Knowledge grows

Our position on **Nature**

May 2025

The way food is produced and consumed today is unsustainable. In fact, the global food system is the primary driver of biodiversity loss. Rapid and immediate transformation across the food value chain is therefore critical in reversing the trends of hunger, soil degradation, global warming, and biodiversity decline.

Guided by Yara's mission to responsibly feed the world and protect the planet, we are committed to being a part of the solution, with the ambition of Growing a Nature-Positive Food Future.

Yara focuses on contributing to food system transformation with an emphasis on climate, soil and efficient use of vital resources like water. In the short-term, our priority is to reduce greenhouse gas (GHG) emissions from our production. In addition, we support farmers in adopting sustainable crop nutrition practices, underlining balanced crop nutrition as essential for scaling up regenerative agriculture[1]. While recognizing our dependence on nature and reducing harmful impacts is essential, we acknowledge that as a company we are at the beginning of the journey. True progress requires collaboration: by bringing together the private and public sectors, we can take action to address the nature crisis.

Nature – **why the urgency?**

Our nature is a diverse entity, forming Earth's ecosystems; communities of living organisms interacting with each other. Today nature is in a crisis: human activity has thrown many of these systems out of equilibrium, resulting in an increase in climate change events and a decrease in biodiversity, which refers to the variety of life on Earth. We are using resources at a rate equivalent to 1.6 Earths, causing unsustainable strain on ecosystems[2]. One million of the eight million species face extinction. Human activities have altered 75% of the Earth's land, 85% of wetlands, and 66% of ocean areas.[3]

The nature crisis has also unprecedented financial consequences. The World Economic Forum estimates that over half of the world's GDP, USD 44 trillion of economic value[4], is at moderate or severe risk due to nature loss. The agri-food sector, and therefore our ability to feed the world's growing population, is heavily dependent on nature for its future resilience.

The global food system is the leading cause of biodiversity loss, primarily due to agricultural expansion leading to land use change. Agriculture alone threatens 24,000 species and is responsible for 85% of projected terrestrial biodiversity loss[5]. Globally, almost half of the nitrogen input to cropland is at risk of being lost to the environment[6], contributing to the breach of safe boundaries for nitrogen pollution and biodiversity[7]. In addition, water usage in agriculture is significant, as farming is the largest consumer of freshwater resources globally. Approximately 70% of all freshwater withdrawals worldwide are used for agriculture[8]. In developing countries, this figure can be as high as 80-90%. Reconsidering how we produce food, for example through balanced crop nutrition and improved nitrogen use efficiency, is critical in safeguarding nature and improving food production and food security for a growing population.

International consensus on **Nature-action**

In 2022 the Kunming-Montreal Global Biodiversity Framework (GBF) was adopted to guide global action on nature through to 2030[9].

Like the Paris Agreement's pivotal role in addressing the climate crisis, the new nature agreement establishes a foundation for a coordinated global effort to tackle the nature crisis. It requires governments to integrate the framework into their national legislation, calling for policy measures and regulations. Both the public and private sectors must step up to the challenge if we are to meet the increasing food demands of a growing population.

Global Biodiversity Framework

The GBF outlines 23 action-oriented targets to 2030, among which we have identified the following three as the most relevant for Yara's operations:

Target 7 - Mitigate pollution risks and impacts to non-harmful levels for biodiversity and ecosystem services, considering cumulative effects. Excess nutrient loss should be cut by at least 50% through efficient nutrient cycling and use.

Yara's upstream and downstream actions contribute to this target, refer to pages 5-6.

Target 8 - Reduce the impact of climate change and ocean acidification on biodiversity and enhance its resilience through mitigation, adaptation, and disaster risk reduction, using nature-based and ecosystem-based solutions, while ensuring climate actions benefit biodiversity.

Yara's decarbonization actions contribute to this target, refer to page 5.

