

Land Positive



Preserving our planet's resources

Hectares of land saved over 2019 baseline



The global challenge

Biodiversity loss and resource conservation

Around 70% of the world's biodiversity has been lost over the past 50 years, and key ecosystem-based services such as food pollination, disease and pest control are in decline, primarily due to land use change.

We rely upon nature, biodiversity and ecosystems for climate regulation and resilience, and our economy.

Delivering greater impact

We are applying our technologies, reach and in-house expertise toward a mutually beneficial relationship between Croda and nature for a thriving planet and society

Our long-standing relationship with nature and our leadership commitment enable us to work not only to mitigate our negative impacts but to actively improve the state of nature and people's lives through active engagement monitoring of our land footprint, and technological innovation.

The outcome of COP15 represents a landmark biodiversity agreement with concrete measures to halt and reverse nature loss, including putting 30% of the planet and 30% of degraded ecosystems under protection by 2030 to preserve our planet and ecosystems.

Land Positive SDG targets:

2.3, 2.4, 12.2, 13.1, 15.2, 15.3 and 15.5



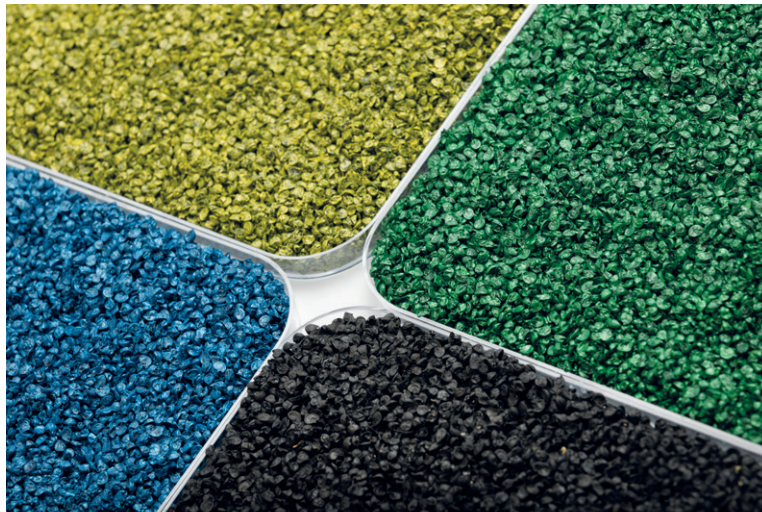
Land Positive continued

Land use & crop science innovation

Land use

In 2019, almost four years before the adoption of the recent Kunming – Montreal Global Biodiversity Framework (GBF) at COP15, we decided to have a detailed understanding of our land footprint, a prerequisite to understand our impact on nature and biodiversity. Improving the yield of crops with our adjuvant technologies leads to lowering the land area required to grow one tonne of crop, expressed as land saving, externally validated by Avieco, taking into account the carbon and water savings associated with reducing the land required to grow the crop.

In 2022, combining the yield benefits from our seed coatings, adjuvants and bio-stimulants, total land saved was 145,709 hectares, equivalent to 204,074 football pitches, representing an increase of 15.7% (2021: 33,735 hectares), and 58.0% above our 2019 baseline. We remain on track to hit our 2024 intermediate milestone of saving at least 80,000 hectares per year more than in 2019, and our 2030 target of saving 200,000 hectares per year more than in 2019. In 2022, 58.2% of our land saved is in Asia and Latin America, focusing on areas with the highest demand for food productivity and the greatest threat of deforestation.



Crop science innovation

Benefits from the two breakthrough technologies launched in 2022 were proven across field trials with customers, demonstrating the importance of our collaborative approach and customer intimacy. These latest innovative technologies protect biodiversity and mitigate the impact of a changing climate and land degradation, bringing our total breakthrough technologies launched since 2020 to four.

We are accelerating our pace towards achieving our milestone target of 10 breakthrough technologies by 2024, and our 2030 target to bring an average of two to market each year (see case studies), aligning with our target and helping our customers mitigate the impact of climate change and land degradation.

As a company that has been close to the legislative process of new rules banning microplastics from EU/EEA seed treatments, which is expected to be adopted into EU legislation by 2023, we began our journey to a microplastic-free seed treatment portfolio four years ago. During 2022, we published our whitepaper 'A microplastic-free future for seed treatments', with the aim to share our understanding of the legislation and wider knowledge on the topic, to provide recommendations for what it means for the industry and how collaboration and partnering can help support effective adoption of the legislation.



