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Evidence review

Insight

What is the impact of investing in construction and real estate?

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Foreword

Investments in the construction and real estate (CRE) sector can deliver positive impacts to people and communities by creating economic opportunities, enabling inclusive urbanisation and fostering environmental sustainability. As countries in Africa and South Asia become increasingly urban, rising demand for infrastructure and real estate presents an opportunity for investors to contribute to the realisation of key development goals.

This report contributes to the understanding of the array of development impacts created by the CRE sector, and is intended to support more impactful strategies in the future by allowing investors to balance financial and impact returns. The report also guides on how to think through trade-offs that investors such as DFIs, impact investors, and investors in emerging markets inevitably encounter. We do this by examining the evidence of CRE development impacts from two distinct angles. First, by presenting a CRE Impact Framework, and using this to structure cross-cutting evidence in terms of economic opportunities, inclusive urbanisation and environmental sustainability. Second, by examining evidence of development impacts by CRE sub-sector, grouped by social infrastructure and business infrastructure, to highlight sector-specific insights. We conclude by identifying areas for future research.

This evidence review is undertaken in partnership with the World Resources Institute (WRI). WRI is an international research organisation that works at the nexus of international development and the environment. The WRI Ross Centre for Sustainable Cities is the largest of WRI's programmes and is focused on transformative initiatives related to urban mobility, urban development, and urban efficiency and climate, to transform cities into centres of inclusive, resilient and green growth. The research team enlisted for this report comprises the central research team in the Ross Centre. WRI's flagship World Resources Report on Cities: Towards a More Equal City has informed some of this research.

The findings in this report are based on an in-depth literature review of more than 170 academic studies, development agency publications, newspaper articles, blogs, industry reports, resources provided by CRE sector experts in multiple countries, as well as the experience of the WRI author team based on past research. CRE sub-sectors studied include social infrastructure – covering housing, urban regeneration projects, student housing, healthcare facilities and schools – and business infrastructure – including hotels, retail, industrial and logistics parks and office parks.

We hope this review will encourage more investors to focus on the development impact of the CRE sector in Africa and South Asia. This is especially in recognition of the sector's importance in determining urban form in cities and its potential to lock-in economic, social, and environmental performance for years to come.

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01

Introduction

Investments in the construction and real estate (CRE) sector play a large role in determining whether cities become centres of sustainable, climate resilient and inclusive growth, or whether they continue down a path of resource-intensive, unplanned and inequitable expansion.

Macroeconomic trends are driving demand for CRE investments in Africa and South Asia. CRE sector investments in cities determine urban form and also lock-in economic, social and environmental performance for years to come. Many cities in Africa and South Asia are consuming more land for housing and infrastructure to accommodate new urban residents. At the same time, they also have limited capacity for governance and tax collection. They also have fewer resources to deliver core public infrastructure and services, such as housing, transport, electricity, water and sanitation in new and existing developments (Beard et al., 2016). These trends pose both challenges and opportunities for CRE investments to advance sustainable development.

Africa and South Asia are now key geographies for the CRE sector. Africa and Asia are expected to be home to more than 90 per cent of the increase in urban population of about 2.5 billion people by 2050 (United Nations 2019) and the majority of the increase in built-up urban land globally. Urbanisation in Africa rose from 15 to 40 per cent from 1960 to 2010, and the urban population is estimated to triple in the next 50 years (Freire et al., 2014). South Asia's urban population is expected to absorb 250 million more people by 2030 (World Bank, 2015). In many cities in Africa, high rates of urbanisation are increasing housing needs in urban areas, causing a large-scale housing and service backlog.

Much empirical evidence exists on how cities are growing outwards at a faster rate than their population growth, leading to declining population density, higher costs of public service provision, and higher social costs associated with congestion, air pollution, and urban inefficiencies (Libertun de Duren & Compeán, 2015; Brueckner & Sridhar, 2012; Curruthers & Ulfarsson, 2003; Hortas-Rico & Solé-Ollé, 2010). Across sub-Saharan Africa and South Asia in particular, societies that were primarily rural are rapidly becoming more urban, resulting in heavy real estate investment and booming property development

(Goodfellow, 2017). Unplanned peripheral growth, however, increases the costs of service provision, deepens spatial inequities in access to jobs and services, and imposes heavy burdens on households and cities – both in terms of the time and money spent on transport and on the city in terms of lost productivity and emissions. Lower-income cities with weak planning and land governance and fewer resources will see the largest increase in this type of growth (Mahendra & Seto, 2019).

Informality dominates in African and South Asian markets, creating risks of economic exclusion as CRE sectors consolidate and formalise. For example, many warehouses in South Asia have traditionally been small and independently owned and operated by people who do not participate in the formal logistics industry (Knight Frank, 2019). As the warehousing industry consolidates and formalises, there is a risk of excluding more vulnerable people operating in the informal segment, even if formalising the sector improves job quality and safety overall. Informal employment accounts for more than three-quarters of urban employment in Africa, and more than half of urban employment in Asia and the Pacific (International Labour Organisation (ILO), 2018). Roughly one-third of people living in cities in the global South live in informal settlements (Habitat III Policy Unit 10, 2016).

Privatised development – in the absence of accompanying investments in local public infrastructure – poses significant challenges to achieving broad economic, social and environmental benefits in the CRE sector (Levien, 2012). In India and some African countries, many cities have given preference to private sector development to promote a 'world city' vision, and to attract international corporations and the capital they bring (Goldman, 2010). This has led to numerous high-tech centres developing on the periphery of cities. This kind of privatised development often overlooks the needs of local and vulnerable populations and, in some cases, has led to the dispossession of residents' land in peri-urban areas, along with the loss of fertile agricultural land to urban development (McGranahan et al., 2016; Logan & Molotch, 2007; Heller, 2014; Shatkin, 2008; Levien, 2012).

Many contextual challenges also exist, such as a lack of market transparency, poor infrastructure, political risk, currency risk, and difficulties in obtaining building permissions and approvals (Jones Lang LaSalle, 2018). Demand-side challenges include insufficient access to credit, low and unreliable wages and a lack of recorded income streams. Markets in these sectors, in these geographies, are typically highly segmented, with uneven and widely variable services, expectations and norms. For example, housing spans a wide range of quality and size of buildings, combinations (and lack) of services, legality and land ownership, and methods of payment and finance (King et al., 2017).

On the micro-economic side, cities and their sub-systems suffer from non-transparent and poorly functioning factor markets. Labour, land, and capital markets are rife with asymmetries that prevent them from effectively allocating resources. Overlapping land ownership systems – private, public, and customary or tribal ownership – present challenges in Africa and, to a lesser extent, in South Asia. Land markets cannot function without basic, accurate, and relatively up-to-date land records, which are also essential for property tax revenue generation. Without these revenues, essential services that residents and businesses require for productive investments are likely to be insufficient.

CRE sector investors have a large role to play in determining how productive, inclusive and sustainable cities of the future become. This report lays out a framework for achieving positive impact and compiles evidence on both the positive impacts (and potential risks) of investing in both social and business infrastructure projects in Africa and South Asia.

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02

The CRE Sector Impact Framework

The CRE Sector Impact Framework is a tool to systematically consider the development impact of construction and real estate investments—both in terms of their positive impacts, as well as their potential for creating negative impacts.

Based on the reviewed evidence, this section presents insights, actions and lessons learned that can drive impact, structured using the three long-term impact goals in the framework:

1. **Economic opportunity:** Creating high-quality jobs and improving livelihoods by enabling expansion of economic activities, and contributing to greater economic productivity.
2. **Inclusive urbanisation:** Enabling more inclusive access to social and economic benefits, and the safety and health of everyone in a city.
3. **Environmental sustainability:** Improving energy and resource efficiency, land use, emissions reduction and climate resilience.

