

Meeting global challenges
Delivering greater impact

Sustainability Report 2022



Highlights

Sales

£2,089.3m

2021: £1,889.6m

Adjusted profit before tax (PBT)

£496.1m

2021: £445.2m

Scope 1 & 2 emissions (TeCO₂e)

121,093

2021: 133,899

Land area saved (hectares)

145,709

2021: 125,958

Total Recordable Injury Rate*

0.74

2021: 0.76 (restated)

* TRIR based on full year performance excluding COVID-19 cases

Sales growth (constant currency)

+5.2%

2021: +43.2%

IFRS profit before tax (PBT)

£780.0m

2021: £411.5m

Ordinary dividend (proposed full year)

+8.0%

2021: +9.9%



Scan this QR code to download our non-financial data pack

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How we report

This report forms part of a wider reporting suite and the table below details where to find particular disclosures within this suite.

Information provided	Annual Report (ARA2022)	Sustainability Report	Non-financial data pack	Fundamentals factsheets	croda.com
Our Commitment progress report	✓	✓	✓	✓	✓
Case studies		✓			✓
Non-financial information statement	✓				
TCFD	✓				
GRI			✓		
SASB Review			✓		
Principal adverse sustainability impacts statement			✓		

Meeting global challenges

Delivering greater impact

Of the trends affecting our markets and supply chains, we have identified three key global challenges where delivery of our Commitment can maximise positive impacts on planet and society. Our response to each continues to develop as we work towards our Commitment to be Climate, Land and People Positive by 2030. Aligning our work with the United Nations Sustainable Development Goals (UN SDGs) ensures Croda is tackling the most important challenges to deliver positive impact.

The challenge

Living sustainably within our planetary boundaries

Population growth and increasing consumption, fuelled by the expansion of the middle class with increased disposable income in the developing world, are putting pressure on planetary systems, such as water, climate, biodiversity and scarce natural resources. Addressing this challenge requires transformational new approaches to consumption and circularity. For example, one of the greatest challenges of the coming decades is not only the transition to a carbon net zero society but doing so by embracing the role nature plays in mitigating and adapting to climate change and addressing social inequalities. Consumers, primarily in developed markets but increasingly in China and around the world, are supporting businesses they believe act responsibly, understand these societal challenges, protect and restore nature and provide solutions to mitigate the causes and adapt to the negative impacts of a changing climate.

The enabler

Digitalisation facilitating faster, more connected supply chains

Digital is changing expectations about transparency, with consumers demanding businesses take responsibility for not just their own operations but also their supply chains and end of life of their products. Digital is also increasing the speed at which new trends are adopted and enabling businesses to deliver transformative solutions from wherever they are conceived. Successful products are those which are innovative, highly effective, low impact, sustainably sourced and clearly labelled.

Global demand for health and wellbeing

The pandemic has laid bare public health challenges around the world and accelerated the demand for health care, already growing due to higher global population, rising malnutrition and an ageing population in developed countries. Following two years of lockdowns, consumers are much more conscious of their physical and mental wellbeing and the dependencies on healthier communities more broadly. This has increased the focus on the efficacy of products with increased demand for ingredients that are underpinned by science, and that support physical and mental health.

Feeding a growing population and restoring nature

World population passed eight billion in 2022 and is expected to reach nearly ten billion by 2050¹ with the majority of the increase coming in South and East Asia, and Africa. Feeding this growing population will require a 70%² increase in agricultural output by 2050, and the challenge is achieving this in a sustainable, regenerative way. Agriculture has undergone yield-enhancing shifts in the past but yields of important crops such as rice and wheat have now stopped rising in some intensively farmed parts of the world. Agricultural soils have been overused and overexposed to chemical fertilisers, destroying their vitality and threatening the food security of 3.2 billion people³, especially poor rural communities and smallholder farmers. Since most suitable land is already farmed, most of this growth will come from higher yields and more resilient crops in less suitable land, supported by restoring degraded ecosystems.

The opportunity to deliver greater impact

Climate Positive



Read more on our Commitment
See pages 22-27

Land Positive



Read more on our Commitment
See pages 28-31

People Positive



Read more on our Commitment
See pages 32-35

1. United Nations, World Population Prospects 2022

2. Food and Agriculture Organization of the United Nations, Global agriculture towards 2050

3. The Global Environment Facility, Land Degradation

Megatrends

Megatrends in our markets

In response to these global challenges, the Consumer Care and Life Sciences markets have inspired two technological megatrends, where innovative ingredients from leading suppliers like Croda can support the delivery of significant positive impact on planet and society.



Megatrends continued

The two trends affecting our markets and how we're responding

1. Move to sustainable ingredients

Consumers want to live more sustainably and this is influencing their decisions when it comes to the products that they buy. Generational shifts are accelerating these trends with an increasing number of consumers willing to pay more for purpose-led brands that meet their specific values. Sustainability will be the biggest single driver of consumer markets over the next decade and beyond.

Consumer-facing companies need to enhance consumer trust in their brands, so are looking for ingredients that enable them to deliver products with proven, substantiated claims and transparent, assured information on their social and environmental footprints. Sustainable ingredients must have a low footprint in terms of the carbon, water and resources used in their manufacture, and should also contribute to enabling consumers to live more sustainably.

Growing consumer demand for sustainable ingredients is driving increased regulation by industry and national authorities. For example, there are now very few countries in the world without cosmetic legislation and an increasing number of countries also have chemical regulations in place, with many more set to adopt chemical legislation in the coming years. Increasingly widespread and thorough legislation is providing a higher threshold for approval for new ingredients while increasing consumer confidence about the footprint and sustainability benefits of the products they buy.

The move to sustainable ingredients is not confined to consumer markets. Not only do crop science companies want biodegradable ingredients with a low carbon footprint, they also need innovative ingredients that make a positive contribution to improving yields, soil health and biodiversity.

Alongside more sustainable chemistry, biotechnology can be a highly sustainable route for creating new and existing molecules that have applications in high growth markets of today and the future. Designed correctly, biotechnology will enable ongoing performance innovation, facilitate ingredient footprint reduction, and support the transformation to bio-based ingredients.

→ For more information see the Crop Care and Consumer Care: Capturing new opportunities section in our ARA2022 on pages 27-33

2. Move to biologics

In Life Sciences, the 20th century was the era of the small molecule: relatively simple compounds made by chemical synthesis. The 21st century is the era of biologics: giant molecules manufactured inside animal cells or micro-organisms, that are already transforming medicine and will transform agriculture over the next decade.

Biologic drugs mimic closely our body's biology and are much better at treating disease in a targeted way with fewer side effects. But they are complex molecules that are hard to make, difficult to keep stable, and need sophisticated delivery systems. They are also difficult to administer and are normally injected because otherwise they would be destroyed by stomach acid when swallowed.

The nucleic acid revolution that we are now witnessing, best illustrated by the global roll out of messenger ribonucleic acid (mRNA) vaccines for COVID-19, is the next phase in the move to biologics. It is creating an incredible number of opportunities because nucleic acids teach the body to create its own medicine. This is a fundamental shift in the complexity of new drugs and in their value – both in terms of patient outcomes and commercial opportunities for pharmaceutical companies.

Although crop science is some years behind, it is also experiencing a transformation to biologically active ingredients. For example, naturally occurring microbes act as fertilisers for plants but have yet to be exploited systematically to raise crop yields. The nucleic acid revolution is also making new approaches possible in agriculture. For example, ribonucleic acid (RNA) interference could be used as a precisely targeted, environmentally friendly pesticide, by preventing the production of a critical molecule in the body of a specific pest.

The ability for these biologics to target specific elements in the host offers a significant opportunity to reduce negative impacts on the planet and society. Increased targeting means reduced overall dosage, less unintended side effects and fewer resources to produce the same benefits. Novel performance means new approaches such as improved vaccination to both prevent and cure diseases, and regenerative agriculture that leverages the power of nature.

→ For more information see the Pharma: Capturing new opportunities section in our ARA2022 on pages 30-31

Chief Executive's review

Our Purpose driving success



Steve Foots
Group Chief Executive

“Our success is defined by our culture and shared ambition to create a positive impact.”

During 2022 we saw a continued return to some sense of normal life post-COVID-19 pandemic, however 2022 has been far from normal with the unwelcome challenges unfolding as a result of the conflict in Ukraine, the energy crisis and supply chain disruption.

Despite these challenges we remained focused on our priorities of tackling climate change as part of our broad-based restorative sustainability strategy; our vital work on vaccine adjuvants; completing the divestment of our industrial businesses; and through these we delivered an all-time record financial performance.

Our embedded Purpose, Smart science to improve lives™, has been central to this achievement, which, above all, has been delivered through the extraordinary commitment of our people across the Company. This is further confirmation that our success is defined by our culture and shared ambition to create a positive impact.

Responding to the climate crisis

We remain undistracted from the efforts required to meet our 2030 Science Based Target (SBT) for reducing greenhouse gas (GHG) emissions, and I am pleased to report that, for the third year in succession, we remain on track and are now starting to see the benefit of our early investments in scope 1 emissions reduction. Covering both our operations and supply chain, aligning our scope 1 and 2 SBT with the 1.5°C scenario and commitment to net zero by 2050 sets us apart as leaders in our industry, reflecting our ongoing departure from fossil-based chemistry and endorsing our capital light business model. Third party validated decarbonisation roadmaps are in place for our manufacturing sites and non-manufacturing offices and laboratories, demonstrating our pathway to 2030 is robust.

It is really exciting to see the progress we have made in generating up to date product-level carbon footprint data. We will be using this information to enable the sectors and regions to make better business decisions around our product portfolio and are starting the work with customers to agree how best to share this information with them in the future.

As a member of Together for Sustainability (TfS), we are helping develop the industry standard approach to product-level carbon footprinting, to help all our suppliers meet our data demands in a low friction, unified way.

Aspiring to become Net Nature Positive

Understanding the impact of our business on nature is as important as understanding scope 3 carbon. The Science Based Targets Network (SBTN) is developing guidance to set Science Based Targets for nature that will define a clear pathway for business. We recognise the importance of the role that we can play to drive positive change across our supply chains and are committed to building on the significant progress we have already made. Through an increased focus on preserving forests and habitats, minimising our water impact and helping accelerate sustainable and regenerative agriculture, we aspire to become Net Nature Positive by 2030.

Improving more lives

Since the Croda Foundation achieved charitable status at the end of 2021, the Board of Trustees has approved over £1.1m in funding for 13 projects from its core funds. In addition, the Foundation is distributing further grants specifically focusing on vaccine and health infrastructure projects, donating approximately £1.75m of the £2m restricted healthcare grant to date, supporting projects within South Asia, Africa and Brazil which have already benefitted over 14 million lives.

Our innovation is being driven by increased internal investment together with stronger external partnerships and notably governmental support in the United Kingdom (UK) and United States of America (USA). We are now contributing to the development of 17 of the 24 vaccines prioritised by the World Health Organization (WHO).

Use of our sunscreen technology has enabled us to already achieve our 2030 sunscreen protection target in 2022, protecting over 60 million people from the harmful effect of ultraviolet (UV) rays.

Chief Executive's review continued

Sustainability leadership

To ensure we collaborate to deliver maximum impact, during 2022 we joined the World Business Council for Sustainable Development (WBCSD), the global CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive and more equitable future. In joining WBCSD we will have access to collaborations at the frontier of business and sustainability, adding our expertise and passion to their work, as well as learning together.

Continuing this theme, it was with great pleasure that we welcomed Aris Vrettos, previously Director of the Business Transformation Centre at Cambridge Institute for Sustainability Leadership (CISL), to the Croda family as Director, Sustainability Strategy and Transformation. With his extensive experience and insight into sustainability-centred organisations and thought leadership, Aris will challenge our approach and stretch our thinking and ambition, as well as leading some important programmes within Croda.

Underpinning our strategy is the absolute commitment to be a safe, inclusive and fair company for all our employees and our communities. We have seen great progress against many of our Fundamental targets that support this commitment and ensure Croda continues to live our values of Together, Responsible and Innovative.

We ended 2022 with confidence and collective pride in our business, our Purpose and our Commitment to make a positive impact and I thank everyone across Croda for their continued ambition and commitment to leadership in sustainability.

Steve Foots, Group Chief Executive

Accelerating towards greater impact



Croda is on an exciting journey, continuing to grow through sustainability and innovation towards becoming a Purpose-led business. 2022 showed we are operating in a fast-moving, interconnected context with a clear direction of travel. As the climate breakdown and growing social pressures affect people everywhere, investors, regulators and customers set new standards and expectations on business transparency, performance and leadership.

These reaffirm that our restorative strategy and hard work on decarbonisation, land and water usage, health and social outcomes target the right areas, and that we need to further focus and accelerate. Going forward our response needs to be ambitious, systemic and collaborative, guided by science and market trends.

Over the next period we will continue to align our systems and processes with our pursuit of impact, working closely with customers and suppliers to help shift behaviours and meet future needs. We are building the necessary competencies and capabilities across the business and will continue to review and enrich our transformation with goals and metrics that both challenge and validate our progress.

Purpose and sustainability are live, breathing topics in Croda, distributed across key leaders and business teams. We know our journey comes with challenges and responsibilities: it is those that we are so driven to address and turn into opportunities for impact.

