

INTERSECTING

VOLUME 03/2021

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Sustainable Responses
to the COVID-19 Pandemic

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Image Source: Vaccination Centre Berlin - Velodrom Arena 1. Heinle, Wischer und Partner, 2021. Image by Konstantin Boerner, all rights reserved ©.



Which of the Sustainable Development Goals (SDGs) have gained importance since the beginning of the pandemic?

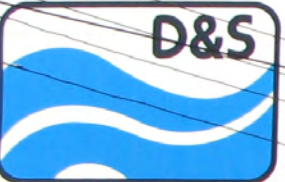
Image Source: Ferry crossing Butterworth and Georgetown, Penang, Malaysia.
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preface

GRUNDFOS 
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**PUMPS IN
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ALLIANCE MEDIA

“Neither regulators, investors, businesses, including start-ups, nor communities, can respond alone to complex, multifold, interconnected crisis. Cross-fertilization is very much needed to incubate global solutions and devise local responses.”

– Maximilien PELLEGRINI, SUEZ, Paris



Image Source: Water-tank service in the outskirts of Nairobi, Kenya. Image by Nicolas J.A. Buchoud, all rights reserved ©.



Maximilien PELLEGRINI
CEO Water France, SUEZ
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Interconnected crisis and systems need new value propositions

Europe in the end of the 19th century was a region of intense, rapid, unequal urbanization, from Paris to Berlin to London, as industrialization was flourishing. World-famous paintings from the impressionists not only depicted nature, flowers and sunsets but also changing landscapes and how new infrastructure networks were transforming life. The very time of the construction of the Eiffel Tower and of the steamy world exhibitions is also when scientists such as Louis Pasteur discovered the huge role of... the tiny microbes, especially active in humid and water environments.

From the invention of hygienism to the rational, large-scale planning and delivery of energy or water networks and other social infrastructure in the post World-War II era, bringing the benefits of comfort and well-being to all, major industrial and engineering innovations have been inseparable from wider societal and scientific transformations,

not to mention profound disruptions and disasters, be the it Spanish Flu of 1918 or wars that torn nations and people apart.

In the era of the COVID-19 pandemic crisis, utilities and infrastructure networks are now undergoing another generation of change at all scales, locally and globally.

Rural-agricultural landscapes remodeled by growing global food demand, digitalization, poorly designed urban/rural linkages, the acceleration of soil and ecosystem degradation, global warming, poor air quality affecting the health of millions in expanding metro areas, are questioning inherited knowhow as they also provide good reasons to invest into a better future. Such interlinkages or intersections are among the most complex for private companies and governments alike to manage, notwithstanding underlying changing social demand and needs.

Shaping sustainable infrastructure systems that do effectively contribute to a low carbon and even a net zero economy requires a new generation of triple bottom line approach combining responsible entrepreneurship, sustainable territorial development and place-making, and large scale environmental innovation backed by secured sources of sustainable finance.

Going beyond corporate social responsibility (CSR) and environmental and sustainable governance (ESG), quality partnerships between public and private spheres are man-

datory to foster long-term sustainable development trajectories and a new sustainable economy. As the COVID-19 crisis pandemic highlights the many fragmentations within our societies, among regions, across neighborhoods, this calls for open dialogues and trust. Neither regulators, investors, businesses, including start-ups, nor communities, can respond alone to complex, multifold, interconnected crisis.

Cross-fertilization is much needed to incubate global solutions and devise local responses across climate, health and economic priorities, all closely depending from the other. Circular economy and resources management, creative economy and labor transformations, the delivery of the 2030 Agenda in times of expanding geopolitical divides, are as many areas that require urgent action. The success depends on our collective ability to create and implement paradigm shifts internally within our companies and at a wider economic and social scale.

For all these reasons, INTERSECTING represents a strong and durable value proposition, which we are delighted to have contributed to and to support. It stands out as a reservoir of ideas and connections. We see it as a fruitful and promising attempt to overcome blunt contradictions and instead create favorable conditions to think differently, to put the COVID-19 pandemic crisis into perspective and to refine our understanding of future challenges and policy options.



CENTRAL & SOUTH ASIA²⁰²¹

JULY 15-16, TASHKENT

INTERNATIONAL CONFERENCE «CENTRAL AND SOUTH ASIA:
REGIONAL CONNECTIVITY. CHALLENGES AND OPPORTUNITIES».

“Intersecting is not just a book about cities or infrastructure. Built across months-long dialogues and ad hoc panels, Intersecting is also a visual reflection of a major crisis and its aftermath.”

– Nicolas J.A. BUCHOUD, Global Solutions Initiative, Paris

Image Source: At the opening plenary of the 'Central and South Asia Connectivity' international summit in Tashkent, Uzbekistan, July 15-16 2021.
Image by Nicolas J.A. Buchoud, all rights reserved ©.



Nicolas J.A. BUCHOUD (ed.)
Global Solutions Fellow
Paris, France

INTERSECTING as a compass for recovery

The pandemic is over (isn't it?).

When in the spring of 2020, we first initiated the Solutions Dialogues which would then become INTERSECTING, the World Health Organization (WHO) reported 10 million COVID-19 cases and half a million dead across the globe. When we released INTERSECTING's first edition a year later, the Coronavirus Update Live reported 115 million cases and 2,5 million dead. Halfway to 2021, over 220 million cases have officially been reported and nearly 5 million dead.

Much has been said about the pandemic, and often as quickly forgotten. It is unclear what we have learned from the crisis and yet, the world has moved from research to large scale industrialization of vaccines -and so far, a very uneven distribution of them. The global lockdowns of the spring 2020 have allowed for an instant photography of our interconnected world. Following the SARS, MERS and Ebola

pandemics, the COVID-19 has forced us to break all routines abruptly and at massive scale. Governments, together with Central Banks and International Financial Institutions have spent staggering amounts to mitigate the crisis' macroeconomic impacts, especially in developed countries.

INTERSECTING's exploration from the Amazonian to Central Asia to the Arctic, from neighborhoods to urbanization corridors, from health to inequalities, warns that painting in green and inclusive colors the same institutional and networking patterns as before the crisis will quickly fall short.

Few countries and institutions, including local governments and their advocacy networks, have admitted how little prepared they were to cope with the pandemic. The global community has consolidated knowledge from the management of previous pandemics in too scarce and random a way, a situation accurately described by the Center for International and Strategic Studies in 2019 as a 'cycle of complacency.

The New Urban Agenda celebrated at the Habitat III Summit in Quito in 2016 was silent about pandemic risks. In 2020, the final Declaration of the 10th World Urban Forum held in Abu Dhabi remained equally mute, whereas cities and billions of urban dwellers were hard hit by the pandemic's many impacts.

Infrastructure investments are widely thought to be a key to recover from the crisis, to reach out to a new sustainable

economy, especially if we favor a new paradigm of infrastructure for distribution. Yet a decade of rebuilding growth through connectivity after the 2008 global financial crisis has painstakingly exposed people to the pandemic, showing the limitations of existing investment models. Multiple pleas for cities to implement sustainable pandemic responses locally and play a new role globally could just add more complexity to clogged global decision mechanisms.

INTERSECTING is a call for knowledge generation and distribution to become the cornerstone of future good government but this will be done in a world that is, if not in disorder, in transformation. The race for post pandemic leadership has started for good but delivering on a global roadmap of sustainable recovery will require coherent and accountable institutional frameworks and implementation mechanisms.

Formidable change has occurred already. In the United-States, the new presidential administration elected in 2020 has issued a bipartisan trillion dollars' infrastructure plan in the summer of 2021, with even more to come. The European Union also approved a large recovery plan of more than 750 billion euros. In the meantime, profound geopolitical shifts are happening and one could only think that the United-States could no longer continue fight a war in Afghanistan while massively investing at home.

INTERSECTING was built as a compass or even as an astrolabe, pointing out to multidimensional combined social,

political, infrastructural, geo-economical and scientific challenges and recovery options. It reflects over 18 months of debates, research, exchanges, dialogues, explorations and publications.

INTERSECTING is based upon multiple, interlinked entry points, from 'disease' to 'cooperation', looking into possible future world structures. We believe it is ours to decide how infrastructure can serve other purposes than trade development and resources consumption, ours to understand the social factors of global warming and other ecosystem alterations, ours to assess how cities can continue to be places of innovation while re-valuing rural geo-economics and while understanding that they are also the places where resentment and distrust are articulated.


One of INTERSECTING's main finding is that lethality of the SARS-Cov-2 virus is redoubled not only by its multiple variants, but also by a knowledge and even a cognitive crisis accelerated by the development of the digital space and media transformation. Therefore, solutions are to be found at the edges. At the intersections of disciplinary and policy borders. At the intersections of short and long term. At the intersections of community and global scales. At the intersections of systems, institutions and cultures. At the intersections of entrepreneurship and society. Otherwise, what lessons from biotechnologies and vaccine development could we ever learn to serve for better policy-making in the urban age?

INTERSECTING is a collective work, the result of the dedicated engagement of five co-editors, several supporting knowledge partners, ADBI and OECD, nearly a hundred co-authors, including strong voices and ones from future leaders, from all regions of the globe, with two dozen of some of the world's very best universities and research centers taking part. Incubated by the Global Solutions Initiative, supported by GIZ, it also marks the 10th anniversary of the Grand Paris Alliance for Sustainable Investments.

You can read INTERSECTING piece by piece, photography by photography, quote by quote and as a whole.

