September 2023

Biodiversity

Global Position

Commitment

Every field around the world is unique in terms of its climate, geography, soil, and cultural practices utilized for production; thus, it is impractical to employ a one-size-fits-all approach. To address biodiversity loss, actions must be defined locally based on context specific needs. As agriculture functions in a biological system with many social, economic, supply chain, and technology overlays, an integrated systems approach and value chain collaboration is essential to collectively address global challenges such as food security, climate change, water scarcity and biodiversity loss. Through collaborations along value chains and across sectors we can help advance sustainability while creating on-farm resilience and value. Nutrien is committed to helping protect biodiversity by contributing to the next wave of innovation and sustainability in agriculture. We support sustainable practices across our sites, operations and communities. We consider impacts to biodiversity directly at our operation sites, and indirectly through our agricultural products and services.

The Issue

Agriculture is dependent on healthy ecosystems to sustain our global food supply. Supporting solutions that protect ecosystems is paramount to meeting this demand. Agriculture is dependent on healthy ecosystems to sustain our global food supply. Biodiversity provides a buffer against variability in farm productivity, improve crop pollination, and increase natural resistance to weed, pest, and disease invasions. Supporting solutions that protect ecosystems is paramount to meeting this demand. The greater the biodiversity of an ecosystem, the greater the stability and resilience of that system. Land-use, climate change, and pollution are the primary drivers of biodiversity loss globally. Agriculture expansion contributes to land use change[1]. While not the only contributing driver or industry, Nutrien recognizes the environmental, social, and economic value that biodiversity creates and the need for global multistakeholder action to sustainably feed the future.

Biodiversity and Agriculture

Food systems represent one of the largest impacts globally to biodiversity, mainly because of the conversion of natural landscapes into grazing and cropped land. Agricultural greenhouse gas emissions (GHGs) also contribute to climate change[2], which can amplify the impacts of biodiversity loss. A decline in biodiversity threatens the ecological systems that underpin the world's natural capital.

Agriculture can enhance biodiversity on managed lands or landscapes as greater diversity of crops affects both above and below ground biodiversity. Agriculture can help to restore a balanced nutrient supply in soils to supplement the existing supply of nutrients and improve nutrient cycling. Enhancing soil nutrition can provide an opportunity for farmers to grow more food on less land. Healthy, biodiverse soil supports the preservation of natural habitats and their biodiversity, while sustainably managing the land in existing production. Agricultural landscapes can provide critical and essential refuge and habitat as corridors for wildlife which helps to support near term global conservation strategies.

A diverse ecosystem, natural or managed, is a resilient ecosystem if properly managed and/or protected. Agriculture and healthy ecosystems can not only co-exist but can prosper- it isn't an "either-or" situation. Growers understand the

[1] IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

[2] Approximately 25 % of the globe's GHGs come from land clearing, crop production and fertilization, with animal-based food contributing 75% of that. Source: IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

importance of managing ecosystem functions and services, such as nutrient and water cycling, carbon sequestration, and pollination. Their stewardship of critical natural resources, such as water, soil, and biodiversity, is essential to the long-term success of their farms. Maintaining a nature-positive focus in agriculture is critical to conserving biodiversity while sustainably producing the food to support the world's population and protect the livelihoods of farming families.

Nature positive food systems are characterized by the regenerative, non-depleting and non-destructive use of natural resources[3]. Nature positive production is based on stewardship of the environment and biodiversity as the foundation of critical ecosystem services, including carbon sequestration, soil, water, and climate regulation.[4] Nutrien recognizes and embraces the need for nature-positive actions. This is driven by the belief that nature-based solutions (NbS), actions to protect, sustainably manage, or benefit biodiversity, can deliver business value while helping to feed the future in a sustainable manner.