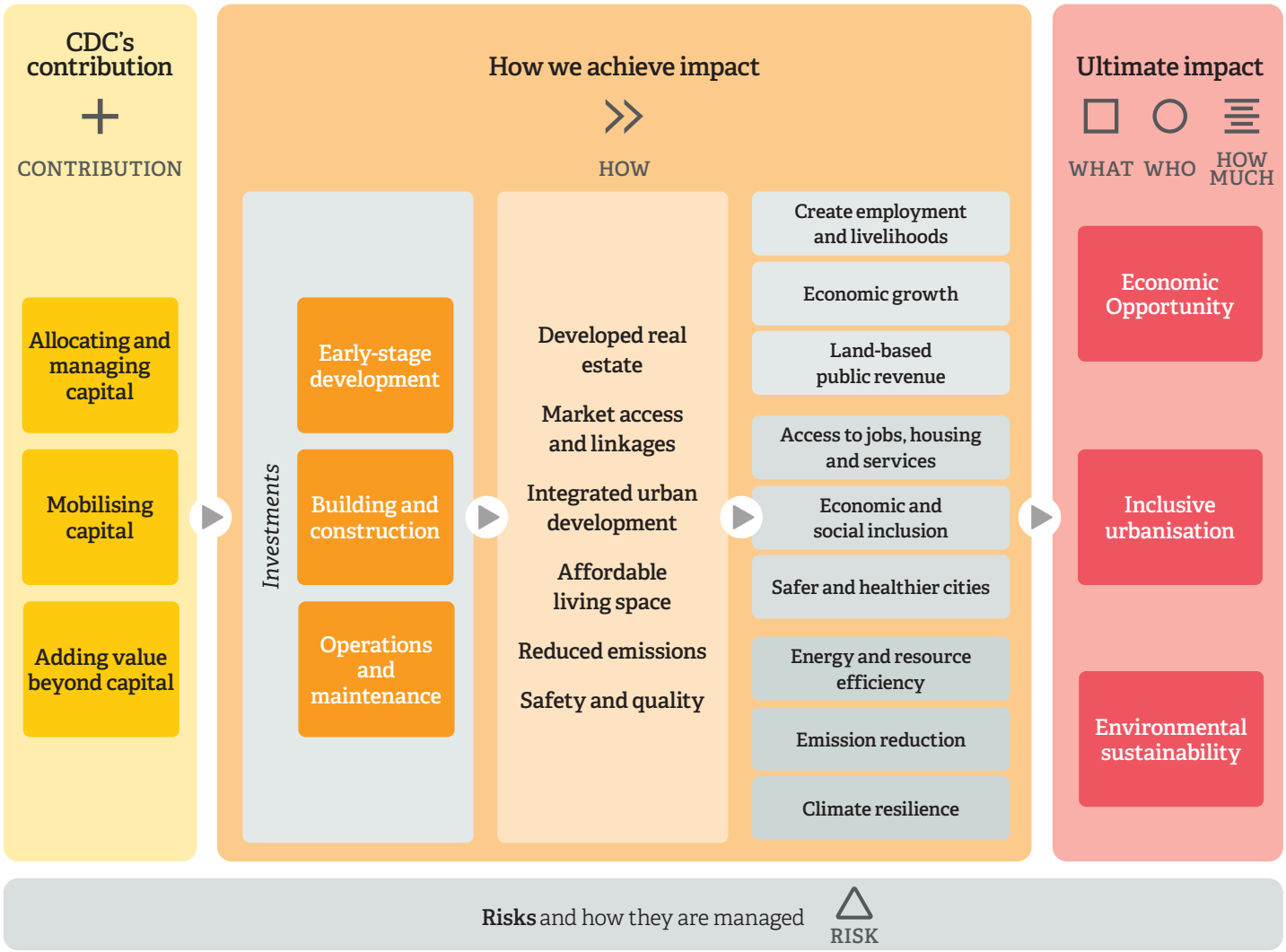

Figure 1. CRE Sector Impact Framework

2.1 Economic opportunity

Local employment and livelihoods

The CRE sector is labour-intensive in terms of creating construction jobs, jobs related to inputs into construction, and future employment at new development sites. The employment created per unit of CRE investment is relatively large compared to other economic sectors and CRE projects can stimulate local economic growth (ILO, 2014). Investments in the CRE sector can give a boost to local vendors, suppliers, and shopkeepers by providing new demand for local goods and services (Overseas Development Institute (ODI), 2006). From new housing to business parks and hotels, CRE projects bring in customers who require places to shop, food to eat, and convenient access to transportation and healthcare services.

One of the most significant challenges in the sector lies in the prevalence of informal employment, which tends to be less secure and to have fewer protections for workers (ILO, 2014). Data from some countries show that among construction workers, 74 per cent in Malaysia, 85 per cent in the Philippines, and 90 per cent in Egypt are casual or self-employed, meaning they lack social protections such as accident insurance and long-term job security (Jason, 2008; Wells and Jason, 2010). Informal construction workers are often not recognised in policies and legislation, while weak enforcement of existing laws means that they are not well protected (ILO, 2014). The construction industry also has a high rate of dependency on migrant workers, who are disproportionately hired

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under temporary, short-term contracts or are self-employed and are at higher risk of workplace injuries (Buckley et al., 2016). Many international and impact investors follow standards for worker protection, such as the International Finance Corporation (IFC) International Performance Standards, but these standards are sometimes challenging to meet in geographies where there is a dominance of informal workers.

Economic growth

Direct, indirect, and induced effects of investments in the CRE sector can lead to important economic contributions at the national or regional scales, which can then lead to a wide range of multiplier effects (IFC, 2016; Fuller, 2016; ICSC, 2017; Amirtahmasebi et al., 2016; World Bank, 2019; Saleman & Jordan, 2014; ODI, 2012). By sourcing goods and services in-country, CRE developments can stimulate national economies and lock-in economic growth.

The CRE sector in Africa and South Asia is growing and contributes significantly to national economies. In 2017, the real estate sector comprised over a quarter (26.2 per cent) of all infrastructure projects in Africa (Deloitte, 2018). In India, the construction sector is the second-largest in terms of material consumption and constitutes 9 per cent of the country's GDP (Caleb et al., 2017; Invest India, 2020). Estimates show its contribution may grow to 13 per cent by 2030, and is expected to be valued at $738.5 billion by 2022 (KPMG, 2018; Invest India, 2020). The Indian construction sector is predicted to become the world's third-largest by 2022 and, by 2030, residential construction demand is expected to increase more than four times from its 2005 levels (Caleb et al., 2017). Additionally, in Bangladesh, the construction sector grew by 9.6 per cent in 2019 (The Daily Star, 2019).

Land-based public revenue

Increased commercial activity and employment opportunities generated by CRE projects often leads to higher demand for infrastructure, services and land around the new development, which, if managed well, can contribute to public revenue and sustainable growth. Cities can tap into increasing land prices in the form of tax collection or development fees – revenue which can be redistributed to public infrastructure and services that benefit people in the immediate communities – in a process called land value capture (Mahendra et al., 2020). In Kenya, for instance, the Nairobi city government charges private developers a development charge of 0.05 per cent of the value of the property, which is intended to finance service provision in the area (Berrisford et al., 2018).

Generating a supply of well-connected land within cities to build lower cost housing and new employment centres is proving an essential strategy for rapidly growing cities to accommodate increasing urban populations without expanding land area unsustainably. For example, land readjustment or land pooling schemes seen in many Asian cities offer a model for participatory decision-making between cities, landowners, land occupants, and private sector infrastructure and service providers. It helps ensure new land development occurs in conjunction with provision of key services, and that well-connected land is made available within the city or its immediate periphery. In some cases, these schemes also incorporate land value capture mechanisms to finance infrastructure and services, taking advantage of the mutually reinforcing links between investment in infrastructure, economic development and rising land values (Turok, 2018). This is often done through property taxation, development charges, or public-private partnerships, but these policies are still very new in many of the secondary and tertiary cities across Africa and South Asia.

A lack of regulation and weak governance structures, combined with increasing demand for land, can lead to widespread land speculation that can quickly result in inflated land prices that nearby residents and service providers cannot afford (Goldman, 2010). This can result in economic displacement and the pricing out of low-income people and small businesses, who are often forced to move to the periphery, further away from urban services and opportunities located in the city.

2.2 Inclusive urbanisation

Access to jobs, housing, and services

New CRE investments located near existing infrastructure and services (such as bus and metro lines) can improve access to jobs, retail, health, education and other services and opportunities. For residents in many cities in the global South, accessing urban services is a daily struggle, even for middle- and upper-income residents (Venter et al., 2019). For instance, in Addis Ababa, Ethiopia, the average distance between formal housing and primary job centres is more than 10 km (Antos et al., 2016). Ensuring new developments are well connected in the city is necessary to avoid the extra cost of building new infrastructure, while also improving access to the benefits that new developments bring. Efforts to strengthen public infrastructure and services around the development area may also be required to minimise the risk of excluding and pricing-out lower-income residents.

There is also a need to facilitate built-up area densities that are both liveable and affordable to deliver compact growth. 'Affordable living space' represents different characteristics at different levels of income. While providing a range of housing choices, the CRE sector can support cities in ensuring more efficient use of land by utilising vacant land in well-located, well-serviced areas and investing in more compact growth. It must also be balanced with space available for employment and commerce in mixed-use developments, so that residents have employment opportunities and can meet their daily needs locally.

CRE projects can minimise the risk of displacement of low-income residents by including them in decision-making processes, complying with local plans and regulations, and investing in lower-cost housing in the area. These measures involve close coordination and alignment between developers, community members and the city government (Amirtahmasebi et al., 2016). Appropriately designed housing policy frameworks that incentivise private developers to build affordable and lower-cost housing can support CRE investments in achieving higher development impact. These should be based not only on quantitative targets, but also crucial qualitative components such as the quality of housing units and the level of connectivity to core services and employment hubs (King et al., 2017).

Economic and social inclusion

When new CRE developments are well located in a city (near both employees and consumers), people can save time spent getting to these developments, increasing the overall productivity and quality of life for city residents. Another way in which CRE investments can enhance their social and economic impact is to take into account the location and needs of informal settlements and informal workers. The share of informal workers in the workforce is rising in many cities and represents an extremely important yet largely untapped market (Chen & Beard, 2018). Informal settlements are also expanding in many cities, and tend to provide a poor quality of life for large proportions of the population who are often excluded from decision-making processes and urban planning (Mahendra & Seto, 2019).

Much of the evidence shows that formal sector real estate development across Asia and Africa has focused on the high-end market, especially in the case of property-led regeneration of urban areas. This can be attributed to a combination of formal and informal incentives and constraints (Goodfellow, 2017). The high-end segment of the market is often perceived as the 'safest bet' in terms of return on investment, even if demand is limited (Goodfellow, 2017). Speculative construction may lead to high gains in land values for developers and landowners in contexts where these gains face limited taxation. But the lower affordability of such properties can lead to a landscape of unfinished and under-used higher-end developments. This is evident in the many unfinished housing projects in Addis Ababa that, if finished, may still be too expensive to meet the needs of the fast-growing urban population (Gardner, 2017).

