

Smart Science to Improve Lives™



Phil Ruxton, Vice President Sustainability 30 January 2020

Smart Science to Improve Lives™

CRODA

Who We Are & What We Do

Since 1925, we have been the name behind the high performance ingredients and technologies in some of the biggest, most successful brands in the world: creating, making and selling speciality chemical ingredients that are relied on by industries and consumers everywhere.

Our Business Model



Engage

Working closely with our customers and supply chain, we identify unmet consumer needs around the world.



Create

We create innovative and sustainable ingredients and technologies that meet consumer needs.



Make

Our manufacturing sites all run flexible operations to consistently high standards.



Sell

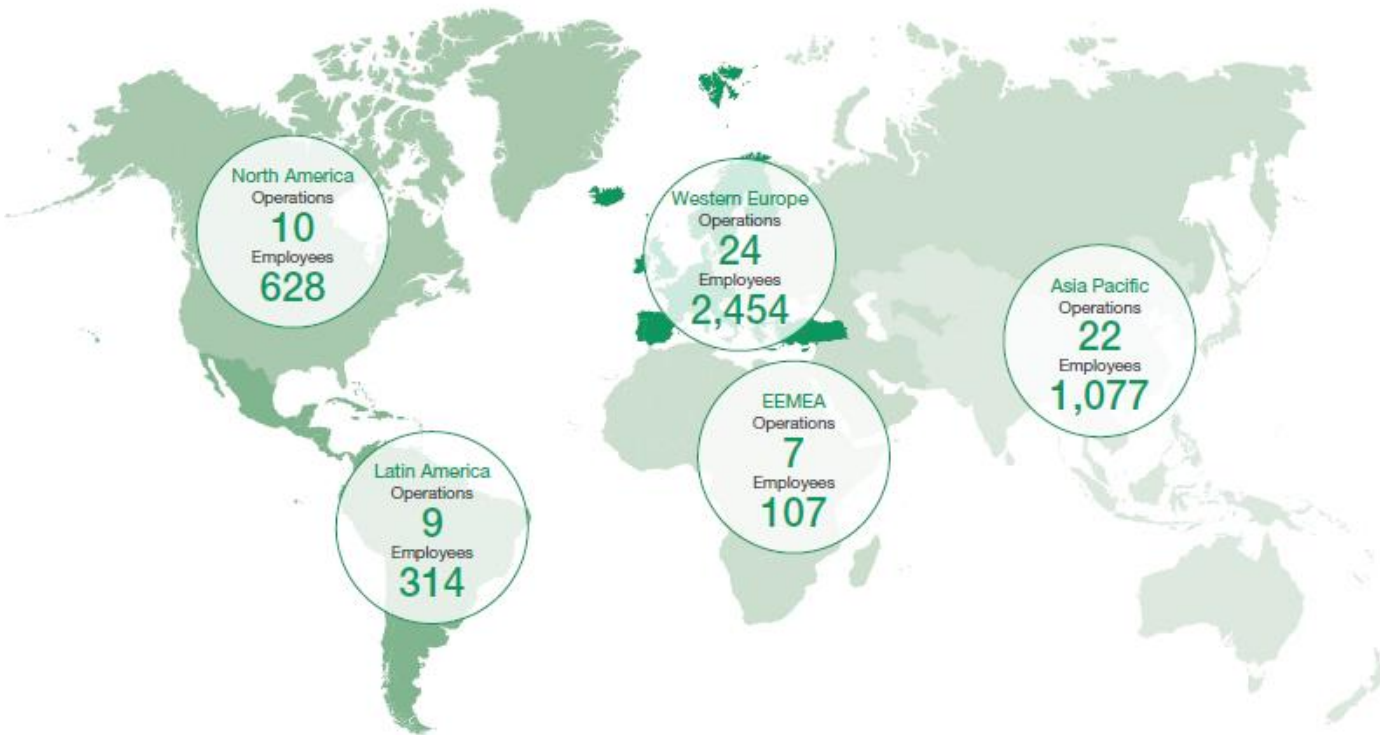
We have a direct selling model with sales, technical and warehousing local to customers.