Target 10 - Ensure sustainable management of agriculture, aquaculture, fisheries, and forestry by promoting biodiversity-friendly practices, such as sustainable intensification, agroecological, and innovative approaches, to enhance resilience, productivity, food security, and ecosystem services while conserving and restoring biodiversity.

Yara's downstream actions contribute to this target, refer to pages 5-6.

Yara's contribution to food system transformation is focused on **climate**, **soil** and **efficient resource use**

Achieving a Nature-Positive future requires collective action beyond individual companies or value chain actors. Our ambition of **"Growing a Nature-Positive Food Future"** reflects our dedication to this societal goal. We are working towards it by understanding our impact on nature and acting on the key negative drivers of nature change in our operations.

Climate change is the most pressing global challenge. Therefore, actions to reduce GHG emissions will remain a priority in the short term. This is also reflected in our target-setting. We are committed to reduce our scope 1 and 2 absolute GHG emissions by 30% by 2030. Our ambition is to reach climate neutrality by 2050. Since 2019, Yara has invested USD 199 million in decarbonization projects and has reduced GHG emissions by 2.4 million tonnes of CO_2e[10].

We will simultaneously baseline and evaluate the nature impacts in our operations. While guidelines for nature conversion industries are more established, those for chemical companies are still developing. However, frameworks like the Task-Force on Nature-related Disclosures (TNFD) and Science Based Targets Network (SBTN) are maturing. We are actively engaging with these frameworks to assess impacts and follow the development of sector-specific guidelines.

At the farm level, we will continue to offer our premium mineral and organic fertilizers[11] and increase the use of certified fertilizers with lower carbon footprint to reduce the total crop carbon footprint. Together with our complementary products, like biologicals, and services, we can reduce GHG emissions from the use of fertilizers while increasing yield, quality and resilience of crops.

Finally, we will continue to invest in our agricultural research and development, building on the more than 100 years of knowledge on fertilizer impact on soil, climate and water. The knowledge that we have built over the years[12] provides a solid foundation for us to collaborate with a range of different partners for a sustainable food system.

Pressures on **nature** across Yara's value chain

The top five causes of biodiversity loss, which are all interconnected, include 1) invasive species, 2) changes in land and sea use, 3) climate change, 4) pollution and 5) direct exploitation of natural resources.[13] The impacts of GHG emissions are global, regardless of where they occur, making measuring of climate impact straightforward. When it comes to the other impact drivers, it is more complex. They are local and vary depending on multiple factors such as the geographic location and local nature sensitivity.

As a global crop-nutrition company, climate change, pollution and direct exploitation of nature resources are most material for our upstream and direct operations. Changes in land use, climate change and pollution are also relevant for our downstream value chain.

Reducing climate and pollution impacts from our operations

We work actively to reduce our GHG emissions and have control over our upstream and direct operations (**sphere of control**). Today mineral fertilizer production and use contributes to around 2.1% of global GHG emissions.[14] **Decarbonizing ammonia production by switching to low-carbon[15] or renewable ammonia[16] enables reducing the carbon footprint of fertilizers by up to 95%[17].** Yara is actively pursuing projects to decarbonize ammonia production by creating renewable ammonia through electrolysis (in Porsgrunn, Norway[18]), and reducing CO_2 emissions from natural gas-based ammonia production through the capture and permanent storage of GHG emissions (in Sluiskil, the Netherlands[19], and in the US).

In addition, Yara is developing environmental improvement roadmaps for each production site. Where relevant, projects focus on decreasing water withdrawal and consumption, reducing dust pollution, developing better waste-water treatment to reduce pollution to water and other topics.