Aris Vrettos, Director, Sustainability Strategy and Transformation

Purpose In Action Awards

Following fantastic levels of engagement in 2021, these awards returned for 2022. 57 nominations across seven categories recognised employees and teams around the world who had driven action towards achieving our Commitment, or demonstrated they were living our values of Responsible, Innovative and Together.

New for 2022 and in response to world events, the Global Action Award was also given to two deserving teams (see p14). Look out for winning entries in this report and on the Croda website.

“These individuals and teams challenge the norm and inspire those around them to do the same. It's great to see an even deeper passion growing around sustainability, integrating best practice in all aspects of our business.”

Steve Foots

Group Chief Executive

At a glance

Global opportunities to deliver impact

We are the name behind the sustainable high-performance ingredients and technologies that feature in many of the world’s most successful brands.

Smart science to improve lives™

Our Purpose
(Why we exist)

Our Commitment
(What we will achieve)

To be Climate, Land and People Positive by 2030

Our values
(How we work every day)

Responsible, Innovative and Together



Scan this QR code to find out more about our Purpose

Our strategy

Sustainability

We have made a bold Commitment to be Climate, Land and People Positive by 2030. By being the most sustainable supplier of innovative ingredients, we will provide solutions to some of the world’s biggest challenges while helping our customers achieve their sustainability goals.

Innovation

Innovation is the lifeblood of our business and our success is dependent on our ability to deliver innovative solutions to customers. Our approach to innovation combines our own internal research and development (R&D) with customer collaboration and open innovation partnerships to accelerate the development of disruptive technologies.

Growth

As we deliver on our Commitment to be Climate, Land and People Positive by 2030 we will significantly grow our positive impact, helping meet the SDG targets. In doing so we will differentiate ourselves through the level of support given to our customers to meet their sustainability targets, creating value growth opportunities.

Our ratings and frameworks

While our full focus is on delivering impact, we understand the value to our stakeholders of external ratings. We use the submission and feedback processes from ratings such as MSCI, Sustainalytics, EcoVadis and CDP to learn and improve our approach across the sustainability agenda.



Our markets

Consumer Care

Positively impacting everyday life

We develop innovative and sustainable ingredients that provide vital functionality to Consumer Care formulations, enabling customers to differentiate their products.

Pharma

Empowering biologics delivery

We develop components and systems for the delivery of Active Pharmaceutical Ingredients (APIs), enabling delivery of the next generation of biologic drugs.

Crop Care

Innovating for sustainable agriculture

We are an innovation partner to crop science companies, developing delivery systems to meet the sustainability challenges and improve performance of crop care solutions.

At a glance continued

Where we operate

North America

- 5 manufacturing sites
- 6 innovation centres
- 6 sales offices

Latin America

- 5 manufacturing sites
- 6 innovation centres
- 11 sales offices

Europe, Middle East & Africa

- 18 manufacturing sites
- 21 innovation centres
- 28 sales offices

Asia

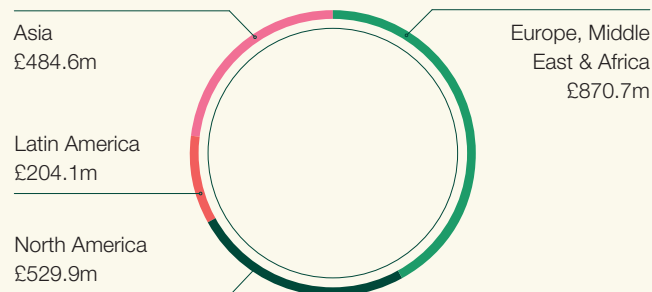
- 15 manufacturing sites
- 13 innovation centres
- 25 sales offices

As of December 2022, all of our locations have approved 2030 decarbonisation roadmaps, as part of our ambition to become Climate Positive.

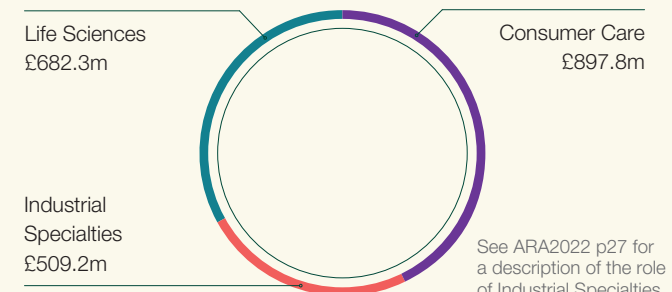
Key

- Principal manufacturing site
- Other manufacturing site
- Innovation centre
- Sales office

Sales by region



Sales by sector



See ARA2022 p27 for a description of the role of Industrial Specialties.

Business model

How we create value

What our business needs

Sustainably sourced raw materials

Impact-focused R&T expertise

Diverse, skilled and engaged employees

Capital

Sites, assets and infrastructure

Transparent and resilient supply chains

Renewable energy

Our Commitment

Climate Positive

People Positive

Land Positive

Fundamentals

Our competitive advantages

'One Croda' culture

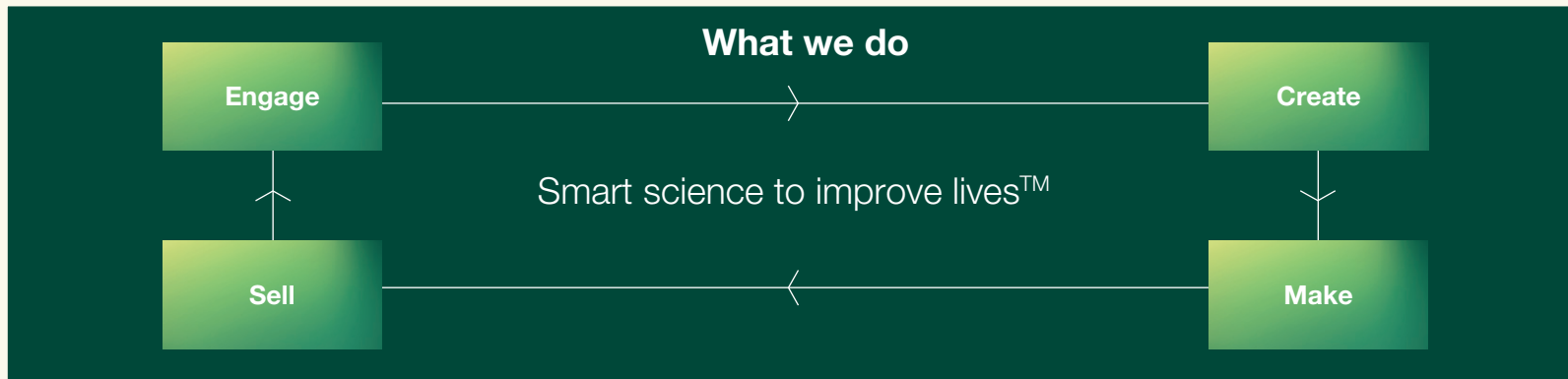
Innovation leadership

Our approach to growth

Customer intimacy

Sustainability leadership

Regulatory expertise



The solutions we provide

Consumer Care

Pharma

Crop Care

Delivering value

Our stakeholders

Environment

Society

Employees

Customers and consumers

Suppliers

Innovation partners

Shareholders

Communities

NGOs

71%

>17,000

45%

>500

>30

5,336

89%

of employees are motivated by our Purpose

customers benefit from our innovative and sustainable ingredients

of raw material volumes from suppliers with public commitments to carbon reduction

innovation partners working collaboratively to advance science

year track record of unbroken dividend growth

hours donated by employees through our 1% club

of global palm derivatives consumption was RSPO physically certified

Business model continued

Our core business model, to engage, create, make and sell, positions us well to deliver on our restorative, impact-first sustainability strategy. We use our smart science to create high performance ingredients and technologies that improve people's lives. This Purpose is underpinned by our values.

Sources of our differentiated position

People, culture and Purpose

United by our strong sense of Purpose and our values, we work as one team. We promote a 'One Croda' culture, encouraging everyone to work together to achieve our goals; paying a living wage, embracing the value of our diverse work force and benefitting from both experience and diversity of thought.

Innovation

Our ingredients have unique characteristics and deliver high impact, with a technology portfolio differentiated by protected intellectual property and know-how, including 1,500 patents across 250 patent families. We have a collaborative, open innovation model which combines internal R&D with technology acquisitions and over 500 open innovation partners. These partnerships facilitate collaboration with leading scientists in universities and small and medium-sized enterprises (SMEs) and give us access to specialist, world class expertise and facilities, with a focus on sustainable innovation by design.

Customer intimacy

We employ our own local, science-focused sales force who understand our customers. This is unusual in our markets where sales are often through distributors. This direct selling model builds relationships with customers and provides us with insights about their challenges, as well as changing consumer behaviour, that are key to how we innovate. Co-formulation programmes fuel their innovation and ours, as well as supporting an accelerated time-to-market. Our digital-led Customer Engagement programme has brought us even closer to our customers, helping identify how we can become a better partner to them.

Sites, assets and capital investment

All of our manufacturing sites as well as offices and laboratories have 2030 decarbonisation roadmaps in place and are already implementing the changes needed to meet our SBT. Work has commenced to understand how we will fully decarbonise and support our net zero by 2050 ambition, with a crucial element of this being de-energisation of our processes.

Our position in the value chain

We sit at the intersection of commodity raw materials and high-performing innovative ingredients. Through application of our intellectual property (IP) and innovative technologies, we transform basic components into ingredients that enable our customers to maximise their impact with minimum footprints. Our approach to raw material procurement supports sustainable sourcing and supplier partnerships, which in turn provides our customers and consumers with the data and confidence they require on the provenance of their ingredients. Our impact growth is achieved by creating new market and technology niches in partnership with our customers, rather than by growing market share in large established markets.

Our values



Responsible

We are responsible for our actions and take care of each other, the environment and all our stakeholders



Innovative

We are innovative, encouraging all employees to generate and contribute to new solutions



Together

We work together as one global family



For more information on our business model see our [ARA2022 pages 14–17](#)

Business model continued**Speciality ingredients**

6,000

Worldwide customers

>17,000

Product patents

1,500

Lives benefitted in 2022

>14 million

**Where do we create impact?****Customers**

We deliver around 6,000 speciality ingredients to over 17,000 customers worldwide. Our customers use our ingredients to differentiate their products and meet their sustainability commitments, regulatory requirements and changing consumer needs.

Consumers

Climate change, biodiversity loss, widening inequalities, changing demographics, overexploitation of resources and innovation in digital technologies are transforming consumer demands. Through our customers' products, our ingredients improve consumers' lives by addressing their needs in sustainable ways; reducing their footprint and encouraging changes in consumer behaviour to make a positive impact.

Shareholders

With more of a focus on sustainability and ESG than ever before, shareholder expectations are changing. New regulations in many jurisdictions are requiring investors and analysts to assess and publish the non-financial risks and opportunities associated with their investment portfolios, in particular climate related risks. Our focus on delivering greater impact through our Commitment and transparent approach to sharing information and data enables shareholders to calculate the impact we bring to their portfolios.

Innovation partners

Our innovation partners contribute to the high proportion of New and Protected Products (NPP) we sell and the continued differentiation of our portfolio for our customers. In return, our shared knowledge and collaboration helps them secure funding, advance science and develop breakthrough technologies that provide positive impact to society and the environment.

Suppliers

We partner with our suppliers to improve sustainability practices in supply chains and commit to sharing the benefits equitably. Our commitment to positive impact sourcing is enabled by supply chain mapping, certification and transparency, often in collaboration with industry partners to maximise impact.

Business model continued

Communities

Our employees donated 5,336 hours (2021: 2,623 hours) via our 1% Club, volunteering in their local communities. As part of this, a focus on science, technology, engineering and mathematics (STEM) opportunities sees the development of the next generation of scientists, through projects ranging from hands on science classes in schools, to sponsorship of underrepresented student groups to attend college summer camps. Paying a Living Wage to all employees and contractors benefits our local communities, as does the continued investment in our manufacturing sites, bringing local employment and increased contribution to national and local governments through taxation.

Society

Our smart science is improving the lives of people all around the world. Our ingredients improve health and wellbeing, for example protecting 61 million people from skin cancer (2021: 55 million) and contributing to vaccine development projects targeting 17 of the WHO's 24 priority diseases. Alongside our commercial endeavours, Croda Foundation, an independent charitable company set up by Croda International Plc, is primarily focused on addressing social inequality, providing access to our smart science which in 2022 benefitted >14 million lives.

Industry

Sharing our knowledge as part of industry consortia enables industry-wide challenges to be addressed in more effective ways. Working to make widely used, traditionally petrochemical-derived, ingredients from sustainable sources has positive benefits across our industry and for manufacturers in the markets in which we operate. Through trade associations and government engagement, we actively contribute to better regulatory and voluntary sustainability standards in line with our commitments to working collaboratively with industry and other partners.

Environment

In delivering our Commitment we are reducing the negative environmental footprint associated with our operations and value chain, and creating opportunities to restore ecosystems through investment in projects that create positive impact in our crop-based supply chains and through the use of our crop and seed technological innovations supporting sustainable agriculture.



Chief Sustainability Officer's letter

Guided by our Purpose in an uncertain world



Phil Ruxton
Chief Sustainability Officer

“We need to challenge ourselves to transform, not evolve, many of our ways of working and means of generating value.”