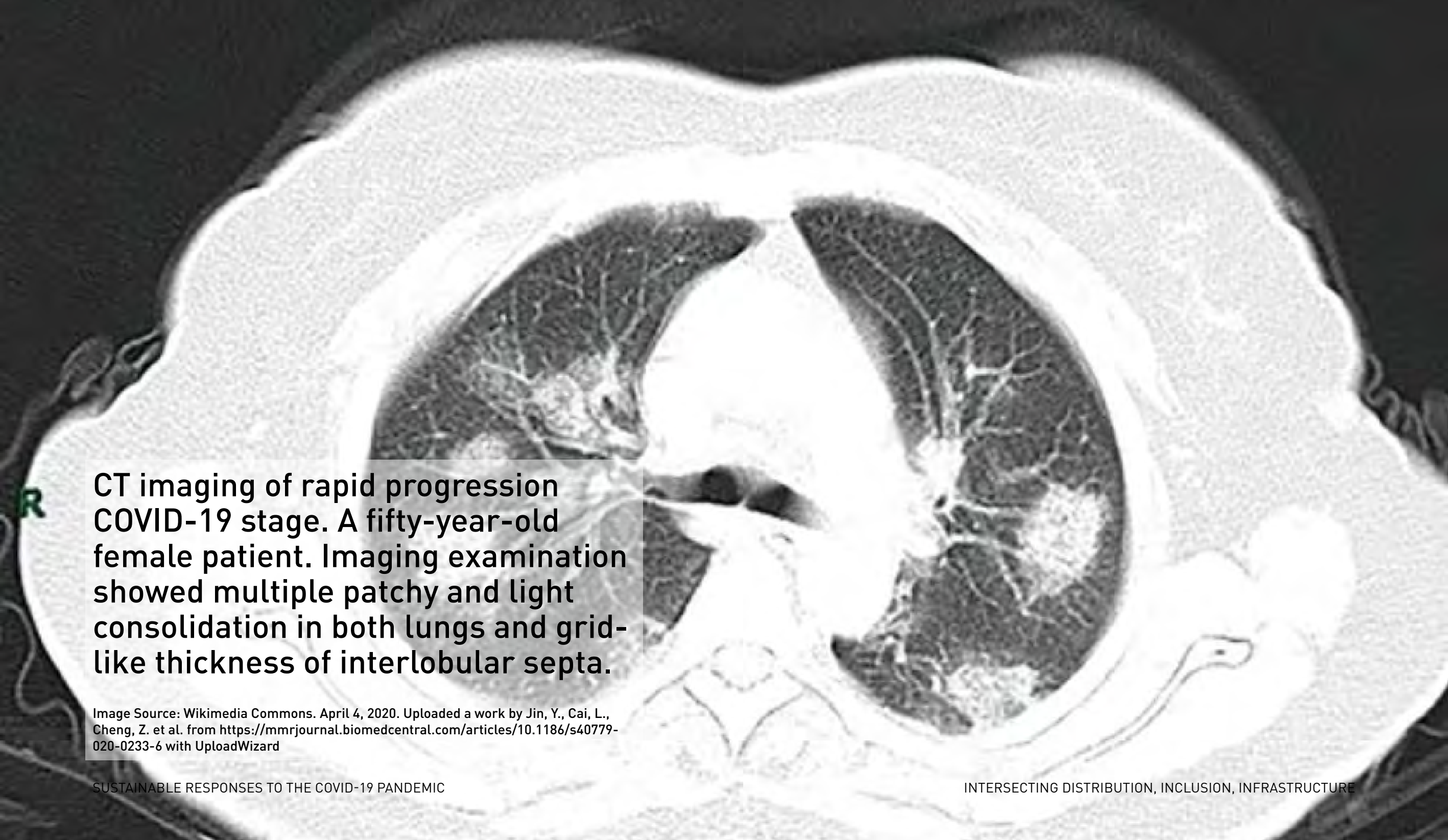
This very first volume of INTERSECTING 'On sustainable urbanization and infrastructure response to the Covid-19 pandemic crisis' is the cornerstone of several upcoming policy, research and advocacy global initiatives addressing resources and circular economy, the future of work and creative economy, and the delivery of the 2030 Agenda, in the context of the Troika of G20 presidencies by Indonesia, India and Brazil from 2022 to 2024.

Welcome to INTERSECTING.

An aerial photograph showing the white wing of a large aircraft in the upper right corner, with black markings '42°' and '25' visible. Below the wing, a small red dot is marked on the white surface. The majority of the image is a vast, dark blue-grey sea. In the lower right quadrant, a long, narrow cargo ship with a reddish-brown hull is seen from above, moving across the water.

Intersecting as a collective compass for recovery.

Image Source: A sea and aerial landscape over the North Sea between Amsterdam and Leeds. Image by Nicolas J.A. Buchoud, all rights reserved ©.



CT imaging of rapid progression COVID-19 stage. A fifty-year-old female patient. Imaging examination showed multiple patchy and light consolidation in both lungs and grid-like thickness of interlobular septa.

Image Source: Wikimedia Commons. April 4, 2020. Uploaded a work by Jin, Y., Cai, L., Cheng, Z. et al. from <https://mmrjournal.biomedcentral.com/articles/10.1186/s40779-020-0233-6> with UploadWizard

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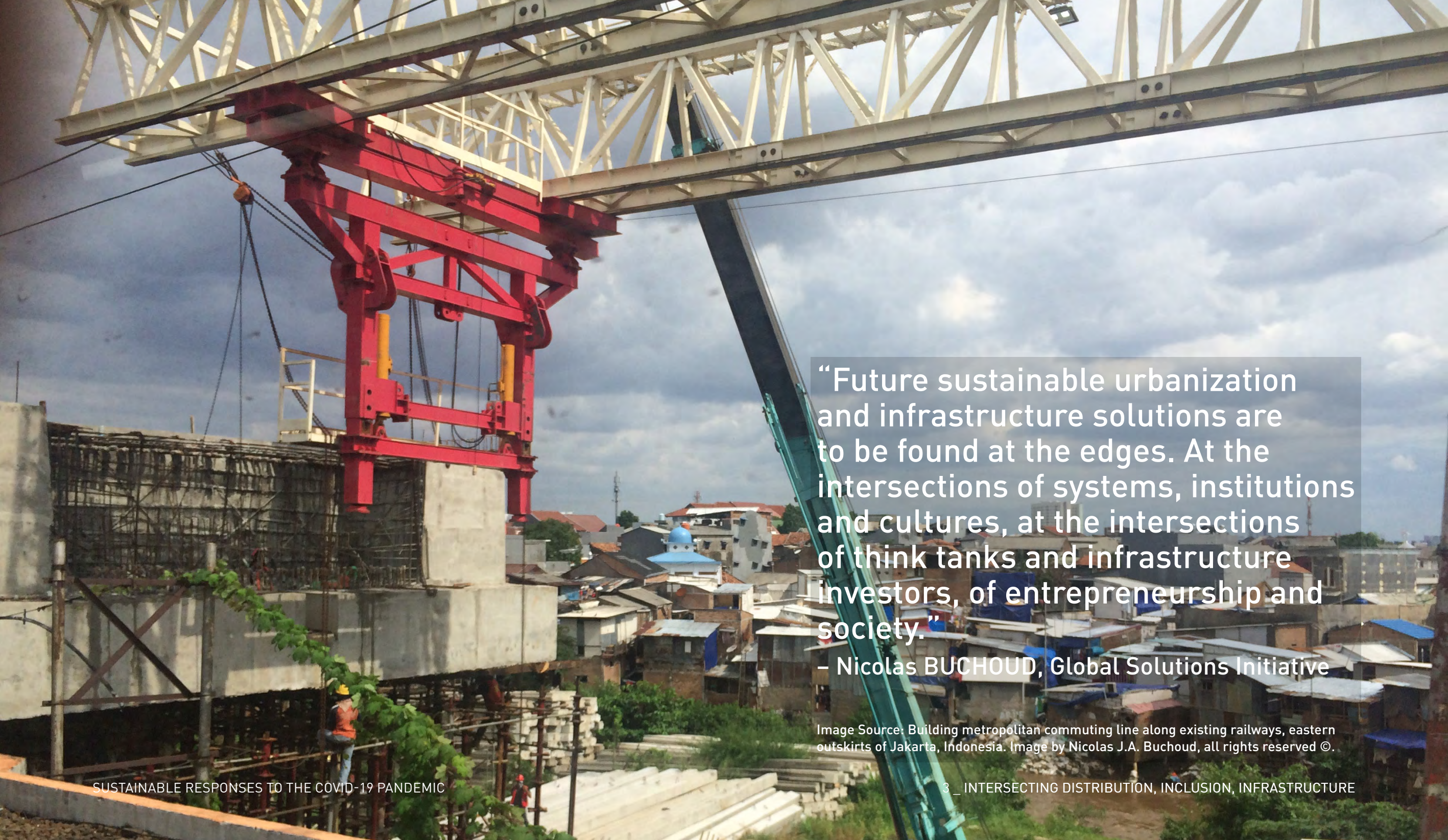
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“Future sustainable urbanization and infrastructure solutions are to be found at the edges. At the intersections of systems, institutions and cultures, at the intersections of think tanks and infrastructure investors, of entrepreneurship and society.”

– Nicolas BUCHOUD, Global Solutions Initiative

Image Source: Building metropolitan commuting line along existing railways, eastern outskirts of Jakarta, Indonesia. Image by Nicolas J.A. Buchoud, all rights reserved ©.



“Sharing is something which we
were apparently not prepared for.”
– the editors

Image Source: Wikimedia Commons. February 8, 2020. Singaporean clear out the supermarket shelves due to the Coronavirus. Daily products such as toilet paper, rice, bread, noodle and vegetables are all sold out. Image by cattan2011. <https://www.flickr.com/photos/68166820@N08/49505410793/>



Holger KUHLE (ed.)
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Beyond the one size fits all financial scheme for infrastructure investment projects

In post-pandemic times, both the demand for infrastructure financing will grow and the supply of financing for recovery will increase. For demand and supply to lead to more sustainable urbanization, a key factor will be the appropriate financing instruments for cities, whereas the COVID-19 pandemic is playing is both disrupting existing plans and pushes for rapid changes in the global infrastructure space.

How important it is to choose financing instruments carefully is shown symptomatically by the financing of hospitals, which are essential for health care. Experience shows that public-private partnership models (PPP) can be suitable for financing hospital buildings, but not for operating health care and the use of infrastructure for healing and care. Experiences show the need to assess the impact of PPPs on uses as well as how citizens and consumers will be impacted on the future. As an example, PPPs on the

electricity sector have not worked well in Australia as it led to increased prices even if the market is competitive and users can switch between providers. Successful PPP cases in Australia were in areas where the government didn't deliver revenue return. Whereas the COVID-19 rapid expansion has showed high levels of unpreparedness in countries and cities, the pandemic has also highlighted underinvestment in social infrastructure, especially in the past decade. In a recovery perspective, it is critical that emergency relief spending and vaccine purchase do not overcome the need for more structural reforms in the health and do not overshadow the need to develop a new generation of more sustainable infrastructure systems.

INTERSECTING argues that the way forward should be to privilege investments in 'infrastructure for distribution' starting at city and regional level. This has several consequences, starting by prioritizing recovery from the bottom-up, and not in a top-down manner. How citizens can play a role in defining infrastructure investment priorities is a condition to balance national, centralized choices, with direct impacts in many fields, from intra-urban to inter-state mobility, such as in India to waste and sanitation.

Whereas 'green technologies' are targeted to leverage more investments to reach out to the Sustainable Development Goals, projects find more easily finance where the return on investment is proven, rather certain and not stretched too far out into the future. In this context, the

'green bonds' model is considered to be promising, inspired by the North-American and Anglo-Saxon financial culture where municipal bonds (and notes) are extensively used for capital-raising needs. Yet, green and municipal bonds cannot become a universal tool that easily, in particular in the COVID-19 context. For instance, in Berlin, the issuance of green bonds requires a special authorization from the parliament and careful evaluation. In addition, from a debt management perspective, green bonds are only sensible if interest rates are lower than that on straight debt and if the issuance of green bonds does not adversely affect liquidity in the straight bond market.

The era of low interest rates might continue after the peak of the current COVID-19 pandemic, but the lack of institutional capacity and of broad legislative foundation to frame the use and benefit of bonds accordingly remains a challenge in many cities and regions. Pre-pandemic existing differences within the infrastructure finance landscape from region to region might even get deeper and increase the contrasts between infrastructure investment capabilities among countries and cities. In 2020, the G20 has issued a new 'InfraTech' agenda meant to supplement the 2019 Quality Infrastructure Investments (QII) principles and engage private and institutional investors in bridging the global infrastructure finance gaps. Region-specific knowledge should be produced in order to make tailored-made banking and investment possible and avoid that InfraTechs further enlarge pre-crisis digital divides.

As the pandemic highlights the importance of being more flexible with infrastructure finance, INTERSECTING raises the call to move on carefully with the development of new technological and financial models, taking into account the fragile financial situation of many subnational governments, and such side-effects as the decline in public transportation ridership due to fear of contagion. In principle, tailor-made, contextualized financing would offer more flexibility to meet specific local situations. Yet it would request overcoming several barriers, starting with the knowledge gaps within financial institutions on the specificities of cities and urban regions. More flexibility also requires expertise at municipal and national levels to decide on which financial schemes are the most suitable, especially in more uncertain market and financial conditions.