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Safer and healthier cities

CRE investments can have a huge influence on public health, safety, and security. Construction activities themselves can produce unhealthy levels of dust and particulate matter that is dangerous for humans to breathe (Norulaini Nik Ab Rahman & Esa, 2014). Emissions from construction activities and the long-term operation of buildings contribute 39 per cent of outdoor air pollution (United Nations Environment and International Energy Agency, 2017). The lack of adequate housing with basic services can also have a huge influence on public health and hygiene – only 22 per cent of households in sub-Saharan Africa and 63 per cent of households in South Asia have access to public piped water (Mitlin et al., 2019). Many healthcare facilities and schools also lack this kind of connectivity, which hinders a city's ability to fight infectious diseases and keep its residents healthy (Kapologwe et al., 2020; United Nations Children's Fund (UNICEF) and World Health Organisation (WHO), 2018).

An important (but potentially less obvious) opportunity for the CRE sector is related to improving safety and security. Adequate housing, for example, can elevate the safety and quality of life of those who live there, their communities, and the city as a whole. Developments designed and built at the human scale by incorporating safe street infrastructure for the most vulnerable road users, such as pedestrians and cyclists, can also increase safety and wellbeing throughout the area being developed (Gwilliam, 2003).

2.3 Environmental sustainability

Climate resilience and resource protection

Buildings must adapt to current climate conditions as well as future climate risks.

To maximise long-term impact in the CRE sector, buildings must adapt to current climate conditions as well as future climate risks. Conducting a physical climate risk assessment can help CRE sector projects avoid the various risks to impact that climate change poses, and can ensure there is positive financial return on the building by minimising both physical risk and transition risk (for instance, if building regulations change in the future). The Taskforce on Climate-related Financial Disclosures (TCFD) is now considered the international framework for businesses and financial institutions for integrating climate-related risks and opportunities into management systems.

At the city level, as cities become more vulnerable to extreme climate events, human health and productivity suffers, as does urban infrastructure like rail lines, bridges, and the electrical grid (Chu et al., 2019). Coastal flooding is an increasing problem for Africa and South Asia, especially. Ten countries account for 84 per cent of the population that will be newly-exposed to coastal flooding by 2030, due to climate change, sinking land, and socioeconomic growth. Five of those countries are in South Asia and Africa: Bangladesh; India; Myanmar; Nigeria; and Egypt (Chertock & Hough, 2020). This threatens both physical structures as well as the services and infrastructure that serves these structures. Water stress is also an increasingly serious threat to cities across Africa and South Asia, as climate change leads to less precipitation in dry months. The worst drought in 35 years hit sub-Saharan Africa in 2018, leaving 30 million people at risk of severe water stress and food shortages (Wijnen et al., 2018). CRE projects must take this into consideration by designing water-efficient buildings that do not worsen stress on water resources.

When construction of a built-up area is rapid and unplanned, it poses heavy burdens on environmental resources and often reduces a city's climate resilience. Some of the fastest-developing areas are in low-elevation coastal zones and face limited water availability – creating immense vulnerability to climate change (Seto et al., 2012; McDonald et al., 2014). Construction on urban flood plains and water bodies is known to cause disastrous flooding from seasonal monsoon rains in many cities of South Asia. Rapid growth in urban land cover is also occurring in biodiversity hotspots, such as wetlands and mangroves (Seto et al., 2012).

New construction often requires the removal or significant reshaping of land, which can lead to soil erosion and land degradation (Norulaini Nik Ab Rahman & Esa, 2014). Construction can also damage flora and fauna in the site area, contribute to water pollution and toxic runoff, and pollute the air with emissions from burning waste and operating construction equipment, as well as creating toxic dust from digging and grading (Norulaini Nik Ab Rahman & Esa, 2014). Following the IFC's Performance Standards on Environmental and Social Sustainability can help to avoid harmful land degradation (IFC, 2012).

Emissions reduction

Reducing CRE-related emissions requires thinking through the entire lifecycle of building, including the location of the development site as well as the embodied carbon emissions in building materials and construction. Land development patterns locked in through CRE sector projects are often difficult to reverse and significantly affect the consumption of resources such as land, energy and water. For example, many CRE projects require significant amounts of land and developers are often attracted to less expensive land on the periphery of the city (Mahendra & Seto, 2019). For employees working in these developments, the peripheral location can lead to longer commute times, which is connected to higher congestion and air pollution for the city overall, along with higher greenhouse gas (GHG) emissions and lost productivity. Worsening urban heat effects have also been linked to sprawled growth (Huang et al., 2019).

Reducing CRE-related emissions requires thinking through the entire lifecycle of building, including the location of the development site as well as the embodied carbon emissions in building materials and construction.

Developments located on the periphery of a city, or in an area not served by public transport, can contribute significantly to carbon emissions. Policies such as trip reduction ordinances enforced by the city, which require companies to implement workplace travel plans, can help to reduce congestion and emissions from employees commuting to new CRE developments (Petzhold, 2019).

Mixed use and centrally located community retail, connected through safe walk and bike infrastructure along with public transport services, can reduce the negative environmental impacts of retail developments. This is also the case with mixed use office spaces and industrial parks. By developing mixed use real estate, connectivity is improved between residents and the services and opportunities they need to access. This cuts down on costly and unsustainable vehicle trips – and the road infrastructure required – provides community space for recreation and cultural interaction, stimulates the local economy and can help prevent urban sprawl (Zamorano & Kulpa, 2016).

Building and energy efficiency

CRE sector investments in cities determine urban form and can lock-in environmental performance for years to come. To keep global warming below 1.5 degrees Celsius (as laid out in the Paris Agreement), residential and commercial buildings must reduce their carbon intensity (measured as kgCO2/m^2) by 95-100 per cent by 2050 (Lebling et al., 2020). This implies that buildings would have to operate at net zero carbon emissions by mid-century to avoid the worst effects of climate change, aligning with the global net zero by 2050 target that says, on average, all carbon emissions must be net zero to stay within the 1.5 degree Celsius global temperature rise (Levin & Davis, 2019).

Investing in energy efficient building materials and systems represents a significant opportunity to decarbonise buildings. Manufacturing construction materials such as steel and cement, accounts for roughly 11 per cent of global carbon emissions (Wang & Hao, 2020). Between now and 2050, embodied carbon will make up close to half of all emissions related to new construction projects (Architecture2030, 2020). Residential buildings currently account for close to 11 per cent of global emissions and commercial buildings account for more than 6 per cent of global emissions (Ge & Friedrich, 2020). Given the rapid growth of the CRE sector in Africa and South Asia (close to 70 per cent of buildings that will exist in India in 2030 have yet to be built), much can be done to ensure that the buildings being constructed are as resource and energy efficient as possible (TNN, 2012).

Investing in energy and water efficient systems can reduce the carbon footprint of new CRE developments. The energy demand for air conditioning will grow in those regions where climate change leads to heat waves and hotter seasons. Energy efficiency measures, such as insulating windows, installing efficient heating and cooling systems, and using energy efficient lighting, will prove crucial in meeting energy demand and lowering emissions. ITC Hotels in India, for example, draws more than 50 per cent of its electricity from renewable sources, and it treats and recycles enough water to irrigate 65,000 trees annually (O'Neill, 2014). So far, however, demand for cooling has negated many improvements in energy intensity in buildings, which continues to grow faster than accompanying floor area expansion in buildings (GlobalABC, IEA, UNEP, 2019). Investing in low-carbon cooling, especially in sub-sectors such as housing, healthcare and schools, will prove essential for cutting emissions and reducing deaths from heat stress (Lundgren-Kownacki et al., 2018).

The IFC estimates there is a $768 billion investment opportunity in green buildings in Africa (IFC, 2019). Sustainable building certifications like EDGE, GRIHA (the Green Rating for Integrated Habitat Assessment, which is specific to India), LEED, and Greenstar Africa have incentivised energy and resource efficient building practices across the CRE sector. EDGE (which was developed by the IFC), requires buildings perform at least 20 per cent better on energy, water and embodied materials usage than the baseline standard in that country (IFC 2019). Aside from lowering emissions, 'building green' can also lead to long-term cost savings and health benefits. Globally, green office buildings have been proven to lower operating costs, increase tenancy rates, contribute to companies' low-carbon strategies, as well as improving the health and wellbeing of employees (IFC, 2019).

03

Mapping the evidence by CRE sub-sector

The following sections provide an in-depth look at the evidence of development impact across nine sub-sectors, organised by social and then business infrastructure. The authors reviewed more than 170 papers and drew evidence from a total of 85 articles that spoke specifically to the impact of each of these sub-sectors.

Some CRE sub-sectors have been more thoroughly studied than others and more evidence exists for some geographies, mainly those with more developed markets like South Africa, or those with a large proportion of CRE sector investment, such as India. Most of the literature reviewed contained relevant information about the potential positive and negative development impacts, although few quantitative impact analyses were publicly available. Overall, industrial and logistics parks, hotels, housing, and urban regeneration had the highest number of relevant sources describing evidence of impacts. The summary graphics below show how the evidence for each CRE sub-sector maps onto the impact framework. These are visual representations of our findings and are not based on a quantitative calculation. High impact signifies there was more relevant evidence found speaking to positive impact in terms of economic opportunity, inclusive urbanisation, and environmental sustainability, and less evidence on the negative impact.

