our operations that help mitigate identified water-related risks, and leveraging our position in the agri-food value chain to meaningfully participate in global water stewardship efforts in the agri-food value chain for collective action and impact.



Analyst Corner

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

Water Stewardship*(continued)***<2%**

Water Intake in Regions
with High or Extremely High
Baseline Water Stress

This CWSA includes six elements:

- 1 Joining the Alliance for Water Stewardship ("AWS"):** Nutrien officially joined as a member of the AWS in January 2021. AWS is the global leader on water stewardship and serves as the custodian of the AWS International Water Stewardship Standard (AWS Standard) and System globally.
- 2 Developing a corporate water stewardship policy:** We leveraged our W-SIT to develop Nutrien's Global Position on Water, which describes Nutrien's approach to water stewardship and water management in our operations. This document was approved by our ESG Cross-Functional Working Group, Executive ESG Committee and our ELT. Read Nutrien's [Global Position on Water](#).
- 3 Performing an enterprise-wide review of water-related practices:** We engaged our production sites to understand current water data needs, constraints and gaps; understand and document applicable best management practices at different levels (for example, site, business unit, company-wide, etc.); and identify how to fill gaps and reduce water-related risk.
- 4 Watershed risk assessment of our sites:** We completed a watershed risk assessment for 27 sites including manufacturing sites and terminals across North and South America. Each facility was assessed based on the watershed in which it operates to help inform context-based water targets to be set in 2023. The risk assessment consisted of the following steps:
 - a. Sites were run through World Resources Institute's ("WRI") Aqueduct™ Water Risk Atlas, a screening tool for water risk used to determine overall water risk and baseline water stress for

2021, and baseline water stress forecast for 2040. Water stress rankings were used as a screening of potential high-risk sites.

- b. Rankings were reviewed with individuals from ERM and SH&E to provide context to the site-specific risks. This was supplemented with desktop research and discussions with stakeholders in higher-risk watersheds (for example, internet searches and discussion with site water lead(s) and external groups such as municipalities and watershed groups).

5 Site Action Prioritization: Sites were prioritized based on the watershed risk assessment, regulatory considerations such as water discharges, financial factors including production volumes, and opportunities for water-risk mitigation.

6 Disclosure and communication of corporate action plan, goal and timeline for implementing the AWS Standard at high-risk sites: Sites were 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 will be used, and corporate goals and targets will align with the UN SDGs as part of our [Feeding the Future Plan](#).

As a member of the AWS, Nutrien will evaluate setting an AWS Standard adoption strategy for our high water-risk facilities. Use of the AWS Standard helps to identify and pursue opportunities to be better water stewards in our operational watersheds at the local level, while reducing water-related risks. This includes working with local stakeholders to understand the unique challenges of the watershed and focusing our efforts on collective action and advocacy for positive environmental, social and economic outcomes.

**Analyst Corner**

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

[Water Position](#)

Site-Based Water Management in Our Operations

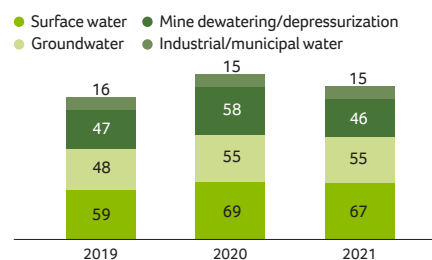
Our primary uses of water are for producing nutrients, such as milling in mining operations, steam generation and process cooling at our fertilizer production facilities. Water is also used to produce some of our liquid products. Water availability is crucial for our two Phosphate and six Potash mining operations. 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, ocean water or recycled water.

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: Pore water within our gypstacks (stockpiles of phosphogypsum byproduct 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. Pore 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 preserve surface water quality through proper phosphate mine reclamation including installation of low permeability caps as necessary on overburden materials.

[Read more.](#)

Water Stewardship in the Agri-Food Value Chain

With Nutrien's extensive Retail network and on-the-ground agronomic expertise, we are in a unique position 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.](#)



TAKING ACTION: Agricultural Water Futures Project

The Agricultural Water Futures ("AWF") Project is a continued collaboration that Nutrien has helped fund and lead since 2016. It envisions a system that incorporates incentives for growers, including ecosystem services valuation, effective monitoring and credits management. The previous phase of work examined the need for watershed action in the agricultural community, the range of water quality and quantity trading programs that exist in other parts of the world, and some of the ways data technology could be harnessed to inform a trading system. This next phase of the project explores water stewardship implementation in the potato supply chain in southern Alberta, Canada to develop a globally replicable step-wise process for water stewardship with widely recognized value.

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. Loss of biodiversity is a key risk to our growers, as it provides a buffer against variability in farm productivity, improves crop pollination, and increases natural resistance to weed, pest, and disease invasions.

ESG Performance Goals/Target:

★ Achieved ✓ On track ⚡ Room for improvement



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

Our Approach

Nutrien is committed to helping protect biodiversity worldwide by leading the next wave of innovation and sustainability in agriculture. We support sustainable practices across our sites, operations and communities.

Nutrien's Biodiversity Strategic Issue Team ("B-SIT") was established in 2020 to provide cross-functional subject matter expertise and a platform for transparent communication and strategic guidance throughout the Company. Strategic Issue Teams are a component of Nutrien's ESG Governance Framework, which supports the collective goal for Nutrien to conduct business with integrity in all aspects of our operations, in all countries where we operate. The team's initial work in 2020 focused on deforestation. While Nutrien maintains a strategic focus on the impacts we can facilitate through our business, deforestation is a shared challenge across the industry and its supply

chain that must be addressed through collaborative leadership within the agriculture sector. [Read Nutrien's Deforestation Position.](#)

In 2021, the B-SIT expanded its scope of work to include objectives focused on a comprehensive review of Nutrien's biodiversity footprint and identify biodiversity-related risks and opportunities across our value chain. These broadened objectives of the B-SIT incorporate a strategic look at innovative biodiversity solutions and measurement, biodiversity-positive production (which means that positive impacts on the variety of ecosystems and living things caused by farming are outweighed by the negative impacts), and on- and off-farm conservation efforts such as reforestation, reclamation and remediation.



Analyst Corner

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

Biodiversity (continued)

For Every Wetland Acre Impacted,
UP TO 2
Wetland Acres Restored/Created

Our Actions

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 on climate change. Climate mitigation solutions include reforestation; protection and conservation; livestock, animal and land management; and coastal wetland and peatland restoration, among others. We consider impacts to biodiversity directly at our operation sites, and indirectly through our agricultural products and services.

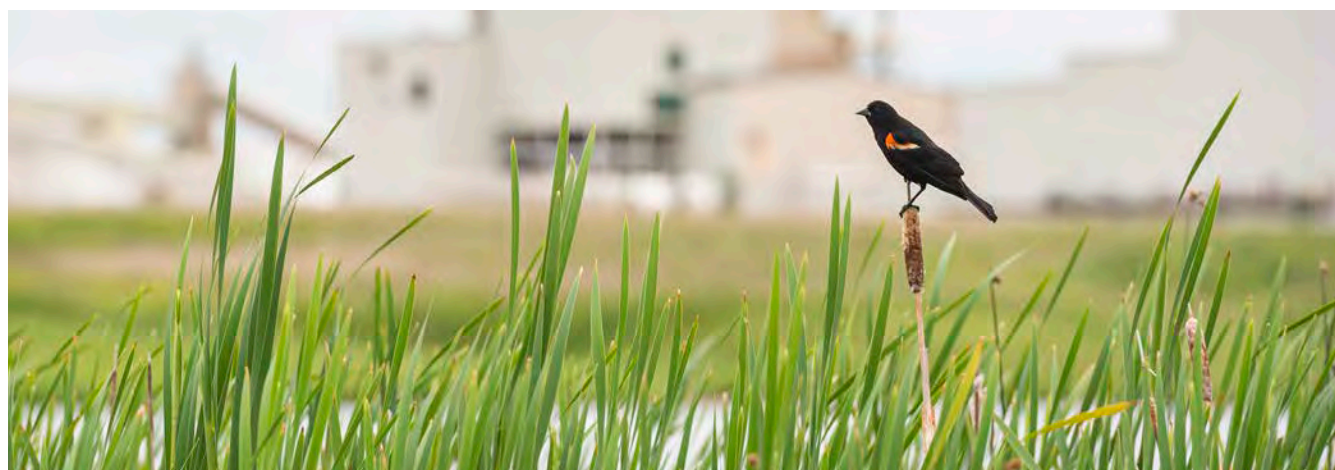
Nutrien recognizes the intrinsic value of protected areas and legally recognized areas of high biodiversity. In the normal course of operations, if a planned project may impact a protected species, or is subject to a regulatory review (for example, the Impact Assessment Act in Canada or the National 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.

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 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, which greatly increases the area biodiversity. Since the late 1970s, we have reclaimed 28,700 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.](#)

Our products and services improve yields on existing agricultural land, reducing the need to convert more land for agricultural purposes and protecting our natural carbon sinks and biodiversity. As part of our initial work, by the end of 2021 we used Agribile® to document sustainable and productive acres in the US that also include biodiversity metrics. [Read more.](#)

Analyst Corner

- ✓ SASB RT-CH-140a.3
- ✓ SASB EM-MM-160a.1



Biodiversity (continued)

Biodiversity Highlights From Across Our Operations

- Pollinator Protection:** Nutrien's addition of honeybee hives to the reclaimed phosphogypsum stack at Fort Saskatchewan, AB and a bee rescue operation at our Redwater, AB facility are examples of how we are protecting pollinators and supporting biodiversity. [Learn more about Fort Saskatchewan](#) and [Redwater](#). Nutrien's Retail terminal in Newton, IL has a four-acre pollinator plot consisting of various native plants including milkweed, which plays a vital role in the lifecycle of monarch butterflies, to support pollinators and birds in the area.
- 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 2009, our cumulative donation of \$1.15 million has been continually reinvested in Western Canada, protecting approximately 650 acres of wetlands on 3,700 acres of total habitat.
- 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. Between 2010 and 2021, DUC has converted more than 198,000 acres and engaged 1,600 landowners.
- Pollinator seeds planted in Idaho:** In 2021, we planted 32 acres of pollinator seed mix near our reclaimed mine in Soda Springs, ID, rather than grasses, which further supports our remediation efforts in the area and fosters biodiversity.
- Threatened species protection in Florida:** Nutrien's White Springs Phosphate mining operations in northern Florida is also 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. Nutrien's on-site 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](#).
- Peregrine falcon protection:** Nutrien's Redwater, AB Nitrogen and Rocanville, SK Potash facilities have each been the spring and summer home for a breeding pair of peregrine falcons. The species has a status of "special concern" in Canada, and we have prioritized their conservation and safety. [Learn more and view Redwater's Falcon Cam](#).



Analyst Corner

✓ SASB EM-MM-160a.1

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/Target:

★ Achieved ✓ On track ⚡ Room for improvement

- ✓ • Develop Retail's plastic recycling strategy and set a target by 2022

Our Approach

In support of Nutrien's SH&E Policy, our Global Waste Minimization Standard communicates non-mining waste management requirements for all Nutrien business units 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 byproducts and waste, we pay special attention to the management of our Potash and Phosphate operations. Our tailings piles comply with applicable laws, regulations and environmental standards.

Our Actions

At the end of 2021, all of our North American manufacturing, retail and corporate sites have completed their initial waste reviews as required by the Global Waste Minimization Standard and have implemented strategies best suited to reducing waste at their locations. The plastic recycling strategy for our Retail operations is in development.

order to manage hazardous waste properly, we work with our waste management suppliers to verify that the materials are registered, transported, treated, and recycled or disposed according to applicable regulatory requirements.

2 Non-Hazardous Waste Management

Approximately 95 percent of the waste we produce is non-hazardous. Mining waste referred to as "mine tailings" is non-hazardous waste. Potash mining and Phosphate operations are the largest contributors to our waste footprint.

1 Hazardous Waste Management

The hazardous waste we generate in our manufacturing operations includes waste chemicals, solvents, paint and spent catalyst. In



Analyst Corner

[Tailings Safety Disclosure](#)

Waste and Tailings (continued)

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

The amount of hazardous and non-hazardous waste that we dispose of and recycle varies from year to year due to projects that include construction, demolitions, turnarounds and clean-ups.

Potash mining

We have six active potash mines with tailings management systems. Clay and salt tailings are byproducts of the potash mining process. Although clay and brine (salt solution) are innocuous waste, there is a potential environmental impact if brine spills onto soil (reduces productivity) or into surface water (impacts water salinity levels). We sell small quantities of salt for winter road application, but the majority is stored in tailings management systems or injected via solution into provincially licensed and approved deep wells.

Tailings management systems consist of engineered containment facilities designed to store solid tailings and brine. The systems, licensed and approved by the Saskatchewan Ministry of Environment, are equipped with instrumentation that monitors key parameters and allows us to evaluate stable performance.

At each mine site, there are environmental staff who manage the day-to-day compliance and surveillance needs of the tailings management systems. At the corporate level, Nutrien has dedicated engineering groups, an ERM group and a centralized SH&E group that support risk assessment and auditing of these facilities. We also hire third parties with expertise in engineering, construction and decommissioning activities to support us as we develop, implement and maintain our tailings systems safely.

Tailings management includes safe storage in

Tailings and brine ponds: We protect surrounding water bodies and aquifers by building containment appropriate for each storage pond, typically consisting of engineered dykes, engineered slurry-walls or compacted earth trench barriers. Areas surrounding tailings ponds

are also closely monitored with routine inspections, investigations and monitoring of surrounding environmental conditions.

Tailings piles: We separate the liquid from the solids through gravity drainage. The salt is stored in piles that are closely monitored through routine inspections, investigations and examinations of surrounding environmental conditions. The salt in the piles dissolves over time through natural rainfall events. Excess liquid, or saturated brine, that is not reused in the production process is injected in deep wells into brackish (that is, non-fresh) water aquifers that are deeper than one kilometer beneath the ground surface. This process is conducted under regulatory oversight and approvals. [Learn more in Nutrien's Tailings Safety Disclosure.](#)

Phosphate operations

Phosphate fertilizer is produced by reacting sulfuric acid with phosphate rock to produce phosphoric acid, which is then reacted with ammonia to produce granulated ammonium phosphate fertilizer. This process also produces phosphogypsum as a byproduct, generated at a finished product ratio of approximately five to one. Although phosphoric acid manufacturing is not a mining operation, and phosphogypsum is not classified as a waste, we are providing this information related to phosphogypsum management in the waste management section of this report to be responsive to stakeholder concerns.

Phosphogypsum is primarily composed of hydrated calcium sulfate but it may also contain trace metals and naturally occurring radioactive materials that were originally in the phosphate rock. Phosphogypsum can potentially be reused for a variety of applications in construction or agriculture. In North America, it is primarily stacked, generally using the following phased process:

Phase 1 – Phosphogypsum ponds: Phosphogypsum is mixed with process water and stored temporarily in specifically designed and monitored ponds. As the solids settle, the process water reports to another pond and is subsequently returned to the plant where it is reused in phosphoric acid production. These ponds are constructed over an impermeable liner to minimize potential impacts to soil and groundwater. As part of the required monitoring programs for the phosphogypsum stack systems, we conduct routine groundwater monitoring and maintain air quality permits.



Analyst Corner

[Tailings Safety Disclosure](#)

Waste and Tailings (continued)

Phase 2 – Phosphogypsum stacks: Over time, the solid phosphogypsum from the ponds is formed into stockpiles referred to as phosphogypsum stacks or gypstacks. To maintain the stability of gypstacks, they are constructed and operated in accordance with applicable engineering standards and regulations. Typically, a third-party engineer develops gypstack construction designs and operating plans.

Nutrien has two active Phosphate fertilizer operations, located in Aurora, NC and White Springs, FL. At Aurora, we stack phosphogypsum and also blend a portion with clay to reclaim adjacent mined lands. Nutrien also has inactive phosphogypsum stacks at four facilities in Conda, ID, Geismar, LA, Redwater, AB, and Fort Saskatchewan, AB that are undergoing closure.

Nutrien does not currently reuse phosphogypsum on a commercial scale, primarily because of the US EPA regulatory criteria established in 1989 that bans all use of phosphogypsum. Phosphogypsum is safely recycled for use in many other areas of the world, and studies show no health or environmental risks. Reuse of phosphogypsum for alternate purposes could reduce the environmental footprint and liabilities associated with gypstack closure.

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. Recycling plastic waste is a focus for our Retail business, and we commit to setting a target in 2022. We understand the growing global concern with single-use plastics and are exploring ways to either reduce plastic packaging or increase its reuse and recycling.

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 with thousands of farmer and applicator participants nationwide. During our initial year as a member of ACRC Nutrien's US

Retail locations participated in the program and recycled over 634,000 pounds of plastic containers. We aim to increase the recycling of plastic containers by streamlining the recycling request process and identifying geographic areas with opportunity to increase participation. The focus of future plastic recycling strategy and targets will be predominantly in the US as it is in the preliminary stages of plastic recycling versus our other regional operations.

In Australia, 100 percent of our Retail locations participated in a plastic recycling program. As a result, 80 percent of the more than 60 million liters of our crop protection and plant nutrition proprietary brands sold in 2021 were shipped using large returnable containers. In support of this we own more than 79,000 reusable drums and participate in a drum leasing program to further minimize the total number of product containers in circulation across the country. We are now exploring the possibility of using reusable containers that have been made from recycled plastics and expect to launch these drums in 2022. 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 will be participating in the newly launched bagMUSTER program for collection for recycling of plastic bag waste.

In Canada, 80 percent of our Retail locations participated in an industry-wide program called Cleanfarms that collects a variety of used agricultural packaging. In 2021, nearly 10,500 pesticide and fertilizer one-way drums and totes were recycled from Nutrien locations through Cleanfarms. Additionally, nearly 425,000 pesticide and fertilizer jugs, totaling more than 152,000 kilograms of plastic, were recycled from Nutrien locations across the country. In 2021, Nutrien participated in a new Cleanfarms pilot collection program for seed, pesticide and inoculant bags and returned over 13,550 kilograms of this material for energy recovery.

In the Past 3 Years:

>2,700

Acres of Land Reclaimed

>1.1M

Trees Planted

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. Data on our releases of air emissions are [available on pages 109 to 110](#).

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 result in more biodiversity after completing the reclamation process than prior to beginning operations.

1 Asset Retirement Obligations

Each year, we estimate the cost and timing of future reclamation expenditures. At the end of 2021, our discounted asset retirement obligations (“AROs”) were \$1.2 billion. Retirement obligations and their estimated costs to reclaim a site are drawn upon when the asset reaches its end of life; 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 \$177 million toward our AROs over the last two years.

2 Reclamation Projects

Nutrien’s Phosphate operations are currently mining at a combined rate of approximately 860 acres per year, and we reclaim land continuously as our mining operations progress. In the past three years, we have successfully returned more than 2,700 acres of land back to productive use after phosphate rock mining:

- Nutrien’s Aurora, NC Phosphate operation has pioneered a land reclamation process that has earned state and national awards over the years. We reclaimed about 130 acres in 2021 and 390 acres in 2020. During this time, we planted approximately 144,000 trees.
- At our White Springs, FL Phosphate mine, we strive to reclaim more land than we mine on an annual basis. In 2021, we reclaimed 550 acres, adding to the nearly 1,680 acres reclaimed in 2020 and 2019. Over the three-year period, we planted approximately 981,000 trees.