Russia's invasion of Ukraine in 2022 sent geopolitical shockwaves around the globe and exacerbated the damage caused by the COVID-19 pandemic. With rising inflation, slowing economic growth, an energy crisis, stresses in supply chains (food in particular), labour shortages and migration crises, the socioeconomic impacts are being felt well beyond the local region. At the same time, the world has faced the visible effects of a warming climate: floods in Pakistan and Australia, wildfires in France, Spain and California, and droughts in East Africa and Germany.

These represent an unprecedented list of challenges and headwinds that businesses need to navigate and address to thrive. Through this, we have remained focused on our longer-term objectives while supporting stakeholders through these volatile and uncertain times, guided by our Purpose. I am pleased to report the 2022 progress achieved by the Croda family and our partners as we strive to meet our ambitious 2030 Commitment.

A few highlights: **Climate Positive** – we remain on track to meet our 2030 SBT and we completed scope 1 and 2 decarbonisation roadmaps for every Croda location, enabling us to prioritise the key projects that will deliver our 1.5°C aligned SBT; **Land Positive** – we announced our aspiration to become Net Nature Positive by 2030 and investigation of our impacts and dependencies on nature and biodiversity is progressing well; **People Positive** – we confirmed that we have met our 2030 target to protect an estimated 60 million lives from the damaging effects of the sun, seven years ahead of schedule; and **Fundamentals** – key suppliers representing 45% of our raw material volumes have made public commitments to carbon reduction, with suppliers of more than half of these volumes signed up publicly to SBTs.

With such an ambitious agenda, not everything always goes to plan. We remain very disappointed with our personal safety performance that remains well behind the ambitious target and milestones we have set. In response, we have focused our efforts on our leadership teams to embrace safety as a value rather than just a priority. In addition, assessing our approach against key external global challenges, we recognise that, post divestment of our industrial businesses, we will need to work harder to make a real impact on the circular economy.

Working across our ecosystems to maximise our positive impact, I continue to be excited by the increasing level of engagement in our sustainability journey around the Croda world and connecting this with our customers and other stakeholders. Our regional Sustainability Champions Networks have been identifying and sharing local best practices and supporting the efficient development of decarbonisation roadmaps at all our locations. Importantly, sustainability is not only an activity for our operations and supply chain teams. Our Life Sciences and Consumer Care sectors have been allocating increased resources to sustainability: reprioritising innovation pipelines, assessing the sustainability characteristics of their product portfolios, and actively engaging with our customers and end markets. In our supply chains, as a founder member of Action for Sustainable Derivatives (ASD), we invested in their first Impact Fund to support positive social and environmental impacts in palm supply chains.

Sustainability leadership and business transformation requires collaboration

There is a great deal more to be done to increase our positive impact on planet and society, enabling progress towards our ambition to be the most sustainable supplier of ingredients in our markets by 2030. We need to challenge ourselves to transform, not evolve, many of our ways of working and means of generating value, not least our product portfolio and the process technologies that we deploy to manufacture ingredients.

The work of the Business Transformation Group at CISL, of which Croda is a founder member, resulted in the launch of a net zero transformation inquiry and development of a diagnostic toolkit for companies to assess their position on the journey to becoming truly Purpose-led.

Finally, I want to recognise and thank everyone at Croda and our partners for their amazing efforts in delivering the 2022 progress towards meeting our Commitment, at a time of increasing uncertainty and challenge.

Phil Ruxton, Chief Sustainability Officer

Sustainability strategy

Our Commitment

Croda is committed to becoming the most sustainable supplier of innovative ingredients. We will create, make and sell solutions to tackle some of the biggest challenges the world is facing. By 2030 we will be Climate, Land and People Positive.

We launched our Commitment in 2020, externally benchmarking our targets with the support of CISL to ensure our ambitions aligned with expectations of a sustainability leader in our industry. We have a restorative strategy, designed to ensure that planet and society are better off as a result of our activities, and we are not only mitigating against negative impacts.

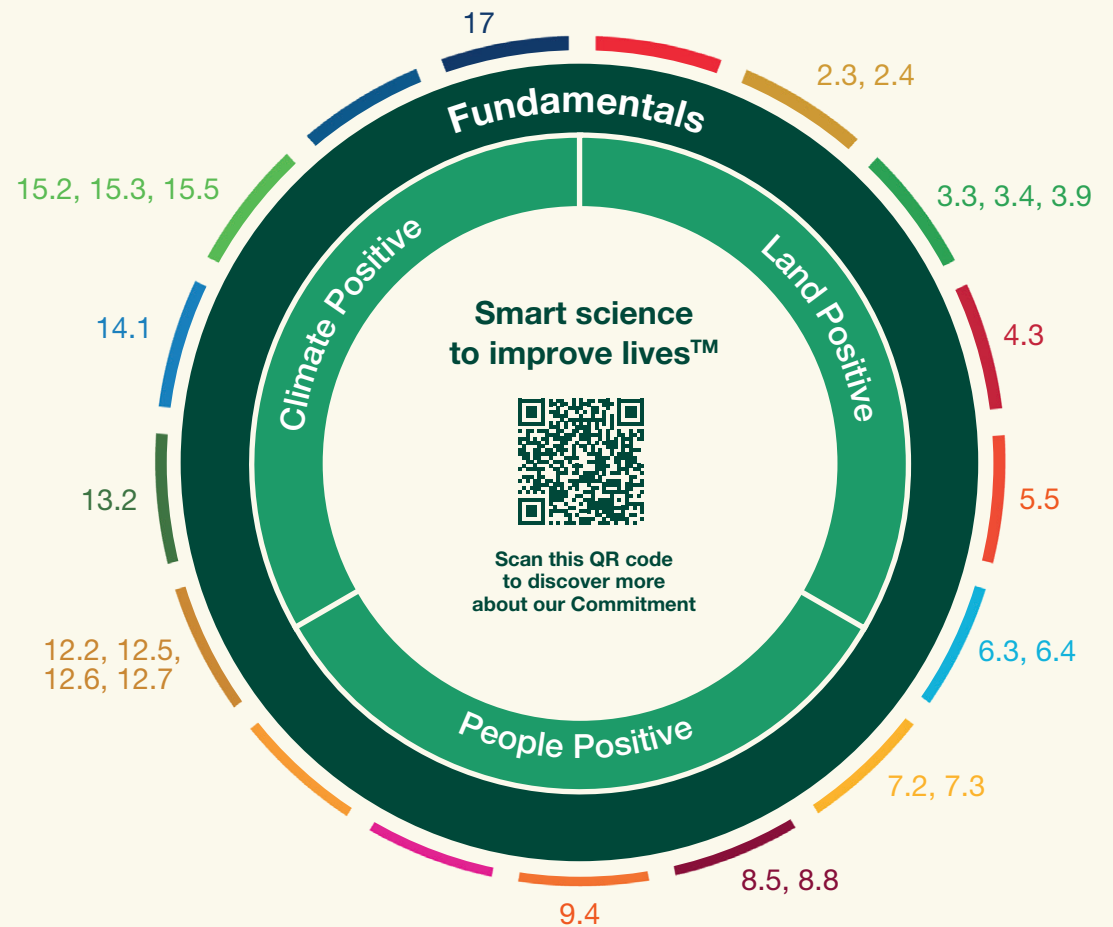
We also have important performance indicators outside Climate, Land and People; we believe these Fundamentals are crucial to our success. Our Fundamental targets represent the social licence required for a multinational manufacturing company, such as Croda, to operate in 2030.

Aligning with the UN SDGs

The SDGs underpin our Commitment. Twenty-three out of the 169 targets that sit below the SDGs are drivers of our strategy; those where we must reduce our negative impacts and where we can make the biggest positive contributions. The targets are grouped around the themes of climate, nature and society, hence our Commitment to be Climate, Land and People Positive.

Beyond these 23 drivers, the remaining SDGs and their targets are similarly important; while they do not drive our strategy, we are contributing to them through our Fundamental objectives (p39) and Croda Foundation (p35), and we depend on wider progress across society towards many of them as enablers to achieve our Commitment.

Just as partnerships are critical to the success of the UN Sustainable Development Agenda through SDG 17, achieving our 2030 Commitment is dependent on productive partnerships with all our stakeholders (see p8 business model). In 2022 we joined the WBCSD, the global CEO-led community of more than 200 leading sustainable businesses working together to accelerate the transformations needed for a net zero, nature positive, more equitable future.



Sustainability strategy continued

Global Action Award: Croda Shanghai and Croda Poland



The Croda Shanghai team was recognised for delivering emergency food packages during COVID-19 lockdowns within local communities. Croda Poland employees were recognised for the Sunflower Project: colleagues provided homes for refugees from the war in Ukraine together with food, clothes and schooling opportunities.



For more information on our Purpose In Action (PIA) Awards [See page 5](#)

A 'living' strategy continually tested and updated

Continuing our relationship, 2022 saw CISL complete an evaluation of Croda's progress towards becoming a Purpose-led company with sustainability at the core of our business strategy. The review of our sustainability journey to 2020 acts as an external benchmark for our continued evolution, and pleasingly, as shown throughout this report, we are making steps that encompass CISL's recommendations, which include:

- Stepping up efforts to increase supply chain transparency, designing and implementing targets and strategies for biodiversity; and increasing diversity and inclusion across all levels of the business
- Further developing the sustainability skills of all employees, embedding sustainable innovation across our whole portfolio
- Using our leadership position in sustainability to inspire and support customers as well as peers and suppliers to adopt sustainable solutions

Informed by this, and the full strategy review completed with our Executive Committee in November 2021, we have further evolved our sustainability strategy.

Following a CISL workshop in 2021 which developed our understanding of initiatives relating to nature for business, during 2022 we were excited to announce our aspiration to become Net Nature Positive by 2030 (see p30 Land Positive). The primary aim of our WBCSD membership is to help develop guidance and regulations for future business-focused nature and biodiversity actions. To this end, we are also a Corporate Engagement partner with the Science Based Targets Network (SBTN). In 2022, we became an early adopter of the updated United Nations Global Compact Annual Communication of Progress approach, using the more rigorous standard as a further tool to measure our progress and identify gaps for improvement.

Our evolving business portfolio creates new opportunities and challenges

In June 2022, we announced our transition to a Life Sciences and Consumer Care focused business, following the divestment of a majority of our PTIC businesses (see ARA2022 p80). As part of our due diligence, we re-baselined all relevant sustainability metrics back to our baseline year of 2018, and reviewed our 2030 targets for Croda moving forward. In every case, we chose to maintain or increase the level of ambition against our targets.

For example, following the GHG Protocol and SBTi framework, we re-baselined our GHG emissions and retained our SBT at the same percentage reduction as previously. The proportion of bio-based organic raw materials reduced to 57%¹ due to the disposal (2021: 69%) but we have retained our original target to achieve 75% by 2030. (see p27 Sustainable innovation). The data and progress in this report relates to Croda post divestment only, please refer to our performance table (p40) for reconciliation with the previous data.

“Our approach to providing resources to meet our 2030 targets follows the Croda model of decentralising wherever possible to be close to the point of need and action.”

Targeted resources to accelerate sustainability performance

Our approach to providing resources to meet our 2030 targets follows the Croda model of decentralising wherever possible to be close to the point of need and action. Our central Group Sustainability and Sustainable Sourcing functions provide subject matter and ESG reporting expertise and manage third-party relationships.

2022 saw the development of a global Sustainability Professionals Network, comprised of those employees with a primary focus on sustainability, within the business and outside our central Group function. Pleasingly, these employees now outnumber our Group sustainability team. This network has been set up to facilitate best practice sharing and allows us to have a much greater reach and impact across the Croda world, building longer-term customer and industry relationships founded on sustainability.

We have allocated more resources to supplier engagement, and to reporting more accurately on sustainable sourcing at product level. We have recruited our first sustainability analyst in Group Finance to roll out our Product Carbon Footprinting programme to all locations (see p25 Climate Positive).

1. The value of 57% quoted in the above is the restated 2021 value minus PTIC.

Sustainability strategy continued

Measuring our growth against the SDGs

Having previously identified the SDG targets that directly connect with our Commitment (see p11 SR2020), we have mapped out how those SDG targets can be impacted through the use of our products in the markets in which we operate, considering our product offering into those markets and the primary supply chains and operations that provide them.

We plan to continue this assessment in the coming years to develop a means of assessing our revenues and profitability by SDG target. The table below presents a summary of the SDG targets our activities impact, broken down by sector and business unit.

	Value chain				Operations						Products and services							
SDGs	8	12	13	15	3	4	5	6	7	8	9	12	2	3	7	13	14	15
Consumer Care																		
Beauty Care	8.5	12.2	13.2	15.2	3.9			6.4	7.2		9.4	12.5		3.4	7.3		14.1	
		12.7		15.5														
Beauty Actives	8.5	12.2		15.5	3.9		5.5				9.4	12.5					14.1	
		12.7																
Home Care	8.5	12.2		15.2	3.9			6.3			9.4	12.5			7.3	13.2	14.1	
		12.7		15.5				6.4	7.2									
Fragrances and Flavours	8.5	12.6		15.2	3.9	4.3	5.5	6.4		8.8	9.4	12.5						
		12.7		15.5														
Life Sciences																		
Seed Enhancement		12.2			3.9			6.3	7.2		9.4	12.5	2.3		7.3	13.2	14.1	15.3
		12.7											2.4					
Crop Protection		12.2		15.2	3.9			6.3			9.4	12.5	2.3		7.3	13.2	14.1	15.3
		12.7	13.2	15.5				6.4	7.2				2.4					
Pharma		12.7		15.2	3.9				7.2		9.4	12.5		3.3	7.3	13.2		
														3.4				

Governance

Sustainability governance and management oversight

Our Commitment is to be Climate, Land and People Positive by 2030, and we have built robust governance mechanisms at all levels to hold ourselves accountable for successful delivery of our ambitious 2030 targets.

