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Financing and Implementing the Quality Infrastructure Agenda

Leveraging the United States-Japan
Partnership to Ensure a High-Quality
Option and Other Next Steps

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A Report of the
CSIS PROJECT ON PROSPERITY AND DEVELOPMENT



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Executive Summary

The idea of “quality infrastructure” first emerged in May 2015, when Japanese Prime Minister Shinzo Abe announced a multibillion-dollar infrastructure aid package intended to create durable, environmentally sustainable, and disaster-resistant infrastructure in countries around the world.¹ At the Ise Shima summit of 2016, the G7 further developed this idea by adopting a set of principles to guide their conceptualization of the term “quality infrastructure.” These principles have been agreed upon and highlighted by many countries in their pursuit of national and regional quality infrastructure agendas.

The degree to which a country’s infrastructure is developed and integrated with its business and commercial centers determines the success of its economy. High-quality infrastructure and proper connectivity have a direct impact on the delivery of public goods and services and overall economic efficiency, growth, and productivity. It also provides an enabling environment for mobilizing domestic and international private capital to support the broader agenda of economic development and human prosperity.

Currently, annual global infrastructure demand is estimated at \$3.7 trillion, most of it in developing countries. Asia alone will require more than \$1.7 trillion per year, through 2030, to support its growing infrastructure needs.² Foreign aid alone will not be able to meet this demand, given that the level of global foreign aid available in 2017 was just under \$150 billion, the vast majority of which has been apportioned to challenges unrelated to infrastructure.³ With growing infrastructure demands in many developing countries, the world is looking at a problem that no one country, organization, or funding source can solve alone.

Growing population pressure combined with the lack of infrastructure contribute to broader development and security challenges such as economic stagnation, environmental degradation, forced migration, and pandemics. As the markets and economies of developing countries continue to evolve rapidly, it is critical that their hopes and aspirations be met. In most cases, if developing countries have a choice between no road and a badly financed or poorly built road, they will choose to build the road. A third option—a “quality option”—must be made available to ensure that developing countries have infrastructure options that are sustainable and fiscally responsible and meet universally accepted quality standards. To help close the funding gap, the United States and

¹ Masaaki Kameda, “Abe Announces \$110 Billion in Aid for ‘High-Quality’ Infrastructure in Asia,” *Japan Times*, May 22, 2015, <https://www.japantimes.co.jp/news/2015/05/22/business/abe-announces-110-billion-in-aid-for-high-quality-infrastructure-in-asia/#.W2iWBPZFzct>.

² Global Infrastructure Hub, “Forecasting Infrastructure Investment Needs and Gaps,” *Global Infrastructure Outlook*, <https://outlook.gihub.org/>; Asian Development Bank, *Meeting Asia’s Infrastructure Needs* (Manila, Philippines: Asian Development Bank, February 2017), <https://www.adb.org/sites/default/files/publication/227496/special-report-infrastructure.pdf>.

³ Organisation for Economic Co-operation and Development, “Net ODA,” *OECD Data*, <https://data.oecd.org/oda/net-oda.htm>.

Japan should lead bilateral and multilateral aid institutions around the world to mobilize new sources of capital, upgrade procurement standards and government regulations, and expand access to fiscally sustainable lending.

The Project for Prosperity and Development at CSIS has produced this report outlining the opportunities for an enhanced U.S.-Japanese partnership in leading the discussion on financing quality infrastructure. The two countries can advance this agenda through bilateral aid agencies, multilateral development banks, and other international organizations like the G7 and the G20. This report intends to inform policymakers in the United States and Japan, as well as other stakeholders, about the state of the quality infrastructure agenda and identify the next steps that the two countries can take to pursue it. It highlights the key objectives of this agenda: diversifying borrowing countries' sources of finance for infrastructure development, providing a framework to assess the financial viability of projects, and raising public-sector procurement standards and building procurement capacity in borrowing countries.

The report also highlights the critical issues that the two countries need to revisit given the rapidly evolving global political landscape, including the emergence of new donors like China, whose infrastructure investments and capacity as a donor have grown tremendously in recent years. Given the new and significant role that new donors play, no standard for quality infrastructure will be truly universal or effective without their active participation; this will require traditional bilateral and multilateral donor agencies to increase their engagement with the new donors.

The United States and Japan—through their bilateral aid agencies, partnerships, and broader collaborations with donors, private investors, and others—can help begin a new phase of the quality infrastructure agenda, so that developing countries no longer have to choose between a poor-quality road and no road at all.

1. Background

While the lack of adequate infrastructure stifles economic growth, the consequences of poor-quality infrastructure can be even worse, as countries can be saddled with debt when the economic value expected from the project fails to materialize.⁴ Poorly planned infrastructure projects also impose long-term environmental, human, and social costs. Quality infrastructure is, therefore, a timely and appropriate concept.

As an idea, quality infrastructure has increased in importance in recent years, and Japan is leading the global community to adopt higher standards for infrastructure development. As the Trump administration has expressed in its National Security Strategy, it is critical for the United States to “strengthen cooperation with allies on high-quality infrastructure.”⁵ In that spirit, the United States and Japan need to better coordinate their work, given their complementary interests and capabilities. The following five principles, adopted by the G7 countries at the 2016 Ise Shima summit under the leadership of Japan, can serve as an ideal guide to achieving quality infrastructure.⁶

Principle 1: Ensuring effective governance, reliable operation, and economic efficiency in view of life-cycle cost as well as safety and resilience against natural disaster, terrorism and cyber-attack risks

Principle 2: Ensuring job creation, capacity building and transfer of expertise and know-how for local communities

Principle 3: Addressing social and environmental impacts

Principle 4: Ensuring alignment with economic and development strategies including aspect of climate change and environment at the national and regional levels

Principle 5: Enhancing effective resource mobilization including through public-private partnerships (PPPs)

It is critical that the hopes and aspirations of developing countries, whose markets and economies are fast evolving, are met while also ensuring that infrastructure projects in these countries are sustainable over the long term, are financed in a fiscally responsible manner, and adhere to universally accepted quality standards.

At the same time, the world needs to identify new funding sources to meet the multitrillion-dollar global infrastructure demand. Conventional foreign aid will not suffice: in 2017, it

⁴ Jorge Gonçalves and Jan Peuckert, *Measuring the Impacts of Quality Infrastructure: Impact Theory, Empirics and Study Design* (Braunschweig, Germany: Physikalisch-Technische Bundesanstalt, April 2011), https://www.ptb.de/cms/fileadmin/internet/fachabteilungen/abteilung_9/9.3_internationale_zusammenarbeit/q5_publicationen/207_Guide_Impacts/PTB_Q5_Guide7_Impacts_EN.pdf.