Remediation

At the end of 2021, we had accrued environmental costs of approximately \$505 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 \$55 million.

In 2021, we received federal regulatory approval of the feasibility study at the former North Maybe Mine in Idaho in which we recommend 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 in 2017 that resulted in a 100-fold reduction of selenium concentrations in surface water and earned Nutrien an Environmental Excellence Award from the American Exploration and Mining Association. [Learn more.](#)



Analyst Corner

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

SOCIAL

TOPICS IN THIS SECTION

56	COVID-19 Response
59	Worker Health and Safety
71	Equity, Diversity and Inclusion
75	Responsible Supply Chain
78	Human Capital
80	Community Relations

2021 Highlights

As part of Nutrien's purpose-driven culture, we strive to develop respectful and positive relationships with our employees, contractors, suppliers, customers and local communities, and to contribute positively to society as a whole.

0 SIF
Incidents

Announced the Nutrien-Radicle

**INCLUSION
CHALLENGE**

to Partner with Diverse
Ag-tech Entrepreneurs

56%

Increase in Employee
Volunteer Hours

COVID-19 RESPONSE



Why is this topic relevant to our business?

In 2021, the COVID-19 pandemic continued to impact operations, global supply chains, communities, customers, as well as employees and their families. Deemed an essential service in our core markets and key operating areas, Nutrien remains focused on helping farmers bring food to tables globally in the most efficient and safe manner possible. Supporting all key stakeholders in our value chain, such as employees, customers, suppliers and community partners is critical to achieving this goal.

Our Approach

Pandemic recovery continues to be a focus for Nutrien. As public health and perception dynamically change, we analyze and adapt our response to safeguard our employees and other key stakeholders while supplying critical agricultural products and solutions to growers. Our response has three key elements: providing support and a safe

working environment for our workforce, ensuring business continuity, and supporting people and communities around the globe. Ongoing activities include critical forecasting for further pandemic disruptions to business, and evaluations of employee and community protection requirements.

Supporting a Safe Workforce

Nutrien continued to prioritize supporting our workforce globally through the personal and professional impacts of the pandemic in 2021. New hires were welcomed with a virtual onboarding where applicable, and we continued our commitment to our summer intern programming. Our employee listening program continued to focus on the COVID-19 pandemic impacts to our employees, forming content for our executive-led townhalls in 2021. Employee and contractor safety, health and wellness were paramount, and we adjusted protocols throughout the year as new information and recommendations became available.

employees in a timely fashion. All Nutrien locations developed location-specific plans that addressed staffing, production, maintenance, personal protective equipment (“PPE”), capital projects and maintenance turnarounds. Specific protocols aligned with best practices and national, regional and local health authority recommendations for proximity, screening, contact tracing, scheduling, sanitizing and PPE requirements were monitored and adjusted depending on risk. Protocols included travel restrictions and remote offices, and we leveraged technology to support remote work. At the end of 2021, nearly 17,000 employees and contractors were equipped with proximity monitoring and contact tracing technology to help limit and track the spread of COVID-19. [Learn more.](#)

Given the increased levels of stress and uncertainty that all employees experienced this year, Nutrien increased its focus on



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- ✓ SASB RT-CH-210a.1
- ✓ SASB RT-CH-320a.2
- ✓ SASB EM-MM-210b.1

1 Employee Safety, Health and Wellness

SH&E, occupational health, hygiene, government and medical subject matter experts worked directly with our ELT to provide Nutrien-specific advice and share accurate information with our

COVID-19 Response (continued)

physical and mental wellness. We provided access to resources such as at-home exercise classes and live webinars from mental health experts. We consider mental well-being to be one of Nutrien's key proactive safety practices. [Read more.](#)

2 Contractor Requirements

Contractors (including subcontractors, service providers and vendors) are critical partners to Nutrien's safe execution of work. Nutrien engaged contractors to communicate, plan and share resources related to safe work during the pandemic. Throughout 2021, Nutrien maintained a high level of safety, health and

wellness for contractors, vendors, service providers and others working on our sites. Our Culture of Care is exemplified as essential operations continue and safety measures for our partners build collaboration and trust. Nutrien business units and sites maintain specific risk, operation, regional and regulatory expectations, which are communicated to all contractors and visitors to address this enhanced level of safety. Action plans included communication, scheduling work, entry procedures, contact tracing, temperature checks, distancing, mask usage, and enhanced cleaning and sanitization processes.



TAKING ACTION: Safe Turnarounds in 2021 Despite COVID-19

A turnaround is a planned shutdown of a production facility for preventative maintenance and/or facility upgrades. It is a complex operation requiring extensive planning, careful coordination of multiple workstreams, many extra personnel on site, and now, COVID-19 precautions. In 2021, our Nitrogen business unit completed two major turnarounds at Borger, TX and Redwater, AB without a COVID-19 outbreak. The Redwater turnaround required more than 1,000 additional people on site daily for more than two months. It is safe and efficient turnarounds like these that help us seamlessly deliver products and services to our customers, even during difficult times.

Business Continuity

Nutrien continually works to safeguard our operations and prevent business interruptions. This involves enhancing supply chain resiliency, ensuring access to capital, and providing cybersecurity awareness and training for our people. Our Retail Digital platform has also allowed us to facilitate efficient delivery of products, services and solutions.

1 Supply Chain Resilience

As COVID-19 significantly impacted global supply chains, we took the following steps to identify and mitigate risks and enhance the resiliency of our supply chain, ensuring operational disruptions were mitigated:

- identified high-risk inbound materials and used this analysis to monitor and address upstream risks and identify potential issues, as well as identify stock on hand for critical items
- ensured we had the right balance of contingency raw materials and transportation, freight and logistics capacity, which protected our operations from lagging response times and ensured certainty of supply
- developed alternate suppliers for key inputs, as a precaution, and tested new materials to mitigate potential supply risks while maintaining open and frequent channels of communication with our key suppliers
- documented force majeure notifications and used our third-party supplier risk tools and open-source industry news to assess the status of critical suppliers, allowing for improved agility
- worked with governments to modify requirements so that our essential supply chain could safely continue operations within the fast-changing environment

COVID-19 Response (continued)

2 Access to Capital

Throughout the year, demand for crop inputs continued to be strong, reflecting Nutrien's position as an essential component of the global food supply chain. We manage liquidity to maintain sufficient liquid financial resources to fund our financial position and meet our commitments and obligations in a cost-effective manner. We believe that internally generated cash flow, supplemented by available borrowings under our existing financing sources, if necessary, will be sufficient to meet our anticipated capital expenditures and other cash requirements for the foreseeable future. We do not reasonably expect any presently known trend or uncertainty to affect our ability to access our historical sources of liquidity.

3 Cybersecurity

The COVID-19 pandemic continued to elevate the risk of cyberthreats in 2021. Nutrien adapted by ensuring our most critical asset, our people, are cyber safe both at work and at home. Educating our people, beyond the workplace, emphasizes our commitment to creating a culture of cyber safety. We completed training focused on phishing attacks and cybersecurity awareness for employees and their family members, and contractors.

[Read more.](#)

4 Digital Platform

Nutrien's digital platform includes a secure e-commerce platform for our Retail operations in North America. It allows for the completion of most day-to-day customer transactions with limited requirement for in-person contact. [Read more.](#)

Community Outreach

Feeding the world is at the core of what we do. When the pandemic hit, we focused on keeping food programs running without disruption in the communities where we live and operate. In 2021, Nutrien continued to support existing community organizations that struggled to stay open due to fewer volunteers and fewer fundraising opportunities from cancelled events and activities

related to COVID-19 safety concerns. Nutrien supported more than 140 food-related organizations in North America, Australia, South America and Trinidad. By collaborating with our local charities, we were able to help them get food to tables, even under the most difficult circumstances.

Nutrien also supported communities through volunteering, donation matching and in-kind gifts. Our expanded volunteer program continued in 2021, offering employees up to five paid days off to volunteer in their community. Nutrien's support also included providing our free virtual sustainability education resources through our education partners. [Learn more.](#)



WORKER HEALTH AND SAFETY



Why is this topic relevant to our business?

Safety is a core value at Nutrien, and nothing is more important than the safety and well-being of our employees, our contractors and the communities we serve. Ensuring safe operations and keeping employees and contractors safe are essential elements of delivering strong business performance. Strong safety standards and programs help us maintain our reputation as an industry leader and responsible employer while reducing our legal and financial exposure.

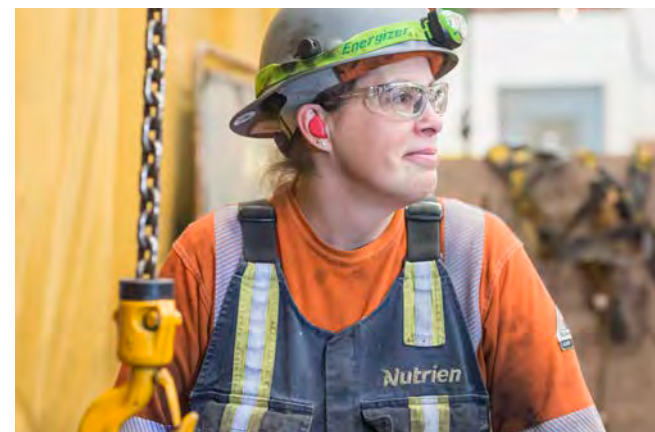
ESG Performance Goals/Target:

★ Achieved ✓ On track ⚪ Room for improvement

- ✓ • Achieve top-quartile safety performance across all business units by end of 2025
- ★ • Zero Serious Injury and Fatality (“SIF”) incidents annually¹
- ★ • Expand safety coaching into performance conversations for all employees by 2022
- ✓ • Develop Loss of Containment² reduction strategy and provide related target by 2023

Our Approach

Safety is a core value at Nutrien. Our commitment to safety is integrated into our operations through our Code of Conduct, SH&E Policy, vision, strategy, actions, and management system elements including global, business unit and site standards. Our safety culture starts with our organizational leaders and extends to everyone involved in our business. We consider contractors to be our partners in all areas of SH&E.



+ Analyst Corner

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

[SH&E Policy](#)

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.

Worker Health and Safety (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.

Vision

Everyone Home Safe, Every Day

What we strive for – the north star that guides us.

Strategy

Our Culture of Care

The behaviors that grow our culture: lead, collaborate, challenge and trust.

Actions

The Nutrien Way

Everything we do to support and sustain our culture on a daily basis.

Our Strategy

To achieve our vision, we are focused on the enhancement and deep integration of our safety strategy to grow a Culture of Care by demonstrating deliberate, principled behaviors and actions. Nutrien's ESG goals and targets include several workplace health and safety targets that support our 2030 Commitments and drive progress toward the achievement of our safety vision. To maintain focus on each business unit's unique risks and needs, we set annual safety targets at the corporate level, that are combined with business unit-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 2021 [Proxy Circular](#).



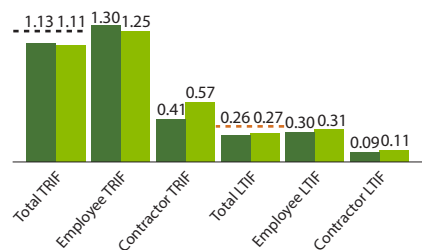
Nutrien's safety strategy is centered around caring for ourselves, each other and our community by employing four pillars under the Nutrien Culture of Care: Lead, Collaborate, Challenge and Trust.

Worker Health and Safety (continued)

Safety Rates

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

● 2020 ● 2021 -- Target Total TRIF -- Target Total LTIF



TRIF: Total Recordable Injury Frequency
LTIF: Lost-Time Injury Frequency

Nutrien continued to achieve positive safety performance in 2021.

Analyst Corner

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

Our Actions

Nutrien's SH&E Management System outlines the expectations of our global operations and integrates our SH&E strategy with tools to form a positive, proactive, risk-based structure for company-wide execution. The system is a framework for consistent protection of employees, contractors, environment and assets. Its structure reflects the uniqueness of each site and business unit by assessing risks and controls based on each specific workforce, operation and geography.





[Learn more.](#)

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 business units. During 2021, our Retail business unit continued to evolve its SH&E management system and intranet sites to reflect updates, current

risks and compliance needs. Communication was enhanced by providing access to documentation, regulations, expectations and information. Retail continues to enhance its operations, integrating best practices from Nutrien, industry and associations while opening avenues for efficiency and improvement across all operating geographies.

In 2021, Nutrien continued our safety journey with the launch of "the Nutrien Way." Simply put, "the Nutrien Way" is 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.](#)

The Nutrien Way includes the following key daily actions:

-  Take the time to work safely
-  Identify hazards and stop work if necessary
-  Pause frequently and focus
-  Use the right tools and personal protective equipment for the job
-  Care and look out for each other

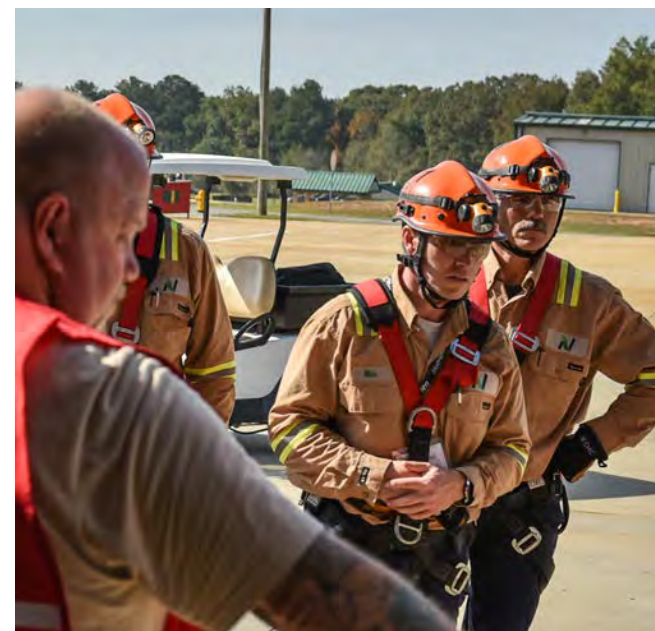


Image taken prior to COVID-19.

Worker Health and Safety (continued)

Overview of SH&E at Nutrien

Here are some of the core practices that make up the Nutrien Way in support of our safety vision and strategy:

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	Learn More
<ul style="list-style-type: none"> • Leader visibility • Safety leadership coaching • Recognition • Psychological safety • Supporting frameworks 	<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"> • Process safety • Environmental stewardship • Product stewardship 	<ul style="list-style-type: none"> • "SIF-in-the-Routine" • SIF elimination 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 	The Nutrien Way
<ul style="list-style-type: none"> • Leading indicators • Daily safety updates 		<ul style="list-style-type: none"> • Continuous improvement teams and safety committees 		<ul style="list-style-type: none"> • Culture pulse check • SH&E Health Index • Industry guidance • Rail safety 	SH&E Management doc
<ul style="list-style-type: none"> • Our Performance • National Safety Council® Green Cross Award 	<ul style="list-style-type: none"> • Crew Safety Leadership Feedback • SH&E Summit Week • South America Safety Month • Contractor Culture Survey 	<ul style="list-style-type: none"> • Process Safety • Training and Competency • Data Analytics • Forklift Safety • Storage Safety • Product Transport Safety <ul style="list-style-type: none"> – Rail – Trucking 	<ul style="list-style-type: none"> • SIF Elimination Programs • SIF Elimination Recognition • Technology Adoption • Emergency Response • Driving Safety • Heavy Mobile Equipment Safety • Underground Mine Safety 	<ul style="list-style-type: none"> • Mental Health and Wellness • Retail Canada Training Facility • Thermal Imaging • SDS QR Codes • AgVet Chemical Safety • Safety Campaigns 	2021 updates (below)

1 Leadership and Accountability

At Nutrien, everyone is a safety leader, regardless of position. We are all accountable and have a part to play in keeping each other safe.

Here are some of the ways we demonstrated safety leadership and accountability in 2021:

a. Our Performance

Tracking our performance, setting targets and benchmarking holds us accountable and drives improvement. Nutrien achieved our best safety year to date due to our employees' and contractors' motivation, communication and effort over the last two years to focus collectively on SH&E performance.

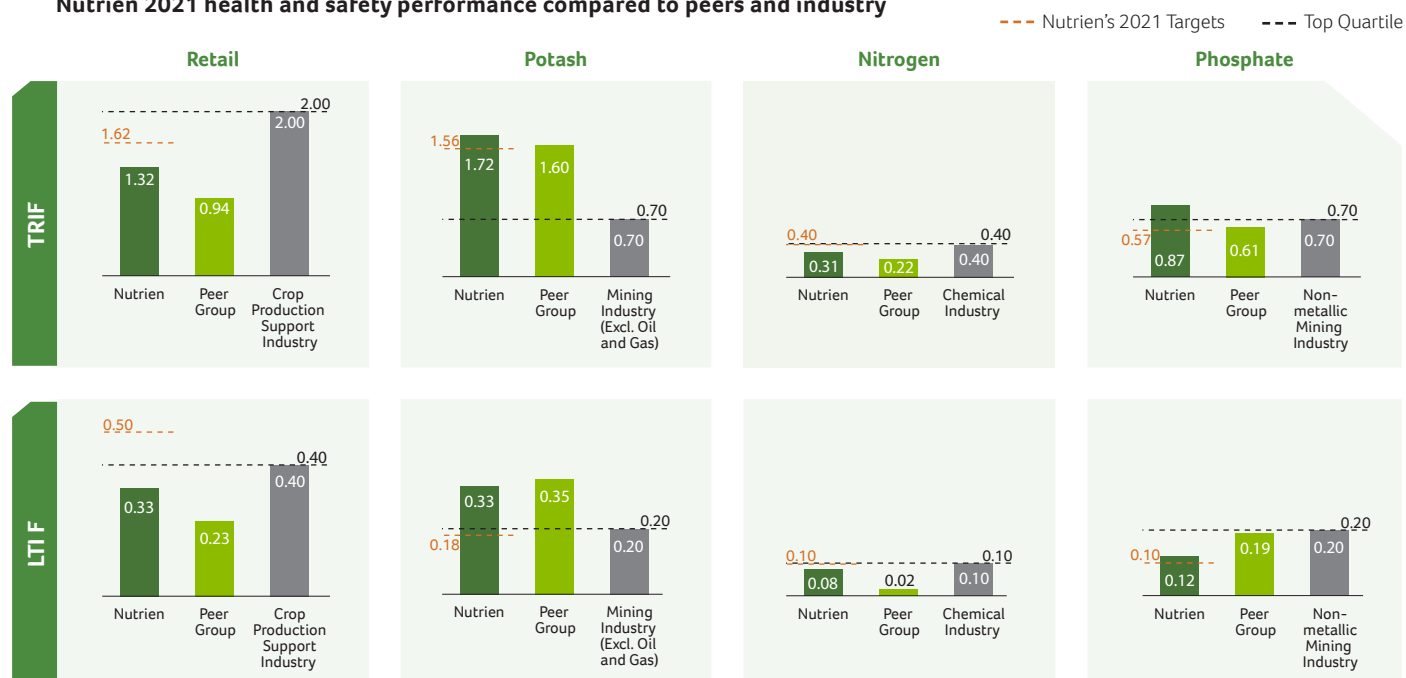
Worker Health and Safety

(continued)

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:

- **Retail:** represents approximately 60 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 nearly 29,000 leased or owned retail vehicles and application equipment.
- **Potash:** includes a flexible six-mine network, each with surface processing operations. These operations represent approximately 11 percent of Nutrien's total workhours.
- **Nitrogen:** represents approximately 14 percent of Nutrien's total workhours. Our Nitrogen operations include 13 ammonia plants.
- **Phosphate:** represents approximately 9 percent of Nutrien's total workhours. We operate two integrated phosphate mines and mineral processing complexes plus four plants that manufacture phosphate products.
- **Corporate:** represents the remaining approximately 6 percent of Nutrien's total workhours.