Scan this QR code to read more

More broadly, within our safe and sustainable design approach, biodegradability screening at early stages of innovation is one of the critical success criteria. We are further developing our capabilities to measure biodegradability of polymers, working with external accredited testing partners and field experts. Three specialist labs with these screening capabilities, including automated testing, are being established at our existing Princeton, Daresbury and Enkhuizen locations.

Symiro™ biostimulant

As the challenge to feed our growing global population continues, increasing crop growth and yields is becoming an important area of focus to meet the rising demand for food. In response to this, our biostimulant specialists, Plant Impact, launched Symiro™. A seed applied technology, Symiro™ has been shown to promote crop growth and yields in soybean. As a vital source of food, protein and oils, improving the yield of soybean in the Latin American region eases pressure on food production and provides economic benefit to farming communities. InSync Plus, our Symiro™ containing formulation, has been proven to increase soybean yields in Brazil by an average of 5.6%.

Abiotic stress mitigation in onions

Changing climates mean higher temperatures, periods of drought and higher salinity are becoming an increasing problem for farmers. To mitigate the impact of these abiotic stresses on certain crops, our seed enhancement business, Incotec, developed a microplastic-free, bio-based and fully degradable new seed treatment. Trials demonstrated improved germination under stress conditions, and up to 10% increase in crop yield has been realised, shown through customer field trials of bunching onions in Mexico.

Land Positive continued

Becoming Net Nature Positive by 2030

Our natural world is finite and is under threat from human activity. Ecosystems are in danger of irreversible loss, reducing biodiversity, and affecting the species and interconnected systems we all depend upon for food security, our health and wellbeing and beyond. The recent adoption by 188 countries of the GBF at COP15 aims to address biodiversity loss, restore ecosystems and protect indigenous rights, reinforcing our holistic approach of embracing the role nature plays to achieve UN global climate goals while addressing social inequalities.

We want to actively play our part in the growing global effort to protect and restore nature. We acknowledge that our business activities have an impact on nature and are committed to address them, giving back more than we take, as our success and resilience rely on functioning ecosystems and resilient supply chains.

As we have continuously grown our understanding of global challenges and our role in addressing them, we announced in 2022 our aspiration to be Net Nature Positive by 2030. This will require both a change in mindset and a transformative approach, ensuring that Croda's relationship with nature is one of mutual benefit, in collaboration with stakeholders and like-minded peers, contributing positively for a thriving future.

During 2022, working with the draft and developing SBTN framework on nature, we are systematically working to better understand the ways that each of our major manufacturing sites, raw materials and finished ingredients impact or depend upon biodiversity and nature. Guided by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services drivers for nature loss, our expertise and resources in LCA, water use impact, land use savings and sustainable sourcing, we updated our 2021 Materiality Assessment, performed a comprehensive value chain assessment, and identified areas of transformative action within the business.

We are evaluating our commodities, technology platforms and product portfolio in terms of their geographies, their proximity to critical ecosystems and their inherent risks and opportunities for nature. This is helping us map the intensity of our corporate impacts and dependencies on nature across the value chain, highlighting those issue areas that transcend sectoral and financial considerations and are specific to our business and innovation strategy. Our approach has been further refined through our participation in the SBTN Corporate Engagement Programme

and the WBCSD Nature working group, also aligning with the recommendations of CISL case study (see p14, Sustainability Strategy). The outcome of our value chain assessment will drive positive change in our raw material and supplier selection as well as innovation approaches. It will also uncover opportunities for collaborative action, as we aim to synchronise efforts with suppliers, customers and other stakeholders to improve the general state of nature, rather than simply de-risking our own business. This work is expected to be completed during 2023 and will allow us to develop a Net Nature Positive roadmap towards 2030 and beyond.

We believe we can make a significant contribution to protecting natural systems in a number of key areas:

Sourcing natural raw materials

We are committed to NDPE in our supply chains and establishing regenerative projects in areas prone to deforestation. In addition, Croda Foundation partnerships have to date seen 3,300 hectares of forests protected and restored in Mato Grosso with Instituto Amazonas, Brazil.