Growers can pursue biodiversity and other sustainable outcomes on their farms while remaining profitable and increasing crop productivity to meet growing demands. Nutrien strives to improve environmental stewardship in agriculture through whole-acre solutions for growers including, but not limited to:

- Land management options, that include diversified crop rotations, intercropping, reduced or no tillage, cover cropping, and diversifying marginal lands, which:
    - Provide benefits to nutrient and water holding capacity of the soils, benefiting the number, variety, and health of the micro-and macro-organisms in the soil; and
    - Add to the quality and quantity of soil organic matter, helping to increase the number and diversity of soil organisms. This aids in the establishment, growth, and nutrient content of the crops, and improves the health and fertility of the soil itself. Healthy soils account for 25% of the world's biodiversity[5].
- Nutrient management recommendations that include practices such as agronomic science-based nutrient management plans, direct seeding with slow/controlled release fertilizers and variable rate application, which:
    - Prevent negative impacts to soil that can lead to land degradation and erosion;
    - Reduce GHGs from the use of nitrogen fertilizers;
    - Support high crop yields so more food can be grown on less land, potentially reducing land conversion of natural ecosystems; and
    - Reduce nutrient losses to water that may cause eutrophication of fresh and coastal ecosystems.
- Water management recommendations that include practices that support efficient in-field use of water (e.g., irrigation scheduling, drip systems) and build farmland resilience through water holding capacity of the soil, which:
    - Reduce potential nutrient loss to ground and surface water; and
    - Support viable and healthy streams and rivers for aquatic ecosystems to flourish.

Investing in Innovation

The application of science and technology focused on plant health is undergoing a transformation, shifting from merely giving plants what they need to grow to supporting the ecosystem in which plants grow. Nutrien is investing in the development of biological products and management practices that leverage nature. As a leader in the global agri-food value chain, we focus our nature positive efforts on the conservation, restoration, regeneration, and sustainable use of the world's natural capital.

Through our retail network, we aim to help the agri-food value chain realize environmental benefits (e.g., positive biodiversity, water, and climate outcomes) that support a sustainable food system through our whole-acre solutions

[3] https://sc-fss2021.org/wp-content/uploads/2021/04/Action_Track_3_paper_Boost_Nature_Positive_Production.pdf
[4] https://sc-fss2021.org/wp-content/uploads/2021/04/Action_Track_3_paper_Boost_Nature_Positive_Production.pdf
[5] https://www.openaccessgovernment.org/the-commissions-new-proposals-for-the-european-green-deal/124781/

approach. Nutrien is committed to working through partnerships in the conservation of natural ecosystems, restoring and regenerating landscapes, and using the land and water sustainably.

By supporting localized field-based solutions, nature can be conserved, restored and regenerated, while simultaneously meeting other global societal goals, including feeding the world in a sustainable manner. Nutrien is continuously assessing its risks associated with biodiversity and the appropriate frameworks[6] to best inform Nutrien's strategic approach to manage biodiversity on the farm. Our current approach incorporates:

- Conserve: Conservation helps avoid further biodiversity losses, which combined with sustainable production and consumption of our food and energy, can help reduce biodiversity loss[7]. Nutrien takes conservation action by:
    - Supporting conservation of native landscapes through strategic, shared-value, industry and community partnerships and investment;
    - Protecting forests worldwide by not supporting illegal deforestation[8];
    - Facilitating local leadership and programs designed to address management, protection, and conservation in habitat hotspots; and,
    - Continuing product stewardship education, training, and processes to reduce downstream environmental impacts of our products and services.

- Restore and Regenerate: Restoration and regeneration assists the recovery of an ecosystem that has been degraded. Nutrien takes restoration and regeneration action by:
    - Restoring landscapes in our own operational footprint, often beyond basic regulatory requirements;
    - Promoting, and engaging in regional NbS;
    - Restoring landscapes and habitats through partnerships in our operating regions;
    - Increasing productivity on currently cultivated land in the field through regenerative practices such as no-till adoption, cover cropping, intercropping, and nutrient stewardship; and,
    - Partnering with civil society in operating regions to regenerate degraded land that has previously been cleared so it can once again be productive.