Board leadership

Our Board comprises Non-Executive Directors plus the Group Chief Executive and Chief Financial Officer. It has ultimate responsibility for reviewing, monitoring and guiding our strategy, providing constructive challenge and specialist advice. The Board has overall accountability for the management and guidance of risks and opportunities, including those relating to Climate, Land and People, and for the delivery of our financial and non-financial performance.

Phil Ruxton, Chief Sustainability Officer, provides the Board with a quarterly update on progress on behalf of the Sustainability Committee.

In 2022, sustainability was given significant focus at the Board-level Audit Committee and Executive-level Risk Committee. This included a review of corporate level risks and opportunities associated with sustainability, future compliance with the rapidly changing reporting framework requirements, and assessing the processes and controls around preparing non-financial data as we plan to seek selective external assurance in 2023.

The full Board also conducted a review of progress against delivery of our Commitment in December 2022.

Outcomes of these discussions included sustainability considerations for Non-Executive Director appointments and plans for Board-level sustainability competence development in 2023.

Executive Committee ownership

Formed in 2020, the Sustainability Committee is chaired by our Chief Sustainability Officer, and is a subcommittee of the Executive Committee. It has delegated authority to oversee the development, measurement and delivery of our KPIs across the three pillars of our sustainability strategy: Climate, Land and People, supported by our Fundamentals. It comprises members of the Executive Committee and senior leaders from across Croda, with each member responsible for delivering specific 2030 targets. Expert advice and support are provided by the Group sustainability team and third-party partners. The Sustainability Committee met six times in 2022.

Sustainability is also built into our long-term incentive plans through the inclusion of key non-financial metrics relating to 15% of the plan for senior leaders (see ARA2022 p112).

Embedding ownership across the business

The Sustainability Committee is responsible for global Group-wide engagement with our sustainability targets and provides guidance and support to sites, regions and sectors to develop plans to deliver our goals.

Together award:
Alban Muller, Croda
France, Sederma



This initiative saw new employees at Alban Muller, Croda France and Sederma coming together for a morning of team building in the Forest of Rambouillet. Introducing them to the Company, activities included a group breakfast and showing teamwork by building a dry hedge together: an incredible biodiversity reservoir.



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

See page 5



Scan this QR code to find out more about our Sustainability Committee

Governance continued

Organised to deliver our Commitment

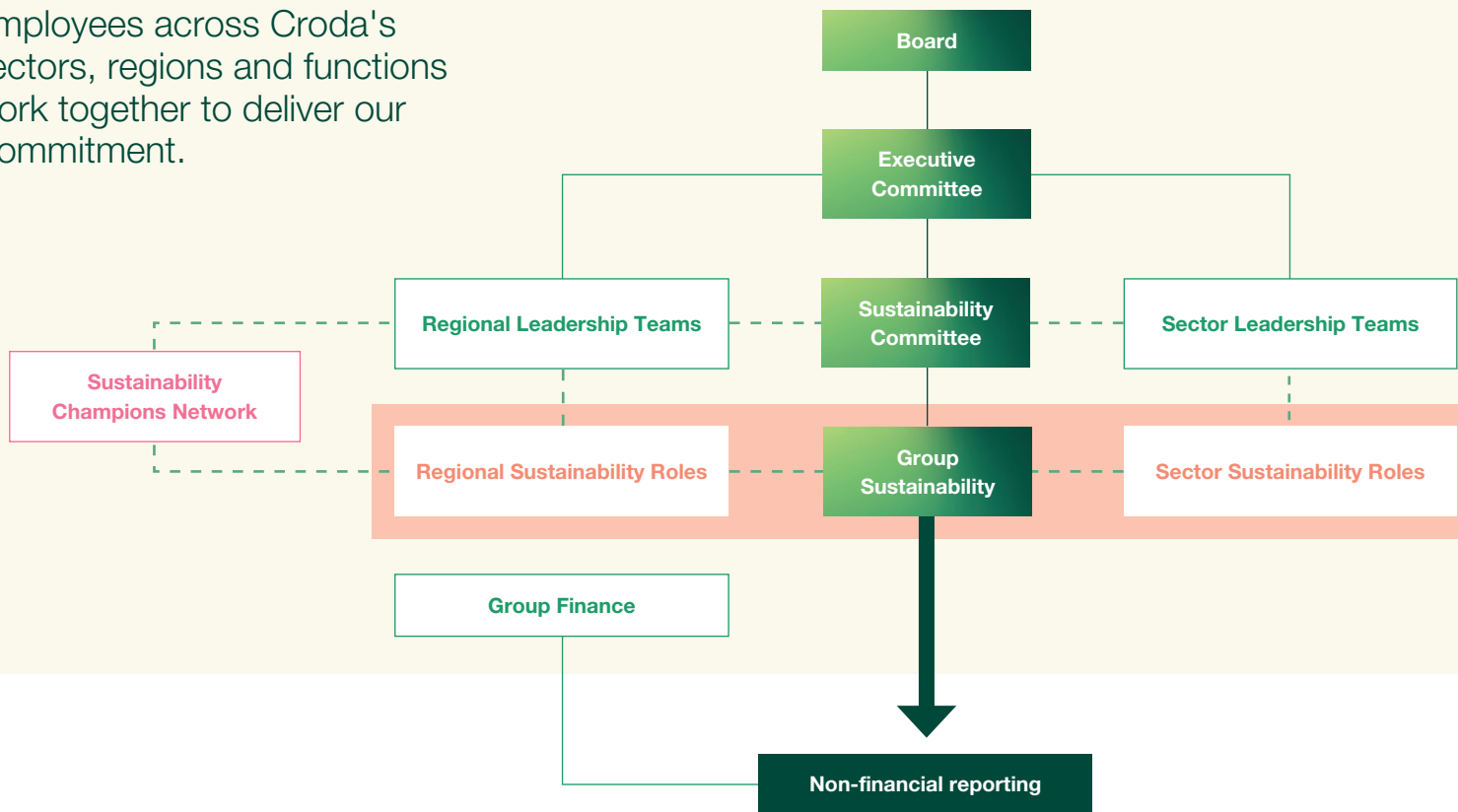
We aspire to embed sustainability across Croda; engaging all employees; connecting our strategy with their roles; and enabling decisions at all levels to take into account sustainability-related impacts.

Employees across Croda's sectors, regions and functions work together to deliver our Commitment.

Our sustainability networks

Sustainability Champions Network:
Employee-led initiative made up of passionate individuals around the Croda world who take time from their day job to help embed sustainability across Croda (see p12).

Sustainability Professionals Network:
Employees with a primary focus on sustainability in their roles in the business, sat outside of our Group Sustainability function (see p14).



■ Sustainability Professionals Network
 Croda Forum/Department

Governance continued

Risk and opportunity management

Our robust risk management system provides the framework for capturing, assessing and monitoring all risks and opportunities in the organisation across the short, medium and long term, including sustainability-related risks and opportunities (see p52 ARA2022). Oversight of all risks is provided by the Risk Committee, a subcommittee of the Executive Committee, which meets quarterly and provides reports to the Board. The framework means risks are owned at the correct point in the organisation responsible for their management and mitigation. Sustainability-related risks are identified across all of our generic risk areas, with key risks relating to:

1. Those owned and managed by the Sustainability Committee covering the entire Group, with skills and knowledge centralised in the Group sustainability team. Key risks identified include:
 - a. Senior leaders providing enough focus and resources locally to support the work required to deliver our 2030 sustainability strategy.
 - b. Confidence in the quality and provenance of product specific sustainability data (e.g. product carbon or water footprint) to support external assurance.
 - c. Ability of third parties, such as customers and suppliers, to align with our sustainability ambitions and provide the relevant data.
 - d. The ability to keep abreast of changing regulatory reporting requirements.
2. Climate scenario related risks that are owned and managed at sites. Specific risks are identified associated with the Task Force on Climate-related Financial Disclosures (TCFD) climate scenario assessments (see p63 ARA2022) we have conducted. These are incorporated into the risk management system at the correct point to ensure local ownership and control.
3. Existing local known risks. These are already included in the risk management system by local leadership teams and cover many aspects of the sustainability agenda. A recent assessment identified more than 50 specific risks already captured that are being mitigated and monitored. The assessment also identified best practice and potential gaps in this decentralised approach, which are being addressed.

Our Grievance Policy for the palm derivatives sector helps create a deforestation-free palm derivatives supply chain, respecting human rights and supporting local livelihoods, supported by our partnership with ASD to promote transparency, risk management and engagement.

Monitoring and control, metrics and targets

We have developed the detailed metrics and reporting methodologies behind our 2030 targets, and applied the principle of placing responsibility to collect and approve data as close to source as possible. This includes a dashboard of key metrics that are reviewed on a quarterly basis by the Sustainability Committee and Executive Committee.

Assurance

Since 2019, our GHG emissions have been independently verified to a reasonable level by Avieco, now part of Accenture.

Recognising the increasing importance of the accuracy and integrity of non-financial data for all stakeholders, in 2022 we conducted an internal audit of the methodologies and responsibilities for collecting the data associated with all our 2030 non-financial KPIs. In 2023 we will be seeking limited assurance of climate KPIs, the first step in our roadmap to reasonable assurance of all non-financial data.

2022 reporting parameters

This report covers the sustainability performance of Croda International Plc for the period 1 January 2022 to 31 December 2022. The scope of this report, and data within it, is all operations wholly owned for the full 12-month period, plus those operations where we have significant management influence due to a majority shareholding.

During 2022, Croda divested a significant portion of our global business. The business post-divestment is considered throughout this report as stated above; please refer to p40 performance table for full year actual data and the reconciliation. All relevant non-financial data and KPIs have been re-baselined back to 2018 without the divested business; please refer to the non-financial data pack for details of the reconciliation. Targets and milestones have remained as previously defined, except where mentioned in the relevant section of the report (see p36 performance update).

As of 31 December 2022, Croda employed 5,825 people across 92 locations in 39 countries.

Group employees

5,825

Group locations

92

Countries operated in

39

Governance continued

Our approach to non-financial reporting

To ensure we can provide our internal and external stakeholders with a level of non-financial information upon which to base decisions, we are increasing our focus on ESG reporting.

During 2022 we recruited into a newly created role of Group ESG Reporting Manager, to lead our work in this area as we move towards assurance of all our non-financial data.

TCFD

Responding to the TCFD recommendations has helped us to understand and quantify the risks and opportunities associated with a changing climate. We have responded to the TCFD recommendations since 2020, before the regulatory requirement to do so, and are looking to continually improve our response, ensuring the outputs are embedded within our climate strategy.

Our 2021 response was selected at random to form part of the UK Financial Reporting Council (FRC) 'limited scope' review of compliance with TCFD disclosures and climate in company financial statements.

The FRC did not have any questions or queries following their review, however, they did identify three areas where Croda's existing disclosures could be improved for 2022, connected with climate-related risks and opportunities. These were:

- A description of Croda's short-, medium- and long-term time horizons
- A description of why certain risks were chosen for climate scenario analysis over others
- A description of our risks and opportunities by sector and/or geography

These improvements are incorporated into our 2022 disclosure to ensure continual improvement.

The FRC provides no assurance that the annual report and accounts are correct in all material respects. The FRC's role is to consider compliance with reporting requirements, not to verify the information provided. The FRC accepts no liability for reliance on this review by the company or any third party, including but not limited to investors and shareholders.



Please see the TCFD section in our ARA2022 for our full disclosure.
Pages 60-68

Upcoming regulations

We recognise the need to keep abreast of regulatory changes to ensure compliance, meet our reporting obligations and to be able to demonstrate leadership in reporting progress against our non-financial KPIs. This applies not only to UK reporting requirements, but also those outside the UK where we may have eligible subsidiaries.

Examples of upcoming frameworks are:

ISSB: In 2022 we responded to the International Sustainability Standards Board consultation on their proposed non-financial reporting standards, along with 1,300 other letters. The ISSB board is now in place and proposing changes based on this feedback, with the release of final standards expected Q1 2023.

TNFD: The Taskforce on Nature-related Financial Disclosures recommendations are due in September 2023; the work we are doing to understand our impacts and dependencies on nature will be important as we move to disclose against this framework.



Scan this QR code to download our non-financial data pack

All our non-financial data can be found in our non-financial data pack on croda.com. This details our alignment to both the Global Reporting Initiative (GRI) and Sustainability Accounting Standards Board (SASB) reporting frameworks.

Group ESG Reporting Manager



"In my role I work closely with pillar owners across the business to drive continual improvement across all aspects of ESG reporting. Through developing a non-financial reporting framework, I will ensure alignment to global standards and upcoming regulations and reporting requirements. My role will allow us to demonstrate our sustainability leadership through external ratings and rankings indices."