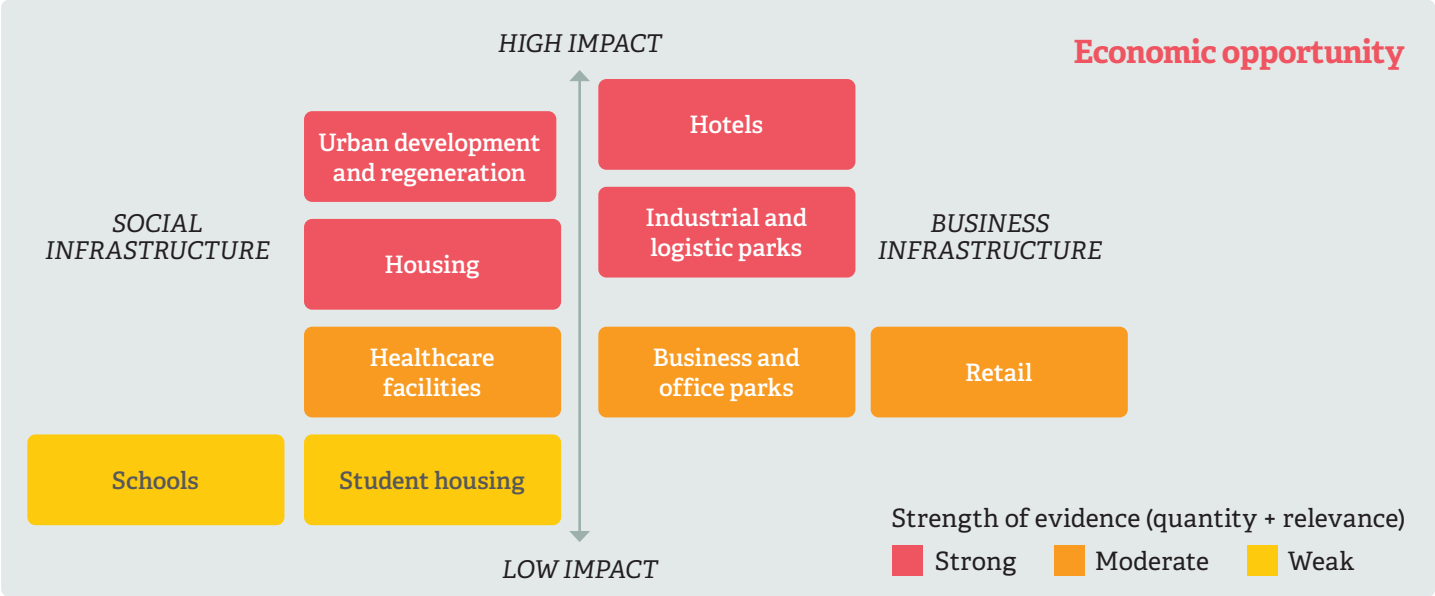

Figure 2. Summary of strength of evidence of economic opportunity

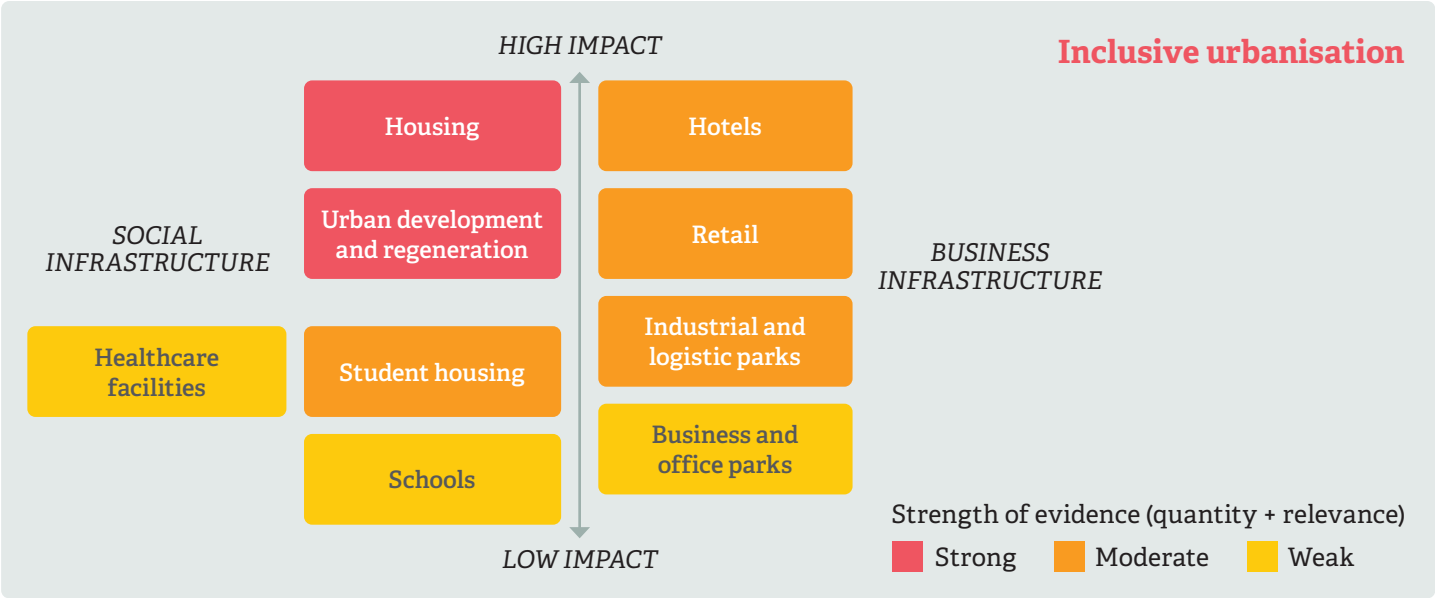

Figure 3. Summary of strength of evidence of inclusive urbanisation

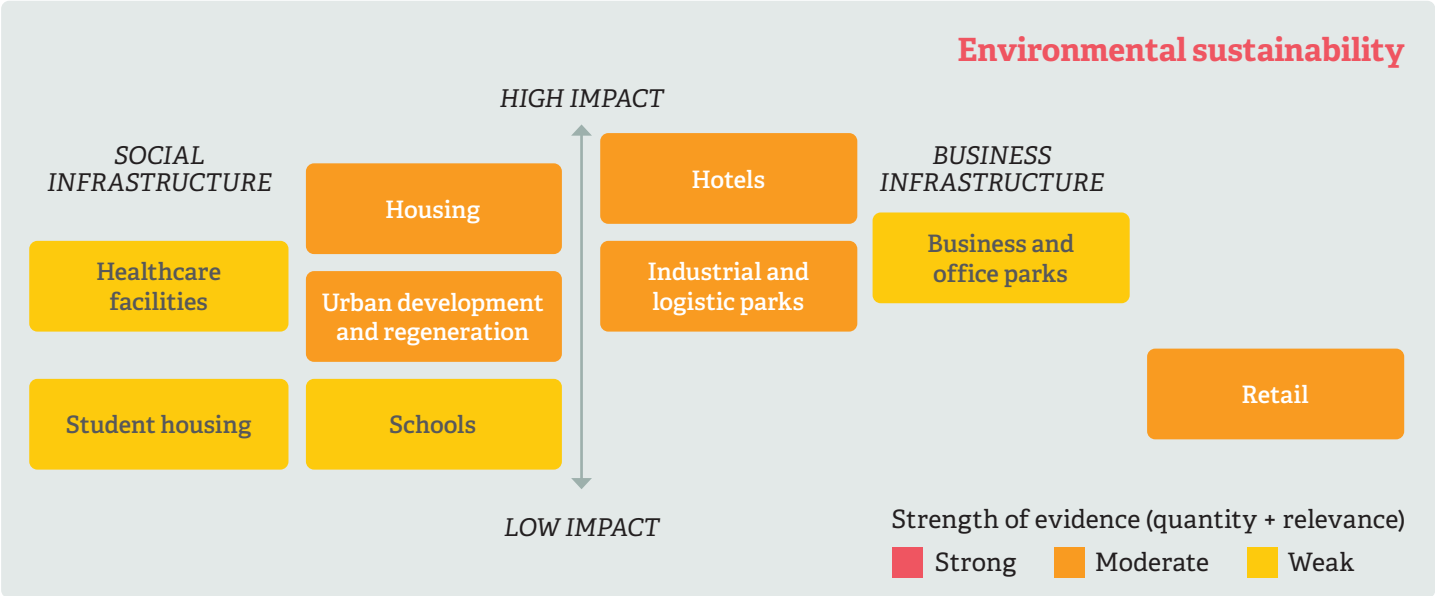

Figure 4. Summary of strength of evidence of environmental sustainability

3.1 Social infrastructure

3.1.1 Housing

Investing in housing is aligned with multiple Sustainable Development Goals (SDGs), such as alleviating poverty (SDG 1), health and well-being (SDG 3), economic growth (SDG 8), reducing inequalities (SDG 10), sustainable cities and communities (SDG 11) and climate action (SDG 13). Quality housing provides both physical and financial security, creates a healthy living environment and enables people to seek more productive work opportunities (Scott, 2012; Hoek-Smit, 2009).

The provision of adequate housing for under-served households can improve living conditions and tenure security for low-income people. It can also improve quality of life and health of future generations and the city at large, and foster inclusion and provide social protections for vulnerable groups (King et al., 2017). However, large proportions of people in urban areas of South Asia and Africa lack adequate and affordable housing. For instance, in Nairobi, 70 per cent of the city's population currently resides in informal settlements where basic services such as electricity and clean water are not guaranteed (Mwau et al., 2020) and a reported 50-53 per cent of the population in Mumbai, India's largest city, are slum dwellers (Koppikar, 2018).

