



# Executive Summary

Asia's diversity is its strength, providing opportunities for trade, investment, and economic growth. The region's economies have flourished as they have become more closely intertwined with each other and the rest of the world. International supply chains span the region to take advantage of each country's comparative advantage. As a result, Asia plays an increasingly central role in the global economy: it is the world's production factory, biggest saver, and an emerging giant in outsourced services.

Without good connectivity, however, diversity breeds disparity rather than prosperity. Asia's trade competitiveness—and its increasingly sophisticated production networks in particular—depends on efficient, fast, reliable, and seamless infrastructure connections. The pattern of Asia's development highlights this phenomenon. Its thriving firms cluster in an arc of enterprise along its coastlines, close to international ports and airports. But many parts of Asia—inland and remote areas, landlocked countries, and distant islands—are isolated economically as well as geographically. Much of Asia's potential remains untapped.

While parts of the region's infrastructure are world class, it is generally below the global average, as this study details. Rapid growth in recent years has also put severe pressure on the existing infrastructure, particularly in transport and energy, as well as in communications. The inadequacies of Asia's infrastructure networks are a bottleneck to growth, a threat to competitiveness, and an obstacle to poverty reduction.

The study examines major challenges and issues associated with developing regional infrastructure through the fostering of

regional cooperation in Asia, and provides a framework for pan-Asian infrastructure cooperation. To the best of the Asian Development Bank and Asian Development Bank Institute's knowledge, this is the first time that such a study on regional infrastructure has been undertaken. The study's long-term vision is the creation of a seamless Asia—an integrated region connected by world-class, environmentally friendly infrastructure—in terms of both “hard” (physical) and “soft” (facilitating) infrastructure. The soft part supports the development and operation of the hard component. The challenge now is to build efficient and seamless connections across Asia—and thus to the rest of the world.

This study finds that the benefits of upgrading and extending Asia's infrastructure networks are substantial, and that all countries in the region would benefit. A logistics network is only as good as its weakest link; each country in a regional supply chain gains from infrastructure improvements made in others. Also, the wider a network, the more each of its users benefits. Thus, better connections to inland areas would boost trade and economic growth in inland areas as well as coastal ones. Connecting national electricity grids and gas pipelines and harnessing common energy resources, such as rivers with hydroelectric potential, would boost regional energy trade, subsequently reducing costs, increasing the diversity of supply, enhancing energy security, and often benefiting the environment. Regional infrastructure development creates a win-win outcome for all participating countries.

Improving connectivity in the region would bring Asia large welfare gains through increased market access, reduced trade costs, and more efficient energy production and use. If the required investment toward pan-Asian connectivity is made in the region's transport, communications, and energy infrastructure during 2010–2020, developing Asia's real income during that period and beyond could reach \$13 trillion. Countries that trade more, as well as those whose

infrastructure needs are particularly urgent, would experience much larger gains. Asia's leaders cannot afford to ignore such large gains.

Between 2010 and 2020, Asia needs to invest approximately \$8 trillion in overall national infrastructure. In addition, Asia needs to spend approximately \$290 billion on specific regional infrastructure projects in transport and energy that are in the pipeline. Of these regional projects, 21 high priority projects that could be implemented by 2015 at a cost of \$15 billion have been identified. The successful implementation of these high-priority projects and their wider regional benefits would create a strong drive toward further strengthening regional infrastructure networks. This amounts to an overall infrastructure investment need of about \$750 billion per year during this 11-year period.

As this study goes to press, the global financial turmoil and resulting economic downturn are still unfolding. If the current crisis is prolonged, demand from advanced economies will remain stagnant, thus depressing Asia's production. However, the lesson of the financial crisis of 1997–1998 is clear: cuts in infrastructure investment that jeopardize future recovery should be avoided. Therefore, the need to upgrade and extend infrastructure networks over the time frame of 2010–2020 assumes greater importance. To mitigate the medium-term consequences of the ongoing crisis, Asia will need to put greater emphasis on increasing regional demand. As private financing will be much harder to secure, governments should adopt fiscal stimulus packages that accelerate and increase infrastructure investment. At this stage, enhanced regional infrastructure cooperation could complement these country-level efforts. International institutions such as Asian Development Bank and the World Bank need to provide increased financial and technical assistance for regional infrastructure programs.

In the long run, the full benefits of Asia's size and diversity can be realized only by creating a single Asian market where goods, services, capital, information, and people move freely. Moving toward that long-term vision of a seamless Asia requires world-class, pan-Asian infrastructure networks that: (i) provide open connections to regional and global markets; (ii) are driven by political leadership as well as economic logic; (iii) are built up from national, bilateral, and subregional programs; and (iv) are guided and supported by broad-based and effective regional frameworks that ensure their proper development and financing.