Zoë Law

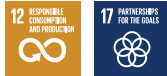
Group ESG Reporting Manager

Our Commitment

Fundamentals: Living Our Purpose through Stakeholder Impact

Our social licence to operate is built on trust and is the foundation of everything we do. We consider all stakeholders in our ecosystem and strive to adopt best practices in environment, labour and human rights, ethics and sustainable procurement. We have highlighted four areas of our Fundamentals in this report.

1. Sustainable sourcing and supplier partnerships



Overview

Confirming environmental integrity and social accountability is an increasingly important prerequisite in our upstream supply chains. During 2022 we further revised our Supplier Code of Conduct and introduced our Supplier Scorecard to measure performance and help our suppliers understand any gaps that need to be addressed.

Palm derivatives

Our use of palm-derived raw materials is supported by RSPO supply chain mapping, certification and transparency. In 2022 89.3% of our global palm derivatives consumption was RSPO physically certified by Mass Balance. In Europe and the Americas, we achieved 99% transformation to RSPO. We continue to face challenges completing the conversion primarily due to slow market progress in Asia. Working with Action for Sustainable Derivatives (ASD), our 2021 supply chain mapping covered 97% of our total volumes of palm-based raw materials.

Supply chain transparency was achieved for 95.8% (refineries), 94.0% (mills) and 28.7% (plantations) of volume. 98.7% of traceable volumes originate from Indonesia (53.2%), Malaysia (44.4%) and Thailand (1%), with 975 mills representing 90.0% of traceable volumes.

Sustainable Palm Index

The Sustainable Palm Index (SPI) is an evaluation scorecard for suppliers of palm-based derivatives, aimed at assessing the level of commitments, processes and achievements in terms of sustainable sourcing practices such as No Deforestation, no Peat, no Exploitation (NDPE) principles. In 2022, we participated in the SPI assessment of our palm oil derivatives volumes and actions taken in 2021, confirming compliance to the SPI. Our 2021 score increased to 87/100 (+ 2 ppts), despite more demanding criteria, against the average score of 52.

Risk prioritisation and dynamic monitoring

We are founder members of ASD, who overlay environmental and social risk data and assessments to enable members like Croda to focus our transparency, risk management and engagement efforts to improve practices. In 2022, we worked with ASD to publish our Grievance Policy in the palm derivatives sector and supported the launch of the first ASD Impact Fund – Kaleka Mosaik Initiative – aimed at driving positive impact in priority production landscapes in Central Kalimantan and Indonesia (see adjacent case study). We also engaged with ASD in a collaborative satellite monitoring pilot to create a methodology to identify and confirm deforestation-free mills, refineries and plantations.

Other supply chain initiatives include:

- Active engagement as a member of Together for Sustainability (TfS) consortium (p25)
- Our sites in Singapore and Chocques, France, working to achieve International Sustainability and Carbon Certification (ISCC+) certified status
- We have 12 field verifications performed by the Union of Ethical BioTrade (UEBT) for our Beauty Actives supply chain

ASD Kaleka Mosaik Initiative Impact Fund



We are contributing to the first Impact Fund of ASD, developed in partnership with Tides Foundation, launched in March 2022 with five other ASD members, intending to provide €1.5m over the next five years to focus on finding ways to sustainably restore the landscape and support socioeconomic growth in a priority region (Central Kalimantan, Indonesia) that has strong supply chain links and systemic environmental and human rights challenges.



To read more visit

<https://sustainablederivatives.org/our-impact>

Our Commitment continued

2. Health, safety and wellbeing



Safety is a value

Our headline KPI – Total Recordable Injury Rate (TRIR) – is still too high, well above our milestone target. While this rate has not risen since the beginning of 2022, we are disappointed with the lack of progress – so much so that, in Q1 2022, our Group CEO and leadership team committed significant time to understanding and then making a fundamental shift in how our leadership approaches safety.

This culminated in the May 2022 senior leadership conference dedicated to the theme, Safety is a Value. This values-driven cultural change to our leadership approach to health and safety is based on leaders consistently and authentically showing that we care about our employees in everything they do. All senior leaders in the organisation have committed to this, with personal development plans monitored by the Group CEO. Despite the improvement required, there are already pockets of industry best-in-class safety performance in Croda – for example, 2022 saw our site at Campinas, Brazil pass four years without a recordable incident.

Our new Human Performance Programme, developed in 2021, has been rolled out to six pilot sites. This creates opportunities for meaningful conversations about how work is carried out, exploring the risks that people face, and to empower all employees to get involved and provide solutions. In the first six months of the trial, more than 100 improvements were identified across only the six sites involved. Resources are being allocated to enable a full rollout in the next two years.

A Safety Culture Survey was conducted in 2022 for manufacturing and warehousing operations at more than 40 global locations, with a high engagement level of 85%. Whole-organisation pulse surveys have also included questions on how we work together in a safe way. The results have allowed us to identify locations that require focus, informing local, regional and senior leadership reviews as we continue building a picture of what is required to keep everyone safe when they work at Croda.

Improving performance by humanising safety

Involvement and engagement have increased, and longstanding infrastructure and operational issues are being addressed following a pilot Human Performance Programme at our site in Thane, India. Making operational learning a regular practice to improve the lives of employees, the programme titled 'Me Saksham', meaning 'I'm self-dependent', brings learning to life. As part of this, six multi-disciplinary groups were formed to review site-wide processes, discussing ideas and prioritising improvements, with the teams already seeing the benefits of humanising safety for all.

3. Fair income



In 2018, we gained accreditation in the UK as a Living Wage Employer from the Living Wage Foundation. We extended our work to be a Living Wage Employer globally, completing an assessment of all employees worldwide in 2021. This was done in partnership with the Fair Wage Network, establishing a Living Wage in each of the countries in which we operate and ensuring all employees receive this as a minimum, even more important in light of the global cost of living crisis. We are now working with the Fair Wage Network to gain accreditation for our work and to ensure our progress stands up to external scrutiny. In 2022, we also began the process of ensuring all our regular contractors are paid a Living Wage and plan to achieve this milestone before the end of 2024.

During 2022, we enhanced benefits according to regional needs and provided financial support to counter the increase in employees' cost of living. This included introducing free private healthcare for all UK employees, deciding not to increase employee contributions into our defined benefit pension scheme, and giving one-off cost-of-living payments that benefitted our lower paid employees the most.

4. Product stewardship



Full life cycle assessment (LCA) of our ingredients is critical to understand how to reduce our footprint and maximise our positive impact, and enable the transition to sustainable ingredients through customer collaboration and innovation. Examining environmental impacts holistically, beyond carbon, also supports understanding of our impacts and dependencies on nature.

Following the development of our externally verified in-house LCA tool last year, in 2022 we completed four cradle-to-grave LCAs and two cradle-to-gate LCAs. Examining the environmental impacts of key ingredients from our Consumer Care and Life Sciences sectors, these studies allowed us to investigate the downstream impacts and benefits of our ingredients in use, the effect of the transition from petrochemical to bio-based raw materials, plus many more insights. We also recruited an LCA specialist to progress our work towards developing an LCA Centre of Excellence.



We have 10 public 2030 targets against our Fundamentals. Refer to p39-40 for 2022 progress and scan this QR code to see our Fundamental Data Sheets



Scan this QR code for a case study on LCA at Croda.

Climate Positive



Accelerating towards a low-carbon future

Energy generated from non-fossil sources

24%

2020

25%

2021

31%

2022



The global challenge

Limiting global warming to 1.5°C above pre-industrial levels

Population growth and increasing consumption with associated CO₂ emissions, fuelled by the expansion of the middle class with increased disposable income in the developing world, have led to unprecedented levels of global warming of over 1°C above pre-industrial levels. Climate change is already causing more frequent and extreme weather events, and the rise in global temperatures must be limited to 1.5°C to avoid catastrophic impacts to the planet and health of society. Addressing this challenge requires transformational new approaches to energy and raw material consumption and sourcing.

Delivering greater impact

We are reducing our emissions in line with our verified SBT and working to deliver carbon saving in-use benefits throughout our supply chain

Growing consumer demand for sustainable ingredients means our customers require transparency and the ability to deliver products with proven, substantiated claims on their environmental footprint, including carbon. Delivery against our decarbonisation roadmaps, through the switch to alternative energy sources and technology transformation, alongside the transition away from fossil towards an increasingly bio-based portfolio of ingredients, allows us to demonstrate quantifiable carbon reductions at a product level, to support our customers in meeting these consumer expectations. Developing products which offer benefits in use, including avoiding emissions, also support customers and consumers in living more sustainably and reducing their carbon footprint.

Climate Positive SDG targets:

7.2, 7.3, 9.4, 12.2, 13.2, 17



2022 CDP Climate Change Score

A-

Climate Positive continued

Reducing emissions

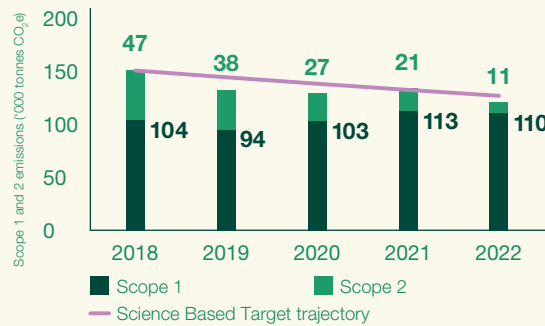
Tackling the climate emergency is a global challenge and a priority for Croda. By decarbonising our operations and supply chain, applying innovation, and delivering sustainable ingredients that provide benefits in use, we are also supporting our customers' decarbonisation ambitions. Our leadership position means we can be a vocal advocate for the transition to net zero across our industry and beyond. Our leadership surrounding climate-related risks and opportunities was recognised by CDP as we scored A- in our 2022 climate disclosure.

At the end of 2022, we are on track to achieve our 1.5°C SBT, with a reduction in scope 1 and 2 emissions of 19.8% since our baseline year of 2018. Progress in the last year has been driven by further reductions in scope 2 emissions, primarily due to purchasing Renewable Energy Certificates (RECs). Several capex projects have been approved and are under way that will significantly help us reduce our scope 1 emissions:

- Our manufacturing site in Brazil has installed a bioethanol boiler in place of consuming natural gas. Now operational, this will save more than 2,000 tonnes of CO₂ each year, equating to a 34% annual reduction in the site's scope 1 and 2 emissions
- This year, one of our largest manufacturing sites in North America progressed a boiler system upgrade modification, allowing a large proportion of natural gas to be substituted for landfill gas; significantly reducing CO₂ emissions
- Our manufacturing site in Spain is investing in recovering waste energy to produce hot water, helping reduce site emissions, showing how improving efficiency of existing assets, together with self-generation of power, can drive emissions down
- Chocques, a top performing Croda site for decarbonisation progress, is on course to achieve zero scope 1 and 2 emissions in 2023, thanks to steam generated from a local municipal waste incinerator. Supply of green energy has been secured for the site for decades to come, and has been externally verified as not contributing to the site's scope 2 emissions

Emissions

GHG emissions¹



Since 2018, our baseline year, our total scope 1 and 2 greenhouse gas (GHG) emissions have reduced by 19.8%. Within this, scope 1 emissions have increased by 6% and we have seen a greater than 77% reduction in scope 2 emissions. This has been driven by a switch to renewable electricity across our manufacturing sites.

Our scope 1, 2 and 3 GHG emissions are verified by Avieco, part of Accenture. Their formal independent verification statement is available at www.croda.com/carbonverification.

Energy consumption and efficiency improvements

In 2022, we consumed 875,545,559 kWh of energy across our global operations (864,679,531 kWh in 2021). As part of our strategy to improve the efficiency of energy consumption, 26 projects were implemented globally, realising 17,180,619 kWh of annualised efficiency improvements, equivalent to 2,767 TeCO₂e avoided emissions.

1. Our GHG inventory has been completed in accordance with the Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard (Revised Edition) using the operational controls approach. Scope 1 emissions are calculated using UK Government emission conversion factors for greenhouse gas company reporting. Scope 2 emissions are market-based.

Climate Positive award: Croda China

273 employees at Croda China took more than 800 individual actions over a five-week programme to reduce their personal carbon footprint. The awareness initiative, promoting the actions we can all take in our everyday lives to reduce carbon emissions, means that approximately 17,500 kg of carbon emissions a year will be collectively saved by the team. The judges were impressed by the scale of engagement and how the team's attitude and culture were changing.



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

See page 5



Climate Positive continued

Validation of our decarbonisation roadmaps

We reached a significant milestone in 2022 with every Croda location, including non-manufacturing sites, completing decarbonisation roadmaps demonstrating how they can achieve a 50% reduction in scope 1 and 2 emissions by the end of 2029.

A quality assessment framework was designed to ensure a robust process was followed: for example, engaging with site employees and ensuring sites had considered a range of initiatives beyond the use of alternative fuel sources, including reducing energy consumption and increasing energy efficiency. Each site roadmap was assessed using the framework and all sites reached the required standards. This quality assessment process was validated externally by Avieco.

