

Frame the Future Thought Pieces



Accelerate and Prioritize Sustainable Infrastructure



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The Covid-19 pandemic raised the specter of the importance of infrastructure and its sustainability, and indeed the importance of appropriate technologies. Images of grounded aircraft, stalled shipments, and less-trafficked roads were met with the celebration of cleaner air and quieter urban neighborhoods. But they also hid the major effects of supply chain disruptions, job losses, and the costs of goods delivery. Those with well-functioning communications systems and those who could work from home managed to surmount the challenges of lockdown and curfews, while the rest had to find other ways to cope.

Countries had to dig deep into their fiscal coffers to find solutions to meet the demands of dealing with the challenges from the pandemic, from saving lives to protecting livelihoods. Those countries already highly indebted needed to find innovative and alternative sources of finance. But in all of this imagery, the importance of sustainable infrastructure and technologies could not have been more evident.

In environments where infrastructure is lacking, such as in many of the emerging economies and developing countries, there is an opportunity to innovate and leapfrog ahead with new technologies. This has been most visible in the telecommunications sector, where leapfrogging from fixed lines to mobile phones in Africa gave rise to highly innovative mobile payments systems and financial

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technologies (FinTech). Such innovations fueled further transformation by adopting data science and artificial intelligence in areas like smart agriculture (e.g., the [Lacuna Fund](#)); distributed or off-grid and renewable energy systems (e.g. [AI for renewable energy](#) in Nigeria or [smart grids using blockchain](#)); as well as e-commerce, where bridging the access gap and [making e-commerce more inclusive could also deliver further value](#). Mobile solutions were highly critical as a solution to many sectors during the pandemic, from delivering groceries to telemedicine and working from home in the services sectors.

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Where infrastructure is aging or mature, the pandemic has also signaled the need for new thinking and imaginative approaches for retooling and recycling. Many innovations have materialized, such as [bringing digital solutions to aging infrastructure](#), [expanding and extending the life of aging water treatment plants](#), and using smart materials for the renovation of old infrastructure.

In other cases, the pandemic has made even more visible those infrastructure services that are not fit for purpose in handling shocks. City infrastructure [coping with floods from the heavy rains](#) while handling the pandemic is but one illustration hitting countries from Germany to India. Cyber security is yet another area of preparedness that infrastructure managers need to have in place.

Amongst the key choices for policymakers are whether to bundle or unbundle the provision of infrastructure services. Kenya, for example, has decided to bundle its ports, railways, and pipeline infrastructure to reduce supply chain and logistics costs for business. Such choices have been made in constructing infrastructure in the past, such as the [Jamuna Bridge](#), where rail, gas, telecoms, and road transport have been bundled on the same bridge infrastructure to cross the Jamuna river. On the electricity side, choices have varied between bundling and unbundling with services that are in many cases distributed or off-grid.

Other choices relate to new uses for old infrastructure, such as the potential of [running hydrogen through pipelines originally developed for oil and gas](#) as the world shifts to non-fossil fuel economies.

So what do we need to prioritize to advance sustainable infrastructure globally? In addition to the alternative financing solutions, it is critical to build the necessary partnerships to bring the talent, research and innovation, and finance

to serve infrastructure needs. Talent needs to be multidisciplinary, based on continuous learning and learning on the job, and learning from users and consumer feedback loops. Research and innovation need to be sped up to bring in holistic solutions that combine the best that we know from material sciences to data science and behavioral economics. Finally, financing solutions need to be innovative and flexible, and bring the best from blended solutions to risk-mitigated options.

And how do we accelerate investments in sustainable infrastructure and technologies? First, by ensuring that infrastructure solutions are green and can attract green investment resources. Second, by a particular focus on the role of national, regional, and multilateral development banks in taking on the long-term risks of driving the transformation to green infrastructure solutions. Third, by leveraging the existing assets, such as through sale-lease-back solutions at the municipal and corporate level and other [risk mitigated solutions that can attract institutional and private investors](#). Fourth, by seeking innovative solutions such as nature-to-debt for infrastructure swaps, as was done in the [case of the Seychelles](#). Finally, market solutions like social bonds or sustainability bonds as [done recently by Benin](#) are critical.

The key issue is innovation and imagination. Imaginative public-private partnerships in critical value chains could bring much needed financing for infrastructure priorities, such as [Togo has done in the cotton sector](#), and [Rwanda in aviation](#).