⁵ National Security Council, *National Security Strategy of the United States of America* (Washington, DC: White House, December 2017), 47, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

⁶ Group of Seven, “G-7 Ise-Shima Principles for Promoting Quality Infrastructure Investment,” <https://www.mofa.go.jp/files/000196472.pdf>.

amounted to just under \$150 billion globally, most of it earmarked for projects unrelated to infrastructure.⁷

The United States and Japan have a natural capacity to become partners in leadership on this issue. Both countries have acknowledged that addressing the multitrillion-dollar infrastructure gap in Asia (and that of the developing world in general) with investments in bankable infrastructure projects will directly support the Free and Open Indo-Pacific Strategy while helping to secure lasting peace and global security.⁸ Senior officials of the Trump administration have also emphasized the United States' commitment to engagement in the region.⁹ Secretary of State Mike Pompeo referred to U.S. economic assistance as a down payment to ensure peace and prosperity in the Indo-Pacific region, while announcing initiatives worth \$115 million that will foster partnerships in the digital economy and cybersecurity, support critical infrastructure investment, ensure energy security, and bolster regional institutions like ASEAN and APEC.¹⁰

Outside of the U.S.-Japanese partnership, several other countries and political leaders have expressed support for the quality infrastructure agenda, through international organizations such as APEC, the G7, and the G20. Through these and other international and regional fora, the United States and Japan can jointly pursue the objectives of reworking their development finance capabilities and ensuring a level playing field for private-sector participants. Economic and regional powers like India and Australia have used alliances like the Quadrilateral Security Dialogue¹¹ to express their support for holding donors of infrastructure projects to higher standards and ensuring that investments are sustainable and economically viable.¹² While universal adoption of an applied framework for quality infrastructure will be a prolonged process, the United States and Japan can spearhead reforms that will pave the way.

⁷ Organisation for Economic Co-operation and Development, "Net ODA."

⁸ Alex N. Wong, "Briefing on the Indo-Pacific Strategy" (Washington, DC: U.S. Department of State, April 2, 2018), <https://www.state.gov/r/pa/prs/ps/2018/04/280134.htm>; International Cooperation Bureau, "Priority Policy for Development Cooperation FY2017" (Tokyo: Ministry of Foreign Affairs of Japan, April 2017), <https://www.mofa.go.jp/files/000259285.pdf>; Mark J. Valencia, "What Does a 'Free and Open Indo-Pacific' Actually Mean?," *Diplomat*, March 30, 2018, <https://thediplomat.com/2018/03/what-does-a-free-and-open-indo-pacific-actually-mean/>.

⁹ Office of the Spokesperson, "Advancing a Free and Open Indo-Pacific" (Washington, D.C.: U.S. Department of State, July 30, 2018), <https://www.state.gov/r/pa/prs/ps/2018/07/284829.htm>.

¹⁰ Lesley Wroughton and David Brunnstrom, "Wary of China's Rise, Pompeo Announces U.S. Initiatives in Emerging Asia" (*Reuters*, July 30, 2018), <https://uk.reuters.com/article/uk-usa-trade/wary-of-chinas-rise-pompeo-announces-u-s-initiatives-in-emerging-asia-idUKKBN1KK0TH>.

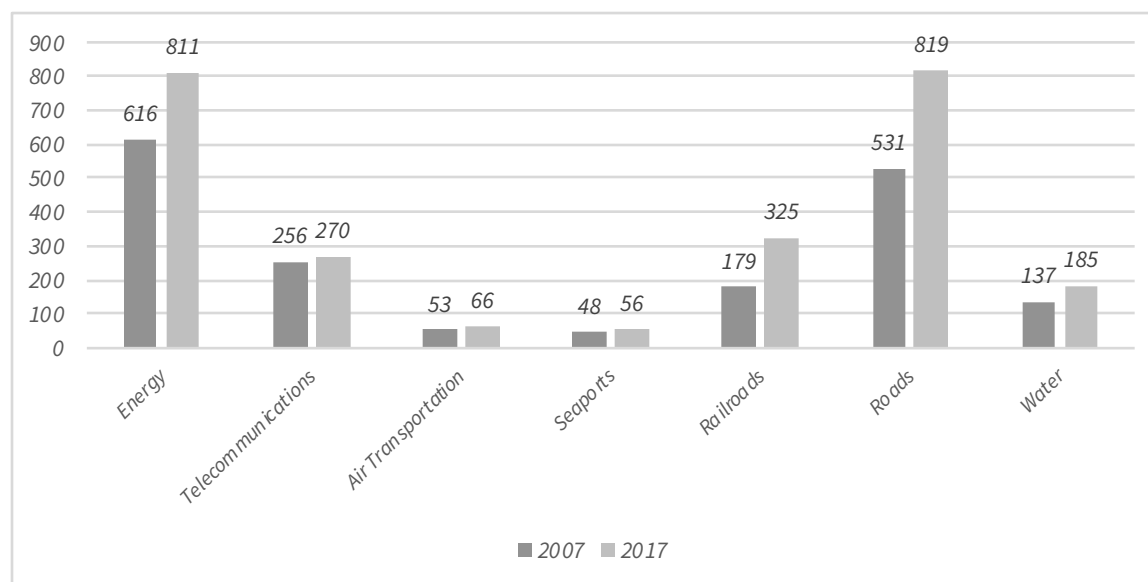
¹¹ The Quadrilateral Security Dialogue's members are the United States, Japan, Australia, and India.

¹² Sutirtho Patranobis, "India Rejects China's Latest Offer to Join BRI," *Hindustan Times*, April 15, 2018, <https://www.hindustantimes.com/world-news/india-rejects-china-s-latest-offer-to-join-bri/story-vH6Pc7nttZJ73PMilNGHpL.html>; "Australia, U.S., India and Japan in Talks to Establish Belt and Road Alternatives: Report," *Reuters*, February 18, 2018, <https://www.reuters.com/article/us-china-beltandroad-quad/australia-u-s-india-and-japan-in-talks-to-establish-belt-and-road-alternative-report-idUSKCN1G20WG>.

2. The Need for Quality Infrastructure

The degree to which a country's infrastructure is developed and integrated with its business and commercial centers is a key determinant of the success of its economy. High-quality infrastructure and good connectivity have a direct impact on the delivery of public goods and services and overall economic efficiency, growth, and productivity. It also provides an enabling environment for mobilizing domestic and international private capital that will help achieve the broader agenda of economic development and human prosperity. Currently, annual global infrastructure demand is estimated at \$3.7 trillion, most of it in developing countries. Asia alone will require more than \$1.7 trillion per year through 2030 to meet its growing infrastructure needs.