Internal carbon price

Since 2020, we have applied an internal shadow carbon price to capex projects to help prioritise projects that will reduce scope 1 and 2 emissions, reducing their pay back periods. In 2022 we increased this price from £55 per tonne to £124 per tonne, in line with the UK Government’s Green Book, highlighting the increasing importance of climate action to avoid exposure to the cost of carbon and the importance we place on ensuring business growth without increasing GHG emissions, through zero scope 1 and 2 emission capacity and capability investments wherever possible.

Employee engagement

Engaging all employees in our decarbonisation programme is critically important to achieve our targets. In December, we invited all Croda employees to regional Carbon Summit webinars, presenting an update on our decarbonisation progress and initiatives, and answering questions. The presenters’ children were featured talking about what climate change meant to them, challenging our leaders on the actions they were taking to address climate change.

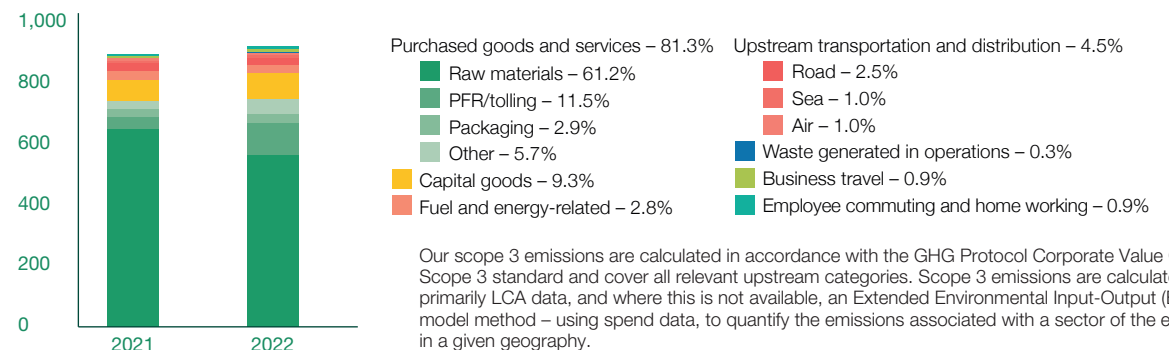
72 low carbon sites make up 4% of Croda’s scope 1 and 2 emissions but employ 2,652 people, so taking visible actions at these sites is important to engage all employees in our decarbonisation journey. The main actions required, common across all non-manufacturing locations, are electrification of the company car fleet, and the move to renewable electricity. Global guidance has been issued to the regions to support company car policies. In working to develop these roadmaps and by taking action, several sites will achieve carbon neutrality (zero scope 1 and 2 emissions) in 2023.

Scope 3 emissions

Having developed an industry leading granular scope 3 inventory in 2021, our focus during 2022 was on increasing the visibility of this data across the organisation to help inform decision-making, including for the development of sector decarbonisation roadmaps (see p25 Climate leadership: product carbon footprint data). We have developed a corporate scope 3 dashboard for quarterly reporting across the business, showing our upstream scope 3 categories. Our sustainable procurement team have developed a roadmap to achieve our scope 3 SBT. We have taken a layered approach, starting with supplier engagement and a supply chain review, with long-term greater impacts to be achieved through innovation and portfolio management led by the sectors, understanding that gathering primary data on carbon emissions attached to sourcing our raw materials is critical for quantifying the benefit of decarbonisation activities within our supply chain (see page 25).

In 2022, our upstream scope 3 emissions were 920,578 tonnes CO₂e. This is a 3% increase since 2021. The emissions attached to our capex projects increased due to project mix. Business travel and employee commuting resumed post Covid and emissions increased in both of these categories. We saw reductions associated with Fuel and Energy Related Activities, aligned with progress towards our operational emissions reduction target.

2022 scope 3 emissions³ by category ('000 tonnes of CO₂e)



Our scope 3 emissions are calculated in accordance with the GHG Protocol Corporate Value Chain Scope 3 standard and cover all relevant upstream categories. Scope 3 emissions are calculated using primarily LCA data, and where this is not available, an Extended Environmental Input-Output (EEIO) model method – using spend data, to quantify the emissions associated with a sector of the economy in a given geography.

Sustainability-linked revolving credit facility

In 2019, we became one of the UK’s first large public companies to include a sustainability metric in a revolving credit facility (RCF), with targets in the seven-year agreement aligned with our 2030 Commitment to become Climate Positive.

Based on Croda’s scope 1 and 2 GHG emissions, these metrics are audited and included in our RCF covenants. We have successfully met the targets each year since launch and have received a deduction on the margin payable, with the savings reinvested into our decarbonisation capital expenditure programme.

For example, in 2022 we invested the savings in the scale up of a new carbon neutral filtration technology at our Ditton manufacturing site in the UK, as well as a proof of concept project for low emission steam generation at our Rawcliffe Bridge manufacturing site in the UK.

Climate Positive continued

Customer award for carbon reduction

We've been working in partnership with Syngenta to deliver innovative and sustainable ingredients in a way that meets their commercial and sustainability goals, providing greater transparency on the origin, composition and environmental impact of ingredients, together with sustainable benefits in use.

In June 2022, this collaborative approach to sustainability was recognised in the Syngenta supplier awards, where we were presented with the Sustainability Award – Carbon Reduction.

“We are delighted to have won,” said Daniele Piergentili, President Life Sciences, Croda. “The strength of our partnership together with our shared sustainability ambitions, including the commitment to reduce carbon emissions, have meant both Croda and Syngenta have made great progress against our sustainability programmes. We look forward to working on more projects.”

Climate leadership: PCF data

2022 has seen Croda working to automate the calculation of PCF data for all products from our top 13 manufacturing sites. This requires using activity-based costing data from our sites and includes the emissions associated with raw materials to calculate a cradle-to-gate footprint per product. The data has two main purposes:

- Internally, it will enable the sectors to make portfolio management decisions with carbon footprint as a datapoint, and will inform the next generation of low carbon products. The sector teams will be finalising 2030 decarbonisation roadmaps during 2023, going beyond the actions already being implemented at our manufacturing sites to include scope 3, and this information will be an invaluable part of that process.
- Externally, this data will be important for customers as they calculate and aim to reduce the scope 3 emissions associated with their raw material purchases. We will be able to provide a number that can demonstrate reductions since 2018, our baseline year, and show future reductions to support our customers' supply chain SBTs.

The release of an industry standard PCF methodology by TfS in 2022 was welcomed, to help provide consistency in PCF calculations. We became the Industry Champion for the Personal Care and Home Care sectors for the new Product Carbon Footprint (PCF) Guidelines for calculation of chemical materials. This guide will enable suppliers and corporations to produce and share high-quality carbon footprint data. The standardisation of the PCF Guidelines will enable us to further collaborate with suppliers and customers and measure the impacts of our shared carbon reduction projects. As members of TfS we will promote the use of this methodology by our suppliers and will ensure our own PCF data aligns with this methodology, seeking external verification in 2023.

Net zero transition

In 2022 we began our planning for beyond 2030 and considering how we will achieve our ambition to be a net zero organisation by 2050. Our UK manufacturing site at Rawcliffe Bridge became our first site to develop a net zero roadmap (see case study). In 2023 we will begin developing net zero roadmaps based on technology platforms rather than individual site level to support the transformation and future preparedness of our business.

Net zero roadmap for UK manufacturing site



We became one of the first UK manufacturing sites to develop a 2050 net zero roadmap as part of the UK Government's Department for Business, Energy and Industrial Strategy 'Industry of the Future' programme, the findings of which fully align to our existing site roadmap developed internally to reduce carbon emissions by 50% by 2030.

In 2021 we were selected to take part in the study and partnered with engineering firm Atkins to develop a net zero roadmap to 2050 for our Rawcliffe Bridge site. The roadmap compares a baseline scenario, where carbon emissions continue rising in line with increases in production volumes, to alternative scenarios for meeting decarbonisation targets of a 90% reduction by 2050. The roadmaps considered electrification of various high temperature processes and the best technology choices to achieve this. They also considered substitution options to replace natural gas for the site's heating requirements. The opex and capex costs of switching to blue or green hydrogen were compared to full electrification using UK Treasury 'Green Book' cost data projections. This is the first time the costs for reaching net zero have been calculated for these scenarios.

Climate Positive continued

Carbon cover

At the end of 2022, our carbon cover ratio was 0.66:1 – the ratio of avoided emissions through the use of our ingredients to our scope 1, 2 and upstream scope 3 emissions. This target has been affected by the divestment of our PTIC businesses, as several of our initiatives sat within that part of the business. However, our level of ambition remains unchanged. In the last year, we received validation for three new case studies, including a new product in Home Care, CroBiotic™ 100 (see p27).

Downstream GHG emissions

Our carbon cover target aims to support customers in avoiding downstream emissions. The concept of avoided emissions is defined by the GHG Protocol as “emission reductions which occur outside of a product’s lifecycle or value chain, but as a result of the use of the product” and often referred to as scope 4. Avoided emissions will be an important part of the net zero transition.

We have started thinking beyond our existing avoided emissions case studies to consider remaining downstream scope 3 emissions associated with the use of our ingredients and how further savings can be made. In better understanding and quantifying emissions in the three downstream scope 3 categories identified in the diagram, we will collaborate with customers to identify innovative ways to reduce our shared downstream scope 3 emissions from today’s baseline. For example, through:

- Consumer education and engagement to reduce energy consumption in use
- Supplying our ingredient in an alternative form, reducing customer processing emissions
- New product development to satisfy an unmet need, reducing use-phase emissions

Measuring the emissions associated with the end-of-life of used products will allow us to quantify, and our customers to realise, the benefits of our move to bio-based ingredients, avoiding the release of additional fossil carbon into the atmosphere.

Our thinking in this area continues to develop, and we will look to align with guidance from the WBCSD on avoided emissions, due for release in early 2023.

Upstream and downstream emissions



Climate Positive continued

CroBiotic™ 100

Surveys indicate that malodour of garments is one of the biggest reasons that consumers choose to wash them. Reducing or eliminating the malodour means consumers can wash clothes less frequently, therefore reducing energy usage/carbon emissions and water consumption. Our next generation cleaning ingredient CroBiotic™ 100 is an optimised powder blend of bacterial strains in spore form. It offers an innovative and effective long-term approach to odour control and hard surface cleaning: a more sustainable solution to cleaning both in transportation and product application.

The product is used in spray formulations, diluted with water and sprayed onto clothes to reduce malodour. It has been shown to reduce the odour from sources including pets, sweat and food and studies have demonstrated savings of 86 kgCO₂e and 18,600 L water per kg of product used.

Sustainable innovation

We have set an ambitious target for 75% of our organic raw materials to be bio-based by 2030. This transition away from petrochemical feedstocks through sustainable innovation has a positive climate impact, avoiding the release of additional fossil carbon into the atmosphere at the end of life of our ingredients. Our sustainable innovation strategy spans the transformational development of existing technologies and the discovery of alternative new solutions.

In the design phase of new product development, our research teams are working with supply chain experts, internally aiming to maximise the bio-based content of new developments well ahead of our portfolio target.

At the end of 2022, 59.4% of our organic raw materials were bio-based. The divestment of our PTIC businesses did have an impact on progress but our target remains unchanged, and we are increasing our level of ambition as 'new' Croda.

In 2022 we committed to transitioning all ethylene oxide purchases to bio-based globally. Our transition to bio-based ethylene oxide (bio EO) is well developed in North America through the ECO range of 100% bio-surfactants. We are progressing well in Europe and Asia towards first bio EO usage in the coming year, with availability of bio EO increasing rapidly in several locations, catalysed by our public leadership position. In addition, where sources are less readily available, teams are investigating the use of ethylene oxide from recycled feedstocks, where upstream scope 3 carbon savings are possible.

Our sustainable innovation strategy also focuses on reducing the footprint of our ingredients during the full product life cycle by: increasing biodegradability; improving purity; and lowering the environmental footprint of products. This holistic approach ensures all aspects of a product's life cycle are considered during the design phase.

In the earlier discovery phase, new disruptive technology platforms and processes are being investigated to offer alternatives to some existing products, within a framework of safe and sustainable design.

Transition to bio-based MPG

Transitioning our raw materials to bio-based sources will enable us to make a significant positive impact through sequestered carbon as well as reducing the GHG emissions associated with these raw materials, in the case of Monopropylene Glycol (MPG), by up to 61%. MPG is used to dilute multiple products manufactured across our sites. As 2022 has seen more commercially available streams of MPG become available, we have engaged with several suppliers in Europe and North America, working with them to understand pricing, availability and environmental implications of transitioning to bio-based sources. Plans are being put in place to begin a phased transition to bio-MPG starting in 2023.

Flue2Chem

In another example of industry-wide collaboration to help tackle the climate emergency, the Flue2Chem Innovate UK project aims to demonstrate that a UK supply chain to produce alkoxyated surfactants from CO₂ is economically and technically feasible. Funding for the project was approved as part of the UK Research and Innovation (UKRI) Transforming Foundation Industries Challenge, which includes the chemical industry. Project and supply chain partners working alongside Croda include: Unilever, SCI, BASF, Tata Steel, Johnson Matthey, UPM-Kymmene, Holmen, the University of Sheffield, the University of Surrey, Carbon Clean, Proctor & Gamble, the Centre for Process Innovation, the Confederation of Paper Industries, and Reckitt. Our role in the chemical industry supply chain makes Croda's participation in this project important, to advocate for sustainable transformation and better support our customers.