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Housing provides ample opportunity to increase local economic activity through job creation, new income creation from residents and construction workers, and increased taxes and other revenues for local governments (CAHF, 2019). The production of goods and services related to building and selling homes stimulates multiple sectors of the economy (Gardner & Lockwood, 2019). In sub-Saharan Africa, the World Bank finds that housing construction can create up to five jobs per housing unit built, indicating that a well-functioning housing market can support increased economic opportunities at scale (World Bank Group, 2015). The housing sector provides not only shelter, but a base from which people can participate in the economy. It represents one of the largest assets a household will possess and, therefore, a significant part of a country's stock of wealth.

Investments in housing in the 'gap market' can improve access to housing for millions. In the African context, people in the gap market – those who do not qualify for government subsidies or free housing, but who cannot afford a newly-built house available on the market – are often underserved and struggle to find adequate and affordable housing. The gap market varies greatly between countries, and even cities, and expectations of homeowners and renters often depend on local political, economic and social factors. Efforts must be made to fully understand the local context – from economic to cultural realities – before investing in gap market housing, so that the needs of low-to-middle income residents are met (Rust, 2020). The Centre for Affordable Housing Finance Africa argues that the lower income segment of the gap market should be targeted by investors and developers, as it provides an opportunity to scale faster due to all of the effects of rapid urbanisation, such as a growing middle class and a shortage of affordable housing units (CAHF, 2015).

Building housing to green building standards can help cut emissions and save energy costs for residents. Energy use for heat and electricity in residential buildings accounts for nearly 11 per cent of global emissions (Ge & Friedrich, 2020). In India, using efficient building materials in the construction of residential buildings could lead to a 50 per cent reduction in GHG emissions in the material lifecycle of buildings (IRP, 2020). IFC investments in green homes in South Africa saw utility cost savings equal to one month's rent for tenants (IFC, 2019).

Investments in housing in the 'gap market' can improve access to housing for millions.

Investments in formal urban housing can also strengthen the climate resilience of vulnerable people and communities. When Cyclone Idai struck the coastal city of Beira, Mozambique in 2019, nearly 90 per cent of homes were destroyed. Notably, an affordable housing development built by Casa Real – a social enterprise that invests in affordable housing in Africa and Asia – suffered little damage. The Casa Real homes were not necessarily built to withstand a strong hurricane, but by meeting minimum building standards, designing homes with good ventilation, and using high-quality building materials, the community was much more resilient in the face of an extreme climate event than others. In a

city like Beira that is facing multiple challenges at once – a growing population, high levels of informality (nearly 70 per cent of the population currently live in informal housing), increasing climate risks, and low quantity of quality housing stock – improving access to formal, secure, and affordable housing is a necessary first step to improving the health, safety, and climate resilience of its urban population (Nkhonjera, 2020).

The availability of lower cost and quality housing is currently lacking in many cities across Africa and South Asia. Although exact numbers on the global housing gap vary, an estimated 330 million urban households globally either currently reside in low-quality housing or are struggling to cover costs of housing that exceed 30 per cent of their income (McKinsey Global Institute, 2017). The consequences of this are not only seen on a human and social level, but if the gap between supply and demand is not eventually met, it may constrain economic growth as a result of insufficient labour availability. Because low-income families generally spend more on housing than other expenses, the housing market has a huge impact on wealth inequality in a city. Those who own homes may benefit from rising housing prices, while low-income residents may be entirely prevented from living in quality homes.

Some responses to housing shortages have been controversial. For example, backyard rental housing in South Africa has played an important role in providing housing for low-income people, while helping them access jobs and transportation networks, yet is sometimes perceived as further exacerbating insufficient service provision. This sector still lacks government support and regulation, however, leaving most of the market to function informally with little protection or oversight for renters (Scheba & Turuk, 2020).

The housing sector in many African and South Asian cities is fragmented and informal by nature, which makes it difficult for investors in the formal sector to achieve impact at scale. While much of the literature focuses on the informal market segment, such as slums and slum upgrading, we find that different actors (from government and private sector) are involved in providing housing across the informal-to-formal continuum, with different levels of impact on low-income residents. In the informal sector, micro and small private developers often act as housing providers, but struggle to achieve scale due to capacity, funding and governance constraints.

To fully realise the benefits of housing investments, housing sites need to be adequately connected to core services such as transport, water, sanitation and energy. Whether or not housing is well-connected to infrastructure and services has a huge impact on overall affordability (Bah et al., 2018). Lacking connection to core urban services also hurts the environmental health of a city. Environmental degradation from unmanaged waste, poor sanitation and inefficient cooking and heating methods is often a result of low-quality housing that is disconnected from basic services and infrastructure (King et al., 2017). Housing that is located on the periphery of the city – and is not well-connected to public transport networks – can also lead to more emissions from long commutes in private vehicles, and can decrease access to jobs and opportunities, especially for women (Venter et al., 2019; Mahendra & Seto, 2019). Ensuring that housing is centrally located and well-connected to public infrastructure and services can lead to city-wide environmental sustainability outcomes, improve access to services and can avoid costly self-provisioning of services, such as private boreholes for water and diesel generators for energy access (Shah & Ruparel, 2019).

Throughout the literature, an important emphasis is put on the potential for rental housing to bridge the housing gap (King et al., 2017). Homeownership is not an option for much of the urban poor population in Africa and South Asia, as these communities often lack the documentation needed to qualify for mortgages (if they are available), or to access subsidies, which typically are insufficient given the needs. Rental housing delivers benefits to residents and communities by providing decent housing connected to core services, and by potentially opening the door to eventual homeownership. It also caters to informal, migrant, and low-income workers who require flexible housing options, improving and supporting crucial flexible labour markets (Pieterse et

Case Study 1: Kotak India Affordable Housing Fund

The Kotak India Affordable Housing Fund (KIAHF) is the first niche fund focused on affordable housing in less developed states in India. CDC has committed $46 million in investment to the fund.

KIAHF will play a catalytic role in promoting commercial investment in low-cost residential real estate in underserved Indian states. It will help to meet the demand for housing and create construction employment and supply chain jobs. In addition, CDC's engagement with KAIHF has supported the adoption of higher environment and social (E&S) standards and systems.

al., 2011). Renting also allows households to use their savings to focus on different priorities, such as education or health (Gilbert, 2019). In South Africa, the rental housing market also provides opportunities for access to employment and economic opportunities for a growing black middle class, many of whom are young, white collar workers who do not plan to stay in one place for very long (Scheba et al., 2020).

3.1.2 Urban development and regeneration

Urban development and regeneration can be conceptualised as the process of bringing new life to areas that have been in decline or decay due to a wide range of factors, including changes in growth and productivity patterns. Urban regeneration projects can increase economic growth and job opportunities, and improve access to core urban services (Amirtahmasebi et al., 2016).

Urban development and regeneration projects can also drive inclusive urbanisation if community members are engaged before and during construction. In Karachi, Pakistan, for example, a World Bank-led neighbourhood improvement effort used a strategic project framework to select investments based on community engagement and participation in three neighbourhoods of the city, bringing positive preliminary results. Investments are being used to enhance or build public spaces in underserved neighbourhoods and generally improve accessibility and mobility, especially for more vulnerable road users. The work has focused on encouraging inclusive participation in decision-making at the city level, by engaging almost 700 residents in town halls and consultations during the project's implementation. A 2020 project report shows that these efforts have helped to showcase the benefits of "localised placemaking for social and economic inclusion" as a complement to large-scale infrastructure projects (World Bank Group, 2020).

Certain models of urban development, such as Transit-Oriented Development (TOD), can lead to more densely populated communities, which can improve environmental sustainability and access to jobs and opportunities. TOD is a strategy that aims to combine high or moderate density housing with complimentary public uses, jobs, retail and services in close proximity to transit (Calthorpe, 1993). Potential benefits of TOD include enhanced economic opportunities and transport options, reduced congestion, creation of open public spaces and 'complete streets' that are safe for all road users, and provision of community facilities (Cervero & Sullivan, 2011; Salat & Ollivier, 2017). TOD has the potential to optimise land use and transportation linkages, although potential negative impacts such as displacement due to rising property values and increased income inequalities remain (Lane, 2017 and WRI & World Bank Group, 2018). Applying IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement can help to avoid these negative impacts (IFC. 2012). TOD accompanied with inclusionary zoning policies that allocate land for affordable housing in transit corridors can also reduce displacement. For example, in Johannesburg, as part of the city's Corridors of Freedom project, the city has given incentives to private developers to build affordable housing in the new Bus Rapid Transit (BRT) corridors (Pieterse & Owens, 2018).

Certain models of urban development, such as Transit-Oriented Development (TOD), can lead to more densely populated communities, which can improve environmental sustainability and access to jobs and opportunities.

Regeneration strategies used by cities, such as the widespread use of Floor Area Ratio (FAR) incentives, can have mixed results. FAR is a zoning and land value capture tool that describes the ratio of a building's total floor area to the size of the parcel of land on which it is developed. FAR incentives are designed to attract private CRE investment and promote the creation of high-density, mixed-used neighbourhoods. When FAR incentives for private developers are offered in public transit corridors, they enable TOD and increase access to transit. While this generally leads to positive economic and inclusive urbanisation outcomes, it can negatively impact housing affordability. For example, in Mumbai, after efforts to regenerate the city centre through the use of FAR incentives attracted private developers to build dense, mixed-use development, the costs of housing increased to the point that it became too expensive for upper-middle class residents to enter the market for a home; the overall urban fabric and character of the city also suffered following redevelopment (Shenvi & Slangen, 2018).