## Supporting Regional Trade and Investment

Where infrastructure connections are good, Asia's trade has expanded rapidly. Trade within East Asia—and with the People's Republic of China in particular—has risen fast; however, where infrastructure connections are poor, such as within South Asia and between Asian subregions, trade remains low. As barriers to trade in Asia have fallen—not least of which are import tariffs and other trade-policy restrictions—infrastructure deficiencies have become an increasingly relevant issue. Correcting these weaknesses in regional infrastructure would do more to lower the cost and increase the volume of trade in Asia than would eliminating any remaining tariff and non-tariff barriers.

Asia's goods are transported mainly by sea. But as traded content shifts from bulky goods toward lighter, often higher-value products, goods are increasingly sent by air. Relatively few goods go long distances by road or rail, as demonstrated by the fact that trade among Asian countries that share a land border is much lower than similar areas elsewhere in the world. Improving rail and road connections to ports

is particularly important for inland areas and landlocked countries, as they tend to encounter high trade costs.

Exports are diversifying across new markets, and intraregional trade in parts and components for regional supply chains accounts for a growing share of total trade. These trends underscore the need for efficient and flexible logistics networks that provide uncomplicated connections between different transport modes and make it possible to trade with more places, in less time, at lower costs. The logistics networks need to be complemented by investments in information and communications technology, human capacity development, cooperation on trade facilitation, and improvements in “soft” infrastructure.

## Harnessing the Benefits of Regional Infrastructure Networks

Sufficient evidence has been generated to confirm that infrastructure plays a key role in promoting and sustaining rapid economic growth. Studies suggest that differences in infrastructure help explain East Asia’s superior growth in relation to other emerging regions. Evidence from around the world shows that the returns from investing in telecommunications, transport, and energy infrastructure greatly exceed those from other forms of capital investment. Studies in several developing Asian countries illustrate how infrastructure, particularly roads and electricity, helps to reduce poverty.

One of the major challenges in developing regional infrastructure is to address the asymmetric distribution of regional infrastructure project costs and benefits. It is also important to effectively manage negative socioeconomic impacts across countries so as to ensure win-win outcomes for participating countries. Studies of the benefits of

regional infrastructure are scarce, but careful economic modeling prepared for this book shows that the benefits are large, tend to be widely distributed, and often help the poor the most. Case studies of Central Asia, the Greater Mekong Subregion, and South Asia show that the gains from subregional infrastructure projects greatly exceed the costs. The negative impacts of regional infrastructure projects include road accidents, human trafficking, displacement of people, and environmental damage. These issues need to be addressed. Efforts to make transport and energy investments more environmentally aware and, in particular, to mitigate their impact on climate change, are critical.

## Developing Effective Policies and Institutions

Asia has made some progress in developing subregional infrastructure programs over the past decade and a half, with overlapping subregional groups cooperating to varying degrees on infrastructure issues in Asia. Such programs are most advanced in the Greater Mekong Subregion and are less developed in other subregions. However, connections between subregions—notably between South and East Asia—are particularly weak.

Further progress requires creating an effective new framework for regional cooperation, as well as strengthening the coordination among and capacity of existing ones. Asia can learn from the experiences of other regions, notably Europe and Latin America. The European Union's experience shows that creating a framework for regional infrastructure cooperation often requires an honest broker to forge a convergence of interests, and high-profile coordinators to monitor implementation. Latin America's experience shows that a forum for dialogue and cooperation can help build awareness of the benefits of

regional integration and infrastructure, filter out unproductive projects, coordinate among national and subnational agencies, and increase stakeholders' participation. While the lessons from other regions are useful, ultimately, Asia must craft policies and institutions that are appropriate for its own needs and circumstances.

Until now, Asia has largely followed a bottom-up, market-driven approach to infrastructure development. However, it is now necessary to complement this approach with a more top-down, market-expanding, and demand-inducing approach geared toward creating a seamless Asia. Furthermore, the prospect of a prolonged downturn in Asia's major export markets underscores the need for a long-term rebalancing of its economy toward meeting local needs. This will require many policy changes, particularly the prioritization of improvements in pan-Asian connectivity.

In view of Asia's varied needs and circumstances—and varying political commitment to closer integration—subregional infrastructure programs have been proceeding at different speeds and on different tracks. Asia should create pan-Asian infrastructure networks by strengthening and integrating existing subregional programs.