Figure 1: Infrastructure Spending by Sector, 2007–2017 (\$ billions)



Source: Global Infrastructure Hub.

The human impact of this infrastructure gap is significant. Globally, over 1.3 billion people still lack electricity due to underdeveloped electrical grids and insufficient generation capacity, while 844 million lack access to safe drinking water, and about 2.5 billion lack access to basic sanitation.¹³ Many emerging economies still lack the transportation infrastructure—including seaports, railways, and roads—that could connect them

¹³ Todd Lindeman, “1.3 Billion Are Living in the Dark,” *Washington Post*, November 6, 2015, <https://www.washingtonpost.com/graphics/world/world-without-power/?noredirect=on>; “Drinking Water” (Geneva, Switzerland: World Health Organization, February 7, 2018), <http://www.who.int/news-room/fact-sheets/detail/drinking-water>; “Global WASH Fast Facts” (Atlanta, GA: Center for Disease Control and Prevention, April 11, 2016), https://www.cdc.gov/healthywater/global/wash_statistics.html.

efficiently to more extensive domestic and global markets.¹⁴ Moreover, with over 4.2 billion people lacking regular access to the internet, more than half of the world's population has yet to benefit from its positive influence on education, economic activity, and governance. Lack of adequate infrastructure is an impediment to sustainable economic growth and international investment.

The developing world in general—and the Indo-Pacific region in particular—have long benefited from Japan's leadership in securing investments for high-quality infrastructure. Foreign aid helped to achieve this: between 1960 and 1984, Japan's foreign aid budget expanded nearly 50 times, from \$100 million to \$4.3 billion.¹⁵ Through commercial partnerships and trade initiatives, Japan has also provided access to and support for infrastructure development to dozens of neighboring countries and has forged greater economic cooperation with them.¹⁶ Today, with an annual aid budget of over \$10 billion, and having made over \$230 billion in private- and public-sector investments since the 2000s, Japan continues to be a leader in infrastructure investment in East Asia and abroad.¹⁷

¹⁴ "Global WASH Fast Facts."

¹⁵ Darshana M. Baruah, *Toward Strategic Economic Cooperation between India and Japan* (New Delhi: Carnegie Endowment for International Peace, December 1, 2016), http://carnegieendowment.org/files/Darshana_Baruah_India_and_Japan.pdf.

¹⁶ Ministry of Foreign Affairs of Japan, "Chapter 2: The Growth of Southeast Asia and the Role of Japan," *Japan's Official Development Assistance White Paper 2013* (Tokyo: Ministry of Foreign Affairs, 2014), <https://www.mofa.go.jp/policy/oda/white/2013/pdfs/0102.pdf>.

¹⁷ Siegfried Alegado, "Japan Still Beating China in Southeast Asia Infrastructure Race," *Bloomberg*, February 8, 2018, <https://www.bloomberg.com/news/articles/2018-02-08/japan-still-beating-china-in-southeast-asia-infrastructure-race>.

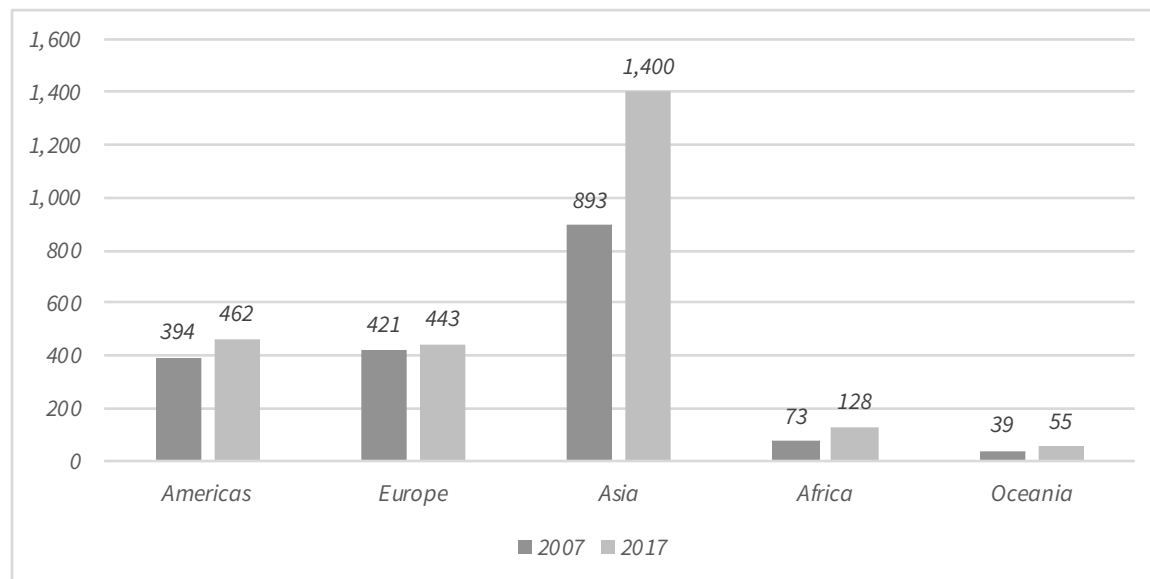
3. Achieving Quality Infrastructure

Global stakeholders should build on the Ise Shima principles to develop and promote a set of universally applicable project-level processes that promote high-quality infrastructure. Specific steps include capacity-building exercises among procurement officials in developing countries, the creation of standards that assess the feasibility and sustainability of infrastructure projects, and incentives for the global community to adopt such standards. Donor countries, through bilateral aid agencies and with the help of multilateral and regional development banks, have an opportunity to collaborate with the private sector to innovate and mobilize private capital while improving their overall development tools.

Sources of Financing

The world is projected to face an infrastructure gap of \$15 trillion by 2040,¹⁸ given current levels of investment. Only a few hundred billion dollars of foreign aid are available globally. To fill this funding gap, the international community—both public and private institutions—will need to mobilize taxes, savings, capital markets, and private equity to finance this multitrillion-dollar infrastructure gap.

Figure 2: Infrastructure Spending by Region, 2007–2017 (\$ billions)



Source: Global Infrastructure Hub.