The effectiveness of financing and investments depends heavily on the existing capacities both within the private and public sector to choose, mix and structure the appropriate instruments, along transparent sustainability priorities. In many cities, these capacities are even more constrained by the divergence of financial resources to urgent social and health priorities. Public investment management assessment centres, which exist in some countries, could support subnational governments to select the best financing instruments, assess their effectiveness and ensure the accountability of their impact.



“Differences between infrastructure investment capabilities, in particular financial and digital innovation, could well increase imbalances between and within countries and cities in the post pandemic context.”

– Holger KUHLE, Deutsche Gesellschaft für Internationale Zusammenarbeit, Berlin

Image Source: Development of the tramway infrastructure network in Casablanca, Morocco. Image by Nicolas J.A. Buchoud, all rights reserved ©.



Lori-Benita KERR
Global Infrastructure Facility
(GIF), the World Bank
Washington D.C.
the United States

Changing trends and new priorities in the global infrastructural space

Globally, the infrastructure investment rationale is changing, along four main directions:

1. Infrastructure operation and resilience

Resiliency is no longer only an issue of how infrastructure could be made resilient, e.g., more climate-resilient, but about how infrastructure could make communities resilient, e.g., navigate through climate changes shocks.

2. Infrastructure as a system (and no longer as an addition of assets)

Connectivity & digital: role of communication through digital infrastructure is booming, a trend only accelerated by the Covid19 pandemic. It is about how the work gets done, including new ways of remote working. The sector is poised (ready for) growth. Integrated and spatial planning infrastructure as system includes nature-based solutions while

taking a long-term view on infrastructure, i.e., maintenance in terms of life cycle (this also refers to infrastructure resiliency).

3. Infrastructure governance

Infrastructure investment is largely a public issue. Improving infrastructure efficiency is critical, especially as public funding is becoming even more constrained across developing countries due to Covid-19. If private investment gains importance, governance issue will also become more complex, with a rising involvement of local governments.

4. Private investments

ESG (environmental, sustainable governance), Climate Finance, and lately, the SDGs (sustainable development goals) provide a number of common criteria in support of sustainability for capital markets. The G20 quality infrastructure investment principles, now including a broader focus on sustainability, are becoming part of the dialogue.

Q: What's the link to global government?

A: There is a growing recognition of subnational governments and cities within the infrastructural space, which means increasing the dialogue how to work with cities in recognition of urbanization. Cities are becoming a strategic theme in the infrastructure world.

Q: What's the balance between digital and physical assets?
How fast is it changing?

A: Main conversations still focus primarily on physical infrastructures, like energy, transport, sanitation, etc. Due to the Covid-19, the conversations have flipped 180 degrees with an unprecedented focus on digital infrastructure. There is a specific focus within the World Bank on the subject of digital connectivity – that kind of sector hadn't been there before.

Q: What's the ratio between public and private investment?
How does this relate to the city?

A: Data points are 83% from the public sector. 17% are from private investment. Climate policy initiatives and in particular climate finance have been a forerunner in connecting a number of global institutions and initiatives with cities in the past decade.

Q: The problem in the developing world right now is the fact that there are not enough physical infrastructures for digital communication. This creates an inequality in terms of access to education, information, etc. Does the World Bank have an overview of various developing countries to achieve the standard of digital infrastructure?

A: Digital data development practice group within the World Bank would have data on that. Universal access to digital broadband to everyone is becoming a global priority.



HELP STOP THE SPREAD OF
COVID-19
ESSENTIAL TRAVEL ONLY

“Main conversations within the global infrastructure space focused until very recently primarily on physical infrastructure, like energy, transport, sanitation, etc. Due to COVID-19, the conversations have flipped 180 degrees with an unprecedented focus on digital infrastructure.”

– Lori-Benita KERR, World Bank, Washington

Image Source: Wikimedia Commons. March 28, 2020. COVID-19 highway sign in Toronto, March 2020. Image by EelamStyleZ. [https://commons.wikimedia.org/wiki/File:COVID-19_highway_sign_in_Toronto,_March_2020_\(cropped\).jpg](https://commons.wikimedia.org/wiki/File:COVID-19_highway_sign_in_Toronto,_March_2020_(cropped).jpg)



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Sustainable infrastructure in regions and cities for post-COVID-19 recovery

Investing in sustainable and resilient infrastructure in regions and cities is a critical element of post-pandemic rebuilding. The regional and local impact of the COVID-19 crisis is highly heterogeneous, with significant implications for policy responses and investments for recovery. For example, large urban areas have been hard hit, but within them deprived areas are more strongly affected than less deprived ones.

The OECD policy paper *The territorial impact of COVID-19: Managing the crisis across levels of government* (4th edition, OECD, 2021 forthcoming) illustrates this regionally differentiated impact. The policy paper calls for a territorial approach to policy responses on the health, economic, social, fiscal fronts, as well as very strong inter-governmental coordination.

The crisis also shed light on the pre-existing territorial disparities in access to infrastructure, notably health and digital infrastructure. For example, remote regions in the OECD see a decreasing rate in hospital beds per 1000 inhabitants of 22%, much higher than the all-region average of 6%. By 2018, regions close to metropolitan areas were equipped with almost twice as many hospital beds per 1 000 inhabitants than remote rural regions.

For digital infrastructure, the urban-rural gaps are also significant. The OECD study showed that 56% of rural households have access to fast broadband (>30 Mbps), in comparison to over 85% in urban areas. If no strong policy actions taken, these metropolitan-rural divides could be even amplified post COVID-19 in a context of tight fiscal constraints (OECD, 2020).

Subnational governments are responsible for almost 60% of total public investment across the OECD, and almost 40% around the world (OECD, 2020 forthcoming; OECD/UCLG, 2019). Regions and municipalities are at the frontline of the

crisis management and recovery, but they face significant challenges in delivering infrastructure investment, with a dangerous “scissors effect” of rising expenditure and falling revenues. According to a survey jointly conducted by the OECD and the European Committee of the Regions (CoR) with 300 subnational representatives in the European Union, 63% of respondents stated that the impact of the crisis on subnational governments is strong (OECD, 2020). To achieve a successful COVID-19 recovery, subnational public investment should not be sacrificed like after the 2008 crisis. Since then, it took seven years for subnational public investment to recover to the 2008 level.

Post-COVID-19, governments also need to invest in infrastructure to meet the substantial need to “build back better”, i.e. building more resilient regions and cities in order to cope with future shocks, regardless their nature. This includes infrastructure investment that focus on addressing climate change, facilitating digital transition, enhancing healthcare, etc.

Subnational governments have a critical role to play in investing in sustainable and resilient infrastructure, which is essential for post-pandemic rebuilding. The OECD is developing a Handbook on delivering sustainable infrastructure for post-COVID-19 recovery, which will also support the work of the G20 on quality infrastructure (OECD, Forthcoming). The Handbook provides concrete recommendations and examples on effective governance of infrastructure,

mobilisation of financial resources, as well as subnational governance and finance in infrastructure, in order to achieve key objectives such as low carbon transition, resilience, regional inclusiveness, and sustainable development. Regarding subnational infrastructure investment, some of key messages include:

Regions (states and provinces) and municipalities need to incorporate long-term objectives in their investments for recovery. They should focus on green and digital priorities as top priorities, but also on building more resilient health systems and investing in social housing to reduce disparities across and within regions.

The capacity of subnational governments in financing and implementing infrastructure is key for effective implementation of the recovery strategies. One important perspective is that subnational governments need to integrate infrastructure investment priorities in broader regional or local development strategies, instead of investing in a solely sectoral-oriented siloed fashion. National governments should provide corresponding support to strengthen the capacities of subnational governments to design and implement public investment projects. While many public investment projects can be launched in the short-term, care must be taken not to focus on speed as the only criteria, and to avoid atomising investment funding into a myriad of small projects. Intermediate levels of government – regions, states, provinces – should be included in national investment recovery strategies.

Subnational governments should optimise and diversify their financial resources for infrastructure investment. They should optimise the use of public funding resources (e.g. national grants, taxes and fees), including to explore innovative instruments such as land-value capture mechanisms. Subnational governments also need to mobilise the private sector and institutional investors for applicable infrastructure projects through appropriate financial mechanisms.

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“Investment in sustainable infrastructure is a key piece of post-pandemic rebuilding. Governments need to invest strategically to build more resilient regions and communities in the wake of COVID-19. This implies a change in the investment-mix and a stronger focus on preparing for future shocks, including the climate-related crises.”

– Dorothee ALLAIN-DUPRE, Organization for Economic Cooperation and Development, Paris



Amitabh KUNDU
Research and Information
Systems for Developing
Countries (RIS)
New Delhi, India

Infrastructure planning for interstate and intrastate mobility in India after the lockdown

Onslaught of the Pandemic in India rendered a large segment of the migrants jobless and homeless who got concentrated in slums and relief camps in and around a few large cities. They were provided shelter, basic infrastructure and other amenities by the central and state governments. The latter required them to register with the local authorities for arranging transport and other facilities for those who wanted to return back home as also for connecting them with entrepreneurs who needed employment.

For a large segment of migrants, Covid19 was a city affliction and an escape to their village was a sanctuary. Public awareness about the virus unfortunately was tinged with social media frenzy. Any person testing positive was seen as a leper by even the “educated people” and could, therefore, expect help from none. Unfortunately, safe and manageable protocol for interstate travel was missing for

those who wanted to return to take care of farm activities or for emotional healing from the dread of the disease. The situation, however, has changed in six months and many are returning back to the cities with the corona stigma becoming much less.

Planning infrastructure for an exit plan and containment strategy for different regions and districts of India on the face of increasing number of infections and fatalities, the numbers crossing 80,000 and 1400 respectively, is a real challenge. The impossibility of implementing social distancing norms in large cities is understandable. About 35 per cent of the households live in one room units and 40 per cent have to depend on community facilities for drinking water and toilets. Any restriction on the mobility of slum dwellers can only increase social proximity and density of interaction - people standing in queues or sitting in large groups. They live not in their houses but on the streets and common spaces. All these are responsible for an alarming rise of infection in slums and low income areas, the mega cities becoming the major hot spots.

Infrastructural planning must be done for providing basic amenities to migrants who have stayed back in the cities and for addressing their socio economic and physical vulnerabilities. Given the high disparity in income and employment opportunities across regions and rural/urban areas, only 15 to 20 per cent of the returnee migrants would stay back, despite the best efforts by their states to absorb

them. Given the pace of unlocking the economy, efforts are being made to bring them back. However, there are risks in putting them once again into the ghettos and congested localities and keeping them dependent on community services for survival. Massive investments are required to improve infrastructure and basic amenities including health-care, education, drinking water and sanitation for them and other segments of vulnerable population, to guarantee the basic human rights as envisaged under SDG as also to sustain the process of economic recovery without further health shocks.

There is a need simultaneously to put back the regional economies into full swing, besides linking them up with the metro based economy. The state level authorities can monitor the location and travel details of the returnee migrants through district level officers and village panchayats by giving them health certificates, attached to the Aadhar (identity) cards. Mobility within and across districts will have to be normalised for ensuring labour supply at places of demand - construction sites, mandis and district industrial centres.