Nutrien 2021 health and safety performance compared to peers and industry



Peers: Based on results for Bunge (2020), ADM (2020) and Deer & Co. (2020)
Industry Data: US Dpt. of Labor Statistics (Support Activities for Crop Production - 2020)

Peers: Based on 2021 average performance of Saskatchewan Mining Association companies
Industry Data: US Dpt. of Labor Statistics (Mining excl. Oil and Gas - 2020)

Peers: Based on 2020 results for CF, Yara and Nova Chemicals
Industry Data: US Dpt. of Labor Statistics (Chemical Manufacturing - 2020)

Peers: Based on 2020 results for Mosaic, OCP and BHP
Industry Data: US Dpt. of Labor Statistics (Non-metallic Mineral Mining and Quarrying - 2020, all sizes)

In 2021, we achieved top-quartile LTI performance across Retail, Nitrogen and Phosphate business units, reflecting our deliberate effort on SIF and severity elimination. Our Retail and Nitrogen business units surpassed top-quartile TRIF performance while the Potash and Phosphate business units further evolved positive performance.

Analyst Corner

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

Worker Health and Safety (continued)

NH₃ safety training received the 2021 Green Cross Safety Advocate Award from the National Safety Council®

b. National Safety Council Green Cross Award

Nutrien's industry-leading ammonia safety training program was recognized by the National Safety Council® in 2021. Anhydrous ammonia (NH₃), a pressurized liquid, is one of the most hazardous products we produce and distribute. Across our North American Retail business, nearly 4,000 employees at 600 locations handle close to one million tons of NH₃ each year. Our SH&E team designed comprehensive, in-house NH₃ training tailored to the needs and protection of our North American Retail employees to complement our Operating Standards Manual. E-learning modules for NH₃ handling have been completed by more than 2,000 employees.

[Learn more.](#)

2 Employee Engagement

Engagement means everyone has a part to play and anyone can be a safety leader. We each contribute in our own way, by taking simple, positive actions, to help everyone go home safe, every day.

Here are some ways that Nutrien's employees and contractors engaged in safety in 2021:

- **Crew Safety Leadership Feedback:** Throughout 2020 and 2021, we launched Crew Safety Leadership Feedback surveys across 32 locations in our manufacturing operations. The goals of the survey were to illuminate any blind spots with respect to our 15 Key Safety Leader Behaviors and to validate what leaders are doing well. Crew's responses are compared to the leader's self-evaluation, and an action plan is created to address any differences. More than 500 crew leaders have now received feedback reports.
- **SH&E Summit Week:** The SH&E Summit is an annual event that brings Nutrien together to discuss important topics in SH&E. Since 2021, the event has been held in a virtual format, consisting of multiple sessions over the course of the week. Each year has a different theme and variety of different topics. In 2021, the theme was "The Nutrien Way: Putting Care into Action" with a concerted focus on each pillar of our Culture of Care with internal and external guests, subject matter experts, and leadership.

- **South America Safety Month:** Throughout the month of August 2021, SH&E South America teams held training sessions, interactive events and safety moments, and shared personal stories to discuss the importance of health and safety in the workplace and in all aspects of daily life. Employees from Argentina, Chile, Uruguay and Brazil attended live events focused on the pillars that guide our Culture of Care. The *Sinal de Alerta* ("Alert Signals") program was launched as part of this initiative to create mechanisms for reporting unsafe situations or near misses and to reinforce the importance of individuals being safety leaders.
- **Contractor Culture Survey:** Contractors represent significant exposure hours worked for Nutrien and conduct critical activities to maintain our safe operations. We recognize the importance of partnering with contractors and other service providers to improve SH&E performance. In 2021, our Potash operations held a perception survey asking contractors to evaluate Nutrien's SH&E practices. The process reinforces areas of strength, solidifies our partnerships and demonstrates Nutrien to be a transparent organization. Nutrien's contractor feedback indicates we are viewed as having mature (above benchmark) SH&E commitments, expectations, processes and tools, excelling in areas of competency and hazard awareness. Areas for continued improvement include communication of change, recognition and near miss reporting. Our Phosphate business is planning to hold a contractor culture survey in early 2022.

3 Structured Systems and Stewardship

We aim to protect our people, communities and the environment. We take process safety and product and environmental stewardship seriously. This means keeping chemicals contained and handling products safely. We set high standards and aim to meet or exceed regulatory requirements.

In 2021, we focused on the following areas:

- **Process Safety:** Process safety focuses on reducing unexpected releases of hazardous materials or energy from piping and process equipment to protect people, the environment, and assets from potential chemical exposures, fires and explosions.

Worker Health and Safety (continued)

Our process safety management ("PSM") program ensures that our facilities are well designed, safely operated and properly maintained throughout the lifecycle of the facility. [Learn more](#).

We expanded the scope of process safety incident reporting in 2020 to include Nutrien Ag Solutions US. In previous years,

only our Nitrogen and Phosphate operations were included. The decline in process safety total incident rates for 2020 is a result of this change in reporting scope. Our Retail operations have high exposure hours and relatively low process safety incidents. Our Potash operations are excluded from these figures as they are entirely Canadian-based and PSM reporting is a US requirement.

Performance	2021	2020	2019	2018
Tier 1 Process Safety Incidents ¹ (count)	3	9	6	NPR
Tier 2 Process Safety Incidents ² (count)	25	24	23	NPR
Tier 1 Process Safety Total Incident Rate ¹ (incidents*200,000 hours/total actual hours)	0.01	0.04	0.07	NPR
Tier 2 Process Safety Total Incident Rate ² (incidents*200,000 hours/total actual hours)	0.12	0.12	0.27	NPR
Total environmental incidents ³	24	23	24	20
Reportable quantity releases	22	20	22	18
Non-compliances	0	0	0	1
Enforcement actions	2	3	2	1
Environmental incident frequency (incidents*200,000 hours/total actual hours)	0.07	0.07	0.07	0.07

NPR = not previously reported

- 1 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.
- 2 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.
- 3 Restated 2018-2020 as a result of changes to classification of incidents.

- **Training and competency:** Safety training helps us keep our work environments safe. Nutrien's central Learning Management System ("LMS") provides visibility, responsibility and ease of assignment, making it an efficient method to provide safety training across Nutrien.
 - **LMS Integration in Australia:** Our Australian Retail operations have embraced Nutrien's central LMS while considering their unique business and regional needs. Examples of training categories include driving, traffic and transport, incident and emergency, chemicals – dangerous goods, and hazardous substances, while role-specific training includes that related to livestock, real estate, water and wool.
 - **Training simulators:** We have implemented process simulators at all our ammonia production plants for initial and refresher operator training. The simulators are also used to design and test process control changes before operation.
 - **Virtual reality training:** Nutrien's Potash business unit is currently testing virtual reality training in concert with Saskatchewan Mining Association Members. The training is entry level and designed for practical application. Additionally, our Potash operations employ a virtual reality sounding (technique designed for detecting loose material) and scaling (technique for removing loose material) demonstration program. Sounding and scaling is vital for maintaining safe

Analyst Corner

✓ SASB RT-CH-540a.1

Worker Health and Safety (continued)

125K

Railcars of Product
Moved in 2021

Canadian National Railway

SAFE HANDLING

Award Winner

Norfolk Southern Thoroughbred

CHEMICAL SAFETY

Award Winner

Canadian Pacific Railway

SAFE SHIPPER

Award Winner

Union Pacific Pinnacle

SAFETY

Award Winner

underground mines, and training in virtual reality permits participants to work in a safe space where learning from success and challenge is paramount.

- **Data analytics:** Nutrien's SH&E department includes a Data Analytics Team who transforms raw data into performance information and provides evolving diagnostic and forecasting support. The team provides data analysis across the organization, playing a central role in evaluation and evidence-based decision making. Significant analysis in 2021 includes Stop Work Authority, telematics, hazard identification, time of day, overtime and other.

We continue to improve our online, centralized data management system for our business units to track, connect and analyze SH&E data. The functionality increased in 2021 as multiple real-time internal performance dashboards are now available to all employees to increase visibility and keep safety "top of mind." As the business use cases develop, we continue to expand our visualization, reporting, and predictive power abilities for planning and prioritization purposes.

- **Forklift safety:** After learning about the automation technology being used with bulldozers in our Phosphate operations, Nutrien's team at our Loveland Products facility in Greeley, CO applied the technology at their facility. Two of their forklifts operate in areas where stacks of totes and boxes reduce visibility and create dangerous blind spots. In 2021, the team developed a new safety sensor system where each forklift and each employee are outfitted with a safety sensor. Now, whenever a forklift and an employee are near each other, the sensors light up and audible alarms go off for both parties. Site visitors are also equipped with sensors when touring the facility.
- **Storage safety:** Nutrien's retail and distribution network includes significant amounts of product in storage. Our retail and storage facilities follow industry best practices, including ResponsibleAg in the US and Agsafe in Australia. The primary storage safety responsibility is to monitor that all chemicals stored in the warehouses are appropriately segregated and handled. [Learn more.](#)

Performance	2021	2020	2019	2018
Percentage of Nutrien Retail facilities enrolled in ResponsibleAg ¹ (US)	91	94	98	98
Percentage of Nutrien agricultural chemical Retail centers accredited by Agsafe (Australia)	100	100	100	100
Non-accidental ammonia release ² rate (releases per thousand railcar movements)	0.00	0.00	0.00	0.07

1 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.

2 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.

- **Product transport safety:** Nutrien maintains a complex supply chain that uses rail, truck and marine transportation to move our products from our production facilities through our network of distribution facilities to our end customers. We conduct our transportation activities in accordance with all regulatory requirements as well as an integrated approach that includes

additional focus on the safety and environmental protection of the communities where we operate.

- **Rail:** Nutrien ships both raw materials and finished goods by rail, in a fleet of over 16,000 railcars that are either owned or leased. More than 125,000 railcars of product were moved in 2021. Approximately 25 percent of Nutrien's

Worker Health and Safety (continued)

0 SIF

Incidents in 2021

rail shipments were classified as hazardous, the majority of which were ammonia. Ammonia is transported in specialized pressure tank cars that help prevent releases in the event of a derailment or high-impact incident. Nutrien has nearly 700 railcars that exceed the highest industry specifications (for example, extra thick steel, reinforced shield). To help prevent non-accidental ammonia releases (“NARs”), we require our facilities and carriers to conduct railcar inspections and preventive maintenance and enforce strict loading and unloading procedures at our facilities.

Nutrien is a leader in the safe handling of hazardous materials by rail and has been recognized as such by multiple North American railroads.

- **Trucking:** Nutrien hires trucking companies to transport our products from our production facilities to our manufacturing customers and distribution network, moving more than 90,000 truckloads annually. Our practices to manage safety during truck transport include a screening process with annual review, certification verification, safety data sheets (“SDSs”) and detailed records.

4 Serious Injury and Fatality (“SIF”) Prevention

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. Personnel at our sites are encouraged to identify hazards to prevent serious injuries and our facility teams focus on eliminating these hazards. This could involve changes to facilities, procedures and/or the use of technology. We collaborate across the organization, sharing ideas and lessons learned to prevent incidents. Here are some of the key elements to our SIF prevention efforts:

- **“SIF-in-the-Routine”:** We recognize the dangers of routine work and losing focus. Nutrien’s approach to assessing routine daily tasks for risk fights complacency and continually improves our efforts.
- **SIF Prevention Projects and SIF Elimination Programs:** Preventing serious incidents is an “all-hands-on-deck” activity.

All workers are encouraged to share their ideas and solutions to remove significant hazards from the workplace. We challenge the status quo of “it’s always been done this way” to make things safer.

- **Incident investigations:** When an incident or potential incident occurs, we find out why it happened and how to fix it. We share lessons learned to prevent it from happening again. We track corrective actions to completion.
- **Innovation:** We aim to work smart and continually iterate and improve how we work safely. We are always adopting new technologies to prevent serious incidents. These include smart devices, remote or independent (not staffed) systems, exciting in-house innovations, and more.
- **Life critical standards:** Nutrien’s global Life Critical Standards recognize specific hazards needing focus across our business units and are included in Nutrien’s corporate SH&E Management System. They provide a strong foundation for action and business units are expected to further integrate eliminations and controls as well as identify other Life Critical Standards for their own operations.

In 2021, we focused on the following:

- **SIF elimination programs:** We have a specific focus on SIF prevention. During 2021, we made the following progress to prevent serious injuries across our operations:
 - **Potash business unit:** We completed approximately 175 “SIF-in-the-Routine” assessments.
 - **Nitrogen business unit:** We introduced SIF Elimination Programs at all sites.
 - **Phosphate business unit:** We completed more than 200 SIF Prevention Projects. The business sets objectives for SIF elimination, which are included in each site’s SH&E evaluation.

Nutrien’s Augusta, GA Nitrogen operations have taken SIF elimination to heart by establishing a cross-functional SIF Team for SIF identification, evaluation and action. They identify hazards related to tasks, near misses, incidents, industry information and

Worker Health and Safety (continued)

Nitrogen and Phosphate: Established **SIF ELIMINATION AWARDS** Program



conversations with employees, including those from procedural drift, complacency and routine work. The SIF Team performs quantitative and qualitative assessments involving subject matter experts and two objective personnel from outside the area being evaluated. The SIF Team also trains workers across the site to engage them in SIF identification, evaluation and action. Through 2021, Augusta Nitrogen operations identified and took action on 18 significant potential SIF ("PSIF") situations.

- **SIF elimination recognition:** Nutrien's Nitrogen and Phosphate operations established an awards program for recognizing significant efforts to eliminate PSIF conditions. Each site submits their PSIF identification, evaluation and elimination actions to SH&E and business unit leadership who evaluate and communicate actions across the sites to ensure best practices are shared around the Company. Quarterly, sites are recognized for their projects and annually, Nutrien executive and business unit leadership formally celebrate the accomplishments of all sites and select one SIF Elimination Champion for the year.
- **Technology adoption:** Critical to the achievement of Nutrien's safety vision, we continue to evaluate and employ technology to help eliminate hazards and risk while improving productivity and performance, for example:
 - **Drones:** Drones are used in many Nutrien operations to reduce risk exposure and gain valuable intelligence about our operations in a short period of time. Across the enterprise, aerial drones improve our ability to assess gypstacks, ponds and elevated work areas such as exhaust stacks while eliminating the risk of working at heights. Use of underwater drones at our Trinidad Nitrogen site eliminates the risk of putting divers into a heavily trafficked area to inspect saltwater intakes. Footage including video and still photos is transmitted to our personnel for evaluation, action (if needed) and record keeping. In 2021, Nutrien SH&E staff represented the Company at the National Safety Council® "Work to Zero" summit to showcase this technology use.
 - **Remote control:** Our Aurora, NC Phosphate mine has removed equipment operators from higher-risk mine areas through their remote-control bulldozer program. This system includes sophisticated software that monitors the grade of the terrain ahead and identifies avoidance zones. It offers improved visibility, with cameras that provide a 180-degree front, back and bird's-eye view of the ground level conditions, along with lighting that reveals a greater field of vision for improved day and nighttime operation. Operators have reduced exposure to environmental elements and ergonomic strain. [Learn more.](#) As part of emergency response, our Cory, SK Potash mine rescue teams can use remote-controlled fire extinguishing equipment on tracks to rapidly cool and extinguish fire from a safe distance and perform fast clean-ups.
- **Hazardous materials software:** Nutrien Ag Solutions in the US implemented new hazardous materials highway transportation software in 2021. The software is aligned with enforcement agencies and improves consistency, data capture and alignment with necessary hazardous material transportation requirements. Increased structure and consistency of hazardous material documentation and vehicle marking requirements helps to reduce risk, improve compliance and enhance efficiency.
- **Emergency response:** Emergency preparedness plans are in place and regularly tested at every Nutrien mine, and fertilizer production and storage facility. Our proactive approach includes emergency response teams at all production facilities that are regularly trained and drilled on site-specific risks using simulations and live scenarios. Nutrien also has a central support team who provide subject matter expertise to site emergency teams related to preparedness, forecasting, equipment, training, response and risk. [Learn more.](#)

Nutrien's new, state-of-the-art rescue truck for our Saskatchewan Potash operations has significantly increased miner safety. If a power outage or similar incident temporarily strands miners underground, Nutrien has a backup exit system in place to get workers to the surface safely and quickly. The new custom-built system can be set up in a fraction of the time compared to the previous system and has numerous enhanced safety features. It is housed in a central location, ready to serve Nutrien's Saskatchewan Potash sites, as well as those of its competitors, should they need assistance. [Learn more.](#)

Worker Health and Safety (continued)

- **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. Nutrien has various measures in place to support safe driving practices. These include defensive driver training, as well as telematics devices to provide feedback on safe driving habits. In 2021, we expanded our safe driving efforts and communicated updated driver and vehicle policies across the business unit, including expectations when operating any company vehicle. Additionally, subject matter experts from across Nutrien implemented a coordinated Commercial Vehicle Driver Policy outlining specific expectations related to operating commercial vehicles on public roadways.

Our Retail operations in Australia also focused on two specific aspects of driving safety:

- **Trailer safety:** In 2021, Nutrien Ag Solutions Australia embarked on a campaign focused on smaller vehicles towing trailers, for example, pickup trucks and trailers with electric brakes, to identify hazards and common risks and to train operational effectiveness. SH&E and operations professionals held field training across multiple locations to help drivers understand compliance, limitations, electric brake set up and use, emergency break-away systems, and general vehicle combination operations.
- **Load securement:** A key component of driving safety is securing all materials and equipment during transport, whether situated inside the vehicle cab, carried on a vehicle or transported by trailer. Unsecure loads can create hazards for our drivers and the public if they fall during transport, protrude into roadways or impact vehicle stability. In 2021, our Australian retail operations focused training and communications on load securement, including best practices, shifting loads, vehicle containment structure, planning, vehicle selection, maximum dimensions permitted, projections, weights, securement devices and compliance for safe transportation.
- **Heavy mobile equipment safety:** Heavy mobile equipment refers to large haul trucks, bulldozers and other equipment used

for open pit mining in our Phosphate business unit. Because we can have up to 60 units active on a site at any time, there is risk of equipment collisions. At our Aurora, NC site, more than 90 percent of mobile equipment has proximity detection sensors to help equipment operators avoid objects in their "blind spot." All heavy mobile equipment operators working at mines receive safety training and must conduct a 360° walkaround – a visual inspection of the area around a vehicle – prior to operating it. In 2021, this protection is in use or actively being tested at all Phosphate sites within Nutrien.