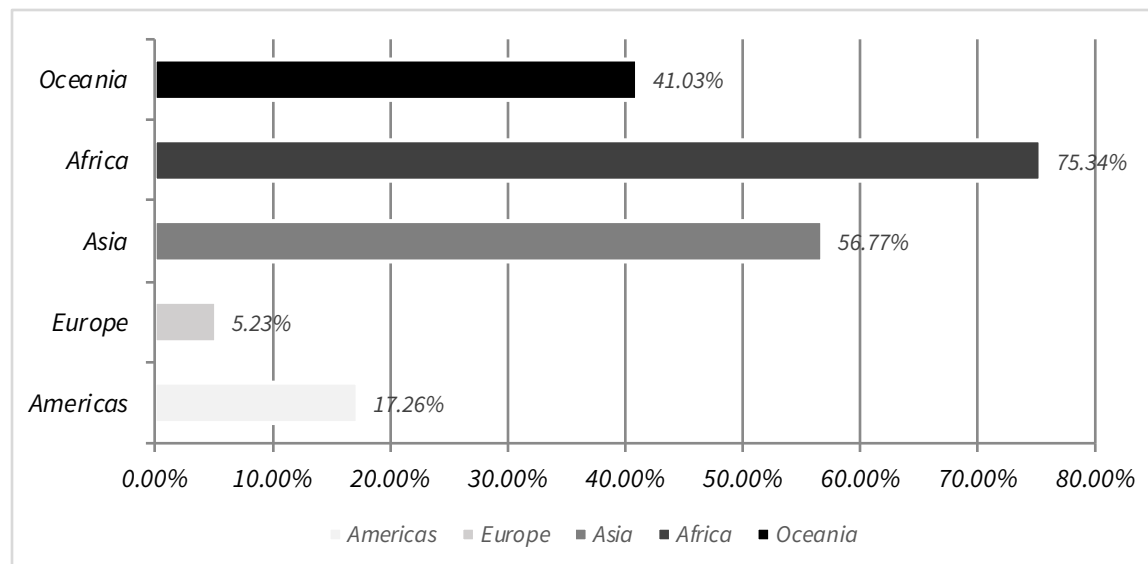
¹⁸ This estimate accounts for the additional costs needed for countries that have not yet met the Sustainable Development Goals.

TAXES

Domestic tax revenue currently plays the dominant role in funding infrastructure projects and will likely continue to do so. The World Bank's International Finance Corporation estimated in 2013 that the most significant source of infrastructure financing in emerging economies was domestic tax revenues, accounting for 60 percent of the total annual infrastructure spending, while private capital made up just over 23 percent.¹⁹ An IMF study estimated that the use of tax revenue for infrastructure funding reached as high as 65 percent of all funding in many countries in sub-Saharan Africa (or nearly \$60 billion), while the contribution of outside donors constituted just over 3 percent.²⁰ In Asia, tax revenues and public-sector resources financed infrastructure projects worth nearly \$1 trillion, while the private sector accounted for a far smaller \$63 billion.²¹

Given how essential tax revenues are to infrastructure projects, it is critical that the role of the untaxed informal sector be reduced. In 2017, this sector constituted over 42 percent of economic activity in Africa and 70 percent in the Indo-Pacific.²²

Figure 3: Percentage Growth in Infrastructure Spending, 2007–2017



Source: Global Infrastructure Hub.

¹⁹ "Infrastructure Financing Trends," *EMCompass Quick Take 5* (April 2016), <http://documents.worldbank.org/curated/en/193791468197952709/pdf/106021-BRI-PUBLIC-EMCompass-5-EMCompass-note05.pdf>.

²⁰ Jeffrey Gutman, Amadou Sy, and Sournya Chattopadhyay, *Financing African Infrastructure: Can the World Deliver?* (Washington, DC: Brookings Institution, March 2015), https://www.brookings.edu/wp-content/uploads/2016/07/AGIFinancingAfricanInfrastructure_FinalWebv2.pdf.

²¹ "How Can Asia Finance the Infrastructure It Needs?" (Manila, Philippines: Asian Development Bank, June 27, 2017), <https://www.adb.org/news/features/how-can-asia-finance-infrastructure-it-needs>.

²² "Over 68% of Asia-Pacific's Workforce Makes a Living in Informal Economy, Says International Labour Organization," *Firstpost*, May 3, 2018, <https://www.firstpost.com/business/over-68-of-asia-pacifics-workforce-makes-a-living-in-informal-economy-says-international-labour-organisation-4455337.html>; Terence Jackson, "Don't Underestimate the Power of Africa's Informal Sector in a Global Economy," *Quartz Africa*, January 21, 2016, <https://qz.com/africa/599483/dont-underestimate-the-power-of-africas-informal-sector-in-a-global-economy/>.

PUBLIC-PRIVATE PARTNERSHIPS

Governments in developing countries continue to expand the role of public-private partnerships (PPPs), including in infrastructure projects.²³ An average of \$121 billion was invested annually in PPP infrastructure projects between 2011 and 2015.²⁴ For these projects to be implemented most efficiently, bilateral and multilateral donors must ensure that the procurement and project implementation processes operate under clear rules that enhance transparency and ensure fiscal responsibility. The World Bank has made the following recommendations in this regard:²⁵

1. Ensure sound appraisal of projects; this can help private-sector organizations assess the quality of projects in the pipeline and invest appropriately.
2. Evaluate unsolicited proposals through a clear and transparent process.
3. Publicly disclose procurement and award notices and project contracts, and hold pre-bidding conferences to enable bidders to share information.
4. Mandate that the recipient country's finance or treasury ministry conduct a sustainability and feasibility study before the approval of any new PPP project.
5. Use digital media effectively to regularly communicate with the public and other private players regarding project assessment, tender documents, and project performance.

These recommendations seek to increase the openness and transparency of PPPs in developing countries, level the playing field for investors, and discourage crony capitalism, thereby creating an enabling environment for private capital to address the global infrastructure gap.

BLENDED FINANCE

Blended finance involves a mixed portfolio of public and private that balances risk/reward profiles, increases private investment in sustainable financing, and develops new markets.²⁶ By scaling up the use of blended finance, countries can narrow the infrastructure gap by unlocking private-sector opportunities. The number of blended finance deals is increasing each year, and sub-Saharan Africa had over 40 percent of

²³ Public-private partnership is defined by the World Bank as “a long-term contract between a private party and a government entity [that] is established for providing a public asset or service, in which the private party bears significant risk and management responsibility, and whose remuneration is linked to performance.” World Bank, *What are Public Private Partnerships?* (Washington, DC: World Bank, February 6, 2018), <https://ppp.worldbank.org/public-private-partnership/overview/what-are-public-private-partnerships>.