Importantly, this is already taking place through individual initiatives but this has to be institutionalized and coordinated for ensuring adherence to the norms of seating capacity, social distancing, pricing etc. State buses and state subsidies for taking commuters and other persons will have to be planned since private operations may not be feasible in certain routes due to distancing norms. It would be unreal-

istic to hope that no new infections would occur but these would be few, less than if there is an influx of migrants to large cities, as witnessed in recent years.



“Infrastructural planning must be done for providing basic amenities to migrants who have stayed back in the cities and for addressing their socio economic and physical vulnerabilities.”

– Amitabh KUNDU, Research and Information Systems for Developing Countries, New Delhi

Image Source: Migrant workers waiting for transportation on a cold winter day in the Russian Far East. Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Intersecting - Chinese infrastructure firms in Africa: the importance of the local context for the right path to recovery

Public infrastructure investment has rightly been among the main countermeasures proposed for a post pandemic recovery and for promoting resilience over the long term. In the context of African economies, the COVID pandemic has renewed the call for urgent investments in adequate physical infrastructure. Infrastructure that are sustainable and resilient and that can foster economic activities, create employment, strengthen supply chains formation, and support skill and technological transfer. Now the key question is: what are the right conditions for this to happen? Lessons can be learned from the results of a recent research we have conducted on the impact of Chinese firms' engagement in the Ethiopian infrastructure sector.

Ethiopia is the second most populated country in Africa and one of that has recorded impressive economic performance over the last decades, putting infrastructure development

at the centre of its development agenda. Despite the scarcity of Ethiopia's natural resources, the country has ranked as one of the key recipients of Chinese financing and one of the largest African markets for Chinese contractors working in the infrastructure industry¹.

For a long time, the literature on China-Africa relations has questioned the capacity of Chinese-led infrastructure projects to have a positive impact on employment, skill and know-how transfer, and value creation in local industries. The standard account reports that Chinese companies fail to integrate their activities with host societies, concentrating in so-called enclave economies, with no or very limited economic benefits for the local communities (Ferguson 2005; Corkin 2013; Wethal 2018).

Yet, our fieldwork evidence tells a different story². In contrast with the mainstream narrative, which depicts Chinese infrastructure projects as secured enclaves, my research shows that Chinese firms operating in the Ethiopian infrastructure sector are increasingly integrated with the local economy. Employment represents the strongest backward linkage created by Chinese companies. The Chinese firms' presence has contributed to skills transfer and triggered capacity building processes. Such processes include training activities, language courses, and forms of higher education cooperation. There is also evidence that Chinese firms' operations have led to the diversification of the local production structure and to the expansion of the local

building materials manufacturing industry. However, joint venture and subcontracting opportunities between Chinese and local firms are still scarce. Technological transfer from Chinese companies to Ethiopian companies also remains underdeveloped.

This proves that the picture is more complex than we tend to think. Chinese companies' behaviours are fluid and with different effects. The creation of economic linkages is highly dependent on the characteristics of Chinese firms working in the sector as well as on the local circumstances in which the firms operate. Two main lessons can be learned from the Ethiopian experience. On the one hand, the size of Chinese companies, their ownership type (private versus state owned enterprises), the industry in which they operate (energy, telecommunication, transportation, water facilities) and the length of operation in the country have proven to be important factors to determine their level of integration with local economy and society. On the other hand, the Ethiopian policy environment, local industrial capabilities, the capacity of local labour force, and the ability of local officials to supervise and monitor projects can amplify or dampen the strengths and limits of infrastructure partnerships. In other words, development linkages are strongly dependent on the capacity and willingness of the Ethiopian decision-makers to create both the normative conditions for an adequate development of local businesses and a system of rights that can empower local workers.

In a post pandemic era, African governments will play a critical role in the creation of a policy and regulatory environment that can make the most out of foreign firms operating in their infrastructure industry. Beyond the speed of executing infrastructure projects, African governments should then place more emphasis on the design of tailored policy instruments. The case of Ethiopia shows that local-content policies (such as policies on labour and contracting, policies aiming at building local and absorptive capacity, policies helping local actors to establish joint ventures) and industrial policies, especially those capitalizing on the linkages with the manufacturing sector, must be high on the agendas of policymakers for the years to come.

1. <https://chinaafricaloandata.bu.edu/>

2. The provided evidence is the result of firm-level surveys, interviews, observations, and direct access to contracts and financial agreements produced through 4 years of PhD research, with fieldwork in both China and Ethiopia.

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中交集团承建宝丽机场航站楼扩建项目 አዲስ አበባ ቦሌ አለም አቀፍ ኤርፖርት ተርሚናል ማስፋፊያ ፕሮጀክት Addis Ababa Bole International Airport Terminal Expansion Project



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诚信

“In contrast with the mainstream narrative, which depicts Chinese infrastructure projects as secured enclaves, our research shows that Chinese firms operating in the Ethiopian infrastructure sector are increasingly integrated with the local economy.”

– Valeria LAURIA, Founder and Director, A-id

Image Source: Addis Ababa Bole International Airport Expansion Project, developed by China Communications Corporation (CCCC), under construction. Image by Ethiopian Airports, 2015, <https://www.facebook.com/EthiopianAirports/photos/pcb.721464944626886/721464867960227/> all rights reserved ©.



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Infrastructure priorities and health: Diversion of resources? A commentary

Collaborative efforts of G20 countries to promote and support quality infrastructure and regional connectivity since the G20 Japan in 2019 have confirmed the role of infrastructure development to support growth, a core issue within the G20 since its early years. As it was well assessed by the G20 Development Working Group in 2020, the Covid-19 pandemic outbreak has strongly impacted national and global investment priorities, but containing the disease should not overshadow the needs to develop a new generation of sustainable infrastructure systems.

The Covid-19 crisis has triggered a significant diversion of resources towards emergency health and economic relief spending. It has raised investments in health (and social) infrastructure as a new priority. As countries are now racing towards vaccine development and campaigning, the much-needed allocation of resources towards public health

infrastructure might be poised to last, in a context where the economy is affected by lockdowns and cascading socio-economic impacts, including decline of fiscal revenues which are even more severe at subnational levels.

Whereas the commitment to develop the quality infrastructure stock should be reinforced to provide wider and better access to opportunities and services for more people, the diversion of public resources to handle sudden health emergencies has blurred global governance perspectives and national investment agendas. Infrastructure are enablers of industrial development, including industry 4.0 and high value innovation but a year of Covid-19 pandemic has contributed to a decline of investments in support of development, also weakening the delivery of the 2030 Agenda. Spendings for emergency relief and buying vaccine have put a lot of strain on public budgets, but without clear vision about the return on those investments and their spillover effects.

In the past years, the G20 has worked effectively towards more effective public-private partnerships to develop a global sustainable infrastructure agenda. Priorities have been about bringing in access, equity and inclusion through infrastructure projects, with a particular focus on land value capture and the development of urban peripheries, a major topic in many emerging economies such as in India. We believe that South-South cooperation could help maximize the benefits of public-private partnerships through

more tailored infrastructure projects also aiming at enhancing sustainable regional development. Such reflections could serve as a benchmark for the development of health infrastructure in a post Covid-19 perspective.

We should build on the legacy of the G20 Japan to further develop technology leverage for quality infrastructure and reinforce how sovereign bonds can help leverage investments for sustainable infrastructure in developed and emerging countries alike. Notwithstanding the Covid-19 crisis, the issue of urban infrastructure is becoming more and more important globally, as the quality of urbanization processes depend not only on local and regional specificities but also to the countries' level of indebtedness. Along with urbanization at metropolitan and regional or even mega-regional scales, multi-infrastructure maritime corridors (including investments in ports, the development and protection of coastal areas, ocean protection and resources valuation etc.) is another category of investments that requires long-term high, level financial commitments from the public and the private sector. Such priorities should not be overshadowed by the Covid-19 pandemic crisis.

Along with South-South cooperation, the G20, notably the G20 Development Working Group as well as other arenas such as the T20, should enhance triangular cooperation, channeling technical, capacity-building and financial support towards resilient, efficient (quality), sustainable infrastructure and urbanization investments, noting that the role

of technologies and their financing will require even more attention in a post-pandemic perspective with potential benefits and new challenges in developed and emerging countries all alike. Urban infrastructure choices will play a critical role in attracting investments in the coming months and years. This will require upscale global cooperation and coordination to turn them into a driver for a new sustainable economy.



Image Source: View of the Al-Bateen wharf from the Ethihad Towers, Abu Dhabi, United Arab Emirates. Image by Nicolas J.A. Buchoud, all rights reserved ©.

SUSTAINABLE RESPONSES TO THE COVID-19 PANDEMIC

“COVID-19 should not overshadow the needs to develop a new generation of large scale, sustainable infrastructure systems.”
– Sachin CHATURVEDI, Research and Information Systems for Developing Countries, New Delhi

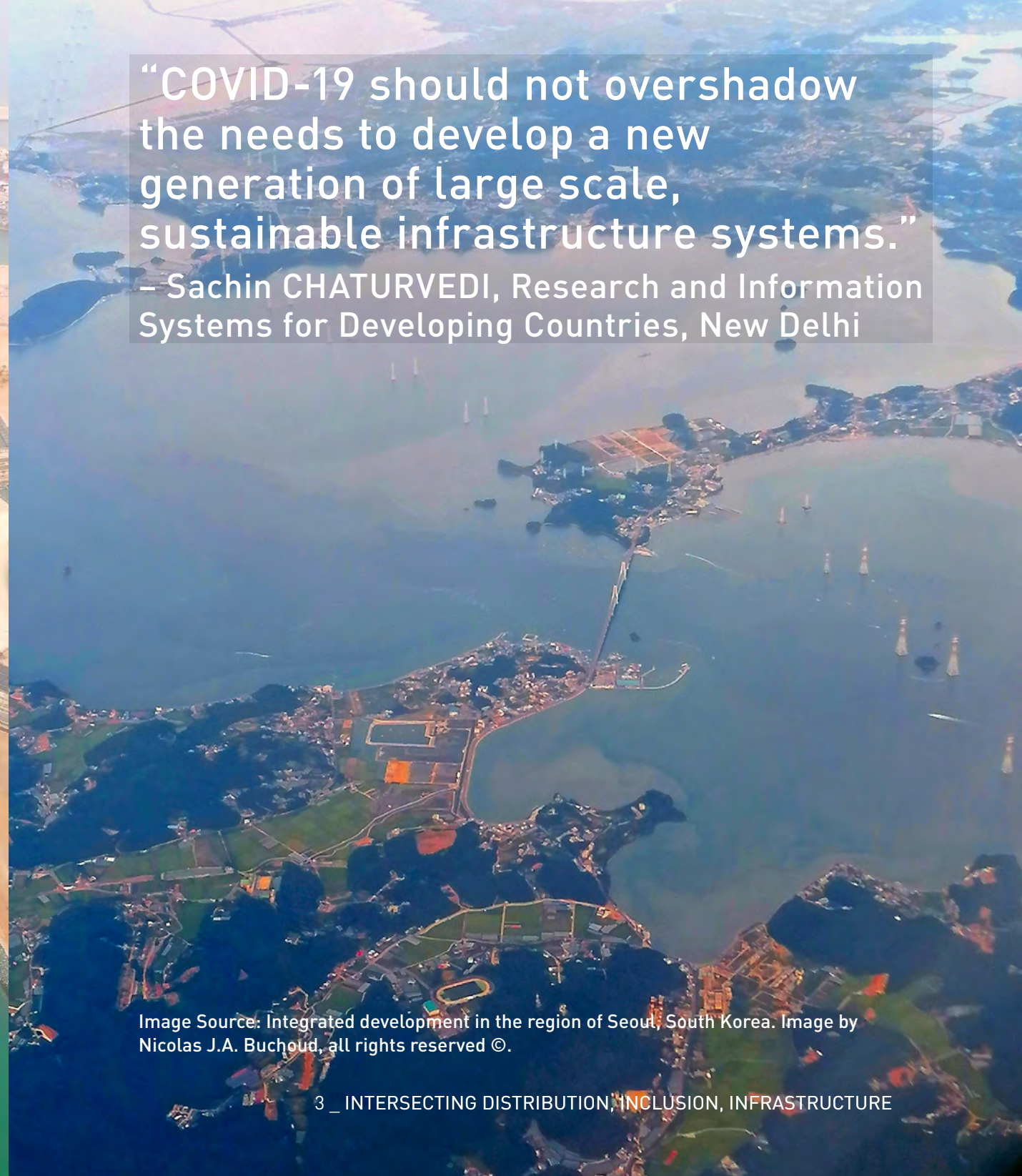


Image Source: Integrated development in the region of Seoul, South Korea. Image by Nicolas J.A. Buchoud, all rights reserved ©.