Consequently, a pan-Asian infrastructure forum (PAIF) should be established to help coordinate and integrate existing subregional infrastructure initiatives. It would bring together all the key stakeholders in the region, which would help build consensus about, prioritize, and coordinate regional infrastructure plans. The PAIF could also develop harmonized standards for regulatory and legal issues—based on international best practices—as well as a common framework for handling and mitigating negative social and environmental impacts. Within the PAIF, sectoral subforums could also be established—for transport and energy, for instance—as well as subforums for soft infrastructure matters, such as regulatory and legal issues.

## Financing Regional Infrastructure

A seamless Asia will not come to fruition without proper financing. Yet, financing infrastructure projects is often challenging—for regional projects in particular—as they involve major risks and uncertainties that the private sector is unwilling to bear. Most regional infrastructure projects are therefore developed and financed by governments. Even those that involve public-private partnerships generally still require some form of government guarantee.

Lessons from other regions show that developing and financing regional projects is a slow and complicated process, even in the European Union. Political leadership from the highest level is necessary but not sufficient, as the Latin American experience demonstrates. Regional projects are often a low priority for domestic policymakers responsible for allocating budgets and usually require assistance from multilateral institutions. Furthermore, at times such projects involve constructing infrastructure segments in areas of a country with little economic activity and few advocacy groups. Concessionary financing from external sources may be necessary to make such projects more attractive to investors.

The region's vast domestic savings would be the main source of financing for Asia's massive infrastructure investment requirements. Due to the turmoil in global financial markets, the public sector will necessarily continue to play a dominant role, with spending from government budgets supplemented by funds channeled through domestic and regional financial markets. Asian governments must bolster their collective efforts to mobilize a large pool of regional savings for viable regional infrastructure investments. If such "bankable" regional projects are created, then private financing involving public-private partnerships could be obtained. Strengthening national and regional bond markets—notably though initiatives such as the Asian

Bond Markets Initiative and Asian Bond Funds—is one of the first steps in creating a viable source of infrastructure financing to tap the vast Asian savings.

An Asian infrastructure fund (AIF) should be established to help mobilize Asian and international funds, and to meet the challenges of preparing and financing “bankable” regional infrastructure projects. The AIF’s capital could come from a variety of sources, including governments, sovereign wealth funds, multilateral development banks, and bilateral agencies. It should have its own legal identity so as to enable it to help finance projects through its own resources, as well as by issuing bonds or through cofinancing arrangements with other entities, including private investors. The AIF would help finance projects identified and prioritized by the PAIF by providing a facility to expedite financial preparations, as well as provide grant and concessional financing in order to encourage countries to prioritize regional projects in their national development programs. It would also be able to provide guarantees against major political, economic, and financial risks.

## Toward a Seamless Asia

The key messages of this study are as follows:

- The required investment in regional infrastructure for pan-Asian connectivity would produce large real income gains of around \$13 trillion for developing Asia during 2010–2020 and beyond.
- A pan-Asian infrastructure forum should be established to help coordinate and integrate existing subregional infrastructure initiatives toward a seamless Asia.

- From 2010 to 2020, Asia will need to invest approximately \$8 trillion in overall national infrastructure and, in addition, about \$290 billion in specific regional infrastructure projects—an average overall infrastructure investment of \$750 billion per year.
- An Asian infrastructure fund is needed to mobilize Asian and international funds and to help prioritize, prepare, and finance “bankable” regional infrastructure projects.

Building roads, railways, bridges, power stations, and pipelines across the region should be a priority for the region’s policymakers. In these uncertain times, Asia must not pause or turn back, but rather forge ahead with the challenging and immensely rewarding task of integrating this large and diverse region for the benefit of all its citizens. Such integration will help boost economic growth and disperse its benefits more widely. It will enhance the region’s competitiveness and extend its global reach. It will help reduce poverty and promote greater environmental sustainability. But it is only possible with a common vision, strong commitment from political leadership, and partnership at the highest level. Now is the time to start moving toward a seamless Asia.



## **About the Asian Development Bank (ADB)**

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. The work of ADB is aimed at improving the welfare of the people in Asia and the Pacific, particularly the nearly 1.7 billion who live on less than \$2 a day. Despite many success stories, Asia and the Pacific remains home to two thirds of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration. Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, technical assistance, grants, guarantees, and equity investments.

## **About the Asian Development Bank Institute (ADBI)**

ADBI, located in Tokyo, is a subsidiary of ADB. It was established in December 1997 to respond to two needs of developing member countries: identification of effective development strategies and improvement of the capacity for sound development management of agencies and organizations in developing member countries. As a provider of knowledge for development and a training center, the Institute serves a region stretching from the Caucasus to the Pacific islands.