- Sustainable use: Sustainable use of landscapes ensures long-term viability. Nutrien enables sustainable use by:
    - Promoting integrated pest management (IPM) to focus on endangered species, habitat, pollinator, and beneficial insect protection. Incorporating IPM into our crop protection solutions combats resistance and promotes biodiversity;
    - Leading emission reduction partnerships in the agri-food value chain through NbS by enabling on-farm practice changes, measured outcomes, and verified solutions and connecting that to value chain sustainability needs;
    - Continuing to reduce Nutrien's operational emissions as set forth in our 2030 targets; and
    - Supporting regenerative on farm practices that focus on building soil fertility and health, increasing biodiversity, and reducing greenhouse gas emissions.

Nutrien focuses on executing action through our various business units and within the agri-food value chain. In our corporate, manufacturing, and upstream operations we strive to:

- Understand, value, and disclose our impact and dependency on nature and biodiversity while identifying and mitigating nature-related risks in enterprise operations;
- Incorporate nature-positive strategies that support our purpose and enable us to become more competitive and resilient;

[6] NCS Hierarchy, Mitigation Hierarchy, STBN's Action Framework, WBCSD's Action Framework

[7] Living planet 2020 report by WWF

[8] https://nutrien-prod-asset.s3.us-east-2.amazonaws.com/s3fs-public/uploads/2022-03/Deforestation%20Position_March2022_Final.pdf

- Advocate that governments support nature-positive practices that enhance biodiversity and provide economic benefits; and
- Engage in partnerships focused on specific geographies or ecosystem types to advocate for nature-positive business opportunities that deliver a competitive financial return.

In our Retail and downstream operations, we work with our customers to support and promote biodiversity efforts such as:

- Sustainable intensification on productive agricultural lands to avoid agricultural expansion into native habitats and protect natural carbon sinks and biodiversity;
- Identification and utilization of marginal or unproductive areas of farmlands to enhance biodiversity in agricultural landscapes, while improving crop productivity;
- Continuation of investment in digital solutions and platforms that provide a solid foundation for data and evidence capture;
- Supporting growers to adopt sustainable agricultural practices by providing agronomic and change-management expertise adapted to the local environment, and enable quantification of their environmental contributions to participate in ecosystem service markets for carbon (removals and reductions), water, and biodiversity outcomes;
- Participation in regional initiatives that build incentives for growers; and,
- Continuation of product stewardship education, training, and processes to mitigate downstream environmental impacts of our products and services.

We continue to work with partners[9] in agri-food value chains to promote and act on biodiversity by collaborating and leading through influence, including:

- Participating in the Science-Based Targets Network (STBN)[10] and the development of the Taskforce on Nature-related Financial Disclosures (TNFD)[11];
- Participating with the World Business Council for Sustainable Development on the Nature and Nature-based Solutions, Natural Climate Solutions, Scaling Positive Agriculture, and Water Stewardship workstreams;
- Participating in the Natural Climate Solutions Alliance;
- Continuation of support and implementation of nutrient and water stewardship planning, practices, and actions in our operations, and in value chain projects with agri-food value chains; and,
- Engaging with value chain partners to drive collective action in operating regions that can be scaled for positive environmental and livelihood outcomes.

Summary

We are committed and uniquely positioned through our integrated business to help promote biodiversity and reduce the environmental impacts of our operations on air, land, and water. We offer products, services and innovative solutions that help growers tackle the environmental challenges facing the agriculture industry.

For additional information regarding Nutrien's biodiversity efforts, please reference Nutrien's current ESG Report. Download here.

[9] Food companies, industry associations, our customers, suppliers, NGOs, governments and other value chain actors to influence and promote collective action on biodiversity

[10] STBN will be providing guidance on setting targets for nature, focused on the realms of Land, Freshwater, and Oceans. Setting an "Apex" goal of zero net nature loss from a baseline of 2020 Halt deforestation, halt land degradation, by 2030 nature is recovering.

[11] TNFD is working with a multi-disciplinary group of leading international organizations (e.g., CDP, STBN, GRI, WWF, WBCSD) that will support its task of developing an integrated risk management and disclosure framework for nature-related risks. The Beta version of the framework was released in March 2022, with feedback and testing approach to inform subsequent beta versions before the Taskforce launches its final recommendations in late 2023.