3 _ INTERSECTING DISTRIBUTION, INCLUSION, INFRASTRUCTURE



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About the G20 InfraTech agendas. An insight

Infrastructure investments will play a significant role in supporting post Covid-19 economic recovery with a focus on sustainable development and resilience but this will mean redoubled efforts from both developed and developing countries. Even before the pandemic outbreak, the Global Infrastructure Hub projected the global infrastructure financing gap would reach 15 trillion by 2040, which remains significant. To improve infrastructure financing in terms of quality and quantity, the Saudi G20 Presidency worked on two main priorities which have been reinforced by the Covid-19 crisis.

Utilizing the benefits of technology for infrastructure

Building on the Quality Infrastructure Investment principles issued by the G20 Japan, the G20 in 2020 has further recognized the benefits of most technology uptake in infrastructure including reducing time to build, increasing return on investments, lowering operation and maintenance costs

and delivering better social, economic and environmental outcomes to meet the Sustainable Development Goals.

To increase the uptake of technology in infrastructure sectors and maximize its benefits, the G20 has issued an InfraTech Agenda, endorsed by G20 leaders, finance ministers and central bank governors at the G20 Leaders' summit in Riyadh in November 2020. The Agenda is also supported by several international organizations. It is a high-level policy guidance for national authorities and the international community to advance the adoption of new and existing technology in infrastructure to fully reap its multiple benefits. The InfraTech Agenda should enable governments to save money and make more informed decisions and enhance governance.

The conclusion of this work is a set of nineteen recommendations along six priority areas:

1. Leverage InfraTech to enhance economic efficiencies and mobilize private - sector investment to promote growth and fiscal sustainability;
2. Promote technologies that foster inclusivity, sustainability, resilience, and good governance;
3. Accelerate innovation and economic dynamism in InfraTech related industries to support economic recovery and growth;
4. Foster a robust data ecosystem to improve resilience and better inform infrastructure planning, operation, maintenance, and investment decisions;

5. Develop agile and flexible policy tools that promote potential growth, productivity and innovation while mitigating risks;
6. Promote national and international cooperation in R&D and knowledge – sharing.

Box: a definition of InfraTech

Infrastructure technology, or InfraTech, can be described as the integration of material, machine and digital technologies across the infrastructure lifecycle. At its broadest definition, InfraTech can be considered any technology that impacts the development, delivery, and ongoing operation of infrastructure. This may include technologies used to define the strategic requirements of infrastructure or enable data-driven decision-making, innovations in finance and funding that support the commercial management of an asset, or technologies integral to the relationship a customer has with infrastructure services. From a policy perspective, it is important to make the distinction between the design of technologies in the operations of infrastructure planning and delivery versus the integration of technologies into the structures themselves, which changes the nature of infrastructure assets from simple inanimate objects to dynamic information systems. (Source: G20 Infrastructure Working Group – G20 Riyadh InfraTech Agenda)

Continuing the work of the G20 Roadmap Infrastructure as an asset class with a focus on improving regulatory framework for the private sector participation.


The G20 Roadmap Infrastructure as an asset class was issued by the G20 Argentina in 2018. In 2020, the Infrastructure Working Group looked at strengthening regulatory frameworks to enhance private sector investment in infrastructure. It is now commonly assumed that public investment in infrastructure will not be enough to meet key infrastructure economic and development objectives, a trend which has been reinforced by the Covid-19 crisis. Thus, it is essential for countries to improve the use of available resources and upgrade private sector participation in infrastructure investment.

The Saudi G20 presidency has engaged with more over a hundred institutions, investors and asset managers globally, to release the G20-OECD report on the collaboration with institutional investors and asset managers on infrastructure in July 2020.¹ The report includes several proposals to create and enable a better environment for private sector investments in infrastructure, based upon:

- a long term strategic and collaborative approach to enhance the supply of the bankable infrastructure projects;
- the promotion of a fair and transparent investment framework and strong regulatory institutions that are able to attract private sector investment.

The report has issued over thirty policy proposals, which should further be explored and developed by the G20 Italy throughout 2021.

1. <http://www.oecd.org/daf/fin/private-pensions/Collaboration-with-Institutional-Investors-and-Asset-Managers-on-Infrastructure.pdf>



“Building on the Quality Infrastructure Investment (QII) principles issued by the G20 Japan, the G20 in 2020 has further recognized the benefits of most technology uptake in infrastructure.”

– Rakan BIN DOHAISH, G20 Saudi Arabia Infrastructure Working Group, Riyadh

Image Source: Dense built environment and complex infrastructure systems intersecting in the Shimbashi central district of Tokyo, Japan.

Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Urban waste management during the pandemic: A brief outlook

Before the Covid-19 pandemic outbreak, it looked like nothing would prevent urbanization, driven by agglomeration economics interconnecting global cities and metropolitan regions, to continue thriving. One year later, the picture has changed but waste management remains as a sensitive and underfunded issue as before the crisis. Yet, aligning local and global initiatives to support circular economy could help put the 2030 Agenda back on track.

Lockdowns, curfews and other restrictions have highlighted the need for more open and public space for all in cities, for more justice in access to nature within and beyond city limits. The crisis has impacted office and retail real estate markets in major cities from London to Paris or Tokyo, as teleworking and e-commerce have developed rapidly. The pandemic has highlighted the deep encroaching of inequalities of revenue and well-being across metropolitan areas,

and revived the attractiveness of small or medium sized cities. In the developing world (and in developed countries alike), the crisis has crudely revealed many deficits in social infrastructure and safety nets, in particular for informal economic sectors. It has exposed many of the workers in the waste management sector, most often in the informal economy, to more risks and vulnerabilities, while the growth of urban waste has not been reversed.¹ As global urbanization is in crisis, leading public and private urban stakeholders have a historic responsibility to review how infrastructure and service delivery can contribute to health safety and to social and economic resilience, with waste management as an immediate priority.

Cities generate about 1.3 billion tons of solid waste per year, a volume that will increase to 2.2 billion tons by 2025 and will double in lower-income countries in the next 20 years, a trend that has not been affected by the Covid-19 pandemic. In many developing and emerging economies, the mismanagement of solid waste has been polluting land, water and air, thus leading to spread of disease and generation of greenhouse gases. Whereas waste management has long been held as a local problem to be solved locally, with international cooperation barely compensating for the lack of capacity building or sustainable revenue models, we can no longer go on like this. The call for more sustainable urban management and urban development has been echoed by the Urban 20 Riyadh Declaration, which has rightly pointed out to a universal right for urban sanitation and

waste management.²

In response to the Covid-19 health challenge, the global community has managed to adapt and even create vaccines in less than twelve months. Rapid improvement in technology, innovation for cleaning products and many service industries have found new ways to serve their customers. Cities and subnational governments should take this opportunity to convince global leaders, in particular through the G20, to allocate more resources on urban sanitation and waste management learn from the current adaptation, in 5 directions:

1. Technology can enable the development of low-cost, scalable solutions but it requires governments to engage with markets, to support fragile secondary markets for recycling, to incentivize the private sector down to a community level. This must be complemented by an enabling ecosystem including better regulations and innovative financing to attract private investment.
2. Development assistance such as through international or decentralized cooperation should be optimized to including local issues from early project design stage. Assistance from multilateral and bilateral donors and philanthropic organizations should value capacity building more thoroughly, which could be done by systematically including leading public and private metropolitan agencies in charge of waste management and sanitation in cooperation frameworks. Waste management is not just about general principles. It is about concrete implementation, know-how, and managing challenging business models.

3. Cities are unique social and economic ecosystems to pool resources and experience, and to implement partnerships ensuring that sanitation, drinking water supply, energy supply, waste collection and treatment are being effectively and efficiently delivered to all.

4. SDG 17: Another complementary way to support new partnerships and enabling ecosystems across local and global scales, public and private and community stakeholders would be to include urban waste and sanitation management as a key objective of the seventeenth sustainable development goal (SDG 17 is about reviving partnerships for sustainable development).

5. Circular economy, including sustainable waste management and their financing should be a continued priority for joint international and city-to city cooperation within the G20, as Rome and Milan are jointly chairing the Urban 20 in 2021.

1. The massive lockdowns and repeated confinements across the globe such as in Paris, have initially led to a drop in the production of waste, but it has gradually been erased. There is even growing evidence that disposable masks and other material to further prevent Covid-19 contagion are not finding their way to waste treatment.

2. U20 Mayors Communiqué 2020. Resolution n°18 'Adopt a universal right of access to urban sanitation and waste management for all while promoting 'zero waste societies', in recognition that waste rarely pays for itself and progress towards circular economy is slow but critical, in particular in rapidly urbanizing regions' <https://www.urban20riyadh.org/sites/default/files/2020-10/U20%202020%20Communique.pdf>

See also the research paper issued by the U20 on Urban waste and sanitation for all. <https://www.urban20riyadh.org/sites/default/files/2020-09/Urban%20Sanitation%20and%20Waste%20Management%20for%20All.pdf>



“Cities generate about 1.3 billion tons of solid waste per year, a volume that will increase to 2.2 billion tons by 2025 and will double in lower-income countries in the next 20 years. A trend that has not been affected by the COVID-19 pandemic.”

– Caroline CHAL, Syctom, Paris

Image Source: ‘Trucking material from the garbage field’. A child playing in the neighborhood of Babakan Siliwangi in Bandung, West Java, Indonesia, before a joint municipal and community clean-up initiative. Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Transport infrastructure in a pandemic and post-pandemic time: Losses, challenges and uncertain changes

Transport's ramified infrastructure, which meets the basic needs of man and society in mobility, belongs to the sphere of the service economy, which has suffered significantly due to the restrictions on communications and the closure of national and regional borders because of the Covid19 crisis. Although the Covid-19 pandemic is far from over, it will have lasting impacts on the management and investments in moving goods and people. In the conditions of huge losses in the transport sector of the economy, the costs of the continuing stagnation of the traditional transportation system are clearly visible.¹ First of all, they are measured in terms of significant decrease in the volume of freight and passenger traffic. The impossibility of its complete restoration, even after 4-5 years, on the previous scale determines the essence of the subsequent necessary qualitative changes in the industry. Among them – reducing the production of vehicles for global markets, their technological modern-

ization in the direction of increasing environmental friendliness, energy efficiency, reducing the cost of services, implementation of digital management, autonomization of use, introduction of sanitary safety standards, transformation of infrastructural and logistic support of modal shifts in the utilization of certain modes of transport and redistribution of flows in the organization of traffic, decline of financial resources supporting the operation of traditional transport facilities.