Where We Operate

38 Countries

72 Operating Sites

4,580 Employees



Our global team

Markets We Serve

Personal Care

Life Sciences

Health Care

Crop Care

Industrial Chemicals

Performance Technologies

Smart Materials

Energy Technologies

Home Care &
Water



Smart Science to Improve Lives™

CRODA

Making a Positive Difference



“We use our smart science to innovate with our customers to meet their needs and improve lives by contributing to the challenge of the United Nations Sustainable Development Goals.”

Steve Foots, Group Chief Executive

Our Strategy



Deliver consistent top and bottom line growth.



Increase the proportion of protected innovation.



Accelerate our customers' transition to sustainable ingredients.

Introducing the UN SDGs



The role of the United Nations Sustainable Development Goals (UN SDGs)

- To avoid the need for a subjective view on what is 'good' or 'bad' for society
- SDGs adopted as a reference point; agreed by 200 governments
- They are the ***closest thing to a strategy for planet Earth that humanity has ever generated.***

Croda Commitment

We will be the most sustainable supplier of innovative ingredients. We will create, make and deliver solutions to tackle some of the biggest challenges the world is facing.



Material Areas and the SDGs

DOING THE RIGHT THING

Health, Safety and Wellbeing



Environmental Stewardship



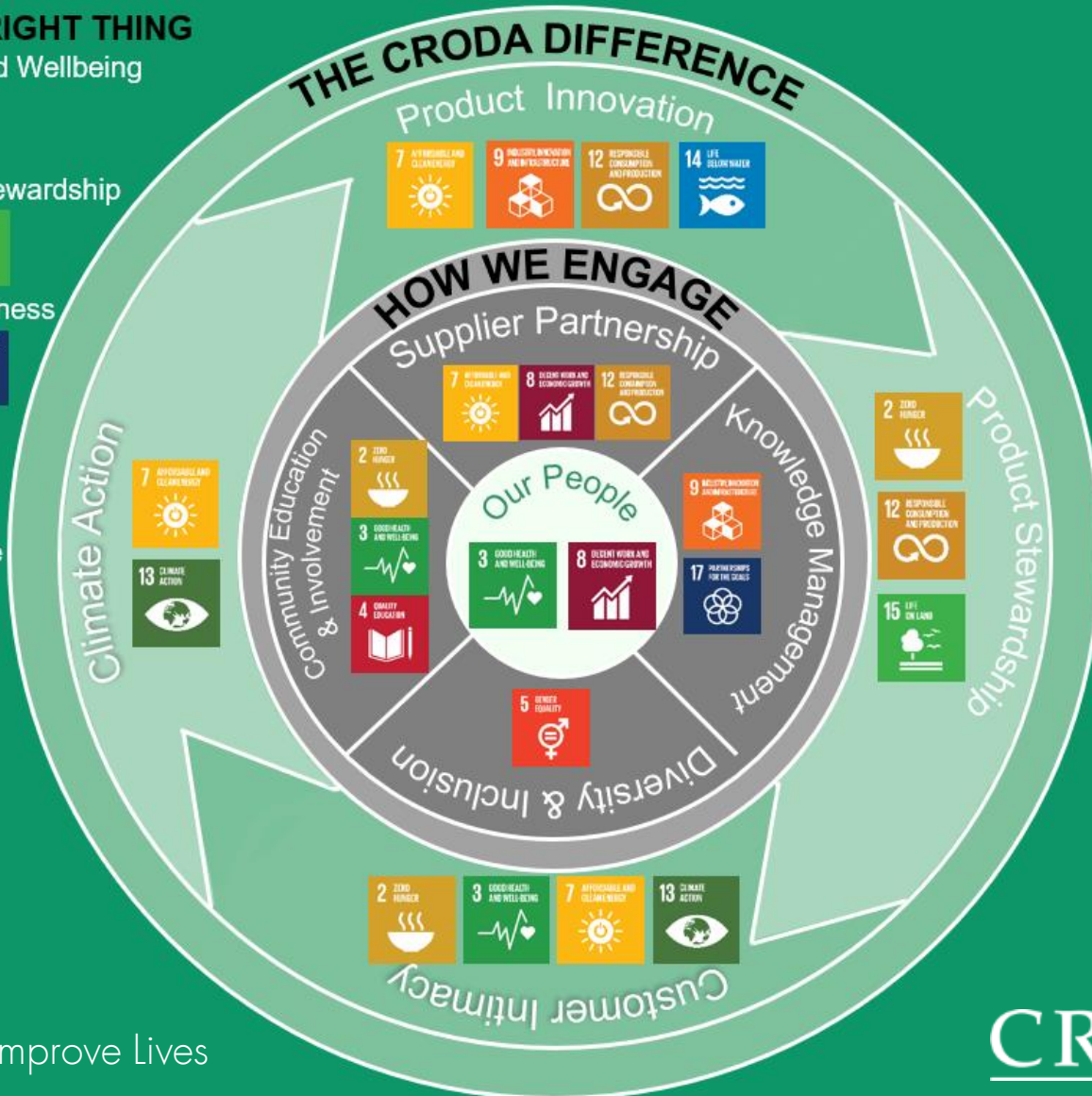
Responsible Business



Process Safety



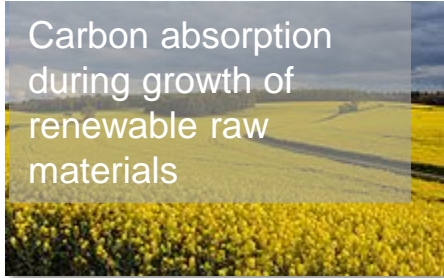
Quality Assurance



Our Carbon Impact

Product Manufacture

Carbon absorption during growth of renewable raw materials



Investment in renewable energy and efficient processes



Low cradle-to-gate carbon footprints of our products



