

Manufacturing



Sector strategy

A strong manufacturing sector is key to economic and social development. CDC invests to support the growth and expansion of this sector across Africa and Asia. The following pages provide insight into how we think about manufacturing and our investment priorities in the sector.

CDC Group is the UK's development finance institution and impact investor, investing to support the UN's Sustainable Development Goals.



Improving the local availability of manufactured products is foundational to alleviating poverty and enabling broader economic development.

The link between improving people's standard of living and their ability to access basic manufactured products is direct:

- + Without piping, valves and pumps, there can be no access to **clean water and sanitation**
- + Without affordable building products like cement, glass, bricks and electrical fittings - there can be no **affordable housing or urban infrastructure**
- + Without readily available **basic healthcare products and medicines**, it is impossible to provide good basic healthcare

Recognising the developmental imperative for promoting strong local manufacturing sectors, our sector strategy for manufacturing is built around three broad themes:

1. **Improving manufactured product availability.**
2. **Accelerating manufacturing ecosystem development.**
3. **Promoting more responsible production and consumption.**

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01

The problems that we are trying to solve

Local manufacturing capability is significantly underdeveloped in most African and South Asian countries. This stifles the pace of broader economic development. It is not feasible to import all the manufactured goods required to keep pace with developmental needs, which slows inclusive progress towards achieving improved standards of living. Without a strong local manufacturing sector as a foundation, growth in other economic sectors is also constrained.

This section explores the developmental challenges that are associated with immature local manufacturing sectors.

Urban development requires manufactured products

Most of the projected population growth in the next 30 years will take place in Africa and Asia, where rural populations are also rapidly urbanising. This urban growth requires increased access to manufactured products to support improved standards of living. In towns and cities, even a basic standard of living depends on access to an array of manufactured goods (see Figure 1). Homes are built from manufactured concrete, bricks, steel and glass. Good hygiene requires access to soap and other cleaning products, whilst the infrastructure to supply clean water and remove sewerage is constructed from manufactured pipes, pumps and valves. When people buy food from shops rather than growing it themselves, packaging and processing are required to transport, preserve and prevent contamination. Without ready access to manufactured products, people's daily lives can be unnecessary hard, with increased risk of dying from preventable causes.

Basic shelter	Basic nutrition	Basic health	Basic sanitation
<ul style="list-style-type: none"> • Cement • Bricks • Roofing materials • Insulating materials • Structural steel • Building glass • Metal sheeting • Electrical fittings • Bedding and clothing 	<ul style="list-style-type: none"> • Non-perishable (packaged) food stuffs • Agri-processing (sugar refining, flour milling etc.) • Edible oils • Baby food • Cooking fuel 	<ul style="list-style-type: none"> • Basic drugs • Basic wound care (e.g. dressings, ointments) • Sterilising fluid • Healthcare equipment 	<ul style="list-style-type: none"> • Water treatment products, pumps, valves etc. • Plumbing fittings • Personal and homecare products (e.g. soaps, detergents)

Figure 1: Examples of manufactured products that address basic human needs



Without a strong local manufacturing sector as a foundation, growth in other economic sectors is also constrained.