²⁴ World Bank, *Infrastructure and Public-Private Partnerships* (Washington, DC: World Bank, April 5, 2018), <http://www.worldbank.org/en/topic/publicprivatepartnerships/overview#1>.

²⁵ World Bank, *Procuring Infrastructure Public-Private Partnerships* (Washington, DC: World Bank, 2018), https://openknowledge.worldbank.org/bitstream/handle/10986/29605/PIPPP_2018.pdf?sequence=1&isAllowed=y.

²⁶ Conor M. Savoy and Aaron Milner, *Blended Finance and Aligning Private Investment with Global Development: Two Sides of the Same Coin* (Washington, DC: Center for Strategic and International Studies, March 27, 2018), <https://www.csis.org/analysis/blended-finance-and-aligning-private-investment-global-development>.

blended finance transactions in 2017.²⁷ There has been a recent push to establish blended finance departments in many organizations, most notably the OECD which recently laid out blended finance principles to guide the activities of aid agencies and donors. The OECD is also promoting a new measure called Total Official Support for Sustainable Development, which will analyze metrics beyond traditional foreign aid, including blended finance.²⁸

DONORS AND DEVELOPMENT FINANCE INSTITUTIONS

Development finance institutions (DFIs)—government- or quasi-government-backed institutions that provide equity, loans, and other financial support for private-sector projects in low- and middle-income countries—have become a vital part of the conversation on quality infrastructure. They seek to invest in commercially viable projects, often leveraging private-sector investments, and help support a general movement away from grant-based foreign assistance.²⁹ In addition to helping finance quality infrastructure, DFIs can also help raise global standards for infrastructure.

DFIs have experienced an explosion of growth in the last 15 years, with their global investment activity growing from \$10 billion in 2002 to \$72 billion in 2015.³⁰ They are likely to continue to grow, with total investments expected to surpass all official development assistance. DFIs are powerful and precise development tools that have supported economic growth and financed critical infrastructure in dozens of developing countries.³¹ For instance, during the 1990s and 2000s, they helped make it possible for private telecommunication companies to invest in cell phone markets in Africa and South Asia at a time when there was no mass consumer market for the devices. Today, hundreds of millions of people from these regions use cell phones for personal and commercial purposes, and cell phones have helped many countries pursue leapfrog development.³²

DFIs also provide critical technical assistance to governments of developing countries by undertaking feasibility studies and by recommending changes to the legal and regulatory framework to enable private-sector investments. They can also play the role of an honest broker, helping developing countries conduct a bidding process while giving private investors assurance that a decision was taken on a transparent and fair basis. Finally, DFIs have a powerful standard-setting function that could help further the quality infrastructure

²⁷ Convergence, *The State of Blended Finance: Working Paper* (Business and Sustainable Development Commission, July 2017), http://s3.amazonaws.com/aws-bsdc/BSDC_and_Convergence_The_State_of_Blended_Finance_July_2017.pdf.

²⁸ “What Is Total Official Support for Sustainable Development (TOSSD)?” (Paris, France: Organisation for Economic Co-operation and Development, n.d.) <http://www.oecd.org/dac/financing-sustainable-development/tossd.htm>.

²⁹ Daniel Runde and Dirk Willem te Velde, *Development Finance Institutions Come of Age* (Washington, DC: Center for Strategic and International Studies, October 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/161021_Savoy_DFI_Web_Rev.pdf.

³⁰ Conor M. Savoy, Paddy Carter, and Alberto Lemma, *Development Finance Institutions Come of Age: Policy Engagement, Impact, and New Directions* (Washington, DC: Center for Strategic and International Studies, 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/161021_Savoy_DFI_Web_Rev.pdf.

³¹ José De Luna-Martínez, “The Role of Development Financial Institutions in the New Millennium,” *East Asia & Pacific on the Rise* (blog) (Washington, DC: World Bank, September 29, 2017), <http://blogs.worldbank.org/eastasiapacific/the-role-of-development-financial-institutions-in-the-new-millennium>.

³² “Cell Phones in Africa: Communication Lifeline” (Washington, DC: Pew Research Center, April 15, 2015), <http://www.pewglobal.org/2015/04/15/cell-phones-in-africa-communication-lifeline/>.

agenda. Through the Equator Principles, a risk-management framework adopted in 2003, DFIs have raised the bar on project finance loans and should continue to expand those efforts for the quality infrastructure agenda.³³

Japan and the United States should use their DFIs—the Japan Bank for International Cooperation and the Overseas Private Investment Corporation, respectively—to crowd in billions of dollars in private-sector investments to help close the infrastructure gap. This should be done in collaboration with other DFIs and using the complementary instruments and capacities of foreign aid agencies such as the Japan International Cooperation Agency and USAID.

Through agreements signed in 2017, Japan and the United States have taken the lead on this issue and have increased collaboration between their DFIs.³⁴ They are now poised to leverage their combined DFI capabilities to support the quality infrastructure agenda in the Indo-Pacific region. Meanwhile, the need for expanded and improved development finance capabilities within the United States has been recognized by members of Congress on both sides of the aisle, and efforts are currently underway to translate that recognition into practical soft-power tools.³⁵

By expanding the operations of DFIs, and increasing their collaboration on larger projects, donor countries can crowd in private capital, ensuring that good projects are financed in a sustainable way.

CHINA AND THE NEW MULTILATERAL DEVELOPMENT BANKS

With the launch of the multitrillion-dollar Belt and Road Initiative (BRI) in 2013, China has emerged as a major financier and a key player in global infrastructure development. Primarily funded by Chinese-owned banks, state-owned enterprises, and Chinese local and provincial governments, BRI's investments in emerging markets are expected to reach \$100 billion annually for the next decade, covering 69 countries or nearly 60 percent of the global population.³⁶ The Shanghai Exchange has begun issuing Belt and Road Bonds to raise capital for these investments.³⁷ Annual lending to BRI countries is estimated at \$130

³³ "Equator Principles Financial Institutions" (Washington, DC: International Finance Corporation, World Bank Group, n.d.), https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/equator+principles+financial+institutions.

³⁴ "OPIC CEO Travels to Japan; Signs Commitments with JBIC and NEXI Supporting Investment in Emerging Markets" (Washington, DC: Overseas Private Investment Corporation, November 7, 2017), <https://www.opic.gov/press-releases/2017/opic-ceo-travels-japan-signs-commitments-jbic-and-nexi-supporting-investment-emerging-markets>.