Redevelopment may also exacerbate socio-economic inequalities through processes of social exclusion and displacement. For example, this occurred in Lideta, the third smallest sub city in Addis Ababa, Ethiopia. This area was one of the first places selected for redevelopment under the City Structure Plan to create a mixed-use development project that would generate affordable housing and space for retail and recreation. Evidence shows that displacement, both from the physical movement of residents during construction and from the resulting unaffordability of the new apartments, has negatively impacted original residents. Most of the population previously living in government-sponsored housing was relocated and not able to return to the high-rise condominiums due to significantly higher rental costs (Mahendra et al., 2020).

Common challenges of unaffordability, displacement and worsened inequalities emerged in much of the literature on urban regeneration. For example, in a handful of neighbourhoods in Brazil and South Africa, research analysing patterns of income and access to services following interventions, such as improved sanitation and the construction of more permanent housing, suggests that increased inequality typically results as improvements are initially implemented (Brelsforda et al., 2017).

3.1.3 Student housing

In much of Africa and South Asia there is a structural undersupply of adequate student housing. Where it is available, accommodation typically provided by universities often comes in the form of relatively low-quality hostel-style housing units (Cushman & Wakefield, 2020). Although affordable in some cases, these can have a negative impact on students' safety, quality of life and learning outcomes. The size of the student housing need is significant. For example, in sub-Saharan Africa, demand for new purpose-built student housing was expected to exceed 500,000 beds from 2016 to 2021 (Jones Lang LaSalle, 2016).

Student housing that is located close to a university campus can improve productivity for students, by cutting down on commute times, potentially leading to the co-benefit of reduced emissions from shorter commutes (CBRE, 2019). A 2011 review of the provision of student housing in South Africa notes that although the private sector could play an important role in bridging the gap between supply and demand of student housing, in order for positive impacts to be realised it must also be accompanied by adequate regulation to ensure housing is affordable (Department of Higher Education and Training, 2011). Understanding the needs of students when developing student accommodation is important, including how much importance different types of students (namely undergraduates or postgraduates) might put on location, affordability, security and safety, and quality.

Displacement of residents may arise as another challenge to achieving positive impact with student housing. A study in South Africa analysed two neighbourhoods that were being transformed into student housing hubs, finding that the trend of redeveloping single-family homes for student accommodation has caused original residents to be displaced (Donaldson et al., 2014).

3.1.4 Healthcare facilities

Expanding access to healthcare facilities is crucial to improving health outcomes, which is connected to economic growth. In sub-Saharan Africa and South Asia, the number of accessible hospital beds is very low, especially given the high rate of infectious and preventable diseases in these regions. In sub-Saharan Africa there are 1.2 beds per 1,000 people, while in South Asia there are only 0.7 beds per 1,000 people (WHO, 2020). Across 48 sub-Saharan African countries, 29 per cent of the total population live more than two hours from the nearest hospital (Ouma et al., 2018). Improving access to quality healthcare facilities, and therefore healthcare services, can contribute to positive economic outcomes. Heathy people are generally more productive, and according to the Organisation for Economic Co-operation and Development (OECD), a 10 per cent increase in life expectancy is associated with a 0.3–0.4 per cent rise in a country's economic growth (Frenk, 2004). The WHO estimates that in Africa 3.1 million healthcare workers will be added to the field by 2030, but that there will still be a needs-based shortage of 6.1 million healthcare workers in 2030

(Cometto et al., 2017). Investments in the healthcare field, including in the construction of healthcare facilities, will be critical to both providing a workplace for the growing pool of healthcare workers and meeting the growing demand for healthcare provision in Africa.

Investments in the healthcare sector can contribute to economic gains across non-healthcare sectors. Healthcare facilities and the services delivered through them involve a broad range of sectors, including IT, pharmaceutical, sanitation, administration, transportation, retail, wholesale and research. It is estimated that for low-income countries, an investment in one healthcare worker leads to the creation of 3.4 non-healthcare jobs in the wider economy (Scheil-Adlung & Nove, 2017).

Investments in the healthcare sector can contribute to economic gains across non-healthcare sectors.

An estimated $25 to $35 billion in new investments will be needed to meet Africa's healthcare demand. Areas for investment include the provision of additional hospital beds and improvements to production facilities and distribution systems for pharmaceutical and medical supplies. Investments in emergency and prehospital healthcare facilities could address more than half of all fatalities in low- and middle-income countries (Marsh & Rouhani, 2018). Collaboration between the public and private sectors is necessary to improve regulatory oversight of privately provided health care and improve the overall sustainability of the system (IFC, 2020).

Facilities not connected to supporting infrastructure can lead to sub-optimal development outcomes (Mavalankar et al., 2005). For example, a study conducted in Tanzania found that a well-functioning healthcare system in the country depends on public healthcare facilities being connected to wider infrastructure development (Kapologwe et al., 2020). Building healthcare facilities close to transport networks can also cut down on emissions associated with longer commute times.

3.1.5 Schools

School planning and location is an important factor determining development impact, especially for lower-income communities, with educational outcomes declining with increasing distance from schools (Theunynck, 2009). For example, in Mali, when primary schools are located less than 1 km away, the probability of enrolment for boys is 32 per cent higher than if the school was further than 15 km away (Estache, 2006). The impact on girls is even more pronounced, as many girls in Africa and South Asia face higher cultural barriers and safety risks in travelling to school than their male counterparts. In addition to transport accessibility, connectivity to drinking water, sanitation and hygiene in schools is also crucial to improving access and quality of education centres (UNICEF & WHO, 2018).

Research looking into whether building more schools improves access and levels of education provides mixed evidence. For example, in Indonesia a large-scale initiative of school building led to an average increase of 0.12 to 0.19 years of education per school per 1,000 children, along with increases in wages of 1.5 to 2.7 per cent (Duflo, 2001). It is less clear whether investments in the construction of schools have a long-term impact on access to education or education levels in Africa and South Asia specifically.

Some studies show that encouraging more demand for schools, by promoting teaching and classroom processes, is more effective than increasing supply through faster rates of construction. One study refers to this as a "software" approach as opposed to the "hardware" approach of building more schools (Orazem et al., 2008). This approach may also be more cost-effective in certain situations.

Some argue that the focus on enrolment has been too narrow and hasn't taken into account measurements of education quality. This requires more than an expansion of educational facilities, such as capacity building, knowledge transfer and technical cooperation (Bircher & Michaelowa, 2016; Riddel & Niño-Zarazúa, 2016). While arguing that the construction of new schools does lead to significantly improved access to education – along with reduction of an array of physical, financial, and social barriers – the Independent Evaluation Group (a unit of the World Bank) acknowledges that it should be coupled with strategies to improve learning outcomes (Independent Evaluation Group, 2006).

3.2 Business infrastructure

3.2.1 Hotels

Evidence shows that investments in hotels can generate positive development impacts. The majority of the literature focused on the higher-end market, however lessons can still be drawn, as all hotels have in common key needs that impact the people and the environment, such as hiring staff, sourcing food, consuming energy and resources, and connecting travellers to local destinations.

In transitioning economies, hotels are often among the first private sector investments – and can send positive signals to other investors interested in the area (IFC, 2016). Hotel development can also have 'trickle-down' effects to low-income groups (Duffy et al., 2016).

Hotels sit at the centre of the tourism and hospitality industries, and transect multiple value chains and sectors (both formal and informal) and, with the right enabling conditions in place, can boost local economies and promote inclusive urbanisation. In India, the hospitality industry currently employs nearly 9 per cent of the country's workforce (Kumar, 2018).

By hiring locally and working with local vendors, hotels can generate a significant number of direct, indirect, and induced jobs from the construction of the hotel through its sustained operation (Mitchell & Li, 2017). Besides the staff working in the hotel, people employed by outside vendors that service the hotel (such as construction workers building the hotel, or maintenance staff working on the upkeep of the finished hotel), and local shopkeepers and informal sellers selling goods and services to hotel guests, all benefit from its construction. The Serena Hotel in Kigali, Rwanda, for instance, has generated an estimated $64 million in the local economy and created 1,100 local jobs (ODI, 2012). Many of these jobs go to semi-skilled urban workers and women – more than 60 per cent of jobs in the hospitality industry in Africa are held by women (Twining-Ward, 2011). More highly-skilled hotel positions tend to offer greater staff mobility, but there is evidence that higher management positions often go to foreign workers (Davidson & Sahli, 2015). Developers and investors should attempt to reverse this trend and hire management locally, or develop training programmes to increase professional development opportunities for local workers.

Hotels can increase their impact on the local economy by developing and strengthening supply chain linkages, rather than importing goods or workers from other countries. Hotels can provide stable demand for informal workers, either by directly purchasing their goods and services (such as local fruit and vegetables) or by providing a steady stream of customers to local outside vendors. It is estimated that 25-50 per cent of tourist spending in restaurants and on local transport and shopping reaches the poor (ODI, 2006). Hotels in rural areas can have an especially large impact on the local economy by providing employment and training to rural workers, and providing a market for artists and craftsmen to sell their goods (DMG Consulting). One ODI report focused on tourism's role in reducing poverty in Africa finds that many jobs in tourism, including hotel work, is more labour-intensive than other non-agricultural industries (ODI, 2006).

The construction and long-term operation of hotels is resource and energy intensive, and requires deliberate action to reduce the carbon footprint over the entire lifecycle of the hotel in order to achieve environmental sustainability outcomes. Investments in sustainable building practices (for example, using recycled materials or renovating existing structures) and following guidance set out by certifications like IFC EDGE and energy-efficient building systems can help to offset some of the negative environmental impacts of hotel construction. Because hotels operate 24/7 and are generally large-scale operations, they provide some of the best opportunities for implementing energy-efficient systems and retro-fits that deliver both emissions reduction and cost savings for building operators.