Collaborating to shape sustainable crop nutrition practices

Further downstream in our value chain, Yara continuously works to influence practices through our agronomic knowledge-sharing, partnerships, and advocacy (**sphere of influence**). We are partnering with various agri-food players to reduce their GHG emissions. One of our most recent partnerships is with PepsiCo in Europe, where we supply farmers in the program with lower-carbon fertilizers and collaborate to lower emissions from crops like potatoes, oats and corn[20]. By 2030, this partnership is expected to support up to 20% reduction of in-field fertilizer emissions, further reducing the carbon footprint of the final food products. Following a similar agreement, Yara has recently extended the partnership with PepsiCo also to Latin America to supply crop nutrition programs that help decarbonize the food value chain of certain crops across the region[21].

In addition to promoting lower-carbon fertilizers, a change to more sustainable farming practices is needed to reduce agriculture's pressure on nature. We are focusing on the following levers:

- **Soil health:** Supporting soil health through balanced crop nutrition provides crops with all nutrients they need to grow, at the right dose;
- **Optimized nitrogen management:** Optimizing nitrogen use efficiency (NUE)[22] minimizes nitrogen surplus in agriculture;
- **Water:** Increasing water use efficiency (WUE) makes better use of scarce water resources.

When crops are harvested, nutrients are removed from the soil. Without replenishment soil health declines, leading to degradation. Applying organic biomass and essential nutrients (both organic and mineral) boosts crop growth, increasing crop residues returned to the soil. This supports soil organisms, enhances organic matter content, and aids soil carbon sequestration.[23]

Nitrogen is imperative for plants to grow, but inappropriate nitrogen management or over-use leads to losses of nitrogen into air, land and water bodies, due to volatilization, erosion, runoff and leaching. These losses cause ammonia (NH_3) and nitrogen oxides (NO_x) air pollution, contaminate groundwater, alter soil chemistry and harm natural ecosystems.

Nitrogen losses can be minimized through the correct application of mineral fertilizer[24]. Furthermore, optimized nutrient management reduces the crop carbon footprint by increasing yield and avoiding the oversupply of nutrients, thereby reducing in-field emissions per unit of crop[25]. This further reduces pressure on land use change, because more can be grown with less land[26].

Finally, a more productive use of water in agriculture is key to meet future food demand without compromising freshwater resources. Yara improves WUE through fertigation, combining crop nutrition expertise with tools and services to reduce the water footprint[28].

Yara offers a broad portfolio of crop nutrition solutions and biostimulants[29] and has over 1000 agronomists out in the fields worldwide. Our agronomic knowledge is deeply rooted in science developed over more than 100 years. Today, we have around 5,000 demo trials[30], more than 100 ongoing scientific field trials[31], and are connected to 100 leading research institutes and universities worldwide.

Optimized nutrient management reduces nature impacts

Yara's products and solutions were tested in a five-year field trial on a coffee farm in Colombia. This led to a 16% reduction on the coffee carbon footprint, improved soil health, 37% yield increase and 7% improved NUE - while also adding 37% to the net profit on the fertilizer investment.[27]

Growing a Nature Positive Food Future is a shared ambition that depends on efficient collaboration between the public and private sectors. Regulations and subsidies need to be shaped to incentivize GHG emission reductions and support sustainable farming practices that promote increased food production and improved food security. Governments, Intergovernmental organizations (IGOs) and Regulatory bodies must collaborate with the private sector to simplify processes, enabling the achievement of our common targets that are congruent with regulation targets already in place. Together, we can accelerate tangible actions that will positively impact the environment, livelihoods and local economies.

References and footnotes

[1] Yara's Position on Regenerative Agriculture
[2] ERPNC.pdf (unep.org)
[3] Media Release: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating' | IPBES secretariat
[4] World Economic Forum (weforum.org), Nature Risk Rising, 2020
[5] 2021-02-03-food-system-biodiversity-loss-benton-et-al.pdf (chathamhouse.org)
[6] ESSD - A global FAOSTAT reference database of cropland nutrient budgets and nutrient use efficiency (1961–2020): nitrogen, phosphorus and potassium (copernicus.org)
[7] From planetary to regional boundaries for agricultural nitrogen pollution | Nature
[8] Water Management | Land & Water | Food and Agriculture Organization of the United Nations | Land & Water | Food and Agriculture Organization of the United Nations (fao.org)

[9] The plan includes concrete measures to halt and reverse nature loss, including putting 30 per cent of the planet and 30 per cent of degraded ecosystems under protection by 2030.
[10] Scope 1+2 (market based).