³⁵ "At the CSIS Global Development Forum, Sen. Coons Discusses the Importance of Modernizing Development Finance" (Washington, DC: Office of U.S. Senator Christopher Coons, April 19, 2018), <https://www.coons.senate.gov/newsroom/press-releases/at-the-csis-global-development-forum-sen-coons-discusses-the-importance-of-modernizing-development-finance>; Better Utilization of Investments Leading to Development Act (BUILD Act) of 2018, S. Res 2463, 115th Congress, 2nd Session, <https://www.congress.gov/bill/115th-congress/senate-bill/2463>.

³⁶ "Asia Beckons: China's Belt and Road Initiative Offers Opportunities and Challenges" (Pricewaterhouse Coopers, 2017), <https://www.pwc.com/us/en/industries/capital-projects-infrastructure/china-belt-road-initiative.html>.

³⁷ Samuel Shen and John Ruwitch, "China to Allow the Issuance of 'Belt & Road' Bonds via Exchanges" (*Reuters*, March 2, 2018), <https://www.reuters.com/article/china-bonds-belt/china-to-allow-the-issuance-of-belt-road-bonds-via-exchanges-idUSB9N1N201T>.

billion, with China's commercial banks supporting the initiative in part.³⁸ The two multilateral institutions led by China, the Beijing-based Asian Infrastructure Investment Bank (AIIB) and the Shanghai-based New Development Bank, are also key sources of finance for BRI projects.³⁹ In 2016, the AIIB had already approved loans worth \$1.7 billion to finance nine BRI development projects.⁴⁰

As countries in Africa and Asia face growing pressure to meet infrastructure demands as well as difficulty in accessing capital markets, availing themselves of China's precarious loans has become the norm. An examination of BRI investments in projects outside Singapore revealed that more than 54 percent of the investments have gone to countries with non-investment-grade or "junk" bonds.⁴¹ In other words, riskier borrowers receive most of the loans under BRI.

Financial Viability of Projects

Absent concerns like the debt sustainability, economic feasibility, and fiscal solvency of new infrastructure projects, attempts to create a concrete set of guidelines for achieving quality infrastructure will remain incomplete. Debt sustainability and fiscal solvency, particularly of borrowing countries, warrant close attention. Over the past few years, a sudden surge of investments in infrastructure has added to the public debt of many borrowing countries and has put a strain on their fiscal resources. Thus, ensuring debt sustainability and fiscal solvency have become important for the donor and recipient countries.

The fiscal crisis that emerged from the construction of the strategic Hambantota Port in Sri Lanka, and the subsequent loss of territorial sovereignty, is emblematic.⁴² The port, which is located on the island country's southern coast, cost the government approximately \$1.12 billion. Without doing any feasibility study or project preparation, the government commissioned this port in 2008 and relied on the Export-Import Bank of China to finance a significant portion of the project. The port failed to produce the economic value that would have made the government's debt payments sustainable. Unable to meet its debt obligations, the Sri Lankan government handed over the port to China and entered into a 99-year lease with the Chinese government. This experience is a clear example of the need to carry out feasibility and sustainability assessments before commissioning infrastructure projects; more needs to be understood about projects' long-term costs.

³⁸ Zheping Huang, "Your Guide to Understanding OBOR, China's New Silk Road Plan," *Quartz*, May 15, 2017, <https://qz.com/983460/obor-an-extremely-simple-guide-to-understanding-chinas-one-belt-one-road-forum-for-its-new-silk-road/>.

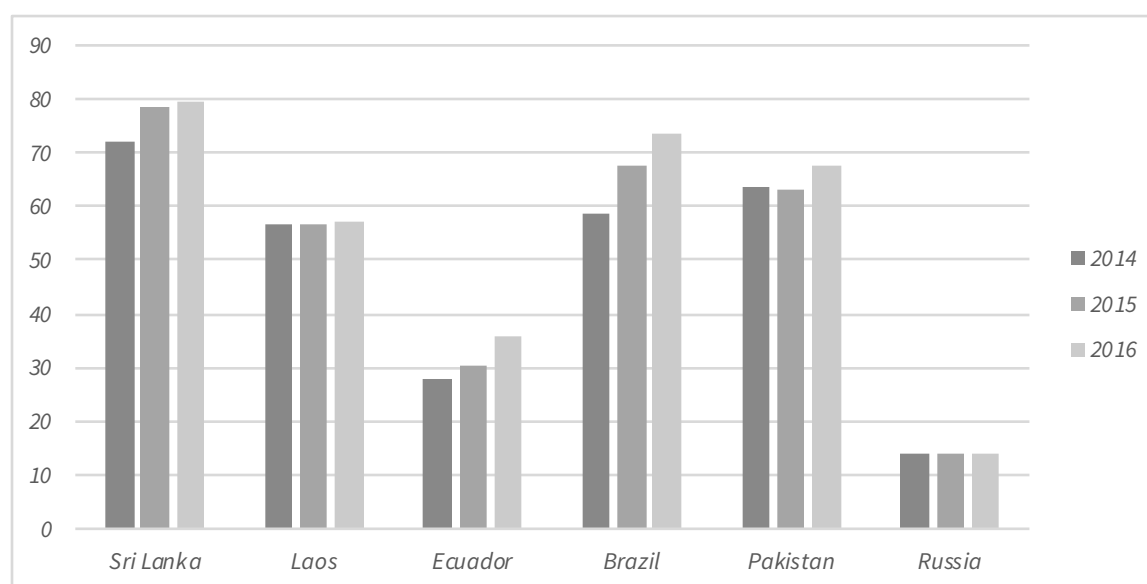
³⁹ Huang, "Your Guide to Understanding OBOR."

⁴⁰ Naohiro Kitano, "Estimating China's Foreign Aid Using New Data: 2015–2016 Preliminary Figures—Contribution to AIIB Significantly Increased China's Aid Volume" (Tokyo, Japan: JICA Research Institute, May 31, 2018), https://www.jica.go.jp/jica-ri/publication/other/175nbg00000puwc6-att/20180531_01.pdf.

⁴¹ David Ho, "Cost of Funding 'Belt and Road Initiative' Is Daunting Task," *South China Morning Post*, September 27, 2017, <https://www.scmp.com/special-reports/business/topics/special-report-belt-and-road/article/2112978/cost-funding-belt-and>.

⁴² Maria Abi-Habib, "How China Got Sri Lanka to Cough Up a Port," *New York Times*, June 25, 2018, <https://www.nytimes.com/2018/06/25/world/asia/china-sri-lanka-port.html>.

Figure 4: Central Government Debt as a Percentage of GDP, 2014–2016



Source: AidData.

Note: The countries described in this figure are the top six recipients of financial support from China that do not have an ongoing political crisis or social unrest.