By hiring locally and working with local vendors, hotels can generate a significant number of direct, indirect, and induced jobs from the construction of the hotel through its sustained operation.

Case Study 2: ONOMO Hotels

CDC invested $54 million in ONOMO Hotels, one of the largest budget hotel operators in sub-Saharan Africa, to address the shortage of business enabling infrastructure across the continent. Our goal is to scale-up an integrated budget hotel platform into a portfolio of modern hotel assets across cities in Africa.

Our investment in ONOMO has supported high quality job creation in some of the world's most challenging countries – Mali, Togo, Guinea, Cameroon and Cote D'Ivoire – with spill-over benefits for local suppliers who supply goods and services to the hotels. We have supported ONOMO to reduce energy and water use, and to ensure new hotels are built using green design and construction principles.

3.2.2 Industrial and logistics parks

There is ample evidence that investments in industrial and logistics parks in Africa and South Asia have the potential to drive sustainable development by creating jobs, building skills and improving efficiencies in the storage and transportation of goods. For one, the growth of logistics and industrial parks complements and supports the growth of other industries, driving economic productivity across the board. In addition, when accompanied by infrastructure support from the government, investments in industrial parks can drive additional investor interest in the area, which can help to boost the local economy (Saleman & Jordan, 2014). Africa's online retail sector, for example, is still in its nascent phase but is growing at a fast rate with the proliferation of mobile phone usage across the continent and a growing middle class (Hattingh et al., 2017; Knight Frank, 2016). The expansion of the online retail sector will drive the need for more robust logistics networks across the continent, presenting an opportunity for job creation in the construction and operation of logistics parks. Given the recent passage of the African Continental Free Trade Area, which goes into effect 1 January 2021, there may also be an uptick in demand for new warehousing and logistics parks, as trade between African countries increases (Ighobor, 2020).

The issue of land is central to determining whether investments in industrial and logistics parks have a positive or negative impact in the cities they serve. Logistics activities generally require a significant amount of land area and solid transportation infrastructure to facilitate the movement of goods. This can create tension between the need for space and inexpensive land generally found away from urban areas, and the need to have easy, efficient access to consumers in high density areas. This tension is evident in both South Asia and Africa, where poor transportation networks and fragmentation between logistics hubs hinder the industry's ability to deliver sustainable development outcomes. In India, for instance, logistics costs are much higher than those in more developed countries, due to the lack of efficient transportation systems that service warehouses across the country (Knight Frank, 2019).

In many cities across Africa and South Asia, industrial developments are located on the periphery of urban areas which often exacerbates unmanaged urban expansion. This can lead to distorted land markets, inadequate service delivery and informal developments that are disconnected from formal services and systems (Mahendra & Seto, 2019). In some cases, the government will designate peripheral land as a special economic zone (SEZ), to attract investments in the area. These zones can promote economic growth, but the preference that these zones give to private development often leaves behind or pushes out vulnerable people living on the periphery (Levien, 2012). Much of the land in India that is available for industrial development is currently in the hands of smallholding farmers, many of whom face dispossession of their land when industrial developers move in (Goldman, 2010). For those who remain and are able to find jobs in new industrial clusters, housing and services in the areas are often inadequate. In Dhaka, Bangladesh, for example, industrial clusters on the periphery of the city have created jobs for millions of poor workers, but the growth on the periphery of the city has been largely unplanned and spontaneous in nature, with services such as piped water, sanitation systems, proper drainage, health facilities, and schools utterly lacking (Roy & Maria, 2020). In Ethiopia, the Hawassa Industrial Park has already created 12,600 jobs, but for many of the low-paid workers who fill these jobs, available housing in the area is of poor quality or too expensive to rent (Jego, 2019). Many workers opt to live in other peripheral neighbourhoods away from the industrial park, which adds to people's commute times and increases congestion in the area. In many new development sites, resettlement is inevitable. Investors should take every measure possible to protect smallholding farmers' land tenure or compensate them fairly, minimise displacement, and ensure there is designated affordable housing in the area. Applying the IFC Performance Standards can help to mitigate any potential negative impact on peripheral residents (IFC, 2012).

In general, industrial centres drive up the price of land in the area (Knight Frank, 2019), which can lead to increased revenue for a city's public projects if land value is captured and redistributed for public infrastructure and services

Investments in industrial and logistics parks in Africa and South Asia have the potential to drive sustainable development by creating jobs, building skills and improving efficiencies in the storage and transportation of goods.

Case Study 3: Africa Logistics Properties

In 2017, we made a $25 million equity investment in Africa Logistics Properties (ALP), a warehouse developer focused on East African opportunities. Our investment helped to fund the construction of Kenya's first modern Grade A logistics and distribution park, constructed to IFC's EDGE green building certification. ALP's tenants have benefitted from low unit storage costs, reliable utilities, better access to markets, and reduced inventory losses through theft or damage. ALP is now in a stronger position to access financing for developing new opportunities.

in the area. But without proper regulations in place, as is often the case in SEZs, where the government appropriates land for private development and gives special permissions (for example, related to zoning and taxes) to incentivise investment in the area, the potential for land value capture and redistribution of benefits of logistics parks investments can be lost.

How logistics parks are built will also have a big impact on future environmental sustainability outcomes, as well as the resiliency of various supply chains. For example, investments in cold storage can help to reduce food loss and waste along the value chain, which is especially important in warmer climates (Salin, 2018). As global temperatures rise and populations grow, investments in cold storage will prove essential for protecting the food supply chain. CRE investors in the industrial and logistics parks space should also ensure that new facilities are constructed to be resilient to future climate shocks, by conducting a climate risk assessment to understand the potential physical climate risks to the facility as well as the surrounding area. In India, the logistics industry is becoming more consolidated and organised, driven by a change in the Goods and Services Tax which has enabled easier transport of goods across state boundaries (Sabnavis & Bhalerao, 2018). This consolidation has the potential to achieve improved efficiencies and reduced emissions.

Investments in eco-industrial parks have the potential to deliver positive economic, social and, especially, environmental outcomes. The Association of Lady Entrepreneurs of India (ALEAP), for example, worked with GIZ to raise money for industrial parks for women, one of which is the ALEAP Green Industrial Park in Telangana, India. This industrial park takes extra measures to ensure its factories are run sustainably with wastewater management systems, soil contamination protections, and efficient battery-operated transportation around the park. It is also investing in an on-site health centre, a vocational training centre, and day-care facilities for children. This park will create opportunities for nearly 200 women entrepreneurs and 10,000 local workers (WBG, 2017).

3.2.3 Business and office parks

Business and office parks generate direct, indirect, and induced jobs in the areas surrounding them, and can help to lower emissions intensities if they are well-located and built following green building standards. These investments include large, integrated office townships, central business districts, IT SEZs and some shared and co-working spaces. More literature on the impact of business and office parks exists for South Asia than Africa.

Like industrial and logistics parks, investments in business and office parks can stimulate economic growth and create jobs. Commercial real estate for offices has been in high demand in recent years, especially in India, in part driven by the expansion of technology and other international companies into markets in the global South (Cushman & Wakefield, 2019). A study of the economic impact of office buildings in the US found that for every $1 million spent on office building construction and operations, nearly 20 jobs are created (Fuller, 2016). This could translate into substantial job growth and human capital development in markets in Africa and South Asia, if demand for office buildings continues to rise in these regions. These jobs include direct jobs for those working for the building owners and tenants; indirect jobs for vendors servicing office buildings and tenants; and induced jobs (such as street corner cafés) which are created by payroll spending of people working in office buildings. By attracting outside companies, office parks can also help to diversify the economy, connect regions and facilitate trade, as well as enabling the delivery of a broader range of goods and services in the area.

Like industrial and logistics parks, investments in business and office parks can stimulate economic growth and create jobs.

Positive economic impacts can be weakened, however, where rapidly-inflating land prices price out low-income residents. This is particularly likely where new office parks cater to high-tech sectors like IT, pharmaceuticals, or life sciences. When this occurs, poor residents (many of whom depend on peripheral land for their livelihoods and sustenance) may no longer be able to afford to live on increasingly expensive land, and do not directly benefit from the higher-skilled jobs and opportunities brought by the new business and office parks

(Bhattacharjee, 2019). In the tech-friendly city of Bangalore, India, for instance, land prices increased by 160 per cent between 2001 and 2006 (Goldman, 2010). The potential to capture the increased value of the land around new office parks – and invest it back into public infrastructure and services – requires strong governance mechanisms, regulations, and established land cadastres, many of which are weak or missing in African and South Asian cities.

If not managed properly, new developments can come at a social cost to urban residents, in some cases exacerbating social divisions where public space and lands shrink in size, uses and access (Goldman, 2010). For city governments, building office parks and attracting outside businesses offers the dual prospects of economic growth and local prestige. However, large office parks may push out vulnerable people and exclude them from public spaces and the benefits that new infrastructure investments bring, like new piped water or electricity lines. In Bangalore, projects like the Mysore-Bangalore corridor project have contributed to the 'world-city' vision of development, whereby private sector expansion and international corporate development has been prioritised to help create a high-tech, globalised version of the city. Nonetheless, this project has displaced hundreds of thousands of people living on the rural periphery of the city, and land used for the project was purchased from farmers at a much lower rate than the land's new urban value (Goldman, 2010).