- **Underground mine safety:** Nutrien's potash is produced from underground mines, which present specific risks including ground fall, fires and water inflow that require mitigation. Read more about Nutrien's [Next Generation Potash initiatives](#), which are expected to reduce worker exposure and risk for injury in our Potash operations. [Learn more.](#)

5 Programs and Initiatives

Tried-and-true base business practices keep our facilities safe. We rely on these practices as the foundation of our day-to-day efforts. They ensure our operations are executing the key work that has been proven to keep us safe and sustain our Culture of Care.

In 2021, we focused on the following:

- **Mental health and wellness:** Nutrien supports mental well-being and understands the value of workplace mental health. Nutrien's occupational health and wellness teams are developing a company-wide strategy to promote the well-being of our employees and partners. Our Potash operations have developed a mental health playbook that includes three levels of training, an "app" for regular self-check, and resources for work and home. We will evaluate potential expansion of the playbook to Nutrien's other business units.
- **Retail Canada training facility:** Construction of a new state-of-the-art training facility for Nutrien Ag Solutions employees in Canada was completed in 2021. The facility will allow the Canadian Retail SH&E department to develop and host training sessions for employees across Western Canada, including the advanced anhydrous ammonia course and other

Worker Health and Safety (continued)

life-critical, hands-on safety training courses once COVID-19 restrictions allow.

- **Thermal imaging:** We use infrared cameras to identify components of an electrical system in need of further inspection as a proactive safety initiative. Cameras are used to detect “hot areas” that signify potential failure, fire or other risk points, identifying issues before they become incidents. This enhances our overall safety, aids in preventive maintenance, and permits measurement and improvement while ensuring continued operations. In 2021, Nutrien Ag Solutions completed infrared electrical inspections at 33 percent of North American locations, on track with their three-year inspection cycle.
- **SDS QR codes:** Quick and easy access to up-to-date product information can be challenging at times and is crucial if needed for appropriate handling, use, transportation, storage and potentially emergency response. Nutrien’s Australian retail operations now use Quick Response (“QR”) codes to access product SDSs. Individuals can use their mobile device to scan the QR code, receiving instant information related to the product and providing a continuous match between systems for customer as well as employee access.
- **AgVet chemical safety:** In Australia, Nutrien Ag Solutions developed a Best Practice Guide for the Management of Agricultural and Veterinary (“AgVet”) Chemicals as a valuable reference for our staff. It includes information on AgVet chemical properties and risk, industry best practices, minimum expectations, storage and segregation requirements, emergency management, sale and transportation guidance, and more. The Best Practice Guide, along with training materials for our operations, was developed in collaboration with industry and regulators.

- **Safety campaigns:** Nutrien participates in and hosts industry-wide and internal safety campaigns focused on areas such as burn awareness, distracted driving, community, home safety, electrical safety, and mental health and wellness.

In 2021, Nutrien’s Retail business unit held a Busy Season safety campaign focused on the time of year when they work significant hours in the field, resulting in increased risk. The Busy Season campaign promotes and rewards positive safety performance during a critical time across the agriculture value chain. Retail branches are monitored, recognized and rewarded for improvements related to incidents, leading indicators, safe driving and year-over-year performance.



2030 Commitments

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

EQUITY, DIVERSITY AND INCLUSION



Why is this topic relevant to our business?

Promoting equity, diversity and inclusive growth across our value chain enhances Nutrien's organizational strength, reflects the diversity of our stakeholders and creates more just communities. We are committed to providing all employees with a respectful and inclusive workplace. In addition to internal workforce efforts, Nutrien can create meaningful opportunities through its business operations to improve opportunities and equity for underrepresented groups.

ESG Performance Goals/Target:

★ Achieved ✓ On track ⚠ Room for improvement

- ★ • Women comprise no fewer than 30 percent of the Board of Directors (maintain annually)
- ⚠ • 30 percent women in leadership (director and above) by 2025
 > The percentage of women in senior leadership positions is 21 percent in 2021, a two-percentage-point improvement compared to 2020, but progress is required to reach the 30 percent target.
- ✓ • By 2025, 25 percent of local spend in our Potash business has direct Indigenous economic impact
- ★ • Annually, 100 percent of potash suppliers contracted under a Master Supply Agreement ("MSA") have local Indigenous inclusion commitments

Our Ambition

Our ambition is to create a Nutrien where our people, customers, suppliers, partners and communities feel welcome and are treated fairly, and we deliver value for all. Giving equal access and opportunities to all people to work under fair and equitable conditions is a moral imperative. We recognize that a focus on diversity without equity and inclusion is not enough.

We aim to develop respectful and positive relationships with our stakeholders and contribute positively to society. We are challenging ourselves to make Equity, Diversity and Inclusion ("EDI") a natural part of how we think and work. We commit to a Nutrien where we all belong and together we all grow.



Analyst Corner

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

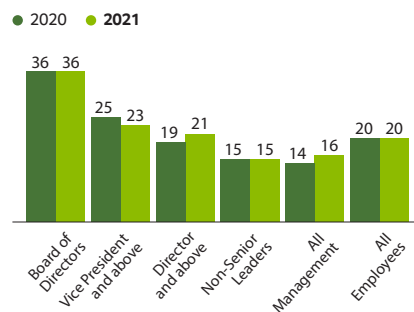
Our Approach

We are developing a global EDI strategy for sustainable EDI success and plans that aligns with business unit and local area objectives. We combine the use of data-driven insights with a human-centric approach to EDI that emphasizes employee experience, purpose and

belonging, and enhances external partnerships and opportunities across our value chain. This transformation spans the breadth of our organization, brand, culture, processes, recruitment, reward

Equity, Diversity and Inclusion (continued)

Women at Various Levels (%)



Our efforts have resulted in increased or maintained gender diversity across most categories.



Analyst Corner

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

and performance management, as well as inclusive and accessible working facilities, supported by technology.

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 EDI strategy. [Read more.](#)

Promoting Diversity Internally

1 Policies

We are committed to a Nutrien where we all belong and together we all grow.

Nutrien's EDI actions are guided by our Code of Conduct, Inclusive Workplace Commitment and Respect in the Workplace Policy. Our global Inclusion Council of senior operational and functional leaders from each business unit and geography is sponsored by our President & CEO and has the mandate and accountability to enable the EDI function and champion EDI tactics throughout the organization. Supervisors, managers and executives are responsible for providing a work environment free from discrimination, bullying, and harassment, including sexual harassment, and workplace violence. Management follows an open-door policy to allow employees to discuss workplace issues.

2 Goals

We have established goals for representation of women in senior positions and track progress with the ELT on a regular basis. We are also working toward more representation of Indigenous People across all job categories in Canada. In keeping with our "match to market" global strategy, we will continue working toward the attraction and retention of Indigenous and racialized people and veterans.

Tailored EDI plans: Nutrien's EDI Center of Excellence ("COE") provides leading best practices in EDI and resources to improve our company culture across the organization. We aim to find opportunities to support equitable outcomes and focus on innovative ways to attract, develop and retain diverse talent across our retail and manufacturing operations. Each business unit within Nutrien has a tailored EDI plan to identify and implement strategies

appropriate to advance EDI forward in a way that strengthens our business. Our Retail business unit has unique regional diversity considerations with operations across the US, Canada, South America and Australia.

3 Building Inclusion Capabilities

Education and training: We provide EDI education and training opportunities and Employee Resource Groups ("ERGs") to support our people.

- We are building EDI competency in Nutrien leaders by incorporating EDI concepts into leadership education programs. The Emerging Talent Program is designed to build a diverse and effective talent pool poised for accelerated development to manager roles within Nutrien Ag Solutions. This three-year rotational program creates a pathway to leadership and management roles within our Retail business unit. We continued Nutrien Academy in 2021, which is a leadership development program designed to build business competency in women at non-senior leader levels of the organization.
- The Women in Trades Program will build a diverse and effective female talent pool for trades and technical positions, specifically Process Operators at Nutrien's Nitrogen operations in Alberta, Canada. Through structured recruitment, in partnership with trade schools, this program will position Nutrien as an employer of choice for underrepresented talent while building our trades and technical capabilities. The program will provide support to students through scholarships, professional development, mentoring, networking events and community engagement. Twelve female participants have been hired to start the program early in 2022.

Equity, Diversity and Inclusion (continued)

- Broader education for all employees and additional resources are available on our EDI Learning Hub. In 2021, we launched a new innovative EDI learning platform that provides micro-learning for Nutrien employees, beginning with foundational content and then building skills to promote ongoing engagement.
- Our ERGs act as our inclusion champions and remain active in the areas of support for women, women in non-traditional environments and roles, LGBTQ+, young professionals, black employees, and military.

4 Diverse and Inclusive Recruitment

In 2021, we continued to evolve our recruitment processes to attract and promote a more diverse selection of candidates, including encouraging the use of diverse candidate profiles 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 established external partnerships to better promote Nutrien job opportunities to women and underrepresented groups, and our recruiters participated in and/or hosted more than 20 diversity-related career events in 2021.

Promoting EDI Externally

1 Inclusive Agriculture

Nutrien is committed to increasing participation of under-represented stakeholders in agriculture.

Leveraging Nutrien Financial: We abide by the Equal Credit Opportunity Act ("ECOA"), 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's existing credit program operates in accordance with the ECOA and is inclusive for all applicants.

Our financing solutions play an important role in providing competitive financing options with continued emphasis on improving sustainability outcomes. We are building new partnerships with diverse grower groups such as the National

Black Growers Council and through our relationships we will learn more about how we can meet the needs of diverse grower groups. In addition, we are exploring new finance program opportunities to promote sustainable agriculture and support positive environmental outcomes. In 2021, we created a Diversity Lending Steering Committee to explore and develop new opportunities.

Screening investments using an inclusion lens: Bold leadership and new opportunities are required to help stakeholders impacted by historical inequities and disparities in agriculture. We are aiming to embed inclusion criteria into our investment process for better business, social, environmental and investment outcomes. Inclusive investment is a way of rethinking what we value as we invest, and who is at the investment table as an investor, to bring about systems-level change.



TAKING ACTION: Radicle Inclusion Challenge

Nutrien increased our focus on opportunities to partner with diverse businesses and start-ups by partnering with Radicle Growth for an Inclusion Challenge, which will run in 2022. Women and BIPOC are generally less represented in access to venture capital. This challenge will target underrepresented groups across the globe who specialize in sustainable agriculture technology to compete in a one-day pitch. Two winners will be selected, each of whom will receive \$250,000 and gain advice on strategy and capital formation and introductions to Nutrien's senior leaders and partners. This landmark initiative will provide significant market intelligence on inclusion and diversity in ag-tech, and begin to help address the imbalance in access to capital investment, networks and knowledge experienced by female and BIPOC entrepreneurs within the ag-tech industry. [Learn more.](#)

Equity, Diversity and Inclusion (continued)

2 Engaging Indigenous Communities

With a large operating base in Canada, we strive to contribute to closing the gaps faced by Indigenous Peoples, particularly in the areas of education and employment. We are leveraging our corporate influence to build meaningful relationships and deepen conversation around reconciliation, offer equitable access to employment at Nutrien, and educate our leadership and employees regarding the history of Canada and Indigenous Peoples. We also collaborate with Indigenous Peoples on community programs and advocacy and offer special training opportunities.

We are committed to growing inclusive capacities through our Indigenous Internship Program in Canada by creating opportunities for nearly 90 professional students since 2015. On average, we retain 20 to 25 percent of these graduates as valuable full-time employees. We engage in positive actions across cultures and sectors.

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 EDI across our operations including efforts directed at increasing representation of visible minorities.

3 Supplier Diversity

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. We use the Playbook to support our suppliers in their own inclusion efforts. [Read more.](#)

In 2021, we stated expectations regarding EDI commitments for our potash suppliers, resulting in all suppliers with new MSAs executed in 2021 having commitments to Indigenous local content. MSAs prior to 2021 will be updated at the time of renewal. In addition, all new potash contracts will include commitments to EDI and Indigenous Plans along with targets and reporting requirements. These Plans identify impact 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. We also created a new internal role of Manager of Supply Chain EDI, Potash, who is responsible for internal and external engagement to ensure Plans are supported, tracked and reported on as per each new agreement.

4 Community Investment

We leverage our community investment to support the economic and social development of diverse groups through leadership in strategic partnerships, education and training, scholarships, and donations and sponsorships that reflect our diversity priorities. [Read more.](#)



Analyst Corner

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

RESPONSIBLE SUPPLY CHAIN



Why is this topic relevant to our business?

A reliable supply chain comprising business partners that share our commitment to doing business with integrity is essential to reputation and operational risk mitigation. It helps us uphold our values and build resilience regarding how we address environmental, social, political or other factors affecting our operations. Transparency is linked to trust, and customers, consumers, suppliers, shareholders, regulators and other stakeholders want to trust the companies they engage with.

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, including our Procurement Diversity and Inclusion Procedure, 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 Retail, Potash, Nitrogen and Phosphate business units.

Our supplier evaluations examine factors related to overall supplier integrity, as it relates to political, economic and social instability, along with supplier product integrity. Cybersecurity threats and supply chain resiliency are also considered as part of the overall enterprise risk evaluation.

Our Initiatives

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.

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



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

Responsible Supply Chain (continued)

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, 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 business units 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.

We review the performance of our Tier 1 suppliers on a semi-annual or annual basis. We also review certain Tier 2 and 3 suppliers based on internal supplier risk assessments. Our supplier risk module for monitoring existing suppliers was enhanced and tested throughout 2021. Enhancements include the ability to segment suppliers during the engagement period of the supply chain process, reducing overall risk to Nutrien. 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. As part of the Supplier Code due diligence program, Nutrien conducts in-person supplier audits as necessary on a risk basis.

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. We evaluate new and existing suppliers within and outside the US via a third-party audit of their facility and process for SH&E management controls. 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 different business units have varying on-site contractor needs. For instance, our Retail 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 ISNworld, an online contractor and supplier management platform that collects and verifies key contractor information, including SH&E 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 non-discrimination, 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

Responsible Supply Chain (continued)



supplier. Where contractual commitments and local law permit, this review may include termination of our relationship with the non-compliant supplier.

3 Diversity in Our Supply Chain

Nutrien believes that a commitment to EDI in our supply chain encourages innovation by advancing people, processes and systems that support responsible, sustainable operations. 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 perspective is to build authentic relationships with qualified local contractors and suppliers, which allow us to engage in meaningful dialogue about how we go 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, people and businesses throughout our supply chain. 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](#).

Nutrien invests in growing relationships with Indigenous-owned companies. We are working toward equalizing the environment by creating project and employment opportunities with clear expectations of how Indigenous ownership and true economic participation can drive successful outcomes. 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. The value that is created through building relationships with Indigenous communities and people provides sustainability and stability back to the local economy. In 2021, we partnered with more than 30 Indigenous suppliers in Canada, of which approximately 70 percent are majority-owned (that is, 51 percent or more of the company is Indigenous-owned).

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✓ 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 are essential factors in attracting and retaining the talented people who will help Nutrien achieve its purpose – to grow our world from the ground up.

Our Approach

We attract and retain our people by investing in the experience and engagement of our employees, developing the best talent, and employing effective succession management processes to safeguard the long-term achievement of our strategy.

1 Employee Experience and Engagement

Employees who have positive experiences at work are more likely to be engaged in working safely and collaboratively toward our shared company goals. We promote employee engagement by focusing on the overall employee experience: offering meaningful work and inspiration, providing the right rewards, ensuring mental and physical well-being, and giving a true sense of belonging.

Employee listening: Listening to our employees helps us identify ways we can improve the employee experience and increase talent retention. In 2021, we increased the number of town halls where we heard from over 2,000 employees about our response to keeping our employees safe, various topics of interest, and support that we can provide moving forward. Read more about our [COVID-19 response](#).

In 2021, Nutrien capitalized on the positive results from the 2020 Employee Engagement Survey and turned data into key actions and activities across the organization. Specifically, Nutrien leaned into the results around career development, rolling out targeted career development resources to all employees, using Nutrien's Learning Management System, and providing educational opportunities for employees to learn more about owning their career.

We continued our listening activities. We invited all new hires to provide feedback on their experience to identify potential onboarding enhancements. We also invited all employees with a service milestone in 2021 (such as one year, five years, 10 years and more) to share their experiences. Finally, with our enhanced exit interview process, we heard from 58 percent of employees who voluntarily left Nutrien to help us identify retention opportunities.

Total rewards: Nutrien offers competitive salaries, comprehensive benefits and performance-based incentives. Our compensation framework and processes provide guidance in pay decisions while supporting our commitment to pay equity and inclusion.

Physical and mental health and safety: Ensuring our employees are healthy and safe, especially in 2021 with the ongoing COVID-19 pandemic, is paramount. In addition to physical safety measures, Nutrien continued to support employees and their families through the mental health challenges that came with an ongoing pandemic. This included a continued promotion of our Employee Assistance Program, targeted programming to support employee mental health, and virtual opportunities for employees to ask questions to our senior leadership teams and medical professionals. Additionally, in 2021, Nutrien embarked on a collaborative multi-departmental project to address psychological health and safety in Nutrien's workplaces. The results of this project will be rolled out to leaders and employees in 2022.



Analyst Corner

[Code of Conduct](#)

Human Capital (continued)

2 Developing the Best Talent

At Nutrien, our success is possible because our people can grow their careers. Supporting the career development of our employees is a key driver of employee engagement and essential for employee retention. Each employee is empowered to own their career, with Nutrien's support in their growth and development.

Career development planning: In 2021, we enhanced our suite of materials to support employees and leaders in career development planning. We also deployed a system to gather information from our employees on their prior experience, career aspirations and personal interests to enable greater internal talent mobility.

Learning Management System: Nutrien's Learning Management System ("LMS") is now available for our corporate, manufacturing, and North American and Australian Retail 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 2022. 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.

Learning and development programs: Every Nutrien employee has access to thousands of professional development programs and content. In 2021, 390 individuals participated in the pilot of the Nutrien Leadership Development Program - a multi-day program with modules covering topics such as establishing trust, performance management, equity, diversity and inclusion, and mental health to frontline leaders. We also provided global access to a new Authentic Leadership Program for all Nutrien employees, with 745 participants in 2021. In addition, we placed a cohort of women through Nutrien Academy, a program aimed to further develop business acumen and leadership capability within Nutrien's up-and-coming diverse talent.

3 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.

Our succession planning process involves identifying roles most critical to the achievement of Nutrien's strategy and purpose, while further identifying a high-potential talent pool for the purpose of accelerating development and allowing Nutrien to proactively manage diversity into areas of maximum impact. For these critical roles, an internal talent pool and pipeline is developed, and an external market analysis is performed. Our ELT reviews the senior leadership succession roles and candidate progression and developmental progress on a regular basis. We intend to leverage the data and insights from our employees' career development profiles to better match employee aspirations to vacant roles. Throughout 2021, we also started identifying key positions within mid-level leadership roles along with highly specialized roles and difficult-to-fill positions, and began succession planning accordingly.

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

4 Talent Attraction

We intend to attract the best talent to help us achieve our purpose. In 2021, Nutrien's talent attraction and sourcing group hired more than 2,800 people and had a 91 percent acceptance rate on all employment offers.

5 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 14 collective bargaining agreements with labor unions representing 20 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.

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✓ SASB EM-MM-310a.1

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 larger operational footprint. Strong connections in our communities provide opportunities for employee attraction, engagement and retention and contribute to business risk mitigation and reputation management through increased communication opportunities and trust building. Above all, Nutrien can make a positive impact and help advance shared sustainability priorities in the communities where we do business.