Productivity improvements require manufactured products

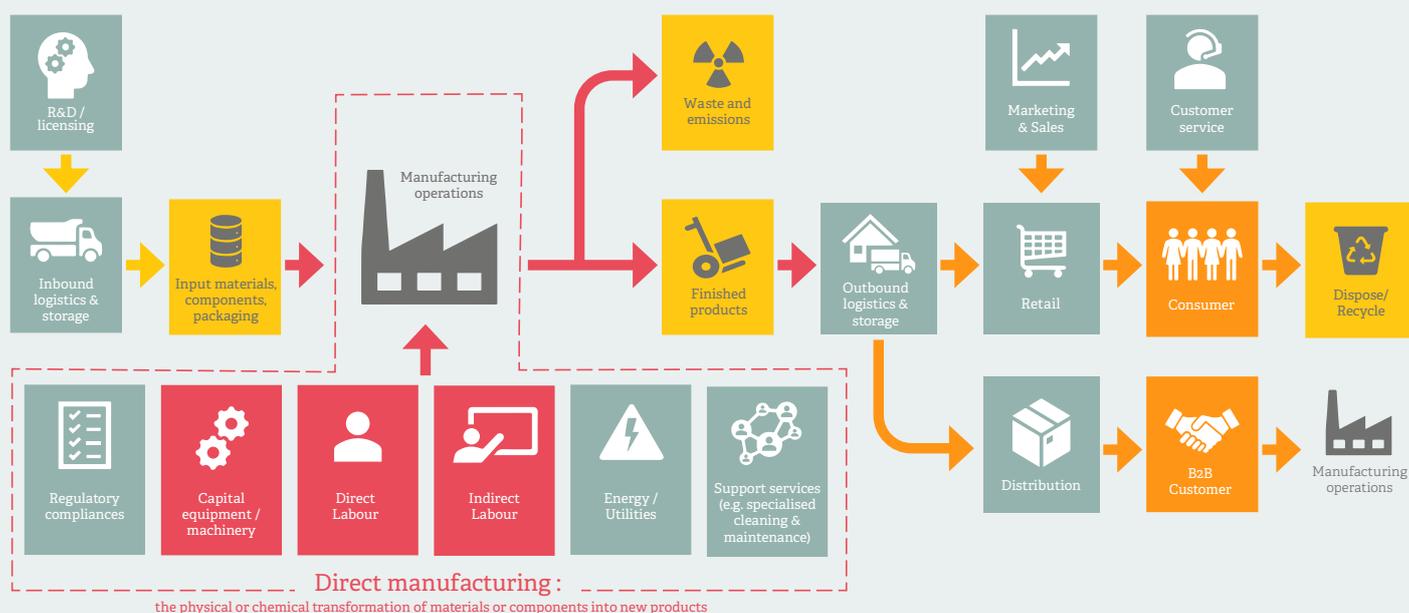
Improved availability of manufactured goods is also required for wider economic development. Productivity in advanced economies has significantly increased over the last two centuries largely because of the improved availability of labour-saving devices: tractors, irrigation pumps, electric motors, computers, and more – all of which are manufactured. Home appliances that reduce the burden of unpaid domestic work (disproportionately carried out by women), are also examples of manufactured products that improve productivity.

Local production is needed to improve product availability

In many developing economies, it is not feasible to import the quantities of manufactured products required to keep pace with developmental needs. Without local production, the costs to import can be prohibitively high – especially for goods that are heavy and bulky to transport. For example, many of the products needed to build a modern city – cement, bricks and glass – cannot be imported without incurring large transport costs. Importing also requires access to foreign currency, which is severely constrained in many developing countries that do not have other significant sources of export income. When the availability of manufactured goods that service basic needs is constrained, it can widen inequalities in standards of living, with access to needed products limited only to the wealthy. Domestic manufacturing businesses can not only improve the availability of products, but also help to improve a country’s balance of trade, either by exporting their products or by providing competitively priced substitutes for imports. This in turn can help to improve the availability of foreign currency to purchase products that are not feasible to produce locally.

How we think about manufacturing

All manufacturing businesses share the same defining characteristic in that they involve the “physical or chemical transformation of materials into new products”¹. This encompasses an extraordinarily wide range of activities – from crushing and chemically treating rock to make fertiliser, to the assembly of highly complex electronic devices with parts sourced from thousands of individual component manufacturers. And manufacturers depend on many services provided by non-manufacturing firms – logistics, storage, waste disposal and maintenance, among other things – which therefore form an integral part of the broader “manufacturing ecosystem”.



1 OECD glossary of statistical terms

Local manufacturing provides the foundation to create and sustain employment in other sectors

Developing local manufacturing not only promotes job creation within the sector, but also plays a crucial role in developing jobs in other sectors. Employment created by the manufacturing sector can be viewed as being in the centre of an hourglass, where direct manufacturing job numbers may be relatively small, but the presence of a thriving manufacturing sector is the enabler of a much larger employment base (see Figure 2).² This includes employment in upstream businesses like suppliers, component manufacturers and the innovation workforce; employment in downstream businesses like logistics and warehousing providers; as well as employment in service businesses across the value stream like cleaning, security, insurance and legal services.