Despite the fact that, for example, the EU countries decided in March 2020 on the free continuous cross-border transportation of goods, the traffic load indicators are low due to the temporary or final closure of a number of industrial enterprises which is a result of the economic lockdown. Meanwhile, the need to expand stocks at terminals and, accordingly, an increase in demand for equipped warehouses is increasing. A significant narrowing of the range of transported goods in favor of inclusion in the main flow and supply chain of food and medical goods also affected a certain transformation of the transport and logistics infrastructure and their equipment. State support measures adopted in many countries for operators representing various modes of transport cover, inter alia, covering payments exclusively for the use of existing ground infrastructure.

The decisions taken during the spread of the first and second launch (wave) of the coronavirus aimed social distancing and affected the impossibility of moving towards

achieving sustainable development in the implementation of task 11.2. SDG 11 - “Expanding public transport in cities”. From 60 to 90% of urban residents stopped using public transport.² With moving online most of a significant number of citizens either working or studying, transport has shifted from the daily necessities of life to the area of increased risks of COVID 19. Against this background, sales of private cars as safer means of personal mobility have increased in many of countries. For example, in Russia, it was about 7% percent compared to the last 2019. Such trends also do not contribute to the achievement of environmental sustainable development goals.³

In the context of the pandemic crisis and the reallocation of public resources, financing targets for modernizing transport infrastructure have decreased in many countries. Due to budget deficits and falling revenues, many transport projects are postponed indefinitely. For example, in North Carolina (USA), the Department of Transportation was forced to postpone more than 100 projects worth \$ 2.2 billion in 2020. Infrastructure investment in South Africa is down 5.4% this year.⁴ As a result of the sequestration of the financial plan for the implementation of the transport part of the comprehensive plan for the modernization and expansion of the backbone infrastructure for the period up to 2024 in the Russian Federation, investment in infrastructure decreased by almost 2 times.⁵

At the same time, the Covid-19 pandemic has stimulated the development of digital infrastructure, logistics servers, and unmanned vehicles, in the context of the implementation of contactless modes of life and the organization of work processes. Transport infrastructure is also changing with the expansion of preventive health measures through. Modern vehicles and transport facilities, given the uncertainty of the final end of the pandemic, must necessarily be equipped with appropriate disinfection equipment. As the movement (flow) of people and goods is listed among the key five economic sectors most affected by the pandemic crisis (KPMG 2021), further development of transport infrastructure will be difficult and contradictory.⁶

The positive forecast is that transport will be in the focus of political programs for financial support of key sectors of the economy in the post-view period as well. Negative factors are determined by the close dependence of the development of transport infrastructure on the rapid recovery of many sectors of the economy, the banking system, and commercial activity of business, which for the next 5 years forecast of a decline in world GDP by 5.3%, seems problematic. In addition, a significant reduction in the demand for passenger transportation is expected due to a decrease in the income of the population, the continuation of the policy of organizing a significant part of professional activity in a remote format, and the emergence of new models of citizens' behavior in relation to routes, forms and types of mobility.

АВТОМОБИЛЬНЫЕ ДОРОГИ РОССИИ

“Due to the COVID-19 crisis, sales of private cars as safer means of personal mobility have increased by 7% in Russia in the last quarter of 2020 as compared to 2019. Such trends do not contribute to the achievement of the SDGs.”

– Irina KARAPETYANTS, Russian University of Transport, Moscow

Перечень организаций
осуществляющих строительство и эксплуатацию автомобильных дорог

1. ООО «Автодор»	11. ООО «Трансавтодор»	21. ООО «Трансавтодор»	31. ООО «Трансавтодор»
2. ООО «Автодор»	12. ООО «Трансавтодор»	22. ООО «Трансавтодор»	32. ООО «Трансавтодор»
3. ООО «Автодор»	13. ООО «Трансавтодор»	23. ООО «Трансавтодор»	33. ООО «Трансавтодор»
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7. ООО «Автодор»	17. ООО «Трансавтодор»	27. ООО «Трансавтодор»	37. ООО «Трансавтодор»
8. ООО «Автодор»	18. ООО «Трансавтодор»	28. ООО «Трансавтодор»	38. ООО «Трансавтодор»
9. ООО «Автодор»	19. ООО «Трансавтодор»	29. ООО «Трансавтодор»	39. ООО «Трансавтодор»
10. ООО «Автодор»	20. ООО «Трансавтодор»	30. ООО «Трансавтодор»	40. ООО «Трансавтодор»

Image Source: Map of the federal road system connecting the Russian Federation and central Asia by 2030, Rosdor NII institute, Moscow.
Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Financing urbanization and the return of the nation state

The 21st century belongs to cities. Without enough investments into their development the needs of the exponentially growing population will not be met. Nor will millions of people receive the chance to improve their lives. The challenge is simple – more investments in cities – the solution very complex. Various levels, actors and factors are involved, besides that every national and local context is unique. Surely, cities need to be in the driver's seat of development, since they are directly confronted with challenges and implement solutions. Logically, they should also be in charge when it comes to public and private investments. This may include a more extensive provision of grants or direct access to external financing supported with guarantee mechanisms.

The focus on cities, however, is only one side of the coin when it comes to financing a sustainable local and global future. The other decisive side is the national level, also in

times of urbanization and globalization.

Fact one: We must be aware that all we build and structure today will last for the coming decades thus determining our future developing path. There is a closing window of opportunity to set development on the right track.

Fact two: Cities in developing countries and emerging economies are rarely ready for mobilizing, accessing and managing vast amounts of financing – not to mention preparation of concrete investment projects. Most cities do not have the right to access external finance, not even in local currency. They lack autonomy and legal frameworks, capacities, own resources and experience. In best case scenarios, it may take two to three decades to fill these gaps in legislation, governance and financial market development

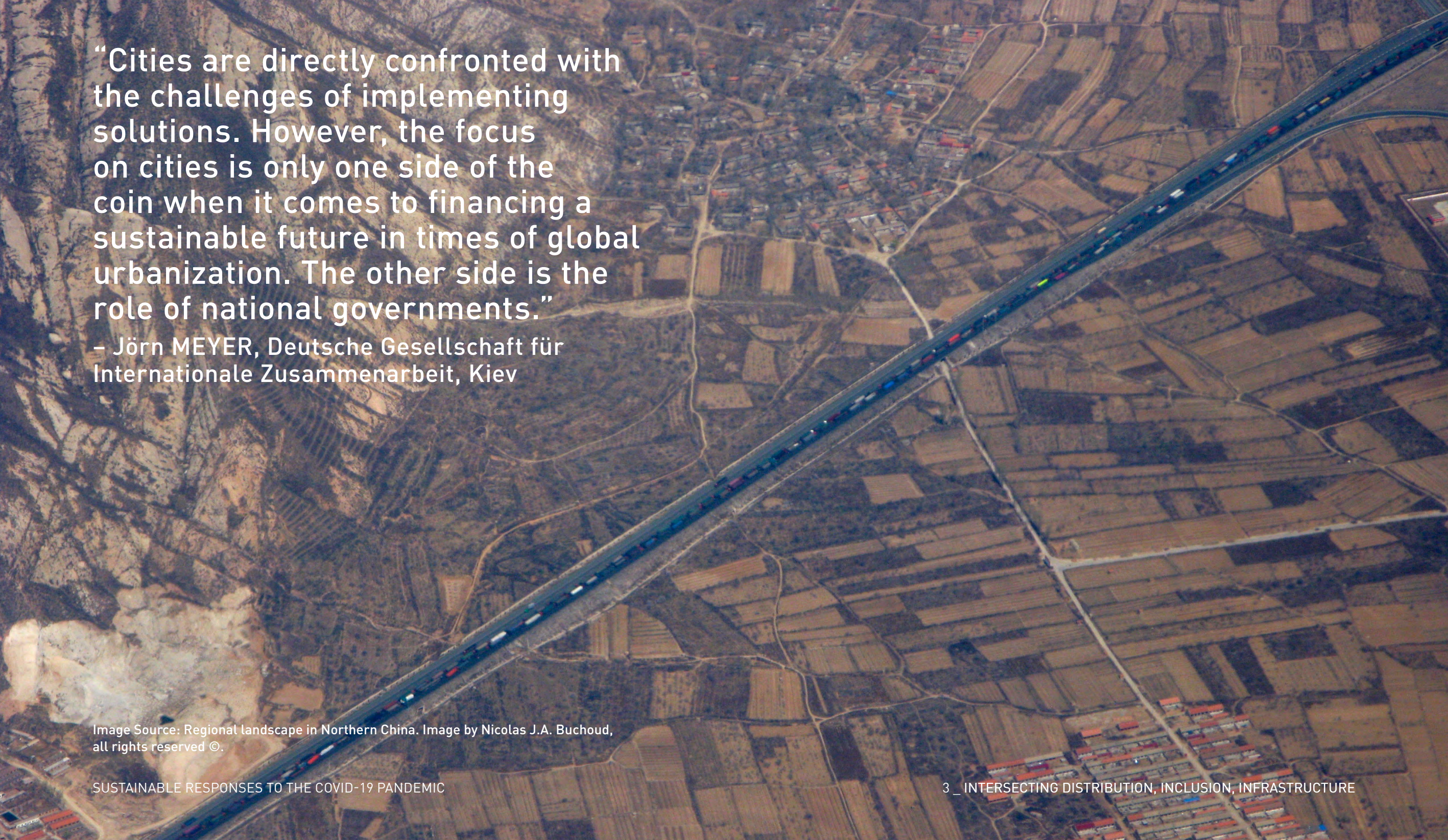
Fact three: Nation states are the major provider for subnational financing. Fiscal transfers from the national level are indispensable for municipal budgets. Within international financial cooperation, development banks and funds generally channel their money through national governments to cities. Few exceptions cannot alter this clear status.

To sum up: Cities must act now but the world cannot wait for them to be ready for action. It needs more than “just” strengthening cities. Nation states must take over a stronger role towards urban development, such as mobilizing more earmarked financing for cities. Since they are part-

ners for international finance, why not use this role more for urban development? And why not extend this mobilization beyond ODA also including private investments, who are essential for meeting the demands?

Economic prosperity, climate change or actions in the COVID-19 crisis, many national measures can only be implemented locally. Still, the missing recognition of the urban importance remains one major obstacle. The local level may even be perceived in competition to the national. A global effort is needed to raise the recognition of cities, starting with (re-)defining the role of nation states. It needs a final consensus that cities are decisive for national and global agendas. Where national reluctance prevails, the international community like the G20 may incentivize action in the right direction.

Enthusiasm that a sustainable world needs sustainable cities versus skepticisms that cities cannot meet this demand calls for a pragmatic twin-track approach: First, cities are supported on all levels and in all issues. Second, a more active role of the nation state is claimed and incentivized. Clear is: Cities need to be in the driver seat, but until they learn how to drive, the nation state needs to take over the wheel. Eventually, both are in the same car.