ESG Performance Goals/Targets:

★ Achieved ✓ On track ⚡ Room for improvement

- ⚡ • Employees volunteer at least 25,000 hours by 2025
> Annual increase of 56 percent, or more than 4,000 hours, but faced challenges during the pandemic due to safety concerns and fewer volunteer opportunities
- ✓ • Develop and implement a targeted approach to measure the impact of our sustainability and community investments by 2023

Our Approach

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

Community engagement is supported by a company-wide internal network and central governance. Activities 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. Engagement and investments are guided by company-wide criteria aligned with our sustainability priorities. 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 ensure the integrity of our community outreach.

1 Engaging Community Partners

Around the world, Nutrien representatives participate in community-based groups such as industry associations, Chambers of Commerce, Community Advisory Panels, charitable and non-profit organizations, and first responder committees. The format and purpose of the engagement varies but the primary function is to facilitate two-way communication. 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.

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- ✓ SASB RT-CH-210a.1
- ✓ SASB EM-MM-210b.1
- [Community Relations Position](#)
- [Community Investment](#)

Community Relations (continued)

>1M

Youth Reached
With Support of > 150 Non-profit
and Community Partners

CFW was named a
**SDG GOOD
PRACTICE**
by the UN Department of
Economic and Social Affairs



2 Investing in Communities

We invest in initiatives that address existing needs in local communities, and further our strategic sustainability priorities. We also support 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, which are matched 1:1. Nutrien's education programs are available or implemented everywhere we are present and raise awareness about sustainable agriculture and environmental stewardship.

In 2021, we increased internal collaboration and corporate funding to support community relations in Nutrien Ag Solutions communities. We also implemented our Australian and South American community investment strategies with rollout continuing in 2022.

For maximum and targeted impact, Nutrien's community relations and investment priorities parallel our sustainability priorities. Initiatives in 2021 in these three priority areas include

Sustainable Agriculture and Food Solutions

- **Food solutions and food banks:** Nutrien maintained support of food solutions around the globe, reaching over 140 food agencies in five countries.
- **Smallholder training and support:** We provided funding for the 4R Solution Project, a collaboration between government, industry and industry associations to advance sustainable agriculture in Sub-Saharan Africa. [Learn more.](#)
- **Grower mental health support:** Nutrien provided \$200,000 for AgriSafe Network to support a crisis line for US farmers. We also completed our three-year AUD\$390,000 to support Lifeline, Australia's largest mental health service. In Canada, Nutrien is a

marquee partner with Do More Ag, an organization championing the mental well-being of Canadian producers.

Environmental Stewardship

- **Caring for our Watersheds® ("CFW"):** Nutrien's environmental education program supported approximately 3,300 youth from three countries 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.](#)
 - **Phinizy Center for Water Sciences:** We support the Phinizy Center for Water Sciences in Augusta, GA and its mission to provide leadership for sustainable watersheds and economic vitality in the Savannah River area through research and education and by connecting people with nature.
 - **WUQWATR:** 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.
- ### Equity, Diversity and Inclusion
- **Supporting minorities:** We support Minorities in Agriculture, Natural Resources and Related Science ("MANRRS") to promote academic and professional advancement by empowering minorities in agriculture and related fields.
 - **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](#).

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

NPR = not previously reported

GOVERNANCE

TOPICS IN THIS SECTION

83	Corporate Governance
84	Governance of ESG Risks
87	Integrity
91	Cybersecurity and Data Privacy
93	Additional Governance Topics
94	Nutrien TCFD Disclosures

2021 Highlights

We embed strong corporate governance systems and principles in our business through oversight from our Board of Directors, strong integrity values that inform our activities, and rigorous systems for cybersecurity and data privacy.

Continued Improvements in
TCFD
Disclosure

Hosted
5
Stakeholder Cybersecurity
Training Sessions

ALL
Employees Received Online
Integrity Training

CORPORATE GOVERNANCE

Performance	2021
BOARD AND GOVERNANCE INFORMATION	
Total number of directors	11
Number of independent directors	10
Separate Chair and CEO	Yes
Independent Chair (required)	Yes
Annual board evaluation process	Yes
BOARD RENEWAL AND DIVERSITY	
Annual election of directors	Yes
Majority voting policy	Yes
Average age of directors	60
Mandatory retirement age	72
Average director tenure	9 yrs ¹
Women Board members (after 2021 AGM)	36%
Designated group Board members ²	18%
Board Diversity Policy	Yes
SHAREHOLDER RIGHTS	
Proxy access	Yes
Say on pay advisory vote	Yes
Votes in favor of compensation approach at the 2021 AGM	94.6%

1 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).

2 Designated Groups are defined as women, Indigenous Peoples, persons with disabilities and members of visible minorities. Designated Group information is provided as of May 17, 2021.

Why is this topic relevant to our business?

Corporate governance that is aligned with Nutrien's purpose and focused on reducing risk exposure increases our competitiveness as a company while creating long-term value and resiliency for all our stakeholders.

Our Approach

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

Nutrien's Corporate Governance Structure includes policies and processes that define the roles of the Board and the ELT. It also helps us embed high ethical standards in our business practices. The Board oversees prudent management of Nutrien's business including oversight of ESG issues such as our strategy to address climate-related risks and opportunities, and EDI.

Board Diversity

Having a mix of directors on the Board 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 May 17, 2021, of our directors, four are women (36 percent of the total number of directors), one is an Indigenous person (9 percent of the total number of directors) and one is a member of a visible minority (9 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 time that a director can serve on the Board. Under the Board's Corporate Governance Framework, a director's retirement age is generally 72, but the Board may also request a director extend their term of service beyond the retirement age.

The Board regularly reviews the Board skills matrix for skills and experience in sustainability matters as desired competencies. For more information, see [Nutrien's 2021 Proxy Circular](#).

Executive Compensation

A component of executive compensation is tied to demonstrated progress across ESG. In 2020, we introduced three social responsibility metrics to our annual incentive scorecard to underline the importance of ESG. This included adding a component of leadership compensation that was tied directly to Nutrien's ESG performance during the year to demonstrate our focus on key ESG issues and progress across our sustainability strategic pillars. In 2021, Nutrien further refined executive compensation to include progress of GHG emission projects and diversity-related ESG metrics.

Nutrien's compensation framework is based on a pay-for-performance philosophy. Currently, 88 percent of CEO compensation was at-risk, and 77 percent of other named executive officers' compensation was at-risk. There were no changes to our executive compensation framework in 2021. We include an advisory "say on pay" vote at our annual meetings (in line with 2019 amendments in Bill C-97).

GOVERNANCE OF ESG RISKS

Why is this topic relevant to our business?

As ESG risks and opportunities are generally longer term in nature, incorporating them into our strategic and business planning activities helps enhance our planning, decision making and resilience. Understanding emerging trends, 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 managed appropriately. Our Safety and Sustainability Committee ("S&S Committee") has responsibility for oversight of the Corporation'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 Corporation, 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 2021 Proxy Circular](#).

Responsibility and accountability for risk management is embedded in all levels of our organization, and we integrate risk management into key decision-making processes and strategy. Our sustainability function is incorporated under the corporate development and strategy portfolio.

To demonstrate our commitment to sustainability, we took further steps to improve upon our ESG governance in 2021:

- published Nutrien's Feeding the Future Plan in April 2021, which highlighted six key sustainability commitments to be achieved by the year 2030. [Read more](#).

- published key ESG targets and goals in our 2021 ESG Report, helping to drive short- and medium-term action and support for our longer-term 2030 commitments
- held our first ESG Stakeholder Update for shareholders and other stakeholders in June of 2021, with leaders speaking to our sustainability strategy, climate-related opportunities, commitments and action taken to date
- further expanded our ESG governance process at the ELT and senior leadership levels that provide oversight on ESG issues identification, integration and reporting

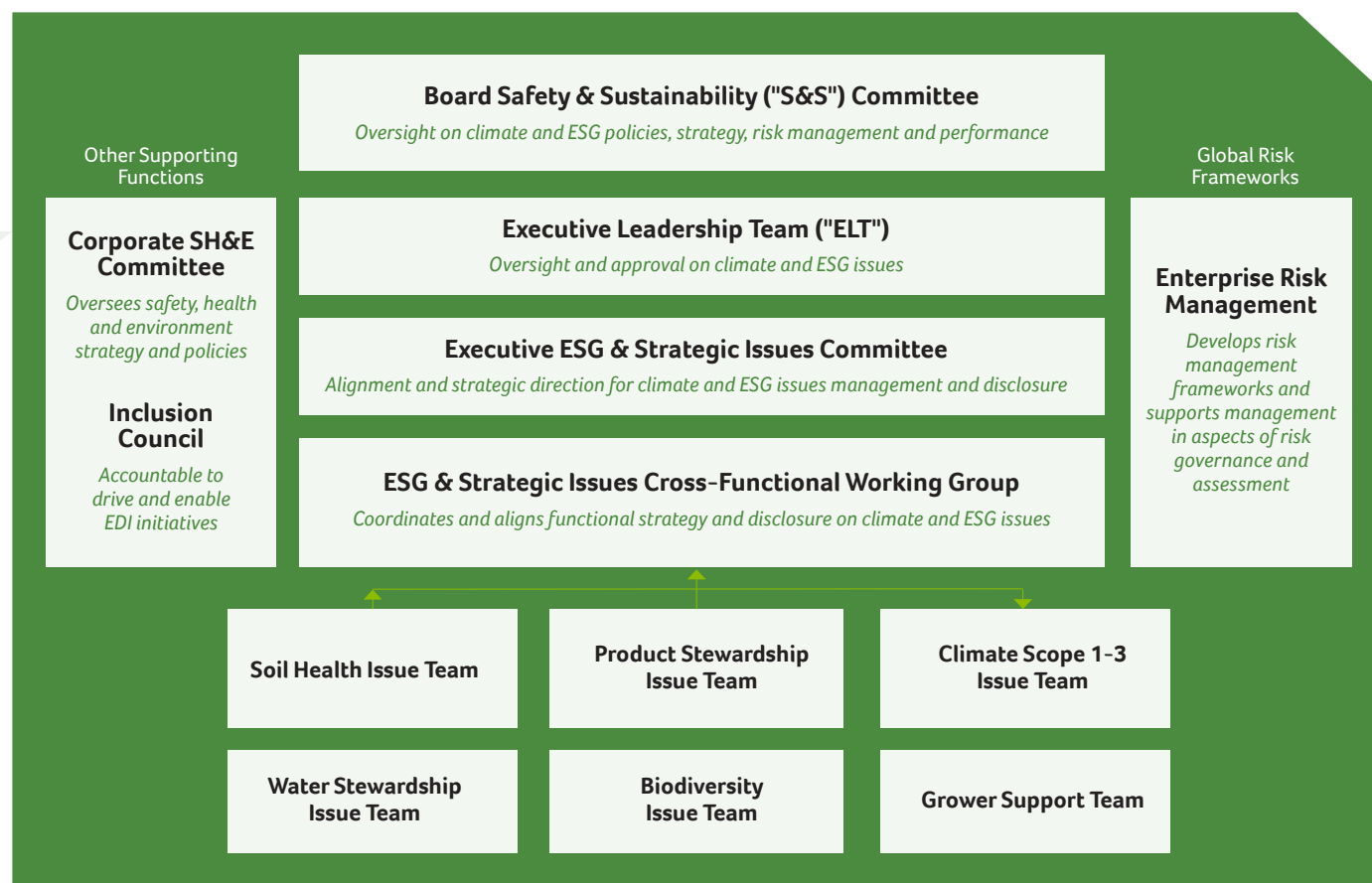


Analyst Corner

- ✓ TCFD Governance a) b)

Governance of ESG Risks (continued)

Nutrien Sustainability and ESG Governance Framework



Board Oversight and Activities

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

In 2021, as part of the mandate to oversee significant policies and management systems, the S&S Committee

- reviewed safety, health, environmental and cybersecurity performance summaries to identify any performance issues;
- reviewed the safety, health, environment and cybersecurity audit plan for the current and upcoming year, including Nutrien's COVID-19 safety protocols;



Analyst Corner

- ✓ TCFD Governance a) b)

Governance of ESG Risks (continued)

- reviewed with management the safety, environmental and cybersecurity emergency response planning processes;
- oversaw policies relating to sustainability and progress toward sustainability goals;
- oversaw the Feeding the Future Plan and Nutrien's 2021 ESG Report and supporting ESG targets and goals; and
- oversaw Nutrien's climate risk and GHG emission strategy.

In 2021, as part of the risk and compliance requirements of its mandate, the S&S Committee

- reviewed Nutrien's remediation projects, environmental provisions, and significant legal and regulatory developments;
- reviewed risks (including insurance risks) related to safety, sustainability and cybersecurity (including climate-related, technological, regulatory, data privacy and social risks);
- studied cybersecurity risk in conjunction with the Audit Committee;
- oversaw Nutrien's approach to data privacy and governance; and
- reviewed disclosure containing significant information within the Committee's mandate.

Executive Leadership Oversight and Activities

Under the oversight of the S&S Committee, Nutrien's executive leadership has the responsibility of ensuring our key ESG- and climate-related risks are being appropriately addressed.

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

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

Executive ESG & Strategic Issues Committee: responsible for overseeing ESG issues and the materiality assessment of ESG issues, to develop appropriate 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.

ESG 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 and the Global Financial Risk Committee: has a focused mandate to accelerate diversity and inclusion initiatives including the internal gender portion of our EDI strategy.

Corporate SH&E Committee: responsible for strategy and oversight 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 SH&E 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.

Our Approach to ESG- and Climate-Related Risks

Our approach to risk management is guided by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") Enterprise Risk Management Framework (2017) and ISO 31000 (2018) Risk Management Guidelines. When considering ESG and climate-related risks, we also look to COSO's guidance on Applying Enterprise Risk Management to ESG-Related Risks. We also cross-reference our identified risks with SASB Chemicals and Metals and Mining Sustainability Accounting Standards along with TCFD recommendations for completeness. Read Nutrien's [TCFD disclosures](#).



Analyst Corner

- ✓ 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 risk.

ESG Performance Goals/Target:

★ Achieved ✓ On track ⚡ Room for improvement

- ★ • All employees, directors and officers complete mandatory Code of Conduct training annually

Our Approach

Integrity and safety are our two 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, Privacy Policy, and others.

In 2021, we updated the Code to better express our business-oriented approach to how we want to operate the Company. We also updated our approach to safety, speaking up and compliance investigation principles. Further, we created a stand-alone Conflicts of

Interest Policy that leveraged content that was previously in the Code and guidance on our intranet.

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 business units 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 is one risk area that 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 global antitrust and



Analyst Corner

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

Integrity (continued)

competition laws applicable to our operations. 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-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 just third parties who are acting on our behalf.

Foundations for Integrity

We continually review and, where necessary, update our policies to provide clarity and guidance around our expectations for doing business with integrity. For instance, in 2021, we updated the Code to better express how our core value of integrity enables business success. We also updated our approach to safety, speaking up and compliance investigation principles. Further, we created a stand-alone Conflicts of Interest Policy that leveraged content that was previously in the Code and guidance on our intranet.

In connection with our new stand-alone Conflicts of Interest Policy, we launched an online conflicts of interest disclosure tool that creates a more user-friendly and accessible resource for employees to disclose actual, potential or apparent conflicts of interest. The tool also improves our ability to efficiently route those disclosures to the appropriate people for review and follow-up. It also better integrates the insights from such disclosures with any conflicts of

interest concerns that are raised by others through our speaking up channels.

In 2021, we published a new Records and Information Management Policy that helps employees better understand how to maintain records to both deliver value to the business and comply with record retention requirements across our jurisdictions. The new policy also improves how we address the increasingly higher percentage of electronically stored information compared to paper records.

Also in 2021, we created a dedicated Policy Portal on our intranet that improves the ability for employees to find the current policies that apply to their activities based on their role and location in the Company. The Portal also contains refreshed and refined guidance from a policy governance standpoint to improve consistency across the Company on when a policy is needed and the process for review, approval and publication.

Our 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 risk intelligence, learning, speaking up and investigations. In 2021, we created a new dedicated Integrity Program page on our intranet to further improve access to, and the substance of, resources in each of these four pillars.

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: 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 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).



Analyst Corner

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

Integrity (continued)

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.

In 2021, we piloted a new approach to conducting legal and compliance risk assessments as part of our ERM program. The initiative leveraged best practices from other multinational publicly traded companies to facilitate enhanced discussions between Nutrien's Legal team, Integrity Group, and business partners across all our geographies and business units. These discussions improved our understanding of areas to adjust our risk mitigation efforts to be effective and efficient.

Culture: In 2021, we launched an integrity culture questionnaire initiative that reaches out to a representative sample of employees across the entire company. Employees remain anonymous but the responses enable us to understand what we are doing well and where we have room to improve in particular geographies, business units and functions. Assessing and addressing psychological safety is an important aspect of this initiative. We survey employees on a monthly basis to create a dashboard that enables more responsive action by the Integrity Group (and its partners in Human Resources and SH&E) than a questionnaire or survey that is done once per year. For example, we can better deploy targeted training to specific populations within the Company to address emerging issues.

2 Learning

Training: All employees, directors and officers must complete mandatory Code of Conduct training annually. The 2021 training included Nutrien's purpose and values; fostering our speaking up culture; cybersecurity; data privacy; respect in the workplace (including EDI and anti-harassment); conflicts of interest; anti-corruption; fair competition; fair purchasing practices; insider trading; 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 2021, we provided targeted risk-based training for employees regarding respect in the workplace. In addition, more than 300 employees received tailored live training on fair competition and more than 200 received tailored live training on anti-corruption.

In 2021, we conducted a refreshed integrity training needs assessment in the areas of anti-corruption and fair competition. This leveraged newly developed decision tree resources that outline employees' training requirements based on specific day-to-day business activities as aligned with stakeholders. We adjusted our going forward training plan based on this assessment.

Integrity Moments: Integrity Moments involve sharing personal or other examples or stories about integrity in action at the start of meetings, including at Nutrien Board meetings. We continued with our Integrity Moments initiative launched in 2019 to foster and normalize discussions about our core value of integrity in our everyday work. In 2021, we focused our efforts by leveraging the Daily Safety Stories employees receive by email to incorporate and explicitly call out the integrity aspects of safety. This includes, for example, situations where an employee stopped work because of a perceived safety issue and demonstrated the commitment to doing work with integrity even if that means a short-term negative impact on production. We continue to encourage employees to share an Integrity Moment at the beginning of meetings to share personal or other stories about integrity in action.

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 meetings, 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
(continued)

integrity concerns, questions or complaints, and they encourage an environment where our employees feel comfortable speaking up. We always strive to protect the anonymity of anyone who raises a concern regarding suspected misconduct. 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 (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 slightly compared to last year. Concerns related to workplace conduct were most common in 2021. Read more on [page 114](#).

4 Investigations

We 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 include

- Maintain independence to preserve the integrity of the investigation process.
- Efficiently use resources to conduct the investigation in a time-

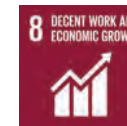
and cost-sensitive manner, as well as avoiding unreasonable disruption to business operations from the investigation process.