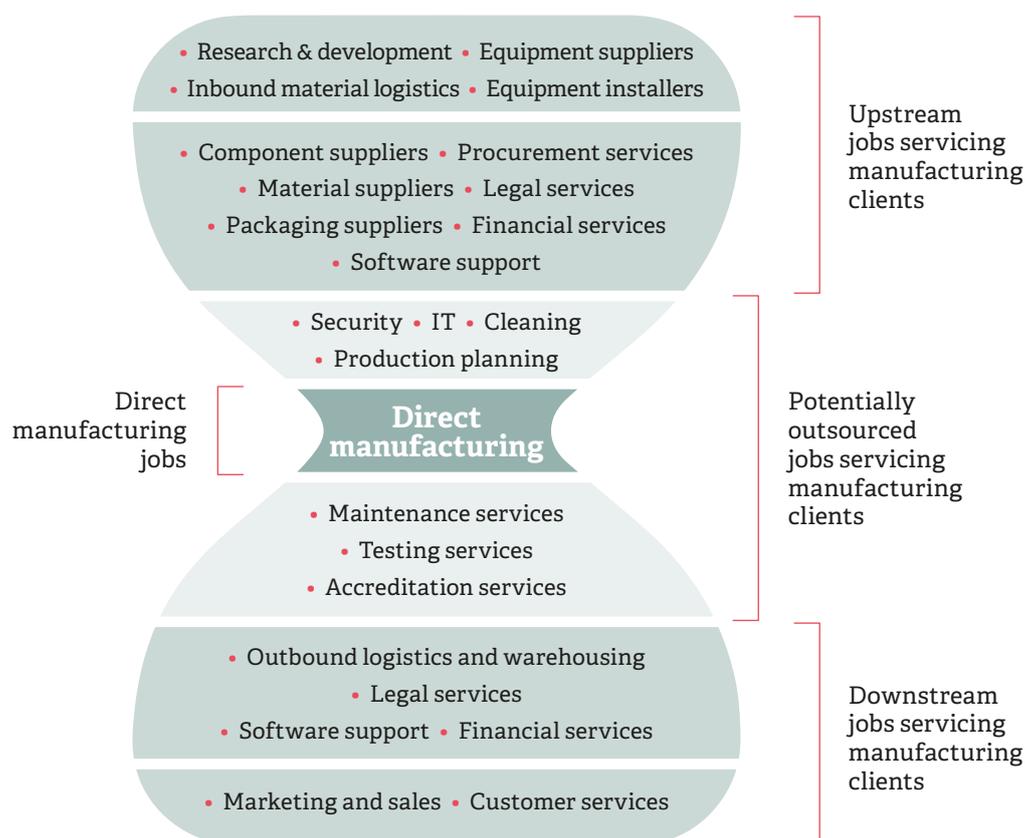


Figure 2: Manufacturing employment hourglass

Local manufacturing is needed to build capabilities and deliver technological advances across other sectors

The types of skills that the manufacturing sector develops contributes to building technological capabilities as well as other capabilities that can be leveraged by the wider economy as employees and workers move to other sectors or start their own businesses. The extended manufacturing value chain can profitably employ low-skilled workers and transform them into more highly skilled workers. By providing an employment destination, a thriving manufacturing sector also encourages young people to study and develop engineering and technical skills.



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² Bonvillian & Singer, Advanced Manufacturing

Progression into the Fourth Industrial Revolution

Maturing technologies are transforming the manufacturing sector, leading to a 'Fourth Industrial Revolution'. These Fourth Industrial Revolution (4IR) technologies are changing the nature of the jobs and skills required in both manufacturing and other sectors. Automation that was previously costly and skill-intensive is becoming more cost-effective and user-friendly. Whilst this may reduce the future number of employees directly involved in manufacturing, maturing technologies are also making it possible to competitively manufacture in smaller quantities from a larger number of smaller and more responsive, distributed factories. This 'distributed manufacturing' or 'near-shoring' model offers opportunities to more rapidly develop local manufacturing ecosystems than has previously been possible. The distributed model also promotes more resilient supply chains as it becomes increasingly less attractive for production to be concentrated in a few geographic hubs. Economies that don't develop a local manufacturing sector are in danger of missing out on the leapfrogging opportunities to industrialise that that technologies of the fourth industrial revolution present.

Delivering the Sustainable Development Goals

Given the importance of domestic manufacturing for economic development, it is unsurprising that all of the most developed economies in the world have significant levels of manufacturing output – including economies like Dubai and Singapore which are better known for their service sectors. Without a significant expansion of local manufacturing sectors in developing economies, it will be impossible to achieve the United Nations' Sustainable Development Goals (SDGs), each of which have a direct or indirect dependence on the manufacturing sector (see following page).