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



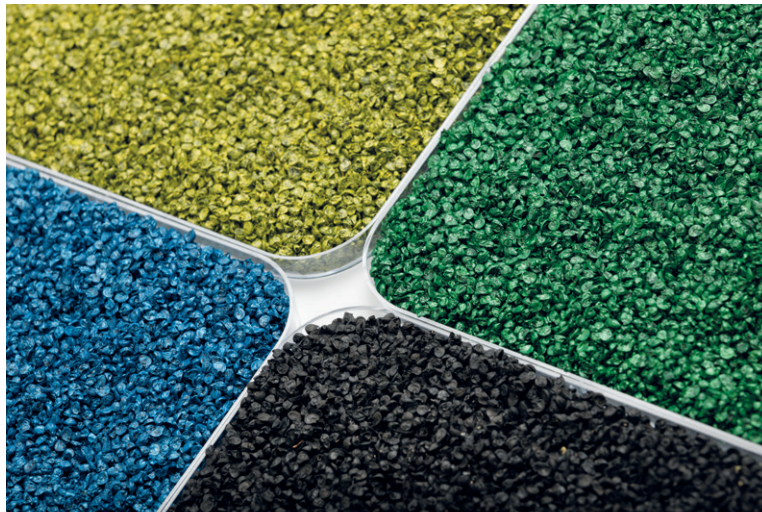
Land Positive continued

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.



Protecting society and improving lives



Number of live Croda Foundation projects

21



The global challenge

Social inequality and global human development

The emergence from the pandemic and the needs it has created call for a healthier world, including the communities we depend upon and wider society, from food security to better health and wellbeing. It requires addressing the social inequalities within and among countries.

Delivering greater impact:

Developing solutions to improve health and wellbeing for society through our customers, promoting diversity in our business and delivering social impact in communities.

Living our Purpose, Smart science to improve lives™, Croda relies on individuals, from its employees to external stakeholders and communities, promoting diversity and inclusion to contribute to a world in which, by 2050, more than nine billion people can live well, within planetary boundaries¹.

As we depend upon each other, from our novel biologic technologies to sunscreens, from meaningful impact projects in our value chains and ecosystems to Croda Foundation, our ability to collaborate and innovate are key enablers to deliver impact at scale.

1. WBCSD's Vision 2050: Time to Transform

People Positive SDG targets:

3.3, 3.4, 5.5 and 17



People Positive continued

Health & wellbeing

Protecting against threats to global human health

As part of our People Positive strategy, we are committed to using our smart science to promote healthy lives: empowering biologics delivery through our core speciality excipients, adjuvant systems and lipid delivery systems.

Croda Pharma is investing in enabling next-generation therapeutics and mRNA-based vaccines. Beyond COVID-19, we continue our collaboration with partners in the fight against the 24 WHO-listed pipeline vaccine diseases. Our technologies are already included in more than 40 commercialised vaccines at or past phase III clinical trial stage. We are moving closer to our target of contributing to the successful development and commercialisation of 25% of WHO-listed pipeline vaccines and have achieved our 2024 milestone of ten clinical phase III trials across 25% of the pipeline vaccines.

Aligned with SDG 3, Good Health & Wellbeing, and our 2021 materiality assessment highlighting Global Health Preparedness as a new material area, in 2022 we were awarded a £15.9m grant by the UK Government to expand our Pharma manufacturing facilities in Leek, Staffordshire. We also entered into a cooperative agreement with the United States Government (total project investment up to \$133m) to establish a third lipid facility in Lamar, Pennsylvania, with both investments supporting delivery of next generation nucleic acid drugs.

In 2022, Croda Pharma was awarded the Best Supplier for Covid-19 Vaccine Development Award at the India Biologics & Vaccines Outstanding Industry Awards for delivering vaccine adjuvants in developing nations. These are locations where the infrastructure required to store many vaccines at low temperatures does not exist.

“This is exactly what Croda is all about – working together and making a difference. A great achievement by our customers can only be possible with the help from dedicated commercial teams working together with the manufacturing sites.”

Christel Haugsted, Director, Supply Chain Management, Croda Denmark

Protection from potentially developing skin cancer

In 2022, through the use of our solar protection ingredients, Croda contributed to protecting more than 61 million people from potentially developing skin cancer caused by harmful UV rays. This is seven years earlier than our 2030 target to protect at least 60 million people annually. Building on this achievement, work is now underway to develop a roadmap to extend our target towards increased positive social impact relating to sun protection from the use of our technologies.

Building on a 2021 initiative in Asia, we are advancing our work on formulations to provide the full solution for safe and sustainable UV protection based on minerals. In 2022, we rolled out formulation academies in the US and, in early 2023, in Europe, as well as creating a new formulation kit in Latin America focusing on very high SPFs and low energy process formulations.

Continuing our path of education and tackling misinformation, we have continued the ‘myth busters’ campaign, this time focusing on consumer myths around SPF and sunscreens.

Conscious of social inequality and discrimination, Croda is providing support to improve the lives of people with albinism in Togo. Protecting this community is critical to prevent skin lesions, the most serious being skin cancer, being more exposed due to their inability to synthesise melanin. Working in partnership with Pierre Fabre Foundation, we have provided our broad-spectrum titanium dioxide-based UV filter to help them support a community of 1,200 people with albinism across Togo, Uganda and the Ivory Coast, in protecting themselves against the harmful effects of UV rays.



Scan this QR code to view our myth buster blog

People Positive award: Avanti, Leek and Cowick teams



This award was won by the teams at Avanti, Leek and Cowick for developing and producing an ingredient used in the Pfizer COVID-19 vaccine. This was a huge team effort involving a large number of people, and was selected due to the can-do spirit, cooperation and dedication that were demonstrated.

This project is our Purpose in action and clearly represents our values of Together, Responsible and Innovative.



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

See page 5

People Positive continued

Focusing on D&I in Asia

Colleagues in Asia have been leading a programme of raising awareness, building an inclusive culture, and driving inclusivity in recruitment. Junko Kubokawa, Country/Regional Managing Director, and Jeyanthi Krishnan, Asia Regional Counsel, are leading activities across Asia Pacific, which include a new D&I newsletter tailored for the region, a broad action plan to improve inclusion for women in support of the Group gender balance target, alongside a variety of mentorship and training sessions for colleagues.

One particular activity focused on understanding the concerns and needs of female employees through listening groups was held in India, Japan and Indonesia. These have enabled more focused actions to be taken such as creating facilities for nursing mothers and reviewing child-care facility partnerships.

Gender balance

We continue to measure progress against our target of achieving gender balance across our leadership roles by 2030. We are pleased to report that the number of women in leadership positions has increased by 5.7 percentage points since the 2019 baseline figure, with 38.2% of leadership roles now filled by women.

The appointment of a new female CFO, Louisa Burdett, on 1 January 2023 will move the gender balance of the Board in 2023 to 55% female representation and our Executive Committee to 33%.

This year we also saw a 48% net increase in the number of female process operators (excluding leavers as part of the PTIC divestment) and participation in our prestigious senior leadership programmes has been gender balanced, important steps in helping us to achieve our 2030 target.

We continue to monitor balanced shortlists and, in 2023, will automate the collection of this data, allowing us to identify issues as they arise.

Broadening to diversity & inclusion (D&I)

We continue to progress against our D&I roadmap, published in 2021, identifying actions in key areas to ensure we become a more diverse and inclusive organisation: diversity data gathering; improving D&I awareness; developing our D&I brand; measuring and setting KPIs; and alignment to reward and recognition.

Following on from our Global Diversity Representation Survey, we have established region-specific objectives to address targeted issues. For example, our South Asia region established three sub-groups to address issues of communication and awareness, nurturing a D&I culture and reviewing recruitment.

Our programme to build D&I awareness across Croda includes running masterclasses from thought leaders in the field, including a series of sessions on Cultural Awareness with a focus on Asia that was delivered to senior leaders.

Our regional teams have also established new D&I subcommittees and affiliation groups to complement our Global D&I Committee. These have been instrumental in advising regional management on a range of topics to help deliver real change in our employee experience.



Please see the People metrics section in our ARA2022.
See page 21

Improving more lives

Supporting our local communities

We are committed to engaging with and supporting our local communities. In 2022, Croda employees donated 5,336 hours through our 1% Club, including 31% on STEM educational activities.

Supporting SDG 2, Zero Hunger, our Atlas Point employees in North America helped to serve 315 families and distribute 16,500 kg of food. Croda Brazil employees in Campinas helped residents of a nursing home by cleaning and painting planters and planting a range of vegetables, many of which were donated by Incotec Brazil.

“Sharing the value we generate with neighbouring communities and providing them with education and employment opportunities is fundamental to our People Positive strategy and good for Croda.”

Russ Niksic, Senior Vice President - Croda Inc

Beyond our 1% Club, our Fragrances business, Iberchem, expanded its Roots Programme ‘Bridging the Digital Divide’. Initially launched in Thailand, the project now reaches Spain, Mexico, France and China. In donating hundreds of computer workstations, the project enables thousands of students around the world to access information, knowledge and education. 2022 saw Croda South Africa start sponsorship of seven children through school, improving their livelihoods and future prospects.

In the spirit of UN secretary-general António Guterres’ call for action at the International Day for Biological Diversity in May 2022, and aligned with our aspiration to become Net Nature Positive by 2030, Croda employees engaged in diverse initiatives reconnecting people and nature. These included environmental cleaning and forest restoration in local communities (at locations in India, Netherlands, Turkey and Colombia), and maintaining beehives in five of our European sites, helping nature preservation and biodiversity and contributing to the local ecological balance. Read more on our website.

People Positive continued

Responsible award: North America Community Engagement



Atlas Point, one of our biggest manufacturing sites, continues to strengthen its engagement with local communities, through providing opportunities for enhanced learning experience of the local high-schoolers.

North America's Community Engagement team provided six students from under-represented communities with hands-on engineering experience in research laboratories at Bucknell University. The judges appreciated the team's efforts in promoting STEM education in the community around Atlas Point and presenting science as a pathway to improving lives.



For more information on our Purpose In Action (PIA) Awards
See page 5

Sustainably improving one million lives by 2030: Croda Foundation

Following its initial funding and approval as a charity in 2021, this year has been an impactful action year for Croda Foundation, the independent philanthropic organisation set up by Croda International Plc, aligned with our Commitment to be People Positive by 2030. The Foundation aims to improve lives across three priority areas: improve access to healthcare; reduce hunger and poverty and improve livelihoods; and restore forests and ecosystems.

To date, the Foundation has sustainably improved the lives of at least 300,000 people through the projects underway, against its 2030 target of one million.

During 2022, Rommel Moseley, Executive Director at the Foundation, and his team have more than tripled the number of live projects to 21, from six in 2021, benefitting more than 14 million people across 19 countries, and committing £2.8m of the grants provided by Croda during the year. Key milestones achieved in 2022 include formal adoption of the Foundation Theory of Change, the first grant monitoring visits, and recruiting an experienced grant manager. Based on this Theory of Change, the Foundation has approved several milestones to be achieved by the end of 2026:

- 450,000 people have increased income and skills to better support their livelihoods
- 600,000 people have access to healthcare and clean drinking water provision that they didn't previously have
- 7,000 hectares of forests protected or ecosystems restored
- 30,000 trees planted

Croda Foundation's adjusted* mission now aligns further with the UN SDGs. The Foundation ensures that projects supporting the UN SDGs are charitable under English law and further the Foundation's charitable purposes.

To read more visit

www.crodafoundation.com



* During 2022, Croda Foundation adjusted its mission from permanently improving one million lives to sustainably improving one million lives.

America's Grow-A-Row (AGAR): £50,000 for Fresh Produce Initiative



With the US Department of Agriculture reporting that individuals facing food insecurity experience higher rates of chronic disease such as diabetes, hypertension and obesity, this initiative addresses the lack of reliable access to quality affordable fresh produce in low income communities, and the need for nutrition and culinary education. AGAR says its distribution goal increased to 1.13 million kg (2.5 million lb) of fresh products or 10 million servings, while 1,474 children and adults were educated, representing 3,114 hours of instruction. In addition to Croda Foundation's grant support, employee engagement including a 1% Club corn harvest activity and our smart science (lettuce seeds pelleted by Incotec) further contributed to a positive impact.