“Cities are directly confronted with the challenges of implementing solutions. However, the focus on cities is only one side of the coin when it comes to financing a sustainable future in times of global urbanization. The other side is the role of national governments.”

– Jörn MEYER, Deutsche Gesellschaft für Internationale Zusammenarbeit, Kiev

Image Source: Regional landscape in Northern China. Image by Nicolas J.A. Buchoud, all rights reserved ©.



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The COVID-19 crisis: Business responses and policy implications

The unprecedented COVID-19 pandemic has affected workers and businesses in every economy around the world both in the short run and long run. A World Bank report finds that 84% of respondents in its enterprise survey report a sale drop between 60% and 75% on average in the first four weeks after the peak of the outbreak.¹ 94% of the global workforce is living in countries with some sort of workplace closures in place that creates disruption to business operation.²

In response, most firms adjust workforce such as hiring freeze, furlough, reducing wages and working hours, and layoffs. Firms in accommodation sector has the highest probability of granting leaves (52%) and reducing wages (32%). With respect to firm size, large firms are more likely to furlough and lay off workers than small-and-medium enterprises (SMEs) by approximately 15% and 9% respective-

ly. Past research find that small firms may have more flexibility in adjusting to downturn quickly by exploiting market niche and less relying on formal credits than larger firms, thus less subject to sunk costs.³ However, SMEs are likely to be more vulnerable to financial constraints and have less cash at hands to cover the costs during the crisis compared to larger firms even in advanced economies.

Firms also respond by promoting working-from-home. In the US, researchers find that roughly 42% of the labour force is working from home fulltime because of the pandemic, representing over two-third of economic activities.⁴ In an ILO policy brief, studies estimate jobs that can be done remotely is over 26% for Argentina, between 20% and 34% for Uruguay, 24% for Italy, 28% for France, 29% for Germany, 25% for Spain, and 31% for the UK.⁵

Digital transformation allows firms to access new channels of selling and advertising products and reaching a broader customer base. The OECD reports that COVID-19 is accelerating e-commerce market expansion to new firms, customers and more diverse product type from luxury goods to essential necessities, and the shift is likely to be long-lasting.⁶ The surge in e-commerce activities were significant across regions including Europe, North America and Asia-Pacific during the first half of 2020. However, the uptake in e-commerce differs among countries, e.g. the increase in businesses using online platforms ranges from 11% in Ghana to 81% in Indonesia, depending on digital infrastructure

availability.

To build a “better normal”, businesses need government assistance to avoid layoffs, cut costs and invest in technologies. Governments around the world have provided access to finance/tax and other relief in many forms such as direct cash transfer, tax cut, loan extension, etc. as immediate responses to ease financial constraints and improve liquidity, particularly for vulnerable SMEs group. More long-term investments on digital infrastructure, social infrastructure and arrangements are necessary to encourage business digitalization and remote working. Policymakers may also ensure social protection for all, and provide training and skill development for unemployed and marginalized workers. Going forward, governments may combine short-term solutions with long-term structural stimulus to build a more inclusive and resilient economy.

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“More long-term investments on digital and social infrastructures and arrangements are necessary to encourage business digitalization and remote working.”

– Hang DANG MINH, The Australian National University, Canberra

Image Source: Cellphone and computer reparation, connecting people in Bamako, Mali, and in Genoa, Italy. Images by Nicolas J.A. Buchoud, all rights reserved ©



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Sustainable infrastructure isn't just about an outcome, but also who has a say in it

If infrastructure gaps are based on statistical estimates or top-down approaches, they have to rely on oftentimes-incomplete data sources and to make a series of normative assumptions. More often than not, they are incommensurable and say little about regional differences and local contexts such as relevant delivery and institutional regimes, project preparation capacities, or legal and regulatory frameworks. At the same time, while contextually specific studies at smaller scales provide more robust and fine-grained investment figures, it is difficult to extrapolate their investment figures to larger scales. The point is about critical co-constitution of data collection and data per se. In other words, data is laden and not neutral.

Infrastructure investment gaps can be estimated via top down approaches. Departing from normative assumptions about future infrastructure needs it derives the infrastruc-

ture gap by comparing historical and present infrastructure spending to estimates for future investment needs. These analyses estimate the existing capital needs of infrastructure projects based on specific project pipelines derived from market analyses and existing regional capital plans. In comparison to this, bottom-up approaches are contextually specific and mindful of existing public policy, delivery regimes, and infrastructure projects.

The challenge of bottom-up approaches is the requirement of resource intense market analyses, stakeholder capacity and their engagement through sophisticated methodologies, which have pitfalls in their own rights. Considering these challenges, this is the area where the contribution of technical international cooperation remains key.

Supporting municipal governments to play the central role in charting their own financial destinies while they are often co-opted by the prerogatives of central governments or the financial sector is obviously an important domain for international development cooperation. With empowerment from central governments and sufficient internal capacity development to conceive and assess funding options for capital-intensive projects, city leaders can both assist their central governments in delivering on the global agendas like the 2030 Agenda and the Paris Climate Agreement and improving the quality of life for their constituents.

Strengthening urban managers and communities in their

capacity and ability to deal with the interconnections between built environments, digital economy, socio-economic divide and spatial dynamics and in their contextualized derivation of infrastructure and investments needs remains a key area for international development cooperation.

Developing an economic basis and solvency of cities through enabling them to analyze attentively the effects of funding of financial intermediaries to their future budgets is a major task for the near future. It is about the cities capacity to keep or build their sustainable budgets over the time. This relates to the roles of the providers of equity, debt and money at the city, national and the external financiers' level, respectively (including the potential capacity of pension systems). They all have different risk and rewards profiles, timing preferences and determine profoundly a city's capacity of an inclusive and sustainable development over time.

The current pandemic has shown the value of adaptive need infrastructure finance development and the need for building socio-economically resilient cities budgets. The challenge is firstly that in many cities neither one nor the other is given. On the other hand, there is a disconnect between these two. In future, it will be necessary for international cooperation to bridge this gap when supporting cities.



“The challenge of bottom-up approaches for infrastructure investment is the requirement of resource intense market analyses, stakeholder capacity and their engagement through sophisticated methodologies, which have pitfalls in their own rights.”

– Holger KUHLE, Deutsche Gesellschaft für Internationale Zusammenarbeit, Berlin

Image Source: Intersections: favelas, port city and the Rio Niteroi viaduct, Prefeitura da Cidade do Rio de Janeiro, Brazil. Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Connecting the dots between COVID-19 recovery and net-zero. The role of National Development Banks to deliver on Future Urban Infrastructure

Fully capturing the potential of sustainable urban infrastructure

It has become commonplace to assert that ‘cities should be at the forefront of the global race to net-zero’; with an infrastructure investment gap of USD 4 trillion per year between 2015 and 2030, there is enormous potential to contribute to achieving the Paris climate goals. Around 75% of global emissions are concentrated in cities, of which 90% can be cut with the provision of climate-conscious urban infrastructure.¹

So far, however, not enough is being done to fully leverage this potential. As the 2021 State of Cities Climate Finance Report shows, investment is lagging globally, particularly in emerging markets and developing economies. The report estimates that an average of USD 384 billion was invested in urban climate finance annually in 2017/2018, far below the estimated need of USD 4.5 to 5.4 trillion annually². At the same time, the latest report from the International Panel on Climate Change (IPCC) from August 2021 confirms that climate change is ‘widespread, rapid and intensifying’.³

While plenty of private, institutional capital is looking for sustainable assets with long-term stable yields, not enough

is invested in sustainable infrastructure. Increasingly strained public budgets exacerbate the problem, particularly in the face of the COVID-19 pandemic. Part of the problem lies in a well-established sustainable infrastructure truism: a lack of well-prepared, financially viable projects in public and private pipelines that meet sustainability criteria are a critical bottleneck in the transition towards climate-conscious urban infrastructure.

To fully capture the potential of sustainable urban infrastructure and scale up transformative investments, bold action is needed to improve institutional capacity around infrastructure project preparation at the city-level, as well as to foster the vertical integration of municipal, national, and global climate policies and planning approaches. Equally important are strengthened partnerships - domestic and foreign, public and private - to translate climate finance policies into local action.

Our latest research conducted with the Cities Climate Finance Leadership Alliance, GIZ, Global Infrastructure Facility, the World Resources Institute (WRI), and further exchanges with development bankers and city officials at the Asia Pacific Climate Week in July 2021⁴ show that National Development Banks (NDBs) could be game changers at the crossroads of urban climate investment, COVID-19 recovery, and multilevel governance.

What National Development Banks could achieve: strengthening mandates, developing pipelines and catalyzing investments

NDBs are uniquely positioned to play a decisive role in “connecting the dots” needed to transform this situation. Owing to their unique financing models and deep knowledge of local markets, NDBs can offer longer-term and more affordable financing than what is typically available in the market. They also serve as policy instruments and financial institutions that have longstanding relationships with both public and private sector actors and are well-connected with cities. This gives NDBs an extraordinary potential to bridge the gap between the various stakeholders to help develop adequate responses to the climate crisis and translate financing needs and opportunities to cities. Well-placed to intermediate both domestic and international finance from public and private sources, NDBs have already yielded impressive results and impact.

According to a recent report, there were 454 public development banks worldwide.⁵ They represent over USD 11 trillion in assets, USD 1.9 trillion in equity, and USD 1 trillion in annual disbursements. Among them, NDBs hold the most significant shares: over 90% of the assets and around 79% of equity. In addition to their role as financiers and catalysts for public and private financing, many NDBs are already drivers for developing project pipelines in countries and cities.⁶ And, perhaps most importantly, they already act

as enablers, connectors across different stakeholders and institutions, and central pillars within an inter-institutional and multi-level governance approach to overcome the silos that still hamper the translation of ambitious climate action goals into sustainable infrastructure in cities.⁷

Strengthening mandates

To achieve transformation, national governments need to expand NDBs' mandates and regulatory frameworks to better reflect national and local climate ambition. Improving enabling environment conditions would facilitate more green finance towards cities for climate-conscious infrastructure. But even more importantly, it would create better chances to mobilize funding by tapping into the buoyant national and international market for sustainable and responsible finance.⁸ The recent mandate expansion of Indonesia's PT SMI is one such example. The Indonesian Government has mandated its NDB to become one of the critical entities to execute the national economic recovery program, including supporting local governments' economic recovery from the impact of the COVID 19 pandemic and infrastructure development as a central pillar of a green economic recovery. This example is important: recent research shows that only 4% of public development banks are specifically mandated to finance local governments, and even fewer NDBs have a green infrastructure mandate.⁹

Developing pipelines

NDBs can help address the lack of pipelines of bankable projects to finally overcome one of the critical bottlenecks for the financing and delivery of climate-conscious infrastructure projects – and ultimately sustainable urban development overall. Project preparation facilities like the C40 Cities Finance Facility or the Global Infrastructure Facility support cities in developing finance-ready infrastructure projects and linking them with suitable funding sources. Through the support of such facilities, public officials are thereby empowered to better plan, finance, replicate and ultimately scale climate-conscious projects. Since NDBs are often the entry point for cities to access climate finance as intermediaries of international credit lines and direct financiers, they are well-placed to play an influential role in supporting cities in preparing well-structured and bankable projects. Here, enhanced capabilities within NDBs and increased project preparation offer targeted to city clients could make a difference. By collaborating with project preparation facilities and other stakeholders, NDBs could establish themselves – or help set up – aggregation platforms for projects and create business lines tailored for urban infrastructure investment.