[11] Our fertilizer product range | Discover crop nutrition products | Yara International
[12] 65 years-long research concludes: Mineral fertilizer supports sustainable agriculture | Yara International
[13] What are the 5 key drivers of biodiversity loss, according to UNEP? | World Economic Forum (weforum.org)
[14] Greenhouse gas emissions from global production and use of nitrogen synthetic fertilisers in agriculture | Scientific Reports (nature.com)

[15] Low-carbon ammonia is derived from low-carbon hydrogen, produced based on natural gas, with the CO2 stored in permanent reservoirs after a carbon capture and storage process (CCS).
[16] Renewable ammonia is generated by using 100% renewable energy and feedstock sources, resulting in zero or minimal GHG emissions. One example is using hydrogen from water electrolysis based on renewable energy, and nitrogen separated from the air.
[17] At the factory gate. The actual percentage reduction depends on the type of fertilizer and its nitrogen content. In addition, the extent of CCS employed or the origin of renewable ammonia impacts the reduction.

[18] Press kit | Yara's renewable hydrogen plant at Herøya, Norway | Yara International
[19] Yara invests in CCS in Sluiskil and signs binding CO2 transport and storage agreement with Northern Lights – the world's first cross-border CCS-agreement in operation | Yara International
[20] PepsiCo Europe and Yara partner to decarbonize crop production | Yara International
[21] PepsiCo-Yara partnership expands to Latin America I Yara International

[22] NUE means the relationship between nitrogen inputs compared to crop outputs. Higher NUE entails that more crops can be grown with less nitrogen.

[23] Position paper on soil health (yara.com)
[24] Yara's Position on Nitrogen Use Efficiency and Nutrient Management
[25] Greenhouse gas mitigation by agricultural intensification (pnas.org)
[26] The global cropland-sparing potential of high-yield farming | Nature Sustainability
[27] Boron Nutrition in Coffee Improves Drought Stress Resistance and, Together with Calcium, Improves Long-Term Productivity and Seed Composition (mdpi.com)
[28] Yara Position Paper on Water Use Efficiency

[29] Biostimulants are products that contain substances and/or microorganisms whose function is to stimulate and strengthen specific metabolic processes within the plant. By doing this, it enhances a crop's tolerance to abiotic stress (such as drought and extreme temperatures), as well as improve nutrient use efficiency, overall crop quality and yield.
[30] Reoccurring trials on an annual basis demonstrating the benefits of using Yara products, i.e., lower carbon footprint and emissions per kg of crop produced.
[31] Scientific trials are following a scientific experimental design to solve strategic knowledge gaps for Yara.

About Yara

Yara's mission is to responsibly feed the world and protect the planet. We pursue a strategy of sustainable value growth through reducing emissions from crop nutrition production and developing low-emission energy solutions. Yara's ambition is focused on growing a nature-positive food future that creates value for our customers, shareholders and society at large and delivers a more sustainable food value chain.

To drive the green shift in fertilizer production, shipping, and other energy intensive industries, Yara will produce ammonia with significantly lower emissions. We provide digital tools for precision farming and work closely with partners at all levels of the food value chain to share knowledge and promote more efficient and sustainable solutions.

Founded in 1905 to solve the emerging famine in Europe, Yara has established a unique position as the industry's only global crop nutrition company. With 18,000 employees and operations in more than 60 countries, sustainability is an integral part of our business model. In 2024, Yara reported revenues of USD 13.9 billion.

www.yara.com

For further information, please contact:
Yara International ASA
Drammensveien 131
P.O.Box 343, Skøyen
N-0213 Oslo, Norway