All of the most developed economies in the world have significant levels of manufacturing output.



Figure 3: How does a robust manufacturing sector contribute to the SDGs?



Indorama: Supporting independent production and farmer education

Located in Port Harcourt, Nigeria, Indorama Eleme Fertiliser & Chemicals Limited (IEFCL) operates the world's largest single train urea fertiliser manufacturing plant. As part of a syndicate of international finance institutions, led by the IFC and including most of the European DFI community, CDC supported the development of this business with loans of \$40 million in 2013 for the first line of the fertiliser plant, \$100 million in 2018 for the second line and \$25 million in 2020 for an upgrade of the second line.

Having previously depended on imported fertiliser, Nigeria now benefits from significant domestic production, allowing for a reduction in production costs for Nigerian farmers and improvement of food security for a rapidly growing population. As part of its operations, the company educates and provides training to farmers about the proper use of fertilisers for maximizing long-term agricultural yields.

Over 3,600 people are working on the construction of the second line while the first line of the plant employs 470 people. In a potentially dangerous working environment, the company puts great effort into environmental health and safety (EHS). Staff are trained in defensive driving, working at height, crane operations, scaffolding and the safe use of tools. Before every shift, workers attend an EHS briefing on the day's tasks. As of March 2020, the company achieved over 7.7 million 'Lost-Time Incident Free Man-hours'.

02

Our investment themes

We aim to invest in businesses that are not only commercially viable but also make a material contribution to wider economic development. This leads us to prioritise investments that have one or more of three effects:

1. Improving the availability of manufactured products

CDC aims to invest in companies that will make manufactured final or intermediate goods more readily available domestically (or regionally) through lower prices, shorter lead-times or better quality (more fit-for-purpose) and that potentially displace imports. We prioritise manufacturers of goods that meet basic needs for shelter, food, sanitation and healthcare, but will also consider other sub-sectors.

2. Accelerating manufacturing ecosystem development

Our investments aim to accelerate the development of manufacturing ecosystems in African and South Asian countries. We seek investment opportunities that help to remove growth constraints. An example of this could be a lack of local packaging suppliers preventing development of other sub-sectors. We support businesses to extend their capabilities and build more complex, high-tech skills and we support strong management teams with local growth aspirations. We also back companies in sub-sectors that can export competitively.

3. Promoting more responsible production and consumption

We promote positive transformations within the manufacturing sector that lead to more sustainable production and consumption, cleaner technologies, gender equality, skills development and better job quality. We also work with our investees to improve their Environmental, Social and Governance (ESG) practices.

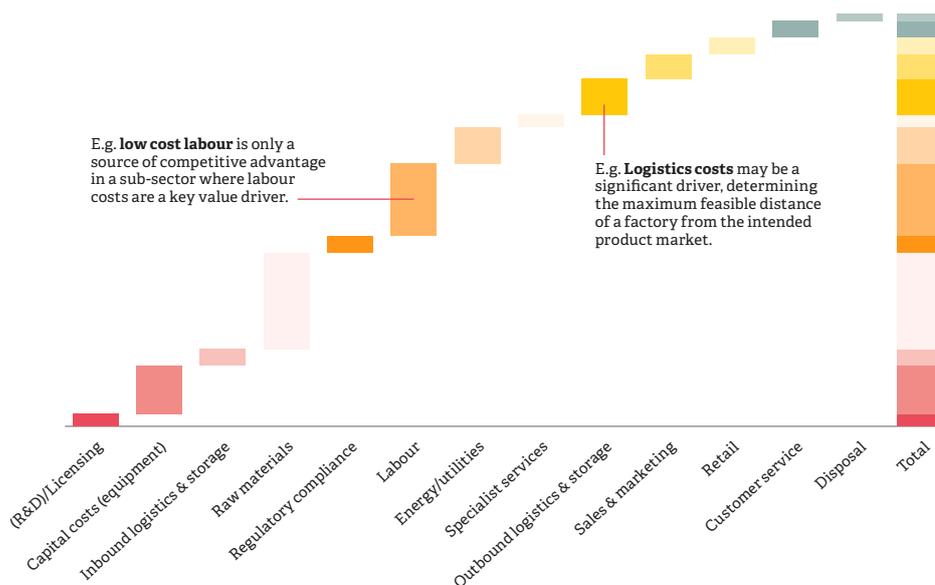


03

How CDC invests in manufacturing

As a Development Finance Institute (DFI), we have a dual mandate to invest to achieve both development impact and financial return.