Catalyzing investments

NDBs can also play a role in aggregating and scaling investments. Often infrastructure projects are developed by one city, with limited replication potential in the municipali-

ty. This is especially true in small and medium-sized cities, where attracting investment is often challenging given the smaller ticket-size of infrastructure projects and higher transaction costs associated with bespoke transactions. NDBs can then have a crucial role in promoting scalability and replication of projects by leveraging standardized infrastructure project frameworks and contracts and pooling smaller infrastructure assets – thereby increasing ticket size, attracting investment, and promoting economies of scale. Here, NDBs should particularly focus on mobilizing additional private investments for urban infrastructure through early-stage and blended finance. And Indonesia again presents a compelling example through its blended finance facility “SDG Indonesia One.” The platform combines public and private funds through blended finance schemes channeled into infrastructure projects in line with SDGs.

How to enable effective multi-level governance partnerships for climate action

The measures mentioned above are well-known in urban infrastructure expert communities and climate policy circles as stand-alone instruments. However, deploying merely technical solutions to individual investment projects will not suffice to truly deliver on the Global Goals and make tangible progress on the path to net-zero. A paradigm shift is required to achieve the true transformation that places

NDBs at the forefront of a new multi-level governance ambition for cities’ climate action and green recovery efforts.

The paradigm shift will also require a more collaborative approach among national governments, and NDBs are well placed to help drive this change. Bilateral and even triangular cooperation among NDBs already exists and has achieved extraordinary results.¹⁰ However, a multi-actor collaboration between national, regional, and multilateral institutions remains exceptional. NDBs can work together towards a collective approach to capacity building and creating pipelines of investments at the city level, as well as to continue with existing learning exchange in the project level. Some initiatives are already leaning in this direction. Multilateral, regional, and many NDBs have already developed frameworks to guide sustainability across infrastructure project cycles, which is critical to guarantee their quality and attractiveness to “green” investment and finance. Together they can also engineer and manage funds meant to finance the origination of quality projects, mitigate financial risks, and facilitate crowding-in funding from specialized markets and institutions. Jointly, they can be effective bridges to attract and channel funds by crowding private credit, capital, and other non-conventional sources.

Moving towards reinvigorated multi-level governance and closer collaboration among NDBs does not require setting up new institutions. Instead, climate action stakeholders at the city-level and NDBs should collaborate via a more

explicit mandate for NDBs to work with cities and provide them with the finance needed to deliver urban climate action. In turn, NDBs can be leveraged as key actors in platforms that bring together emerging markets and developing economies, developed economies, and multilateral organizations.

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“To scale up transformative investments for sustainable urban infrastructure, bold action is needed to foster the integration of municipal, national and global climate and planning policies.”
– John HAUERT, Carmen VOGT, Kristiina YANG, Laura JUNGMAN, Rogério STUDART, Carmel LEV

Image Source: In the outskirts of Atlanta, the United States.
Image by Nicolas J.A. Buchoud, all rights reserved ©.



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The way forward is ‘infrastructure for distribution’: Recovering from COVID-19 from the Bottom Up

The COVID-19 crisis has revealed once again the unfairness of global, national, and local economies. The poor in all countries have had higher rates of infection and death than the middle class and the rich, demonstrating that living conditions including overcrowding, the lack of clean water and sanitation, and higher residential densities affect the incidence of the disease. Millions of people living in informal settlements around cities in developing countries have not been able to afford social distancing, staying home from work, or digital commuting. Those with capital have been able to grow their wealth, while the poor are mired in lost jobs, dwindling savings, and declining public economic support which was distributed in the first months of the pandemic. New York has lost more than a million jobs due to the COVID-19 crisis. In Buenos Aires slum dwellers face the impossible choice of staying home to avoid the virus or going to work to be able to provide food for hungry households.

The governmental response to this double crisis of COVID-19 and the collapse of economies has generally been of two kinds: first, direct immediate aid to victims, either in terms of food, cash payments, or other services, and secondly, through the promise of restarting economies through stimulus packages to support short to medium-term economic recovery. If the first has been a short-term response in many countries, the latter has assumed that restarting growth will take time, with higher public spending contributing to economic multipliers and eventually economic growth. The reality is that stimulus packages have proven to be unaffordable, even in the medium term for rich countries.

The sector most favored in these recovery packages has been infrastructure. The term adopted by the G-20 and other global institutions has been the well-worn slogan of “infrastructure for growth” which goes back to the 1994 World Development Report and the 2010 G20 Seoul Summit which argued for the importance of infrastructure investment action plans. There is little doubt that infrastructure does contribute to growth, as noted by Nobel Laureate Sir W. Arthur Lewis who referred to infrastructure in the 1950s as “social overhead capital”, a necessary input to economic growth. Nonetheless, infrastructure which contributes only to growth is just not enough. Growth is a necessary but not sufficient condition for an equitable recovery, social progress, or sustainable development. The real challenge is how to improve the

unequal distribution of income. The question then is what would be infrastructure for distribution?

Infrastructure for distribution is the idea that the purpose or objective of infrastructure should also be to improve the distribution of income, wealth, or opportunities across society but particularly for the poor who have received a disproportionate impact of the COVID-19 pandemic. An example of infrastructure for distribution could be a water supply system built to provide the quantity and quality of water needed by a specific low-income community. Investing in this system should be labor-intensive rather than capital intensive. The required equipment, such as pipe, should be domestically manufactured pipe and not imported from an industrialized country. It would generate local employment as well as provide water for consumption. This is not very different from the labor-intensive public works programs designed in many countries, from the New Deal in the 1930's in the United States to rural infrastructure programs in India or Mexico.

By paying for the labor to build such a system a project would generate income for the poor who would use it to meet immediate household needs. The income earned by low income people would be quickly consumed and thereby generate immediate economic multipliers in the local economy. If enough income was created and multipliers activated, it would increase the aggregate demand for goods and services within local economies. That aggregate

demand would in turn create new employment that would repeat the cycle.

A sequence of investment, employment, income generation, consumption, and creation of economic multipliers would occur, but not just to increase GDP, admittedly a worthy objective, but rather to expedite the distribution of income to poor communities. This approach contrasts sharply with most infrastructure investment which finances large transportation systems or highways or trunk infrastructure rather than generate immediate expenditure for labor costs that can help poor families meet their needs.

A second example of infrastructure for distribution might be a program to improve environmental management – a green corps – to address a range of environmental problems from pollution to maintenance of green space and other environmental resources. In this case the infrastructure is people. This program could also employ millions of young people who are currently unemployed and thereby generate incomes for this group that has become one of the largest segments of the “precariat”.

Another example of infrastructure for distribution might be in the field of culture or creative economy where many cultural workers earn low incomes in what they perceive to be limited markets for their creative work, whether in the plastic arts or in performance. But some local cultural workers in Indonesia and Mexico have learned that the

digital sphere has the power to publicize and expand their activities., Most of these workers receive modest incomes for their work, but with logistical support, they are able to expand both activities and earnings.

A key feature of infrastructure for distribution is that it can reflect the demands of users. Unlike conventional infrastructure that has a heavy supply bias, designed by engineers and manufactured in factories, infrastructure for distribution would reflect the preferences of users. It is clearly a bottoms-up approach which contrasts with most heavy investment in infrastructure and the canon of development agencies about “going to scale” in order to make a difference.

Going further, one can also speak of “people as infrastructure” where individual and community capacities can activate community responses to problems. One dimension of this is to consider “participation as infrastructure”, as shown in Buenos Aires where a slum community with prior participatory experience in slum upgrading was able to keep COVID-19 cases and mortality below levels in other neighborhoods.

Considering the notion of infrastructure for distribution opens up space for a wider and more social understanding of how infrastructure can be used to achieve other objectives. It offers an alternative to the conventional focus on infrastructure financing which is in fact part of the previ-

ously described “supply bias” when infrastructure is discussed. Infrastructure for distribution shifts the conversation towards the demand side, towards users, and towards focusing much more on the objective of economic and social progress.

In so doing it also suggests a new infrastructure compact in which communities are happy to contribute to the financing of infrastructure that is designed to meet their needs and not abstract policy notions of productivity or mobility. To ignore this dimension and to continue the conventional focus on financing and public-private partnerships is to miss an important opportunity for policy change and a new beginning. The COVID-19 pandemic provides an opening for new initiatives while recognizing that the pandemic has once again exposed not only the social and economic differences within countries and cities but also the weaknesses of existing policy and investment tools. More of the same is not enough.

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“There are many supply biases
in providing infrastructure,
a systematic disregard
of the demand-side.”

– Michael COHEN, New York



Image Source: Wikimedia Commons. USNS Comfort arrival into New York Harbor, March 30, 2020. The Comfort arrived in New York City to assist in the COVID-19 response. Image by U.S. Coast Guard, Petty Officer 3rd Class John Q. Hightower. <https://www.flickr.com/photos/navymedicine/49727674192/>

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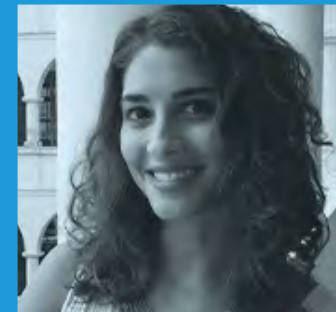
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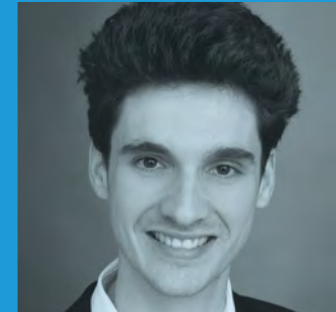
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“Experts are used to converting people on the ground into numbers to feed them into their economic equations. Now, they must listen to the people in the many voices which the people speak.”

– Arun MAIRA, Help Age International, India



Image Source: Wikimedia Commons. June 19, 2020. Black Lives Matter - Sit In - Occupy Bay Street - College Street - Toronto Police Headquarters, Toronto, Canada. Image by Jason Hargrove.
[https://commons.wikimedia.org/wiki/File:Black_Lives_Matter_-_Sit_In_-_Occupy_Bay_Street_-_College_Street_-_Toronto_Police_Headquarters_-_June_19,_2020_-_Creative_Commons_\(50025876838\).jpg](https://commons.wikimedia.org/wiki/File:Black_Lives_Matter_-_Sit_In_-_Occupy_Bay_Street_-_College_Street_-_Toronto_Police_Headquarters_-_June_19,_2020_-_Creative_Commons_(50025876838).jpg)



Large-scale protest demonstrations against COVID-19 restrictions in Berlin.

Image Source: Wikimedia Commons. August 29, 2020. "Querdenken" against Corona restrictions at Friedrichstrasse in Berlin, Germany.
https://de.wikipedia.org/wiki/Datei:29.08.2020_Berlin-Friedrichstrasse.JPG

partners

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“From 1929 to 1932, the Great Depression was not only economic. It triggered regime changes in countries all over the globe. In colonial Africa, the authority of traditional chiefs came apart with the arrival of colonial administration, before revealing new arenas of conflict and creating new political opportunities.”

– From Chinua Achebe, *Things Fall Apart*, William Heinemann ed., London, 1958

Image Source: Plenary round table at the first edition of the Global Solutions Summit in Berlin, during the G20 Germany in 2017. Photo: Tobias Koch for the GSI.

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