



## The Best and Worst of Humanity

This essay is adapted from the foreword to the forthcoming Lincoln Institute book *Infrastructure Economics and Policy: International Perspectives*. To learn more about the book, see the “Infrastructure and Climate Change” excerpt in this issue or visit [www.lincolninst.edu/publications/books/infrastructure-economics-policy](http://www.lincolninst.edu/publications/books/infrastructure-economics-policy).

THE LINCOLN INSTITUTE is preparing to launch a book about infrastructure, which you'll find excerpted in this issue of *Land Lines*. It is one of the very few books about infrastructure published in the last decade. It could not come at a better time.

Today, we are on the cusp of historic investments in global infrastructure. The World Bank estimates that we will need more than US\$90 trillion in new infrastructure by 2030 to prepare cities for 2 billion new inhabitants, primarily in sprawling metropolises in low-income countries. This total investment exceeds the current annual gross domestic product of all the countries on the planet by around 20 percent. In order to formulate new sustainability strategies and policies for cities in regions where populations are growing rapidly—and in regions where city structures continue to evolve to adjust to innovations in technology and commerce—we need to understand the relationship between urbanization and infrastructure.

The world also faces new challenges associated with the climate crisis, the sharing economy, and the fallout from COVID-19. If we want to protect ourselves from the impacts of the climate crisis, the World Bank suggests we add another US\$1 trillion per year to the global investment noted above. If we are to live in a “new normal” shaped by global pandemics, infrastructure design and usage must be modified.

For most people in developed countries, infrastructure is largely invisible, noticed only due to its absence or failure. We are chagrined when the power goes out or the Internet goes down. More distressingly, infrastructure failures can be catastrophic, such as when the Ponte Morandi collapsed into the Polcevera River in Genoa, Italy, in 2018; or when leaking, centuries-old gas pipes destroyed two apartment buildings in East Harlem, New York, in 2014; or when the levees failed and floodwater inundated New Orleans after Hurricane Katrina in 2005.

These awful events made headlines because infrastructure is supposed to be safe and reliable—and for a large portion of the world's population, it usually is. But most people in developing countries live with inadequate roads, unreliable power supplies, and a lack of safe drinking water and basic sanitation. They have a diminished quality of life and reduced life expectancies as a result, and the growth of their local and national economies is constrained.

When it works, infrastructure represents humanity at its best. Designing, developing, and financing infrastructure requires formidable technical expertise. But to get the job done, we also need to exercise our best social and political skills and work together to provide durable public goods that solve seemingly intractable social, economic, and environmental challenges.

Colossal dams spanning treacherous canyons are a great example: they demand exceptional engineering acumen and provide decades of flood prevention, crop irrigation, drinking water, and electricity. Planning and financing infrastructure requires us to dispose of short-term thinking and make investments with benefits that will span generations.

Infrastructure also represents humanity at its worst. We are at our worst when we allow opaque decisions about infrastructure to disadvantage or harm those without the economic or political power to influence those decisions—when new thoroughfares are forced through thriving communities of color to reduce drive times for suburban commuters, for example, or when public officials and beltway bandits strike sweetheart deals behind closed doors. Process is as important as, and sometimes more important than, outcomes. Infrastructure planning must include all stakeholders and account for their needs, aspirations, and rights.

The stakes are high with infrastructure. We commit dizzying sums of money for decades to build and manage projects and systems of unimaginable scale and ambition. The very complexity of all aspects of infrastructure demands paramount integrity: conforming assiduously to engineering specifications, adhering to the rule of law, exercising fiscal discipline, and maintaining absolute transparency and accountability. Decisions to build infrastructure using public funds must be grounded in rigorous cost-benefit analysis. Although such methodologies are well developed in theory, in practice they can be abused with political pressure, intentional bias, or selective myopia. Moreover, public decision processes cannot



Demolition of the Ponte Morandi in Genoa, Italy, in 2019. One year earlier, a section of the bridge had collapsed. Credit: Gianluca Cichellero via iStock/Getty Images Plus.

always be trusted to produce optimal resource allocations. If we can understand the complexity of infrastructure within real-world constraints, we will make better spending decisions.

Despite the obvious need for infrastructure, developing countries struggle to pay for long-term investments. While these constraints are real, there are many ways to finance infrastructure, even in the most impoverished places. These methods include land value capture mechanisms, which have been used for millennia and which involve recovering the increased value of land associated with infrastructure improvements. For example, betterment levies were used by the Roman Empire to build roads, bridges, tunnels, and viaducts connecting a vast area from Portugal

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Interstates 10 and 101 in Los Angeles. Credit: Art Wager via Getty Images.

to Constantinople. Land readjustment, in which parcels of land are pooled and improved with new infrastructure that is paid for through the sale of a small share of the land, has been used hundreds of times on multiple continents to build capital cities like Washington, DC, or rebuild towns and cities in countries ravaged by war.

How effectively infrastructure meets economic and social goals depends critically on the way it is managed and regulated. Both the public and private sectors are active in infrastructure development and service provision. The infrastructure industry has gone through a cycle of domination by the private sector followed by public takeover and public provision, then to privatization, and to the increasingly popular public-private partnerships. Who gets served by infrastructure, and how they are served, is determined by regulatory structures that protect the public interest and require absolute transparency and accountability of vendors and public officials.

We can learn a lot from international experiences related to the management and regulation of infrastructure. Some countries and regions develop and implement infrastructure plans and strategies to achieve specific social and economic

objectives. The European Union used infrastructure grants and loans to help integrate new members both politically and economically through two rounds of expansion. Chinese policy makers advanced high-speed rail development strategies that supported the formation of several major city clusters (or megalopolises) to drive the growth of the national economy. In contrast, Japan's rail policy relied mainly on the private sector to provide vital social services. The lessons from such experiences are important for countries that aspire to not only formulate effective infrastructure plans but also use infrastructure planning to achieve other important goals.

It is hard to exaggerate the importance of infrastructure for sustaining human habitation on this planet. Without it, to quote Thomas Hobbes, "there is no place for Industry; because the fruit thereof is uncertain; and consequently no Culture of the Earth; no Navigation, nor use of the commodities that may be imported by Sea; no commodious Building; no Instruments of moving, and removing such things as require much force . . . And the life of man, solitary, poore, nasty, brutish, and short."

At the Lincoln Institute, we have spent more than seven decades addressing social, economic, and environmental challenges using innovative land policies. Among those we have studied and recommended to address global challenges, none is more important than infrastructure. Without the lifeline goods and services delivered by effective and efficient infrastructure, human life would be nastier, more brutish, and shorter. If we can learn from the authors of this book, life will be better and longer for a multitude of people around the world. □

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