Achieving a financial return protects our capital, allowing us to reinvest and continue to support more businesses. When selecting manufacturing businesses to invest in, we seek a source of sustainable advantage. This will depend on the value drivers of the business, which vary with the type of manufacturing concerned (see figure below).



For example, the price consumers are willing to pay for a mobile phone may depend on the phone's software ecosystem and product design rather than the cost of the raw materials or labour that went into making it. Manufacturing mobile phones closer to their end-users in developing economies may therefore not improve pricing or availability as the transport costs saved are not the dominant value driver. In contrast, manufacturing items with high transport costs, such as packaging or building materials, closer to the customer may help to reduce costs and therefore allow these products to be sold at lower prices.

Figure 4: Illustrative manufacturing value drivers waterfall

Priority focus sectors

Our priority focus sectors – chemicals, healthcare products, building materials, packaging, textiles and garments – flow from this value-driver analysis and from our first two goals of improving the availability of goods that satisfy basic needs, and investing to accelerate the development of manufacturing ecosystems. Our sustainability goals mean we are especially interested in ‘circular economy’ enterprises – such as those that reduce plastic waste; green-technology solutions; and cost-effective distributed or micro-manufacturing. As for countries, we prioritise those where there is at least a nascent manufacturing ecosystem where we can find suitable businesses to support. This tends to correspond to countries with larger populations that can provide a strong initial local market and potentially serve as regional supply hubs.

Identifying priority focus sectors does not rule out our potential investment in other manufacturing sectors. We will also invest opportunistically in light engineering, assembly, manufacturing support services and other businesses that align to our investment themes. However, we do exclude some sectors, specifically the manufacture of tobacco products or armaments.

Investment products

CDC’s investment capital is structured to be patient and flexible, which is what many manufacturing businesses need to support their growth. We provide capital in three broad ways: direct equity, intermediated equity (through funds and capital partnerships), and direct debt – with the ability to structure mezzanine products that combine elements of all of these. We also work with other development finance institutions and can complement an existing deal. Our investments of more than \$10 million are usually provided through direct equity or debt, while we support smaller businesses indirectly through funds or financial institutions, to whom we provide capital.

Manufacturing firms also make up a significant portion of the businesses that make use of our trade finance support, which is typically delivered through risk-sharing partnerships that we have formed with local banks.

More details of our investment products can be found at:
www.cdcgroup.com/en/how-we-invest/investment-strategy/products/

Additional impact

When we make an investment, we add value, working in partnership with our portfolio companies and providing hands-on support to help businesses achieve good environmental, social, governance and business integrity standards. We are an active investor, looking for opportunities to maximise the impact of our portfolio. This means we can provide additional expertise and resources on a case-by-case basis to help investees increase their impact, with a focus on our priorities of gender equality, job quality, climate change, skills and leadership development.

RFL Electronics Limited: Adopting global standards

RFL Electronics Limited (REL) manufactures consumer electronics and white goods for the Bangladeshi market. Part of the PRAN-RFL group, a successful Bangladeshi conglomerate, it has ambitions to expand into international markets. In 2017, CDC committed to \$15 million to the company.

During our appraisal of REL, it became clear that the company faced challenges relating to health and safety, working hours, contractor management and gender equality that are common in the Bangladeshi manufacturing sector. The management of REL were keen to turn things around and move towards international standards for working conditions. Alongside carefully selected advisors, CDC has worked to build capabilities within REL so that its management can develop and apply their own policies in this area.

The results to date are encouraging. A new shift system that reduces hours worked while maintaining workers’ incomes has been piloted. To remedy irregularities in the payment of contractors, they have been shifted onto REL’s payroll. Anti-sexual harassment training has been expanded. And occupational health and safety monitoring procedures have been introduced. Along with several other initiatives, these measures are moving REL towards international standards for working conditions.

Tackling climate change

To avoid the catastrophic effects of climate change, greenhouse gas emissions must be reduced significantly to reach net zero by mid-century.