- Remain mindful and avoid duplication of other processes for resolving employee concerns (for example, union grievance process).
- Utilize an effective and thorough process for gathering facts and reaching reasonable conclusions regarding substantiation and any disciplinary and/or corrective action.
- Treat information received and generated as strictly confidential – only share with authorized people who need to act in direct support of the investigation.
- Maintain sensitivity to protecting the identity of the person raising the allegation and the person against whom the allegation was raised.
- Treat everyone involved in an investigation with respect and dignity.
- Keep an open mind – do not seek to prove or disprove the allegation – simply determine what happened and address it appropriately.
- Separately investigate any acts of retaliation.

All necessary and appropriate actions are taken based on investigation findings.

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

CYBERSECURITY AND DATA PRIVACY



Why is this topic relevant to our business?

The trend toward 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/Target:

★ Achieved ✓ On track — Room for improvement

- ★ • Host quarterly education and training on cybersecurity for our community partners and stakeholders

Our Approach

In addition to 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. Our global Privacy Policy describes the personal information that Nutrien collects from or about individuals, and how we use and to whom we disclose that information. We have supporting policies, standards and guidelines to protect Nutrien systems, services, data and information, based on international best practices including the National Institute of Standards and Technology ("NIST") Cybersecurity Framework worldwide privacy legislation 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.

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. [Read more](#) about our enhancements to cybersecurity in response to COVID-19 workplace changes.

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 yearly by a third party.

Cyber risk identification and preparedness: We continue to enhance our risk assessment framework and work with our business units 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.

Our cybersecurity team responds to cyber incidents and actively prepares other teams at Nutrien to respond using an established framework. In 2021, we conducted tabletop exercises with our ELT, key business leaders and technical teams to simulate real events, test our readiness and enhance their preparedness. We also conduct



Analyst Corner

[NIST Cybersecurity Framework](#)

Cybersecurity and Data Privacy (continued)

Performance	2021
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

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 Code of Conduct annual training, regular phishing campaigns of our staff, and focused training for groups with higher-risk business processes.

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 2021, we exceeded our target to host quarterly cybersecurity education and training for our community partners and stakeholders with five sessions completed.

Key Cybersecurity Training Metrics

	2021	2020	2019	2018
Participants in online cybersecurity refresher (as part of Code of Conduct)	22,850	23,900	20,770	19,120
Tabletop exercises to practice responding to cybersecurity events	2	2	3	1
Participants in focused cybersecurity training for higher-risk business areas	8,310	8,750	7,900	6,700
Participants in live data privacy training	135	39	165	NPR
Participants in an online data privacy refresher (as part of Code of Conduct)	22,850	23,900	20,770	NPR

NPR = not previously reported

2 Data Privacy

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

Nutrien respects the privacy of the personal information of individuals with whom we interact. 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 personally identifiable data in our possession (for example, California Privacy Rights Act coming into effect January 1, 2023). In addition to periodic communications and the online data privacy refresher as part of the Code of Conduct training for all employees, in 2021 we provided tailored communication and training to over 240 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").

ADDITIONAL GOVERNANCE TOPICS

Tax Policy

At Nutrien, we strive to grow our world from the ground up, investing 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 Retail, Potash, Nitrogen and Phosphate businesses 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 23,500 permanent employees.

Our tax policy comprises the following four key elements:

- Tax Compliance
- Engagement with Tax Authorities
- Tax Risk Management and Governance
- Prudent and Responsible Tax Planning

Income Taxes and Earnings by Country

(\$ million)

Country	Income tax (recovery) expense ^{1,2}				Earnings (loss) before income taxes ³			
	2021	2020	2019	2018	2021	2020	2019	2018
Canada	513	67	241	(261)	1,884	525	765	(1,195)
United States	287	(184)	50	104	1,319	(506)	315	619
Australia	60	28	11	29	204	83	27	96
Trinidad	90	(15)	(7)	37	256	(44)	(28)	98
Other	40	27	21	(2)	505	324	229	258
Total	989	(77)	316	(93)	4,168	382	1,308	(124)

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

² In 2018, excludes an income tax expense of \$951 on \$4,555 of net earnings from discontinued operations that were primarily in Chile.

³ Earnings (loss) from continuing operations before income taxes.

Income tax expense increased in 2021 compared to 2020 due to significantly increased earnings in all jurisdictions.

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. We seek policy certainty from governments to underpin the investment decisions we make and the businesses we operate.

Our senior leaders, subject matter experts and designated employees engage with media, investors, and government and industry officials, to both understand and share observations about policies that

may impact our employees, our customers and our communities. Nutrien continues to grow our business throughout the world. We aim to respect and comply with all the laws that apply to our business operations wherever we conduct business around the world. Nutrien participates ethically, openly and responsibly in the democratic public policy development and decision-making process. As part of this process, we publicly disclose all donations or benefits to political parties or candidates per the regulations in each of the jurisdictions where we operate. See political donations reported by year in the [Performance Table, page 115](#).



Analyst Corner

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

NUTRIEN TCFD DISCLOSURES



The [Task Force on Climate-related Financial Disclosures \("TCFD"\)](#) established recommendations for voluntary climate-related financial disclosures to help financial markets better understand the material climate-related risks and opportunities to which companies are exposed and enable efficient allocation of capital in the transition to a low-carbon economy. Nutrien supports the TCFD's recommendations and has been working to implement them since 2019.

Our Progress Towards Meeting the TCFD Recommendations

We conducted an assessment to identify gaps in our internal practices and external disclosures, which informed the development of our climate strategy, released in 2021, including key climate-related commitments and emissions reduction targets. While there are numerous risks related to climate change for Nutrien, action required to address climate change also presents significant opportunities. We next conducted preliminary scenario analysis focusing on our initial material risks, following the TCFD recommendations. While we look to conduct further scenario analysis in 2022, the preliminary analysis we have conducted already has helped us to narrow our focus on key climate-related risks and opportunities. We share what we are doing about them in the reporting that follows.

In 2022, Nutrien plans to continue improving on preliminary analysis and defining our Scope 3 emissions footprint based

upon our 2018 baseline data. This will build on our existing 2030 sustainability commitment work to support our grower customers, develop further supply chain engagement on emissions reduction and drive potential Scope 3 emission targets.

Continued improvement in our climate-related disclosures is also key in the near term. Regulatory bodies around the globe are drafting mandatory climate reporting prototypes, including the newly created International Sustainability Standards Board ("ISSB") formed to develop standards that provide a comprehensive global baseline of sustainability disclosures. The TCFD recommendations are being cited by the majority of these regulatory bodies as the basis for their current initial prototypes.

Below are our preliminary TCFD recommended disclosures. To read further climate-related discussion on Nutrien, please see our [2021 CDP Climate Questionnaire](#).

Governance of Climate-Related Risks and Opportunities

Board Oversight

Risk management is an integral part of our business and is governed by our Board and Board committees, who oversee our ELT and support the understanding and management of the principal risks to our business and strategy. Nutrien's S&S Committee has

primary responsibility for oversight of our general strategy and policies for the management of our climate-related risks and opportunities. It directly reports to and advises the Board on these matters.



Analyst Corner

- ✓ TCFD Governance a)

Nutrien TCFD Disclosures (continued)

The **S&S Committee** meets generally on a quarterly basis and covers significant issues within its mandate, including oversight of climate-related risks and opportunities.

In 2021, the S&S Committee was specifically involved with

- overseeing policies relating to sustainability and progress towards sustainability goals;
- overseeing Nutrien's Feeding the Future Plan and Nutrien's 2021 ESG Report and supporting ESG targets and goals; and
- overseeing Nutrien's climate risk and GHG emission strategy.

Management's Role

Nutrien's ELT supports our Board in understanding the principal risks to our business and strategy. They have the responsibility of ensuring the Company's significant risks, including climate-related risks, are being appropriately identified, addressed and reported. Key ELT members and employee-level committees that play an important role in the monitoring of climate-related risks include

- The **CEO** has overall responsibility for the monitoring and management of climate-related risks and opportunities as part of providing leadership and strategic direction for our business. As the leader of the organization, the CEO provides a clear tone from the top in regards to all climate-related initiatives. Our CEO provides clear support and direction to the rest of the organization's efforts to reduce our GHG emission footprint, as well as meeting our commitments with key external stakeholders.
- The **Executive Vice President, Chief Strategy and Sustainability Officer** reports directly to the CEO and has a direct link to the S&S Committee. They are a member of the ELT who provides executive oversight of the Sustainability function, including climate, and strategic vision and leadership on sustainability-related issues at the executive level. This role is critical to ensure our climate-related initiatives are developed and resourced properly. This position also helps develop and monitor the climate performance objectives for the

Company and provides direction to the ESG & Strategic Issues Cross-Functional Working Group, and the Executive ESG & Strategic Issues Committee.

- The **Executive ESG & Strategic Issues Committee** is an executive-level committee responsible for oversight of the external disclosures tied to the risk mitigation and opportunities of our material climate-related risks and other ESG issues.
- The **ESG & Strategic Issues Cross-Functional Working Group** is responsible for elevating significant climate-related issues and providing support to key issue teams such as our Scope 1, 2 and 3 Emission Teams. This group is also responsible for coordinating action on key issues with Nutrien executives on our Executive ESG & Strategic Issues Committee.
- **Scope 1, 2 and 3 Emission Teams** are composed of subject matter experts across the Company and are responsible for executing on the existing climate strategy for Scope 1 to 3 emissions reductions over the next 10 years and into the future, including reviewing emissions' performance against our targets with our operations' teams.

For more information on Nutrien's ESG Governance Structure in relation to climate risks and opportunities, please see the [Governance of ESG Risks](#) section.

In 2021, Nutrien's ELT approved our climate strategy, along with near-term and 2030 commitments and Scope 1 and 2 targets to reduce GHG emissions intensity by 30 percent from our 2018 baseline. This strategy was presented publicly in June 2021 and we are now developing our Scope 3 emissions reduction strategy tied to our Carbon Program and executing on our Scope 1 and 2 emissions reductions in our Nitrogen and Potash business units.



Analyst Corner

- ✓ TCFD Governance b)

Nutrien TCFD Disclosures (continued)

Process for Integrating Climate-Related Risks

Nutrien integrates risk management into our strategic and business activities to facilitate informed risk taking and responsible management of resources. We manage risk across all areas of our business through our common ERM framework. Our framework is guided by COSO's Enterprise Risk Management Framework (2017) and ISO 31000 (2018) Risk Management Guidelines. When considering ESG and climate-related risks, we also look to COSO's guidance on Applying Enterprise Risk Management to ESG-Related Risks.

Nutrien has several processes in place to identify and assess climate-related risks, including our ERM framework, which provides

a structured approach to this process. Through our ERM process, we identify, analyze and report Nutrien's top risks, including climate-related risk, to management and our Board. Our Executive ESG & Strategic Issues Committee and Cross-Functional Working Group are involved in the escalation of climate-related risks and opportunities, which enables climate-related issues identified through the ESG topic identification process to be incorporated with our ERM process. The process for defining, identifying and evaluating risks is completed annually, including aspects related to climate change.

Identification and Assessment of Climate-Related Risks

Risk management is an integral part of the Company's activities and decision-making processes and is integrated into the structure, operations and processes of the organization. We identify and assess climate-related risks using our global ERM framework at a business unit and enterprise level. Our ERM framework requires the identification, assessment and monitoring of risks to be embedded in business activities across the organization and updated at least annually. These are reviewed by business unit executives and senior leadership for completeness.

Risk Identification

Our identification and assessment of climate-related risks is multi-faceted and includes critical input from our global 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. We also cross-reference our identified risks with SASB Chemicals and Metals and Mining Sustainability Accounting Standards, along with TCFD recommendations for completeness.

Our ESG material topic analysis involves identifying potential climate matters through megatrends analysis, stakeholder

reputation surveys, materiality frameworks such as SASB and the use of its Five Factor Test (a materiality assessment process for prioritizing key ESG issues), digital stakeholder monitoring, and climate and ESG research.

When identifying potential material climate-related risks, we consider the following categories as outlined by TCFD: current regulation, emerging regulation, technology, legal, market, reputation, acute physical and chronic physical. Our enterprise risk framework and ESG material topic analysis consider both existing and emerging regulatory requirements related to climate, SH&E, and royalties and taxes, among others.

Risk Assessment

We characterize a significant risk as a risk or combination of risks that could threaten the achievement of our vision, our business model, future performance or ability to deliver on our strategy. Risks are assessed based on their likelihood or probability of impacting our business and the potential severity of impact. Our assessment criteria are embedded in our ERM framework allowing comparability to other non-climate-related risks.



Analyst Corner

- ✓ TCFD Risk Management a) b) c)

Nutrien TCFD Disclosures (continued)

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

- For **financial impacts**, adjusted EBITDA is used as a key quantifiable indicator. Financial impact may be assessed at the corporate level and/or at the individual business unit 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.
- **SH&E impacts** are based on the potential for safety or health impacts to our employees or communities and the potential impact to the environment.

As climate change poses several longer-term risks to our business, we also assess physical and transitional climate-related risks by building climate models and developing 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, specific to our assessment of physical climate risks, we screen our sites to assess the exposure and vulnerability from weather variability and extreme weather events, 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 and prioritized using a risk matrix and managed by the organization accordingly. Key climate-related risks that have the potential to be financially significant at an enterprise level are brought to the attention of our Executive ESG & Strategic Issues Committee, ELT and Board. Through this process we regularly report on all our top risks to our ELT and the Board.

The impacts of climate change represent significant risks to the Company, and we have developed a climate strategy, emissions reduction targets and other key initiatives to help address these risks.

Strategic Implications



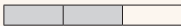

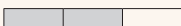

Identified Climate-Related Risks and Opportunities

Nutrien has identified key climate-related risks and opportunities over various time frames and is evaluating other climate-related risks for future disclosure. 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 reduction and discussions for longer-term 2050 climate-related strategies. A listing of all our significant risk factors can be found in our [2021 Annual Information Form](#).



Analyst Corner

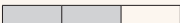



- ✓ TCFD Strategy a) b)







Transition-Related Risks				
1 Current carbon pricing mechanisms	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Short-term	Virtually certain	Increased cost	 Low
What is the risk?	<p>Our Canadian manufacturing facilities are primarily located in the provinces of Alberta and Saskatchewan and 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>Current and increasing regulation of GHGs 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 in order to ensure compliance; • additional costs in the form of taxes, emission allowances or other carbon pricing mechanisms; • increased input costs and compliance-related costs for agricultural customers, which could result in lower demand for our products and reduced revenues. 			
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: We operate a cogeneration facility at our Carseland, AB Nitrogen facility, AB and at our Cory, SK Potash mine. Read more.</p> <p>Carbon capture and utilization: We supply CO₂ from the Redwater, AB Nitrogen facility to the Alberta Carbon Trunk Line to be captured and used for enhanced oil recovery in Central Alberta. The project began its first CO₂ injection in December 2019 and sent approximately 139,000 tonnes of CO₂ to the Alberta Carbon Trunk Line in 2021. Read more.</p> <p>Underway: We have several projects underway that are expected to reduce the carbon footprint of our Nitrogen operations. Construction began on abatement projects totaling approximately \$50 million (one-time cost), that are expected to reduce CO₂ equivalent emissions by over 1 million tonnes by the end of 2023.</p> <p>Future: We estimate total capital investment requirements in the range of \$500 million to \$700 million to achieve our targeted Scope 1 and 2 emission intensity reduction of 30 percent from 2018 baseline emissions by 2030.</p>			
2 Emerging carbon pricing mechanisms	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Likely	Increased cost	 Medium
What is the risk?	The impacts of climate change and future restrictions on emissions of GHGs on the Company's operations could be material but cannot be determined with any certainty at this time.			
What are we doing about it?	In the medium to long term, by reducing our emissions, we can decrease carbon taxes paid or potentially decrease the risk of any other emerging regulatory action against GHG emitters. We will do this through emissions reduction initiatives that will support our targeted reduction of Scope 1 and 2 GHG emissions intensity by 30 percent by 2030, compared to our 2018 baseline, and committing to SBTi targets and engaging in the development of an SDA for target setting. To achieve our 30 percent operational emission intensity target, we estimate capital investment requirements in the range of \$500 million to \$700 million by 2030 , with most projects meeting our minimum return requirements without a significant cost of carbon assumption.			
3 Changing customer behavior	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Likely	Reduced demand for current offerings	 Medium
What is the risk?	<p>Growers expected to reduce emissions: As the globe transitions to lower-carbon options for all consumer products including food, it is expected that growers could potentially be impacted by key stakeholder expectations for changing growing practices and crop inputs used.</p> <p>New technology: The advancement and adoption of technology and digital innovations in agriculture and across the value chain have increased and are expected to further accelerate as grower demographics shift and pressures from consumer preferences, governments and climate change initiatives evolve.</p>			

Transition-Related Risks (continued)





What is the risk? (continued)	Demand for new types of seeds or services: The development of seeds that require less crop nutrients, development of full or partial substitutes for our products, or developments in the application of crop nutrients such as improved nutrient-use efficiency through use of precision agriculture could also emerge, all of which have the potential to adversely affect the demand for our products and results of operations.
What are we doing about it?	<p>Research and development: In 2021, Nutrien spent approximately \$100 million in R&D.</p> <p>Each R&D project meets the following criteria: (1) Superior Science: Technologies originated and advanced within our portfolio offer unique combinations of chemistry, biologicals, genetics or traits; (2) Differentiated Functionality: Products developed and commercialized have features and functionality differentiated from those of existing solutions; and (3) Sustainable Agriculture: Technologies and products increase input efficiency, minimize nutrient loss, reduce environmental impact, and/or improve production agriculture and food safety. Read more.</p> <p>Lower-carbon products: Reducing the environmental impacts from the agricultural products we manufacture and sell is one way we can help our customers manage the increasing environmental and societal pressures they face. We continue to offer growers products and technologies with a lower environmental impact and facilitate the adoption of agronomic best practices. Read more.</p>