We can measure these in-house by modelling **Life Cycle Assessments** in SimaPro, following technical specification **ISO 14067**

Products in End Application

Offer many sustainability benefits in use



Leading to reduction or avoidance of CO₂ emissions

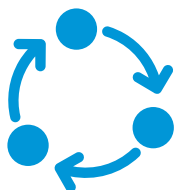
Elements of Innovation



Input

Raw Materials

Petrochemical or bio-based carbon?



Process

Minimising Carbon, Energy & Water Use.

What best practice processes can we use?



Product

What is the sustainability output?

Are sustainability benefits inherent to the product?
e.g. Biodegradability or ecotoxicity

Will the product give a sustainability benefit in-use?

Aligning SDGs with Innovation



Input



Process



Inherent (Biodeg/Ecotox.):



Product



Performance:



Targets & Metrics

Making Sustainability & Innovation Inextricably Linked.

Mindset



**Minimum Sustainability
Criteria**

Driving mindset & behaviour.

Metrics



**Measuring
Sustainability Outputs**

Progress versus Group targets.

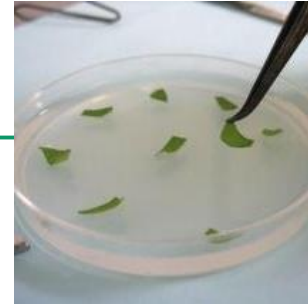
Plant Cell culture



SOURCING



SAMPLING &
DECONTAMINATION



INDUCTION OF
NATIVE CELLS



TRANSFER IN LIQUID
MEDIUM



CELL LINE
SELECTION



CALLOGENESIS



TRANSPOSITION & SCALE-UP
PROCESS



INDUSTRIAL PROCESS

**ACTIVE
INGREDIENTS
OBTAINED BY
PLANT CELL
CULTURE**

Plant Cell Culture offers new possibilities to reduce land use

SOURCING

- ✓ No crops
- ✓ No seasonality
- ✓ No supplier
- ✓ Unlimited availability

ECO-SUSTAINABILITY

- ✓ No over exploitation of land
- ✓ Reduced use of solvents
- ✓ No over harvest risk

ETHICS

- ✓ Land can be used for food crops
- ✓ Protection of plant and biodiversity

SAFETY AND QUALITY

- ✓ High, standardised active quantity
- ✓ No undesired pollutants
- ✓ No GMOs



Any Questions?



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