The IMF has cautioned against risky and unsustainable lending practices and has advised lending countries to lend prudently and responsibly, particularly to countries where public debt is already high.⁴³ Lenders and loan recipients need to understand that increased connectivity and greater infrastructure development must not come at the cost of openness, transparency, and fiscal responsibility.

One valuable tool that helps assess the feasibility and sustainability of new infrastructure projects is life-cycle cost analysis. This enables recipient countries to undertake a holistic assessment of infrastructure projects and understand their longer-term costs, including maintenance, operations, and initial costs.

Raise Public-Sector Procurement Standards

Procurement standards are extremely important in infrastructure development. For decades, the de facto procurement guidelines for developing countries were issued by the World Bank. The guidelines historically encouraged public-sector procurement officials in developing countries, who play a huge role in choosing infrastructure suppliers and builders, to pick the lowest bidder who passed a basic pass/fail evaluation. However, this led in practice to a lowest-cost award system. Many infrastructure projects procured at low

⁴³ Charles Clover, “IMF’s Lagarde Warns over Debt on China’s Belt and Road,” *Financial Times*, April 12, 2018, <https://www.ft.com/content/7b7f9db2-3dec-11e8-b7e0-52972418fec4>; John Hurley, Scott Morris, and Gailyn Portelance, “Examining the Debt Implications of the Belt and Road Initiative from a Policy Perspective” (Washington, DC: Center for Global Development, March 2018), <https://www.cgdev.org/sites/default/files/examining-debt-implications-belt-and-road-initiative-policy-perspective.pdf>.

initial prices have become costly when they had to be redone due to poor quality.⁴⁴ Procurement reforms and capacity building among public-sector officials is therefore critical for bringing about effective changes in standards of infrastructure investment in developing countries. Acknowledging the importance of the procurement process, the World Bank has also adopted a new framework for its procurement guidelines.

Capacity Building

To raise global standards for infrastructure procurement, public officials in developing countries must be trained in project assessment and debt management. It is likely that this will require training hundreds of thousands of officials over the next decade. Training in project preparation, planning, design, and implementation will help officials focus on the efficacy, efficiency, and sustainability of projects. De-risking project investments is an important step, and donor countries should divest their current assets and invest in essential project elements that would ensure that infrastructure investments are feasible and sustainable. Two-thirds of the global population is expected to live in cities by 2050, so much of the training should be delivered to officials in cities and subnational governments. 90 percent of this growth in urbanization is expected to take place in the developing countries of Africa and Asia.⁴⁵

Public-sector capacity-building exercises will likely need to be dramatically scaled up. The U.S. Trade and Development Agency's Global Procurement Initiative trains public-sector officials in emerging markets to apply "best value" and "life-cycle" cost analyses. As part of the initiative, the agency partnered with the Brazilian government in 2017 to train over 150 federal, state, and municipal officials in international best practices in public procurement and cost analysis.⁴⁶ The agency has used the same model to partner with another 11 aid-recipient countries and has trained over 1,000 senior and mid-level public officials in improved procurement practices.⁴⁷

Another example of public-sector official training is the procurement professionalization training conducted by the Millennium Challenge Corporation. In 2012, the United States and Indonesia agreed to implement a certificate program through the corporation to train 500 Indonesian procurement professionals to adopt a new framework for infrastructure procurement.⁴⁸ Programs are in place in other donor countries, including Japan; the Japan

⁴⁴ "GPI: Key Issues," (Washington, DC: U.S. Trade and Development Agency, n.d.), <https://www.ustda.gov/program/gpi/key-issues>.

⁴⁵ "68% of the World Population Projected to Live in Urban Areas by 2050, says UN" (New York, NY: United Nations Department of Economics and Social Affairs, May 16, 2018), <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>.

⁴⁶ "USTDA and Brazil's Ministry of Planning, Development, and Management Launch Second In-Country Procurement Training Workshop" (Washington, DC: U.S. Trade and Development Agency, June 5, 2018), <https://www.ustda.gov/news/press-releases/2018/ustda-and-brazil's-ministry-planning-development-and-management-launch>.

⁴⁷ "GPI: Partner Countries" (Washington, DC: U.S. Trade and Development Agency, n.d.), <https://www.ustda.gov/program/gpi---partner-countries>.

⁴⁸ *Program Implementation Agreement by and between the United States of America, Acting through the Millennium Challenge Corporation, and the Republic of Indonesia, Acting through the Ministry of National Development*

International Cooperation Agency has trained thousands of Asian public-sector officials in project procurement, preparation, and implementation.⁴⁹

Planning/National Development Planning Agency (Bappenas), September 19, 2012,
<https://assets.mcc.gov/content/uploads/2017/05/pia-indonesia.pdf>.

⁴⁹ Japan International Cooperation Agency, “Technical Cooperation Projects,”
https://www.jica.go.jp/english/our_work/types_of_assistance/tech/projects/index.html.

4. Operationalizing the United States-Japan Partnership

To further advance the quality infrastructure agenda and achieve the goals set forth in the 2016 Ise Shima Principles, Japan and the United States can leverage their bilateral partnerships and their leadership in multilateral organizations to mobilize the diverse sources of finance needed to meet the multitrillion dollar global infrastructure demand.

Multilateral Development Banks

Multilateral development banks (MDBs) can play an increased role in ensuring that countries adhere to the operational details that will help achieve the quality infrastructure agenda. By design, MDBs have a broad mandate and the tools to facilitate global compliance with the quality infrastructure norms set to be adopted at the 2019 G20 summit.

Given the nature of their membership in regional development banks, developing countries enjoy a close trust-based relationship with these banks, which helps to create a mechanism for peer-to-peer accountability. Meanwhile, the United States and Japan enjoy considerable influence in the major MDBs, given their shareholding positions (Table 1). This enables the two countries to work together on substantial challenges of infrastructure development and focus on the following key functions:

- **Standards compliance and enforcement**—By leveraging their longstanding networks and partnerships in developing countries, MDBs can ensure that public officials comply with the standards as they continue to work on infrastructure development.
- **Subnational engagement**—The rapid growth of the global population during the second half of the twentieth century diminished the institutional capacity of national governments to deal with development challenges. Recognizing this, MDBs have an opportunity to create mechanisms to significantly expand their subnational engagement and facilitate the decentralization of governance. Subnational engagement allows lenders to be more precise in their investments as they target hundreds of local communities.
- **Local resource mobilization**—The developing world has financial resources to the tune of several trillion dollars locked in local bonds, capital markets, savings, and taxes. However, these resources remain untapped due to the lack of adequate institutional capacity. MDBs can use their capacity and technical assistance to provide developing countries with the capacity to channel these funds into infrastructure investment.