Physical Risks

1 Chronic physical – changes in precipitation patterns and variability in weather patterns	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Likely	Reduced demand	 Medium
What is the risk?	<p>Our grower customers are impacted by changing regional weather factors, primarily increasing temperatures and volatile precipitation, which can impact growing conditions and crop mix, lowering the income of growers and impairing their ability to purchase our crop nutrients, crop protection, seed products and services.</p> <p>Adverse conditions, including as a result of climate change, that can delay or intermittently disrupt fieldwork during the planting and growing seasons may cause agricultural customers to use different forms of crop nutrients and crop protection products, which may adversely affect demand for the forms of products that we sell or may impede farmers from applying our crop nutrients and crop protection products until the following growing season, or in some cases not at all, resulting in lower demand for our products and reduced revenues.</p> <p>Weather can also have an adverse effect on crop yields, which could lower the income of growers and impair their ability to purchase our crop nutrients, crop protection, and seed products and services.</p>			
What are we doing about it?	<p>Leading Retail business: Our full-service offering, continued investment in technology and integrated digital platform position our Retail business as a leader in agricultural solutions for growers. Key initiatives include our Carbon Program, grower pilot projects for sustainable products and soil health, weather expertise to help adapt to changing global climate, agronomic services and our digital analytics.</p> <p>Simplified access to the right financial products: We offer flexible financing solutions to our US customers in support of Nutrien Ag Solutions agricultural product and service sales and provide grower credit through Nutrien Financial. These offerings can help growers endure difficult years and unanticipated climate-related events.</p>			
2 Physical risk to supply chain – ability to obtain and move crop inputs and transport grower production	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Likely	Inability to get inputs or deliver products	 Medium
What is the risk?	Extreme weather events can strain our upstream or downstream supply chain, affecting our ability to get inputs or to deliver our products to customers.			
What are we doing about it?	Our procurement team has contingencies in place to ensure we can continue production if our key suppliers experience disruptions due to 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 Expansion of low-emission goods and services	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Short-term	Virtually certain	Increased revenues	 Medium
What is the opportunity?	Reducing the environmental impacts from the agricultural products we manufacture and sell is one way we can help our customers manage the increasing environmental and societal pressures they face. To lead the next wave of sustainability in agriculture, we are offering growers products and technologies with a lower environmental impact and facilitating the adoption of agronomic best practices. Read more about how our products help reduce nitrogen loss, which is critical in reducing emissions from agriculture.			
What are we doing to realize the opportunity?	<p>Some of our products and services that support growers in reducing their environmental impact are</p> <p>Environmentally Smart Nitrogen or ESN® and nitrogen stabilizers: These products help widen the range of conditions where fertilizer can be applied effectively. We have the ability to increase production of these products as demand increases, with over 400,000 tonnes produced and sold in 2021.</p> <p>Diesel exhaust fluid ("DEF") grade urea: This is a dry product shipped to industrial customers that improves fuel efficiency of diesel machinery and reduces emissions by converting NO_x to N₂ and H₂O. Nutrien sells ~ 750,000 tonnes of DEF annually and has the ability to produce more depending on product mix.</p> <p>Precision application: We provide our grower customers with precision application of nitrogen products on their fields based on their soil data within our digital tool in our Retail business unit. Read more.</p> <p>R&D: We invest approximately \$100 million per year in R&D of new and improved products. The ability to sell advanced products and services is an opportunity to generate further revenues while strategically helping our grower customer increase yields while reducing their GHG footprint.</p>			
2 Development of new products or services	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Virtually certain	Increased revenues	 High
What is the opportunity?	Nutrien's Comprehensive Carbon Program: Nutrien is partnering with growers, value-chain stakeholders, governments and NGOs to develop a Carbon Program that will be designed to support the advancement of a carbon credit market for the agricultural industry through soil carbon sequestration and reduced GHG emissions. By supporting growers to adopt best practices, leverage digital technology and use crop inputs that support sustainability, we can drive emission improvements throughout the entire agricultural value chain. Supporting the development of compliance and voluntary carbon marketplaces to pay growers for every tonne of CO ₂ e reduced and sequestered is key to enable growers to be more productive, profitable and sustainable. Read more .			
What are we doing to realize the opportunity?	The program is currently in development with an anticipated larger-scale commercial implementation in North America and other geographies beginning in 2022. Read more .			
3 Low-carbon ammonia solutions	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	About as likely as not	Increased revenues	 High
What is the opportunity?	To achieve further emissions reduction in ammonia production, end markets for low-carbon products must emerge and technology will need to advance. Overall, the economics of these opportunities must align in order to drive adoption. Available low-carbon options that Nutrien is considering include blue and green ammonia production. These pathways represent a range of technologies and processes to reduce the carbon intensity of ammonia production over the medium and long term.			

Transition-Related Opportunities (continued)

What are we doing to realize the opportunity?	The ability to realize this opportunity is going to depend on renewable energy infrastructure being developed in North America in the long term that will allow for a more cost-effective and economical production of low-carbon ammonia. End markets for low-carbon ammonia will also need to be developed, as the purchase price of this ammonia will be higher due to its cost of production, and potential demand is from industrial users as a low-carbon source of hydrogen energy, from growers as a means by which to reduce their own emissions when nitrogen is applied to soil for crops, and possible use in transportation as marine fuel. This opportunity will be a focus for Nutrien over the medium to long term and will support our 2030 commitment to invest in new technologies and pursue the transition to low-carbon fertilizers, including blue and green ammonia.			
4 More efficient production processes	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium-term	Very likely	Reduced operating costs	 Medium
What is the opportunity?	Energy efficiency projects through brownfield facility expansions and technological investment: Nitrogen: Nutrien has energy efficiency projects at various stages of development across the entire Nitrogen business; Nutrien executed on two projects in 2021 that have an impact on energy efficiency, with other projects scheduled for completion in 2022. Potash: Approximately 45 percent of Nutrien's total Scope 2 emissions are related to electricity consumption at our Potash operations. We are evaluating options to reduce energy consumption, as well as renewable energy opportunities as described below.			
What are we doing to realize the opportunity?	Energy efficiency projects focus on improving the amount of energy consumed per tonne of product produced, thereby reducing not only overall total GHG emissions but the GHG intensity per tonne as well – effectively reducing carbon tax expense and input energy costs. Projects scheduled for completion in 2022 will reduce annual natural gas consumption and eliminate as much as 98,000 tonnes of CO ₂ e. At this time, we are considering similar projects of varying degrees of size and within our Nitrogen, Potash and Phosphate production assets.			
5 Captured CO₂ for resale	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Short-term	Virtually certain	Increased revenues	 Medium-high
What is the opportunity?	Carbon capture, utilization and storage ("CCUS") provides another technical option for reducing GHG emissions and at the same time increase revenues if the CO ₂ can be resold to other companies. Read more.			
What are we doing to realize the opportunity?	Capture CO ₂ for resale opportunities exist at our Augusta, GA, Borger, TX, Geismar, LA, Lima, OH, Trinidad and Redwater, AB facilities. Our nitrogen fertilizer facilities produce pure CO ₂ that can be reused in many applications. We capture and sell a portion of this CO ₂ for industrial applications, turning a waste stream into a useful product. Another portion of the CO ₂ is sold for enhanced oil recovery. At our Redwater, AB facility we sent approximately 139,000 tonnes of CO ₂ to the Alberta Carbon Trunk Line in 2021. This opportunity is one of our largest and most promising opportunities for strategic emissions reduction. Carbon capture projects are focused on sending process CO ₂ to other organizations for use in other manufacturing processes, generating resale revenue and credits for Nutrien.			

Transition-Related Opportunities (continued)				
6 Use of N ₂ O catalyst technologies	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Medium	Likely	Reduced carbon tax and operating costs	 Medium-high
What is the opportunity?	Process improvements: Nitric acid production N ₂ O emissions abatement projects and reliability improvements. Read more.			
What are we doing to realize the opportunity?	We are evaluating and executing on N ₂ O catalyst technologies that could remove up to 90 percent of N ₂ O emissions from our nitric acid production. We are currently evaluating projects at our Kennewick, WA, Augusta, GA, Lima, OH and Geismar, LA, Nitrogen facilities. Opportunities in N ₂ O abatement are among the most impactful emissions reduction projects Nutrien can execute and will be instrumental in our targeted reduction of one million tonnes of CO ₂ e by the end of 2023 from a specific suite of projects. N ₂ O abatement projects focus on investments to reduce emissions; however, they have no impact on our carbon tax as one does not exist in the US.			
7 Lower-emission sources of energy	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Short-term	Likely	Reduced operating costs and carbon taxes	 Medium
What is the opportunity?	Self/cogeneration of electricity and steam within our Nitrogen and Potash production operations. Read more. Generating lower-carbon energy is one of the ways we can reduce our energy-related Scope 2 emissions.			
What are we doing to realize the opportunity?	There are several opportunities for Nutrien to partner with other industry peers to provide supportive byproducts in manufacturing processes, as well as internal projects that enhance cost-effective electricity supply that is lower in emissions than the grid supply. A prime example of this is our cogeneration facility at Carseland, AB. Nutrien is currently reviewing projects at our Rocanville, Lanigan and Allan, SK, Potash mines and other Nutrien facilities. The overall impact of this opportunity reduces the use of energy intensive processes within our operations, thereby reducing operating costs. At the same time, these opportunities reduce emissions from facilities and attributed carbon taxes in Alberta, Canada at approximately CDN\$50/tonne by 2022.			
8 Renewable energy for Scope 2 emissions	Time horizon	Likelihood of the impact	Main mechanism of impact	Magnitude of the impact
	 Short-term	Very likely	Enabling production of green ammonia	 Medium
What is the opportunity?	Without robust renewable energy supply in North America, "green ammonia" production is not economical. The strategic opportunity is to be able to reduce our electrical footprint through external partnerships and new technology, which will reduce operating costs and regulatory carbon taxes. These opportunities will support our target to deploy self-generated wind and solar energy at four Potash facilities by the end of 2025.			
What are we doing to realize the opportunity?	Nutrien is in the process of reviewing several opportunities in both Canada and the US for our Nitrogen and Potash facilities that involve the purchase of renewable energy credits ("RECs") to offset Scope 2 emissions, power purchase agreements ("PPAs") and behind the fence ("BTFs") generator opportunities. We are in the process of reviewing long-term electricity contracts with both regulated and non-regulated providers. We are also exploring both solar and wind power options for our Potash operations in Canada, and opportunities at our Borger, TX Nitrogen facility with a focus on leveraging from best-in-class mature project programs that can reduce our Scope 2 emissions in these operations.			

Nutrien TCFD Disclosures (continued)

Influences on Business Processes and Strategy

The identification of climate-related risks and opportunities has helped Nutrien change our operations and develop our climate strategy. Our financial planning processes and capital allocation decisions incorporate this strategy:

- **Products and services:** Climate-related risks and opportunities related to increasing environmental and societal pressures that our customers face have influenced our strategic decisions towards our portfolio of products and services. [Read more.](#)
- **Supply chain and/or value chain:** Food retailers are demanding their final products have a lower-carbon footprint throughout the value chain, and therefore we have started to look at options to reduce the carbon footprint of our products. If we can do this to the extent expected by food retailers, growers may show preference to purchasing our products. Nutrien unveiled a portfolio approach to its 2021 North American carbon pilots to identify the best path to successfully scale its Carbon Program. Several key industry partners and supply chain stakeholders participated in this program in 2021.
- **Investment in R&D:** Climate-related risks and opportunities related to sustainable agriculture (which will shape the strategy and direction of our company) and reducing environmental footprints has influenced our R&D investment strategy. We have clear sustainable commitments, which include investing in new technologies, to pursue the transition to low-carbon fertilizers, including blue and green ammonia, as well as leveraging our farm-focused technology partnerships and investments to drive positive impact in industry. These priorities allow us to capitalize on opportunities for growth and mitigate potential risk. In 2021, we spent approximately \$100 million in R&D.
- **Operations:** As we generate significant amounts of GHG emissions (through the production, distribution and use of our products) and climate-change policies and emissions regulations are evolving and/or increasing, we developed a climate strategy in 2020 and released it in April 2021, in which we intend to reduce the direct GHG emissions from our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, through GHG reduction and efficiency projects.
- **Capital allocation and financial planning:** Climate-related risks and opportunities have influenced our financial planning in relation to how we allocate capital and potential business acquisitions. As part of Nutrien's Strategy, we want to be a leader in agricultural sustainability, which means we are focused on being a leader in reducing carbon emissions generated along the agricultural value chain.

Climate Resiliency

While we have not completed a comprehensive quantitative climate-related scenario analysis, we are determined to lead the development of a more sustainable agriculture sector and believe that we must find ways to decarbonize our sector while continuing to feed the world. Some of the elements that make our company more resilient are

potential to capitalize on opportunities related to climate change and will focus on positive outcomes and long-term value for all stakeholders. Our Retail business gives us direct contact to the grower with the largest crop input distribution network in North America while our fertilizer production scale and diversity helps us better predict and withstand market and supply chain disruptions.

Our company is integrated along the value chain: With our portfolio of assets across the agricultural value chain, we see the

We are globally diversified: Our diversity in regional assets and operations is the key pillar in our long-term strategy and resiliency,



Analyst Corner

- ✓ TCFD Strategy c)

Nutrien TCFD Disclosures (continued)

and will help to not only absorb potential physical climate impacts, but also drive execution on the opportunities and commitments/ targets already discussed in this TCFD disclosure.

We are focused on reducing emissions from operations: We believe a combination of strategies will be needed to meet society's decarbonization goals. Our reduction plans include activities to reduce the direct GHG emissions at our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, while reducing other material emissions that are upstream and downstream of our operations. In 2021, Nutrien continued to advance our climate strategy, and we set a target to reduce operational GHG emissions intensity by 30 percent by 2030 (from a 2018 baseline) and identified numerous opportunities to reduce our emissions, all of which are supportive of a low-carbon transition plan.

We support sectoral decarbonization: Nutrien supports the goals of the Paris Agreement. This is demonstrated through our commitment to the SBTi. To set a science-based target, Nutrien has engaged with the WBCSD and industry peers to develop an SDA. An SDA is one of three possible methods for setting a science-based target.

We help growers be more resilient and capitalize on the transition to a low-carbon economy: In late 2020, Nutrien launched what we expect to be the agricultural industry's most comprehensive end-to-end Carbon Program with a goal of making it easier for growers to increase productivity, improve sustainability and boost profitability. The program is designed to increase grower margins per acre and generate verifiable carbon credits that can potentially be monetized.

Climate-Related Scenarios

As part of our climate strategy, we commenced a preliminary multi-year analysis on how climate-related changes described in different climate scenarios can impact our company. The initial scenarios focus on both transition and physical risks and were identified based on Nutrien's material ESG risks, our ESG material topic process, and through engagement with internal and external stakeholders.

Discussed below are the key climate-related transition and physical risk scenarios Nutrien has completed preliminary analysis on. This analysis supported the development of our climate strategy, our 2030 Commitments and short-term targets. We will continue to develop these scenarios and look to possibly incorporate other potential risks in the near term.

Transition scenarios

IEA Sustainable Development Scenario and Stated Policies Scenario ("STEPS")

The impact model covers the time horizon over the next 20 years until 2040, in line with IEA's Sustainable Development Scenario and STEPS.

Key internal inputs are production estimates and emissions intensity factors.

External inputs were based on assumptions in IEA's 2020 World Energy Outlook, specifically around CO₂ emissions and carbon pricing.

The **key areas of our organization** considered in this analysis were our Potash, Nitrogen and Phosphate business segments, which account for the majority

of our manufacturing facilities and Scope 1 and 2 emissions profiles.

Preliminary results: While this analysis is ongoing, preliminary results indicate that the impacts of increased carbon regulation could result in additional costs to Nutrien in the form of taxes or emission allowances, facilities improvements, energy costs or otherwise, which in turn could increase Nutrien's operational costs. Because the impact of any future GHG-related regulatory requirements is dependent on the timing and design of such requirements, Nutrien is unable to predict with any certainty the



Analyst Corner

✓ TCFD Strategy c)

Transition scenarios

IEA Sustainable
Development Scenario
and STEPS (continued)

potential impact on us at this time. Nonetheless, the results from this analysis are expected to inform our business objectives and strategy in relation to improvements to reduce GHG emissions at our facilities and set key climate-related commitments and targets such as N₂O abatement and reliability improvements.

Mitigation: By setting GHG emissions reduction targets and committing capital to objectives, we can decrease carbon taxes paid or potentially decrease the risk of any other regulatory action against GHG emitters. We also commit to developing science-based targets and engaging in the development of an SDA for target setting.

Physical scenarios

RCP 2.6, 4.5 and 8.5

We used the **IPCC AR5 RCP** physical risk scenarios – primarily 2.6, 4.5 and 8.5 – to represent three possible outcomes (both the outlier scenarios and middle case scenario) for a balanced approach and view of possibilities to help develop our climate strategy.

While this ongoing analysis is still preliminary, it covers the time horizon over the next 30 years, focused primarily between 2030 and 2050 as these relate to key milestones for global emissions reduction.

Key internal inputs for this analysis will be our global operational footprint and grower customer regional location data, along with historical weather data for temperatures and precipitation by region, which helps determine continuing trends in weather patterns.

The **key data used** from the IPCC RCPs are temperature change, precipitation and volatility of these two factors – all of which could have an impact on both growing conditions for farmers (impact crop yields and mix) and global ag markets (food demand and supply, and crop input demand).

The **physical risk to operations** from climate is tied to possible rising water levels on coastal locations and scarcity of water in certain local regions for operations.

The **key areas of our organization** considered in the preliminary analysis are our Retail operations with its direct connection to grower customers and our Wholesale fertilizer production operations due to consumption of water for production purposes and some facilities' proximity to riverways and coastal regions.

Mitigation: We evaluate acute and chronic weather changes for physical risks to our sites and facilities. We maintain risk registers and emergency response plans at both the enterprise and site level, including appropriate insurance coverage for possible damage to facilities and business interruption. While climate-related physical impacts pose a risk to our overall business, the risk is reduced due to our broad geographical distribution of assets.

Initiatives to support our growers to be more resilient to climate-related changes include

- our [Carbon Program](#),
- grower pilot projects for sustainable products and soil health,
- weather expertise to help adapt to changing global climate,
- agronomic services and our digital analytics, and
- Nutrien Financial services.

**Analyst Corner**

✓ TCFD Strategy c)

Climate-Related Metric and Targets

We currently focus on GHG emissions as our main climate-related risks but continue to incorporate our understanding of climate-related risks and opportunities in the development of our ESG targets. Nutrien is also committed to the SBTi. To set a science-based

target, Nutrien has engaged with the WBCSD and industry peers to develop an SDA. An SDA is one of three possible methods for setting a science-based target.

The table below summarizes our targets and commitments 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 Targets

[Read more](#)

Achieve at least a 30 percent reduction in GHG emissions (Scope 1 and 2) per tonne of our products produced, by 2030 ¹	Page 6
Reduce GHG emissions in nitrogen production by one million tonnes CO ₂ e by the end of 2023	Page 8
Deploy self-generated wind and/or solar energy at four Potash facilities by the end of 2025	Page 8

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 blue and green ammonia, by 2030	Page 7
Complete a watershed risk assessment of our production sites in 2021 to inform context-based operational water targets by 2023	Page 8

¹ From a baseline year of 2018.

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)
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



Analyst Corner

✓ TCFD Metrics and Targets a) b) c)

Scope 3 Emissions

We continue to advance our climate strategy, which includes mapping our Scope 3 GHG emissions to better understand our greatest impacts and opportunities and evaluating reduction opportunities and mitigation strategies along our entire value

chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions related to the use of sold products represent approximately 70 percent of our total Scope 3 emissions, related to the use of nitrogen on soil by grower customers. [Read more.](#)

ADDITIONAL CONTENT

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ABOUT THIS REPORT

This report focuses on Nutrien's material ESG topics, performance and key initiatives for 2021.