Commitment performance

Climate Positive



Key

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

Objectives and targets

Reducing emissions

- By 2030, we will have achieved our SBTs, reducing scope 1 and 2 emissions by 46.2% from a 2018 baseline, in line with limiting global warming to 1.5°C, and reducing upstream scope 3 emissions by 13.5%
- Thereafter, by 2050 we will be a net zero organisation



- A reduction of 25% in 2018 absolute scope 1 and 2 emissions by the end of 2024
- All Croda locations to have a decarbonisation roadmap by the end of 2022



- Absolute scope 1 and 2 emissions have reduced by 19.8% since 2018
- Every Croda location, including non-manufacturing sites, has completed decarbonisation roadmaps demonstrating how they can achieve a 50% reduction in scope 1 and 2 emissions by the end of 2029

Carbon cover

- By 2030, use of our products will avoid four times the carbon emissions (scope 1, 2 and 3) associated with our business – our 4:1 carbon cover



- Two million tonnes of CO₂e emissions savings delivered through use of our products by the end of 2024, which will be externally verified
- 100% of our product portfolio evaluated for downstream scope 3 impact by the end of 2024



- 687,926 tonnes CO₂e were avoided through the use of ingredients attached to verified case studies giving a carbon cover ratio of 0.66 (2021: 0.4)
- In 2022 we developed a framework which enabled further engagement with customers and identification of scope 3 savings, enhancing the quality of our product portfolio evaluation

Sustainable innovation

- By 2030, over 75% of our organic raw materials by weight will be bio-based, absorbing carbon from the atmosphere as they grow



- 71% (rolling three-year average) of our organic raw materials to be bio-based by the end of 2024



- Our use of bio-based organic raw materials increased by two percentage points from 57% to 59.4%

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

Commitment performance continued

People Positive



Key

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

Objectives and targets

Health & wellbeing

- By 2030, we will contribute to the successful development and commercialisation of 25% of WHO-listed pipeline vaccines
- By 2030, we will protect at least 60 million people annually from potentially developing skin cancer from harmful UV rays, through the use of our sun care ingredients



- By the end of 2024 our technology will be part of at least 10 clinical phase III trials across at least 25% of the WHO-listed pipeline vaccines
- By the end of 2024 we will protect one million lives from skin cancer through the use of novel sun protection technologies



- Croda technology at various stages of evaluation in 17 out of the 24 pipeline vaccines, across 123 projects (2021: 79 projects)
- More than 40 are at or successfully beyond clinical phase III trials across nine pipelines, achieving our 2024 milestone
- 61 million people protected through the use of our sun care ingredients in 2022, achieving our 2030 target
- Three million people protected from skin cancer through the use of novel technologies launched in the last four years
- Work is ongoing in Sun Care to define a more impactful new target

Gender balance

- By 2030, we will achieve gender balance across the leadership roles in our organisation



- We are rolling out gender-balanced shortlisting recruitment across Croda, with a target of having 80% of shortlists gender balanced by the end of 2023



- 38.2% of leadership roles now filled by women, against wider workforce that is 40% female
- 19% shortlists were balanced for full year 2022. Data collection will be automated in 2023 enabling closer monitoring and improvement

Improving more lives

- We will establish and fund a Croda Foundation to help improve one million lives in relevant communities



- Intermediate milestones for Croda Foundation to be set during 2022

- 300,000 lives sustainably improved by end 2022 and >14 million lives benefitted by projects from the Croda Foundation
- Since end 2021 over £1.1 million in funding for thirteen projects from core funds with a further £1.75 million of the £2 million restricted health care grant donated specifically focusing on vaccine and health infrastructure projects, supporting projects within South Asia, Africa and Brazil
- Intermediate milestones have been set, please see p35

Commitment performance continued

Fundamentals



Key

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

Objectives and targets	Status	Milestones and metrics	Status	2022 progress
<p>Health, Safety & Wellbeing</p> <ul style="list-style-type: none"> OSHA Total Recordable Injury Rate in the top 10% for the chemical industry 30% increase in positive responses to the wellbeing areas in our Global Employee Culture Survey 		<ul style="list-style-type: none"> Achieve OSHA Total Recordable Injury Rate of 0.3 by the end of 2024 		<ul style="list-style-type: none"> Full Year OSHA Total Recordable Injury Rate* 0.74 (2021: 0.76 restated) The underlying TRIR* which excludes sites acquired less than 3 years ago is 0.63 (2021: 0.72) Human Performance programme fully rolled out to 6 sites, with resources being allocated to enable a full rollout in the next two years Our 2022 survey result, inclusive of PTIC, was 54.4% positive response for the wellbeing areas. This is a 7.6 percentage point decrease from our 2020 baseline survey (62% positive response). The survey will be run again in the first half of 2023
<p>Process Safety</p> <ul style="list-style-type: none"> Zero significant process safety incidents per year We will continue to investigate and apply learnings from minor incidents and near misses 		<ul style="list-style-type: none"> Conduct an independent peer review of our Process Risk Reviews (PRR) for high-hazard processes by the end of 2023 		<ul style="list-style-type: none"> 22 (out of 31) PRRs have been peer reviewed. (excludes 7/9 PTIC PRRs peer reviewed prior to divestment) Process Safety Total Incident Rate (PSTIR) 0.035 in 2022 (0.018 in 2021)
<p>Environmental Stewardship</p> <ul style="list-style-type: none"> Reduce our water use impact by 50% from our 2018 baseline 		<ul style="list-style-type: none"> Reduce our water use impact by 25% from 2018 baseline by the end of 2024 Eliminate process waste to landfill across our operations by the end of 2024 		<ul style="list-style-type: none"> Water use decreased by 29% vs 2018 reference. Half way through setting a baseline water impact score for the 7 sites in water stressed zones, which will form the basis of improvement roadmaps 17% reduction in process waste to landfill vs 2018 baseline
<p>Responsible Business</p> <ul style="list-style-type: none"> Achieve outstanding CSR performance ratings across all themes within the EcoVadis assessment 		<ul style="list-style-type: none"> Achieve an EcoVadis score of at least 85 by end 2023 		<ul style="list-style-type: none"> Achieved an EcoVadis score of 75 in 2022
<p>Fair Income</p> <ul style="list-style-type: none"> Everyone working at Croda locations, including temporary and permanent employees, and all contractors will receive a living wage that is monitored and reviewed annually 		<ul style="list-style-type: none"> All regularly employed contractors will be paid a living wage by end of 2024 		<ul style="list-style-type: none"> We reviewed our Living Wage levels in 2022 and made any adjustments necessary in order to continue paying a Living Wage to all employees as per Living Wage comparators provided by the Fair Wage Network. We are now working with the Fair Wage Network to gain accreditation for our work and to ensure our progress stands up to external scrutiny In 2022 we also began the process of ensuring all our regular contractors are paid a living wage, with each region putting together a plan to ensure we achieve this milestone by the end of 2023
<p>Knowledge Management</p> <ul style="list-style-type: none"> Longer term target under development 		<ul style="list-style-type: none"> 100% of employees will receive a minimum of one week's training per year by the end of 2025 		<ul style="list-style-type: none"> 28.8% of employees globally have completed a week's worth (32 hours) of training in 2022

* excluding COVID-19.

Commitment performance continued

Fundamentals continued

Objectives and targets	Status	Milestones and metrics	Status	2022 progress
Quality Assurance <ul style="list-style-type: none"> Achieve a 99.5% Right First Time (RFT) rate 		<ul style="list-style-type: none"> Achieve a 99.0% RFT rate by the end of 2024 		<ul style="list-style-type: none"> Ended 2022 with a RFT rate of 98.3%. (98.2% 2021 rebaselined)
Product Stewardship <ul style="list-style-type: none"> Full life cycle assessments (LCAs) for our top 100 ingredients 		<ul style="list-style-type: none"> Complete 40 LCAs by the end of 2024 		<ul style="list-style-type: none"> 5 LCAs were completed by end 2022
Sustainable Sourcing and Partnerships <ul style="list-style-type: none"> Ensure all key suppliers are responding to EcoVadis and engaging with us to improve practices 		<ul style="list-style-type: none"> By the end of 2024, all key suppliers will be required to achieve a minimum of the average score from EcoVadis (or equivalent) or will have an action plan with timelines to close gaps By the end of 2024, key suppliers representing at least 50% of our raw material volumes will be required to sign up publicly to SBTi or equivalent carbon reduction targets By the end of 2024, suppliers of crop-based raw materials will be required to provide supply chain transparency in a fully traceable and certified sustainable manner 	 	<ul style="list-style-type: none"> Key suppliers representing 81% of targeted spend have been evaluated using EcoVadis and corrective actions have been assigned and prioritised Key suppliers representing 45% of our raw materials volumes have made public commitments to carbon reduction with more than half of these suppliers, 24% of raw materials volume, signed up publicly to SBTi Supplier requirements are clearly outlined within the 2022 Croda Supplier Code of Conduct and approximately 37% of crop based raw materials volume is certified sustainable with mapped supply chains

Reporting the impact of the divestment of Performance Technologies and Industrial Chemicals

The divestment of the majority of our PTIC business has affected our baseline, current position and targets across several of our non-financial KPIs. Where that has meant our 2030 target has become harder to achieve, an Executive Committee decision was taken as part of strategy discussions to maintain our original target, increasing our level of ambition, for example our sustainable innovation target on bio-based raw material content. Where the divestment would have made the original target achievement easier, for example our scope 1 and 2 emissions target, we have re-baselined to ensure our level of ambition remains unchanged. For completeness, the below table reports on full year 2022 performance for affected KPIs for Croda, including PTIC for the first six months, along with the impact of PTIC separately in the second column. For comparison, the third column reports the number for full year 2022 excluding PTIC, the focus of our reporting throughout this year's report.

Target	Full year 2022	PTIC contribution	Reported 2022 figure	Target	Full year 2022	PTIC contribution	Reported 2022 figure
Scope 1 emissions / tonnes CO ₂ e	133,646	23,159	110,487	Bio-based organic raw material content / %	62.8%	3.40%	59.4%
Scope 2 emissions / tonnes CO ₂ e	10,606	0	10,606	Land used to grow our crop based raw materials / hectares	68,846	13,155	55,692
Scope 1 and 2 emissions intensity / tonnes CO ₂ e/£mil	147.27	304.73	134.03	Employees completing one week's worth of training / %	28.9%	-	28.8%
Scope 3 emissions / tonnes CO ₂ e	1,006,735	86,157	920,578	Right First Time rate / %	98.6%	-	98.3%
Avoided emissions / tonnes CO ₂ e	996,065	308,139	687,926	Process waste to landfill / tonnes	1,597	29	1,569
Carbon cover ratio	0.76:1	0.1:1	0.66:1	Total water withdrawal / m ³	4,901,733	1,650,369	3,251,363

Glossary

Report abbreviations

£m	Million pounds sterling
ABS	Access and Benefit Sharing
AGAR	America's Grow-a-Row
API	Active Pharmaceutical Ingredient
ARA	Annual Report
ASD	Action for Sustainable Derivatives
bio EO	Bio-based ethylene oxide
CISL	Cambridge Institute for Sustainability Leadership
CO₂e	Carbon dioxide equivalent
COP15	15 th meeting of the Conference of the Parties to the UN Convention on Biological Diversity
D&I	Diversity and Inclusion
ECO	Environmentally Conscious Option range of bio-based products
ESG	Environmental, Social and Governance
FRC	Financial Reporting Council
GBF	Global Biodiversity Framework
GHG	Greenhouse gas
GRI	Global Reporting Initiative
IP	Intellectual Property
ISCC	International Sustainability and Carbon Certification
ISSB	International Sustainability Standards Board
KPI	Key Performance Indicator
LCA	Life Cycle Assessment
MPG	Monopropylene Glycol
mRNA	Messenger ribonucleic acid
NDPE	No Deforestation, no Peat, no Exploitation principles
Net zero	Eliminating almost all scope 1 and 2 emissions and significantly reducing our scope 3 emissions, with any residual supply chain emissions permanently offset through fully validated and approved schemes
NGOs	Non-Governmental Organisations

NPP	New and Protected Products
Organic	Carbon-containing, from renewable and/or fossil sources
OSHA	Occupational Safety and Health Administration
PBT	Profit before tax
PCF	Product Carbon Footprint
PIA	Purpose In Action
Plc	Public limited company
Ppts	Percentage points
PRR	Process Risk Review
PTIC	Performance Technologies & Industrial Chemicals
R&D	Research and Development
RCF	Revolving credit facility
RECs	Renewable Energy Certificates
RFT	Right First Time
RNA	Ribonucleic acid
RSPO	Roundtable on Sustainable Palm Oil
SASB	Sustainability Accounting Standards Board
SBT	Science Based Target
SBTi	Science Based Targets initiative
SBTN	Science Based Targets Network
Scope 1	Direct emissions from our own or controlled sources
Scope 2	Indirect emissions from the generation of purchased electricity, steam, heating and cooling
Scope 3	All other indirect emissions that occur in our value chain
SDG	Sustainable Development Goal
SME	Small and medium-sized enterprises
SPF	Sun protection factor
SPI	Sustainable Palm Index
SR	Sustainability Report
STEM	Science, Technology, Engineering and Mathematics

TCFD	Task Force on Climate-related Financial Disclosures
TeCO₂e	Tonnes carbon dioxide equivalent
TfS	Together for Sustainability
TNFD	Taskforce on Nature-related Financial Disclosures
TRIR	Total Recordable Injury Rate
UEBT	Union for Ethical BioTrade
UN	United Nations
UV	Ultraviolet
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization

Cautionary Statement

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Registered office

Croda International Plc
Cowick Hall
Snaith
Goole
East Yorkshire
DN14 9AA
England

T +44 (0)1405 860551

www.croda.com

CRODA

THE UNIVERSITY OF CHICAGO

PHILOSOPHY DEPARTMENT

PHILOSOPHY 101

LECTURE 1: INTRODUCTION

PROFESSOR [Name]

DATE

TOPIC

OBJECTIVES

1. Understand the basic concepts of philosophy.

2. Analyze philosophical arguments.

3. Apply philosophical principles to real-world situations.

4. Develop critical thinking skills.

5. Engage in philosophical dialogue.

6. Explore the history and evolution of philosophy.

7. Examine the relationship between philosophy and other disciplines.