New private sector office developments that are built in areas that lack public infrastructure also run the risk of having to self-provide basic services, which is more expensive overall and can lead to a city divided into pockets of privatised service delivery. This has happened in the city of Gurgaon in India, about 30 minutes outside of Delhi, where the population has swelled by 1,600 per cent over the past 25 years – largely due to the expansion of office and business parks in the area and expensive apartment buildings around them (Dan, 2016). The city still lacks a connected sewage, water and road system, however, and high-end office parks continue to invest in their own privatised service provision that only covers the parcel of land they occupy. This is bad from an equity perspective, as people who are not in these new private development areas still lack access to public services like water and sewage systems, and the city is growing in a fragmented way, one office park at a time.

Disconnected growth can also have harmful environmental impacts. Office parks that push the peripheral boundaries of a city outward can exacerbate unmanaged urban expansion, which is connected to land degradation, inefficient resource use and worsening air pollution (Mahendra & Seto, 2019). Office parks in the periphery can also add to workers' commute times, which contributes to congestion and emissions in the city. Unsustainable building practices and inefficient building operations can add to a building's long-term carbon footprint. These negative environmental impacts can be avoided if new office parks are located in areas that are well-connected to the city's existing infrastructure and workforce, and if developers invest in energy-efficient building systems. By pursuing certifications like LEED, IFC EDGE, and GRIHA (an India-specific certification program), developers of new office parks can not only save on energy and operational costs, but can benefit from brand recognition, leadership and market competitiveness that comes with having a high sustainability rating.

3.2.4 Retail

Retail centres can create jobs, generate public revenue, and provide space for informal vendors to sell goods.

Retail centres can create jobs, generate public revenue, and provide space for informal vendors to sell goods. Literature on the development impacts of retail centres tends to focus on larger malls and shopping centres. Insights for other types of retail centres can still be gleaned from these sources, however, as urban areas are fundamentally shaped by the retail sector, with people depending on both formal and informal space to shop for food, clothing and home essentials.

In both Africa and South Asia, the retail sector is projected to significantly increase in size in the coming years as the middle class grows (Landry & Johnson, 2018; Singhi et al., 2020). Retail construction can benefit people and

communities if investors avoid speculation that drives up land prices and leads to displacement, and if local informal and small-scale retailers are provided a voice in the decision-making process, and given space to continue to sell their goods (Kumar, 2012).

Retail developments create temporary jobs for construction workers, and can facilitate lasting jobs for both formal and informal workers selling goods in retail centres. Investment in the retail sector can help domestic retailers and can drive competition that keeps prices low for consumers (Bhattacharyya, 2012). By supporting multi-brand retailing, investors can also help to develop more efficient and lower-cost supply chains that deliver higher quality and less expensive products to consumers (Mukherjee et al., 2011). It can also support local supply chains by providing a space for vendors to sell and trade goods (ICSC, 2017).

Retail centres can create jobs that are especially well-suited for women, teens and seniors who often require flexible, entry-level job opportunities (ICSC, 2017). There is also the potential for city governments to see an increase in tax revenue from new developments and economic activities associated with shopping centres, which could be reinvested in public programmes and services.

Retail often acts as the cornerstone of a community and can be well-suited for mixed-use developments that allow people to live, work and shop in one convenient area. Retail centres can provide an inclusive place for people to gather and socialise, and can lead to improved quality of life for local residents (ICSC, 2017). Successful retail centres can also attract other infrastructure and developments to the area, improving access to services and opportunities for local people.

A potential challenge with new retail developments is hiring of non-local employees, and the dominance of organised retail which excludes and pushes out informal retailers (Bhattacharyya, 2017). Investors in retail construction should consider the needs of the local community and informal shopkeepers in order to maximise their positive economic impacts (Kumar, 2012). In terms of process, this involves active community engagement to assess the needs of the community, and involving them in development plans to build support and a feeling of co-ownership. It also means potentially designating space for informal vendors to continue to sell their goods. In Bhubaneshwar, India, for example, a successful public-private-community collaborative planning process led to the establishment of 54 vending zones with more than 2,600 fixed kiosks where informal vendors could sell goods. These permanent kiosks were sturdier than carts that vendors would traditionally use, and allowed them to operate more as shopkeepers than illegal roadside vendors (Kumar, 2012).

To contribute to inclusive urbanisation, retail developments must not exclude low-income residents and informal sellers from the area surrounding the development (Bhattacharyya, 2017). Efforts must be made to limit gentrification and excessive price inflation in areas around new retail developments – efforts that can be supported and enforced by strong governance structures and land policy regulations. Investors must also be wary of the type of retailers that will be attracted to the new development – for example, high-end retailers may not cater to the local population and could lead to further exclusion of low-income people. CRE developers and investors interested in the retail space can support these efforts by looking for investment locations with inclusive land policies, and by including provisions for lower-cost housing and dedicated space for informal retailers in their project plans.

In terms of environmental impacts, retail developments face the same challenges with resource-intensive construction practices as other development types covered in this report. In addition, another factor to be aware of is the type of retail that may move into a new space, and whether the goods being sold will promote unsustainable consumption behaviour (Bhattacharyya, 2017). New retail centres that do not consider local transportation hubs and traffic patterns could inadvertently cause an increase in congestion, emissions and traffic accidents. On the positive side, new retail centres can help to improve supply chain and distribution efficiencies by connecting both manufactured and agricultural goods directly with consumers.

04

Private sector focus areas and trade-offs

Understanding the local context is critical for successful project completion and requires intentional effort on the part of CRE developers and investors. To achieve positive development impact, investors must understand the specific barriers to impact that exist in local contexts, and build mitigation and due diligence measures into their investment strategy.

Varying pathways of economic growth mean there are sometimes losers as well as winners in the development process. For example, increasing land values means gentrification can displace people but also – in the presence of effective land value capture mechanisms – can generate additional public revenue that can be used to improve the services provided by a city to all its citizens. Increased formalisation can shake up traditional ways of doing business and displace small business owners, but also – if workers and inputs are sourced locally rather than 'imported' from other areas – can improve working conditions and prospects for the future.

Outlined below are a set of actions and considerations that investors can take to maximise positive impacts of CRE investments in specific areas shown in the CRE sector impact framework (Figure 1) and minimise the likelihood or scale of any potential negative impacts.

Economic opportunity

- Work with local vendors to identify opportunities to increase the proportion of local goods and services used, to ensure the economic benefits from new CRE developments are multiplied and distributed locally.
- Look for the existence of land banks and land value capture mechanisms that generate a supply of well-connected land that results in an increase in public revenue to maximise the positive economic impacts of CRE developments.
- Work with cities and developers to identify underutilised land inside city boundaries for site location and ensure that land being developed is well serviced and well connected to the city.

Inclusive urbanisation

- Avoid displacing and excluding informal and low-income residents. This means ensuring that: housing is affordable for lower-income residents; people who live on land needed for development are fairly compensated for selling their land and, if relocated, are not displaced to peripheral locations further from urban services, opportunities, and social networks; and informal workers and residents are included in decision-making processes when new developments are impacting their land and livelihoods.
- Focus on the lowest end of the formal market to expand the number of people who will find the development affordable.
- Take into consideration the various ways in which a development may help or hurt local safety and security, including investing in street design surrounding a development and considering what safety risks may result from a new development site (for example, whether a building on the periphery will contribute to long, polluting and unsafe commutes for employees).
- Invest in projects that prioritise improved legal and contractual frameworks that support the rights of tenants and landlords, reduce risks and avoid biases against minority groups and women.

Environmental sustainability

- Follow sustainable construction practices that minimise any dust or emissions-related pollution.
- Include open space for greenery and recreation in their development site – spaces that can both help to absorb CO2 emissions and promote mental and physical health of people and communities (Singhal et al., 2013).
- Follow sustainable building codes and invest in renewable energy sources to reach a net zero and resilient sector by 2050, in line with country pathways and plans.
- Design with climate and water risks in mind to bolster the long-term resilience of buildings themselves and the city as a whole.

05

Directions for future research

Given the trend of rapid urbanisation across much of south Asia and sub-Saharan Africa, within the current context of COVID-19 and its resulting economic downturn, the emphasis on the development impacts of the CRE sector is an important one.

Further research should be conducted to better understand the real-world consequences of development decisions in rapidly urbanising regions, especially in second- and third-tier cities. In the future, research should be conducted to not only map the direct impacts of certain investments, but also perform a deeper analysis of the reasons and drivers for those impacts.

Understanding the dynamics of different sectors and sub-sectors is important to guide investment for maximum impact. More research is needed to understand how investments in business infrastructure influence inclusive urbanisation and environmental sustainability, as well as stimulate economic growth. Housing and provision of other social infrastructure is on the agenda of many governments, yet vulnerable lower-income market segments often receive insufficient attention, and thus enabling conditions that can catalyse necessary investments are not undertaken.

Understanding what conditions can incentivise further market development and investment deserves additional attention. In the context of inclusionary housing, it would be useful to explore how government-led incentives may affect the impacts of real estate development, especially how these would play out in areas that are urbanising rapidly amid low income levels. It would be worth examining the extent to which an expanded rental housing market could help address the challenges of adequate and affordable housing, and how a more formalised market may increase this possibility.

Finally, CRE sector investments depend heavily on the policy, governance and contextual conditions in the locations where they are made. Practices and strategies that result in higher development impacts in any one city or location may not yield the same impact elsewhere. Further comparative studies across different geographic contexts can generate more evidence and shed light on the nuances of key enabling conditions necessary for higher development impacts.

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