- Performance for the year ended December 31, 2021 is included, unless otherwise noted, for Nutrien Ltd., and our subsidiaries. Any exceptions are explicitly noted with the relevant data. When available, historical data for 2018, 2019 and 2020 is provided for comparison. Joint ventures are equity-accounted and not proportionately consolidated.
- 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 2021 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 120](#).
- 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.
- Non-financial data sub-totals 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
NO _x	nitrogen oxides
SO _x	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 GHG emissions
Scope 2	indirect GHG emissions associated with the generation of electricity, heating/cooling or steam purchased for own consumption
Scope 3	indirect GHG emissions other than those covered in Scope 2
Blue/low-carbon ammonia	ammonia produced primarily utilizing carbon capture, utilization and storage ("CCUS") or other low-emission production technologies to significantly reduce the carbon intensity of resultant production; this definition does not include end product use

Product Terms and Measures

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

PERFORMANCE TABLE

ENVIRONMENTAL	Units	2021	2020	2019	2018	Footnote	SASB Ref.
Emissions							
GHG – Total Scope 1 Direct	million tonnes CO ₂ e	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 HFCs, PFCs and 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 . Since the publication of our 2021 ESG Report, some data has been restated to correct for minor errors and omissions, and intensity numbers for 2020, 2019 and 2018 have been restated to use production volumes for ammonia, potash and phosphate (as P ₂ O ₅) in the calculation denominator.	RT-CH-110a.1 EM-MM-110a.1
GHG – Scope 1 Direct by type	million tonnes CO ₂	9.48	9.11	9.30	9.99		
	thousand tonnes CH ₄	4.93	2.67	4.94	2.82		
	thousand tonnes N ₂ O	4.85	4.20	3.30	3.80		
GHG Intensity – Scope 1 (company-wide)	tonnes CO ₂ e per tonne product (weighted avg)	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		
Nitrogen GHG Intensity – Scope 1	tonnes CO ₂ e per tonne NH ₃ produced	1.58	1.47	1.45	1.53		
Phosphate GHG Intensity – Scope 1	tonnes CO ₂ e per tonne P ₂ O ₅ produced	0.41	0.41	0.37	0.31		
Specialty Product GHG Intensity – Scope 1 (feed plants, Loveland Products, Inc. and Rainbow facilities)	tonnes CO ₂ e per tonne saleable product (weighted average)	0.08	0.09	0.11	0.10		
Scope 1 emissions covered under emissions-limiting regulations	percent	26	27	27	NPR		RT-CH-110a.1 EM-MM-110a.1
GHG – Scope 2 Energy Indirect	million tonnes CO ₂ e	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 2021 Canadian National Inventory Report (“NIR”), the US EPA Emissions & Generation Resource Integrated Database (“eGRID”), or the International Financial Institutions (“IFI”) Technical Working Group on Greenhouse Gas Accounting Harmonized Default Grid Factors 2021 (V3.1). 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 . Since the publication of our 2021 ESG Report, some data has been restated to correct for minor errors and omissions, and intensity numbers for 2020, 2019 and 2018 have been restated to use production volumes for ammonia, potash and phosphate (as P ₂ O ₅) in the calculation denominator.	
GHG Intensity – Scope 2 (company-wide)	tonnes CO ₂ e per tonne product (weighted average)	0.13	0.14	0.15	0.14		
CO ₂ Captured and Sold	million tonnes CO ₂ e	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	8.3	6.6	8.6	8.0		EM-MM-120a.1
Oxides of nitrogen	thousand tonnes	7.8	7.4	7.7	8.8		RT-CH-120a.1 EM-MM-120a.1
Sulfur dioxide	thousand tonnes	3.8	3.6	3.4	6.9	2019 through 2021 emissions are lower than 2018 due to production changes at our Redwater, AB facility that shut down one of the two sulfuric acid production units.	RT-CH-120a.1 EM-MM-120a.1
Total particulate matter	thousand tonnes	7.4	7.7	7.0	8.3		EM-MM-120a.1

ENVIRONMENTAL (continued)	Units	2021	2020	2019	2018	Footnote	SASB Ref.
Volatile organic compounds	thousand tonnes	2.0	2.2	1.5	1.6		RT-CH-120a.1 EM-MM-120a.1
Other Air Emissions	thousand tonnes	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	1.6	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	thousand terajoules	281.1	279.2	283.9	289.5	Includes natural gas, fuel and electricity use at our facilities. The majority of our energy use is from natural gas as feedstock. Since the publication of our 2021 ESG Report, some data has been restated to correct for minor errors and omissions.	RT-CH-130a.1, EM-MM-130a.1
Natural gas consumed as feedstock	thousand terajoules	146.1	146.0	152.3	156.9		
Fossil fuels consumed	thousand terajoules	114.3	110.7	111.5	114.1	Includes energy that was recovered from waste heat to produce self-generated electricity.	
Electricity purchased	thousand terajoules	16.7	16.8	16.2	15.3		
Imported steam	thousand terajoules	4.0	4.1	4.0	4.4		
Self-generated	thousand terajoules	1.5	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	gigajoules	0	0	0	NPR		RT-CH-130a.1, EM-MM-130a.1
Energy Intensity (company-wide)	gigajoules per tonne of product (weighted average)	13.2	13.9	14.3	13.7	Numbers for 2020, 2019 and 2018 have been restated since the publication of our 2021 ESG Report to use production volumes for ammonia, potash and phosphate (as P ₂ O ₅) in the calculation denominator.	
Water							
Total Water Intake	million m ³	233	237	217	208		RT-CH-140a.1
Freshwater Intake, by Source:							EM-MM-140a.1
Groundwater	million m ³	55	55	48	33		
Mine dewatering/depressurization	million m ³	46	58	47	48		
Surface water	million m ³	67	69	59	75		
Industrial/municipal water	million m ³	15	15	16	18		
Non-freshwater Intake, by Source:							
Ocean water	million m ³	50	41	47	34		
Water Intake in Regions with High or Extremely High Baseline Water Stress	million m ³	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	1.7	1.7	1.6	1.8		RT-CH-140a.1, EM-MM-140a.1
Total Water Consumed	million m ³	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. Intensity numbers for 2020 have been restated since the publication of our 2021 ESG Report to use production volumes for ammonia, potash and phosphate (as P ₂ O ₅) in the calculation denominator.	RT-CH-140a.1, EM-MM-140a.1
Percentage Water Consumed in Regions with High or Extremely High Baseline Water Stress	percent	1.4	1.1	NPR	NPR		RT-CH-140a.1, EM-MM-140a.1

NPR not previously reported

ENVIRONMENTAL (continued)	Units	2021	2020	2019	2018	Footnote	SASB Ref.
Freshwater Consumption Intensity – Company-Wide	m ³ per tonne product (weighted average)	14.0	18.0	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. Intensity numbers for 2020 have been restated since the publication of our 2021 ESG Report to use production volumes for ammonia, potash and phosphate (as P ₂ O ₅) in the calculation denominator.	
Potash freshwater consumption intensity	m ³ per tonne KCl produced	0.6	0.7	NPR	NPR		
Nitrogen freshwater consumption intensity	m ³ per tonne NH ₃ produced	5.6	6.0	NPR	NPR		
Phosphate freshwater consumption intensity	m ³ per tonne P ₂ O ₅ produced	168.0	218.8	NPR	NPR		
Specialty Product freshwater consumption intensity (feed plants, Loveland Products, Inc. and Rainbow facilities)	m ³ per tonne saleable product (weighted average)	0.4	0.3	NPR	NPR		
Total Water Discharge, by Destination	million m ³	279	249	224	262		
Surface water	million m ³	278	248	223	261		
Municipal treatment	million m ³	1	1	1	1		
Effluents and Waste							
Discharges to On-site Disposal Wells	million m ³	15	18	15	15		
Total Non-hazardous Waste:							
Mining waste or byproducts disposed	million tonnes	29	27	26	31	Includes potash mining tailings and phosphogypsum byproduct.	EM-MM-150a.1 EM-MM-150a.2
Non-mining waste disposed	thousand tonnes	113	119	123	90		
Hazardous Waste Disposal	thousand tonnes	7	4	7	5		RT-CH-150a.1
Recycled Materials	thousand tonnes	38	28	35	39	Includes hazardous and non-hazardous materials.	
Environmental Incidents							
Total Environmental Incidents	count	24	23	24	20	Numbers for 2020, 2019 and 2018 have been restated since the publication of our 2021 ESG Report as a result of changes to classification of incidents.	
Reportable Quantity Releases	count	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	1	NPR		
Non-compliances	count	0	0	0	1	Includes non-compliance incidents that exceed \$10 thousand in capital and/or non-manpower fixed costs to prevent, correct or mitigate the non-compliance incident.	
Enforcement actions	count	2	3	2	1	Includes enforcement actions with monetary fines exceeding \$1 thousand.	
Water-related enforcement actions (included in enforcement actions above)	count	0	2	0	NPR		RT-CH-140a.2 EM-MM-140a.2
Environmental Incident Frequency	incidents* 200,000 hours/total actual hours worked	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.	
Non-accidental Ammonia Release Rate	releases per thousand railcar movements	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	743	142	176	441	Amounts settled in a particular year often relate to activities in prior years.	
Environmental Remediation Liabilities	\$ million	505	550	544	534	Calculated on a discounted basis.	
Internal SH&E Audits	count	695	667	655	27	Increase in 2019, 2020 and 2021 is due to the scope of corporate auditing expanding to include the Retail business unit.	

NPR not previously reported

SOCIAL	Units	2021	2020	2019	2018	Footnote	SASB Ref.
Workplace							
Total Employees	count	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	23,500	23,100	22,300	20,300		
Temporary employees	count	2,100	2,500	240	1,760		
Permanent Employees by Region:							
North America	count	18,400	18,320	18,060	18,090	Includes Canada, US, and Trinidad and Tobago.	
South America	count	2,110	1,690	860	630		
Australia	count	2,960	3,010	3,340	1,550		
Europe	count	30	30	40	30		
Total Employee Turnover Rate	percent	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	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	4	4	4	5		
Employee Learning and Development:							
Average learning and development spend	\$ per employee	517	380	435	300	2020 spend decreased due to reduced external training as a result of the COVID-19 pandemic. 2021, 2020 and 2019 spend includes all business units globally, while 2018 data is limited to North American Retail and manufacturing. Figures based on permanent employee count.	
Average hours of training	hours per employee	32	26	18	NPR	Increase in 2021 and 2020 is due to more internal virtual training and expanded reporting by Retail. Figures based on permanent employee count.	
Employee Engagement	percent	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	20.1	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	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	34.3	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
Diversity							
Women at Various Levels:						Based on permanent full-time and part-time employees as of December 31.	
Board	percent	36	36	33	33		
Vice President and above	percent	23	25	25	19		
Director and above	percent	21	19	15	17		
Non-senior leaders	percent	15	15	16	10	Scope of reporting is North America and Trinidad and Tobago only.	
All management	percent	16	14	14	11	Scope of reporting is North America and Trinidad and Tobago only.	
All employees	percent	20	20	19	17		

N/A not applicable NPR not previously reported

SOCIAL (continued)	Units	2021	2020	2019	2018	Footnote	SASB Ref.
Permanent Employee Age Profile:						Based on permanent full-time and part-time employees as of December 31.	
Under 25	percent	5	5	5	6		
25–34	percent	23	23	22	21		
35–44	percent	25	25	24	23		
45–54	percent	22	22	23	22		
55–64	percent	19	20	21	22		
Over 65	percent	4	5	5	6		
Safety							
Total Recordable Injury Frequency	incidents* 200,000 hours/total actual hours worked	1.11	1.13	1.29	1.38	Numbers for 2020, 2019 and 2018 have been restated since the publication of our 2021 ESG Report as a result of changes to classification of incidents.	RT-CH-320a.1
Employee Recordable Injury Frequency	incidents* 200,000 hours/total actual hours worked	1.25	1.30	1.46	1.62		
Contractor Recordable Injury Frequency	incidents* 200,000 hours/total actual hours worked	0.57	0.41	0.69	0.49		
Total Lost-Time Injury Frequency	incidents* 200,000 hours/total actual hours worked	0.27	0.26	0.31	0.37	Numbers for 2020, 2019 and 2018 have been restated since the publication of our 2021 ESG Report as a result of changes to classification of incidents.	
Employee Lost-Time Injury Frequency	incidents* 200,000 hours/total actual hours worked	0.31	0.30	0.38	0.44		
Contractor Lost-Time Injury Frequency	incidents* 200,000 hours/total actual hours worked	0.11	0.09	0.07	0.08		
Employee Lost Time Days Rate	incidents* 200,000 hours/total actual hours worked	7.14	7.66	12.72	10.46	Rates may change as the number of days lost can be incurred outside of calendar year.	
Serious Injury and Fatality Incidents (employee and contractor)	count	0	1	1	2		
Employee Fatalities	count	0	0	1	0		RT-CH-320a.1, EM-MM-320a.1
Contractor Fatalities	count	0	0	0	0		RT-CH-320a.1, EM-MM-320a.1
Tier 1 Process Safety Incidents	count	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. 2021 and 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	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. 2021 and 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	0.01	0.04	0.07	NPR	The 2019 rate includes Nitrogen and Phosphate exposure hours while 2020 and 2021 includes exposure hours for Nutrien Ag Solutions US, Nitrogen and Phosphate.	RT-CH-540a.1
Tier 2 Process Safety Total Incident Rate	incidents* 200,000 hours/total actual hours worked	0.12	0.12	0.27	NPR		

N/Av. not available NPR not previously reported

SOCIAL (continued)	Units	2021	2020	2019	2018	Footnote	SASB Ref.
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	33	N/Av.	Metric 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	62	58	59	N/Av.	Metric includes Nutrien North American manufactured fertilizer-feed-industrial and European distributed fertilizer products. Numbers have been restated since the publication of our 2021 ESG Report to reflect more robust reporting.	RT-CH-410b.1
Percentage of products by revenue that contain genetically modified organisms ("GMOs")	percent	10	7	7	8	2018 includes only the US and Canada.	RT-CH-410c.1
GOVERNANCE							
	Units					Footnote	
Integrity							
Net Production in Countries With High Levels of Corruption Risk	tonnes, saleable	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	calls per 100 employees	0.74	0.67	0.66	0.71		
Total Compliance Reports	count	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	36	9	6	11		
Discrimination	count	14	24	22	21		
Environmental	count	0	NPR	NPR	NPR		
Financial matters	count	30	12	2	3		
Harassment	count	24	25	32	14		
Labor and employment	count	12	NPR	NPR	NPR		
Retaliation	count	2	NPR	NPR	NPR		
Worker safety and health	count	22	NPR	NPR	NPR		
Workplace conduct	count	46	NPR	NPR	NPR		
Other	count	4	14	19	11		
Participants in Anti-Corruption Training:							
Live	count	202	390	1,010	580		
Online course	count	44	40	130	30		
Online refresher	count	22,850	3,930	20,770	19,120	In 2021, all employees received a refresher on Anti-Corruption as part of the annual Code of Conduct training.	
Participants in Fair Competition Training:							
Live	count	305	410	610	500		
Online course	count	N/A	N/A	N/A	N/A		
Online refresher	count	22,850	3,930	20,770	N/A	In 2021, all employees received a refresher on Fair Competition as part of the annual Code of Conduct training.	
Participants in Data Privacy Training:							
Live	count	135	39	165	NPR		

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

GOVERNANCE (continued)		Units	2021	2020	2019	2018	Footnote	SASB Ref.
Online refresher (as part of Code of Conduct training)	count		22,850	23,900	20,770	NPR		
Targeted email refresher	count		107	105	NPR	NPR		
Cybersecurity								
Tabletop Exercises to Practice Responding to Cybersecurity Events	count		2	2	3	1		
Participants in Online Cybersecurity Refresher (as Part of Code of Conduct Training)	count		22,850	23,900	20,770	19,120		
Participants in Focused Cybersecurity Training for Higher-Risk Business Areas	count		8,310	8,750	7,900	6,700		
Cybersecurity Education and Training Sessions Held for Our Community Partners and Stakeholders	count		5	NPR	NPR	NPR		
ECONOMIC		Units	2021	2020	2019	2018	Footnote	SASB Ref.
Economic Value Generated							Other value generated is not material (such as earnings of equity accounted and dividends).	
Sales	\$ million		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		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. Certain immaterial figures have been reclassified for 2019.	
Wages and benefits	\$ million		3,007	2,455	2,205	1,949	Includes salaries and wages and short-term and long-term employee benefits. In 2018, includes gain on curtailment of pension plan. See Nutrien's 2021 Annual Report, Note 4. Certain immaterial figures have been reclassified for 2019.	
Interest payments, dividends declared and share repurchases	\$ million		2,764	1,709	3,186	3,663	Includes finance costs, dividends declared and share repurchases on accrual basis.	
Taxes and royalties paid	\$ million		1,776	286	628	1,614	Includes corporate income, property, sales and excise and production taxes.	
Community investments	\$ million		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).	
Coverage of Defined Benefit Retirement Obligations and Other Post-Retirement Benefit	percent		87	83	79	79	Calculated on an accounting basis for registered defined benefit pension plans, and other post-retirement benefit plans.	
Employees who are active members of defined benefit pension plans	percent		14	13	19	22	For North America, the remaining eligible employees can participate in a defined contribution retirement plan.	
Political Donations in Canada	CAD \$		11,500	6,000	8,000	14,450		
Political Donations in US	USD \$		17,000	52,500	0	34,250		
Political Donations in Australia	AUD \$		0	NPR	NPR	NPR		
Number of Community Partners	count		>2,700	>2,500	>2,300	>2,500	Represents unique charitable and not-for-profit organizations within a community or region.	
COMPANY CONTEXT		Units	2021	2020	2019	2018	All figures are provided on a gross production basis.	SASB Ref.
Potash Production (KCl tonnes produced)	thousand tonnes		13,790	12,595	11,700	12,842		
Nitrogen Production (NH ₃ tonnes produced)	thousand tonnes		5,996	6,063	6,164	6,372	All figures are provided on a gross production basis.	
Phosphate Production (P ₂ O ₅ tonnes produced)	thousand tonnes		1,518	1,444	1,514	1,551	Excludes Redwater. 2018 figures were restated to exclude Redwater.	

NPR not previously reported

SASB INDEX

SASB REFERENCE	METRIC	PAGE
ENVIRONMENT		
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* Partially meets the disclosures suggested by the SASB Standards.

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* Partially meets the disclosures suggested by the SASB Standards.

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Note 1 Nutrien is a publicly traded company; our common shares are traded on the Toronto Stock Exchange and the New York Stock Exchange under the ticker symbol "NTR".

Note 2 Although we have not formally adopted the precautionary principle (as described in the UN Rio Declaration of 1992), our sustainability practices and performance demonstrate our commitment to proactively identify and prevent or mitigate, negative impacts.

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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 constitute "forward-looking information" or "forward-looking statements" (collectively, "forward-looking statements") under applicable securities laws (such statements are often accompanied by words such as "anticipate," "forecast," "expect," "believe," "may," "will," "should," "estimate," "intend," "plan" or other similar words). All statements in this document, other than those relating to historical information 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 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, including the planned expansion of its Experience Centers in Brazil; expectations regarding global population growth; 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 utilizing existing infrastructure; Nutrien's pursuit of opportunities relating to its blue/low-carbon ammonia and other short-term 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; 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 such forward-looking statements. As such, 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 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; 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 our business objectives are detailed from time to time in Nutrien reports, including our 2021 Annual Report dated February 17, 2022 and our Annual Information Form dated February 17, 2022 for the year ended December 31, 2021, 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 emissions 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 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 our ability to meet our 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 our 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; certain complications that may arise in our mining processes; the ability to attract, engage and retain skilled employees; labor 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, restrictions imposed by public health authorities or governments, including vaccine mandates, fiscal and monetary responses by governments and financial institutions, and disruptions to global supply chains; and other risk factors detailed from time to time in Nutrien's reports, including our 2021 Annual Report dated February 17, 2022 and our Annual Information Form dated February 17, 2022 for the year ended December 31, 2021, filed with the Canadian securities regulators and the Securities and Exchange Commission in the US.

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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