Table 1: U.S. and Japanese Shareholder Status in the Major Multilateral Development Banks

	<i>United States</i>		<i>Japan</i>	
	<i>Shares</i>	<i>Status</i>	<i>Shares</i>	<i>Status</i>
<i>World Bank</i>	16.88%	<i>I</i>	7.26%	<i>II</i>
<i>Asian Development Bank</i>	15.60%	<i>I</i>	15.60%	<i>I</i>
<i>African Development Bank</i>	6.10%	<i>I</i>	5.52%	<i>II</i>
<i>Inter-American Development Bank</i>	30.06%	<i>I</i>	5.00%	<i>V</i>
<i>European Bank for Reconstruction and Development</i>	10.00%	<i>I</i>	9.00%	<i>II</i>

Sources: data from the World Bank, the Asian Development Bank, the African Development Bank, and the Inter-American Development Bank.⁵⁰

Notes: Japan and the United States are tied as the largest shareholders in the Asian Development Bank. The United States and Japan are the largest and second largest nonregional shareholders in the African Development Bank; regional members make up 40.55 percent of the overall voting power. Japan is the fifth largest shareholder overall in the Inter-American Development Bank and the largest nonregional shareholder.

Working through the G7 and G20

The 2016 G7 summit allowed Japan to underscore the urgency of addressing the global infrastructure gap while maintaining high quality standards. In the two years since the Ise Shima principles on quality infrastructure were adopted by the G7, countries around the world, and members of the G20 in particular, have followed Japan's lead and expressed interest in pursuing infrastructure projects that are of higher value and quality, through public statements at national, bilateral, and multilateral levels.

Under the Argentine presidency, members of the G20 have worked on developing infrastructure as a new asset class.⁵¹ An asset class is a group of financial instruments and securities that act similarly in the marketplace and primarily refers to equities (stocks and shares with no fixed interest) and bonds (both corporate and government-issued). By treating infrastructure as an asset class, developing countries will be able to mobilize vast pools of local savings and invest them in projects that will establish new transportation services, increase physical connectivity, and improve energy security. The roadmap to developing infrastructure as an asset class builds on the outcomes of previous G20 presidencies and recommends that the G20 focus on contractual standardization, financial

⁵⁰ The World Bank, "Percentage of Total Shares," *The World Bank*, <https://finances.worldbank.org/Shareholder-Equity/Percentage-of-Total-Shares/vxsh-576y>; Asian Development Bank, "Shareholders," *Asian Development Bank*, December 31, 2017, <https://www.adb.org/site/investors/credit-fundamentals/shareholders>; African Development Bank, "Distribution of Voting Power by Executive Director," *African Development Bank*, April 30, 2018, https://www.afdb.org/fileadmin/uploads/afdb/Documents/Boards-Documents/ADB_-Statement_of_Voting_Powers_30_April_2018.pdf; Inter-American Development Bank, "Capital Stock and Voting Power," *Inter-American Development Bank*, <https://www.iadb.org/en/about-us/capital-stock-and-voting-power%2C3166.html>; European Bank for Reconstruction and Development, "Shareholders and Board of Governors," *European Bank for Reconstruction and Development*, <https://www.ebrd.com/shareholders-and-board-of-governors.html>.

⁵¹ Mauricio Macri, "Official Remarks by President Mauricio Macri at the Launch of the Argentine G20 Presidency," *G20*, November 30, 2017, <https://g20.org/en/press/press-room/speeches/official-remarks-president-mauricio-macri-launch-argentine-g20-presidency>.

standardization, project preparation, the data gap, and risk mitigation through financial engineering.⁵² All of these outcomes can be facilitated by Japan and the United States through their aid agencies, DFIs, and financial expertise.

The support expressed by the 20 largest global economies and the efforts being undertaken in the 2018 G20 summit in Buenos Aires give an opening for Japan to lead during the 2019 G20 summit in Osaka and further develop the Ise Shima principles into a clear framework that countries can use to guide their efforts to achieve quality infrastructure.

Joint Pilot Programs

The United States and Japan, whose commitment to helping the developing world achieve quality infrastructure has made them natural partners on this issue, also have an opportunity to undertake joint pilot programs in select countries. Building on the ongoing efforts of their bilateral agencies, like the U.S. Trade and Development Agency and the Japan International Cooperation Agency, the two countries can conduct joint training programs for public officials on infrastructure procurement. By identifying strategically important countries in South Asia, Southeast Asia, East Africa, and Latin America, aid agencies can combine their technical skills and resources; provide those countries with grant assistance, soft loans, and technical assistance; and help officials in charge of industrial policies and procurement decisions adapt to higher standards for infrastructure. These efforts can also support the recipient countries in strengthening their rule of law, ramping up their anticorruption efforts, and maintaining the quality of their legal and governance systems—thereby significantly expanding overall state capacity.

⁵² “Roadmap to Infrastructure as an Asset Class,” *G20*, 2018, https://www.g20.org/sites/default/files/documentos_producidos/roadmap_to_infrastructure_as_an_asset_class_argentina_presidency_1_0.pdf.

5. Conclusion

To meet the demands of their growing populations, developing countries are prepared to opt for a poor-quality road rather than no road at all. But high-quality alternatives should be made available to them, and it is up to the United States and Japan to facilitate this—not only to secure their own economic and strategic interests but also to facilitate global growth. The two countries do not have to offer this high-quality option themselves. Instead, they can lead efforts together to raise global standards of procurement, increase the capacity of public-sector officials, reorient the efforts of major MDBs to unlock local capital, and facilitate direct partnerships between their DFIs, all of which will create the circumstances that make high-quality infrastructure options available.

Conventional development assistance and foreign aid is limited to a few hundred billion dollars each year. Closing the infrastructure gap in the developing world will cost significantly more and will require a diverse set of financial instruments. Private-sector resources can be mobilized with some assistance from bilateral aid agencies and MDBs. Official development assistance can be used to provide technical assistance, facilitate greater involvement of private capital, and undertake feasibility studies. Innovative financing mechanisms and blended public-private investments, primarily through channels like the DFIs, can be used to minimize market risks and crowd in private capital while furthering global infrastructure development. Meanwhile, foreign aid can play an important role in catalyzing private sources of funding and creating a quality infrastructure option.

No standard for quality infrastructure will be universal and effective without active participation from China, whose portfolio of infrastructure investments and capacity as a donor have grown in recent years. It is thus indispensable that bilateral and multilateral donor agencies increase their engagement with China as they seek to raise standards globally.

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