For more information on sustainable sourcing
See page 20

Reducing water impact

Our manufacturing sites are setting ambitious targets, with those in water stressed areas prioritised.



For more information on reducing water
See page 31

Developing technologies

We will support the future vision of sustainable and regenerative agriculture through innovation within our Crop Protection and Seed Enhancement business areas.



For more information on crop innovation
See page 29

“Achieving a nature positive future, one in which natural capital is protected and restored, is essential for the health, wellbeing and prosperity of us all.”

Steve Foots, Group Chief Executive



Scan this QR code to find out more about our 2021 materiality assessment

Land Positive continued

Land Positive award: Incotec China



Creating a coastal habitat to attract birds and other wildlife, Incotec China's award-winning project involved rewilding more than four hectares of coastal salt flats near its Beijing location. Using Incotec pelleting technology, more than 10 million wild grass seeds were processed to create the new coastal habitats. The judges commented that this was an excellent example of how we can use our smart science to achieve sustainability goals.



For more information on our Purpose In Action (PIA) Awards

See page 5

Environmental stewardship – Croda Chocques

Chocques, our manufacturing site in northern France, has demonstrated a holistic approach to environmental stewardship in terms of resource management (water reduction), waste management (compost and decontamination) and habitat management (bees and vegetation) while also making a positive contribution to local communities through the provision of sustainable green energy.

Situated in a region exposed to water risks, Chocques performed a robust impact assessment of their water use and developed a water reduction roadmap, already achieving 30% progress toward the 2030 target (halving their water use impacts from a 2018 baseline) and demonstrating a high awareness of water use impacts and risks. Beside optimising water usage by recycling Effluent Treatment Plant water for cooling and cleaning, the site brings a positive contribution to the long-term health of the local ecosystem, improving water quality of the aquifer and river downstream by discharging effluents of higher quality, well beyond environmental compliance requirements.

With a third of the water withdrawal on site being purified and sent to the local incinerator, supporting the production of green steam and electricity servicing both Croda Chocques and the town nearby, the site is supporting local authorities to tackle environmental concerns beyond water use, limiting erosion along the riverbanks through planting and managing riparian vegetation.

Advocating for Access and Benefit Sharing (ABS) and biodiversity conservation



We supported the launch of the third edition of the Brogota Project through the United Nations Biodiversity Conference COP15 side event: 'Brazilian Biodiversity Law: a comparative with the other international laws'. The Brogota Project is a vital and unique document compiling all the ABS regulations around the world (more than 190 countries), which are the legal requirements to meet the Nagoya Protocol.

We are also signatories for the 'Make it Mandatory' business statement, launched for COP15 and led by Business for Nature, joining more than 330 business and finance institutions from 52 countries urging world leaders to adopt mandatory requirements for all large businesses and financial institutions to assess and disclose their impacts and dependencies on biodiversity by 2030.

Commitment performance continued

Land Positive



Key

- Target achieved
- Target on track
- Target requires additional focus
- Target challenging to achieve

Objectives and targets

Land use

- Throughout this decade, the land saved through the application of our crop protection and seed technologies will exceed any increase in land used to grow our raw materials by at least a factor of two, and by 2030, we save at least 200,000 hectares per year more than in 2019



- By the end of 2024, the land area saved through use of our technologies will be at least 80,000 hectares per year more than in 2019



- We saved 53,486 hectares per year more than our 2019 baseline year and remain on track to achieve our 2024 milestone and 2030 target
- Land used to grow our raw materials in 2022 was 55,692 hectares

Crop science innovation

- Through to 2030 we will bring an average of two crop technological breakthroughs to market each year that are in alignment with our SBTs and which help our customers mitigate the impact of climate change and land degradation
- By 2030, we will have established three new partnerships to contribute to the recovery of compromised farmland and protect biodiversity. We will work with customers, universities and business councils to achieve this



- By the end of 2024, we will have brought 10 qualifying technological breakthroughs to market



- We define a technological breakthrough as a new technology with a measurable significant effect and either a more sustainable route to an existing performance effect, or a new performance effect from an existing technology platform that is in line with our SDG goals
- We brought two technological breakthroughs to market in 2022, which protect biodiversity and mitigate the impact of changing climate and land degradation, bringing our total breakthrough technologies launched since 2020 to four