CDC is committed to aligning our operations with the goals of the Paris Agreement, and to achieving net zero emissions by 2050 at the portfolio level, and also assessing each new transaction for Paris alignment. Opportunities for climate action in the manufacturing sector include improving efficiency in what is one of the hardest sectors to decarbonise, as well as investing in clean technology and circular economy solutions. For example, circular economy business models have the potential to deliver considerable reductions in both emissions and plastic pollution, which are a major threat to biodiverse and resilient ecosystems.

Although the progress that has been made in decarbonising energy generation has not yet been matched in industrial processes, there are opportunities to reduce their carbon footprint by increasing resource efficiency and increasing the use of renewable energy sources for generating electricity. These kinds of interventions can deliver between 10-20% of the emissions reductions needed in the manufacturing sector at a global level and can be deployed today. When we invest, we will assess where manufacturing processes can be made more environmentally sustainable. It is only by continuing to invest in these businesses that we can influence and support the adoption of better practices by our investees. And we continue to promote and support the adoption of greener solutions, such as alternative heat sources, as they become technically and economically feasible.

In both developed and developing economies, fossil fuels remain essential to generating the heat needed by heavy industry to manufacture cement, steel, glass, ceramics, chemicals and paper. Generating this heat using electricity from the grid is not currently a feasible alternative for these heavy industry sectors. And, because the products they produce are foundational to alleviating poverty and enabling economic development, curtailing their production to reduce emissions is not a viable option. However, within the constraints of current technology, manufacturing processes can be made more environmentally sustainable.

As part of adopting the recommendations of the Taskforce on Climate-related Financial Disclosures we are increasing our capacity to assess physical and transition climate risk. A better understanding of the physical risk exposure in our future manufacturing investments will help us understand how to build resilience to a warming climate. CDC has developed an organisation-wide climate strategy made up of three building blocks which align our activities and investments with the goals of the Paris Agreement across all sectors:

1. **Net zero by 2050:** investing for a net zero world, because investment decisions today affect emissions tomorrow.
2. **Just transition:** supporting a 'just transition' to a net zero economy by keeping the creation of decent jobs and skills development at the forefront of the change.
3. **Adaptation and resilience:** strengthening adaptation and resilience of sectors, communities, businesses and people to the effects of climate change.

More details of our climate change strategy can be found at: www.cdcgroup.com/en/climate-change-strategy/

14Trees: Expanding low-carbon technologies

In 2016, we partnered with LafargeHolcim, a global leader in building materials and solutions, to create 14Trees. 14Trees' mission is to take affordable and sustainable construction innovations from labs to the field, test them, optimise them, implement them on the ground, and scale them up. With activities in Malawi, Kenya and Ivory Coast today, 14Trees started with the production, promotion and sale of Durabric, their alternative to clay-burnt brick, in Malawi. Durabric is better for the environment than clay-burnt brick as the bricks are produced from a mixture of earth, sand and cement, compressed in a mould, and left to cure naturally without firing. By avoiding the firing phase, Durabric reduces greenhouse gas emissions and avoids deforestation, saving on average 55 tonnes of carbon dioxide and fourteen trees for every house built.

As of April 2020, 2.75 million Durabrics have been used. The bricks and concrete blocks produced by 14Trees have saved a total of 35,800 tonnes of carbon dioxide emissions and 8,700 trees. These materials have been used for the construction of schools, hospitals and houses. Since opening their first plant in Malawi in 2016, 14Trees now operate four plants. With our support, the business has strengthened the local construction industry by accelerating the adoption of green building standards and partnering with local builders, who are able to improve their construction skills and benefit from employment opportunities.



05

Our COVID-19 response

The impacts of the COVID-19 pandemic continue to evolve globally, with potentially devastating effects in the markets we cover. Our goal of supporting the economic progress and welfare of populations of Africa and South Asia has never been more important. CDC's evolving response has three goals:

1. **Preserve:** Support our partners to help them survive the crisis.
2. **Strengthen:** Scale-up our response to the economic and health challenges of the crisis.
3. **Rebuild:** Act as a long-term partner to the countries where we invest.

The work that we are doing to support COVID-19 recovery is continuously evolving and more details together with the most recent updates can be found at: www.cdcgroup.com/en/covid-19-response/



This strategy encompasses the activities, motivations and ambitions of a large group of people at CDC. They include our investment professionals from each of our Investment Product teams and our Impact professionals, who are thought leaders on the topics of ESG, Business Integrity, Development Impact, Gender and Climate Change.

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