# The Road to Recovery

## GOVERNING POST-DISASTER RECONSTRUCTION



**The 2011 earthquake in New Zealand sundered this road in Christchurch.**

*Laurie A. Johnson and Robert B. Olshansky*

Imagine for a moment that you are a political leader—a prime minister, president, or governor—and you awake to the news that natural disaster has struck. Citizens died, buildings collapsed, infrastructure is hobbled, and local leaders desperately need additional resources and support.

You respond immediately, sending personnel and equipment to the disaster zone and pledging additional assistance to local leaders. Your country, like many around the world, has institutionalized a scalable, tiered response system with regional, state, and national levels of government engaging as disaster-related demands exceed local capacities to respond. Yet within days, even hours—before all the casualties are treated and citizens are accounted for, and before the streets have been cleared of rubble and basic services have been restored—other leaders and the media are demanding answers to questions you haven't had time to consider: How much money will be pledged to the rebuilding? What standards will guide it? Will all landowners be permitted to rebuild? Who will lead the process? Is a new institution or governance structure needed to cut through bureaucratic red tape and expedite the rebuilding?

This article summarizes ongoing research into the roles of various government levels in successful disaster recovery and rebuilding (table 1). It represents the synthesis of two decades of recovery research and planning practice following some of the largest disasters of our time in the United States, Japan, China, Taiwan, Indonesia, India, New Zealand, Australia, Chile, and elsewhere. Its purpose is to find common lessons in these disparate environments and help facilitate recovery for communities struck by disasters yet to come.

**TABLE 1**
**Recovery Management Experiences Around the World**

| | |
|---|---|
| **Australia** | |
| Victoria Bushfire Recovery and Reconstruction Authority | • Formed after February 2009 bushfires; disbanded in June 2011 and transferred operations to government departments, local councils, and nonprofit groups.<br>• State-level department formed through a national-state agreement.<br>• Had broad authority and responsibility for leading and coordinating recovery and reconstruction including state- and community-level planning and actual rebuilding. |
| Queensland Reconstruction Authority | • Established in February 2011 following 2010–2011 flooding in Queensland; still exists.<br>• State-level statutory authority established by the state parliament.<br>• Has broad authorities to decide recovery priorities, work closely with communities, collect information about property and infrastructure, share data with all government levels, coordinate and distribute financial assistance, realize the board's strategic priorities, and facilitate flood mitigation. |
| **Chile** | |
| Ministry of Housing and Urban Development (MINVU- Ministerio de Vivienda y Urbanismo) | • Formed after Chile's 2010 earthquake and tsunami.<br>• Main national agency in charge of reconstruction and development of national reconstruction plan.<br>• Interministerial Committee established by Chile's president; includes representatives of MINVU and all other national ministries involved in recovery and reconstruction; coordinates national budget and finance, integrates the work of ministries involved in reconstruction, and coordinates and monitors the implementation of complex projects over time. |
| **China** | |
| General Headquarters for Earthquake Relief | • Formed following the 2008 Wenchuan Earthquake.<br>• Established within China's State Council (Chinese cabinet), with the premier as nominal director. |
| **India** | |
| Gujarat State Disaster Management Authority (GSDMA) | • Formed after 2001 earthquake; still exists.<br>• Formed administratively as state implementing agency; subsequently formalized through legislation in 2003.<br>• Cabinet-level agency with chief minister as chair.<br>• Has broad powers to manage public recovery funds (provided by government of India, Gujarat, and international donors), set policy, issue recovery guidelines, and to plan, coordinate, and monitor recovery. |
| Abhiyan | • Established after 2001 Gujarat earthquake; still exists.<br>• A network of 30 NGOs facilitates among NGOs, communities, and government.<br>• Formally endorsed and supported by government. |
| Project Management Unit | • Created after 1993 earthquake in Maharashtra state.<br>• Implemented policies of a cabinet-level recovery policy subcommittee.<br>• Focused on implementing community reconstruction projects, with authority to supervise other state agencies and hire consultants. |
| **Indonesia** | |
| Rehabilitation and Reconstruction Agency—BRR | • Formed after 2004 Indian Ocean tsunami, with a 4-year life.<br>• Operated under the authority of the president.<br>• Had considerable latitude to coordinate, monitor, and implement recovery; took over housing reconstruction when other agencies failed to deliver.<br>• Built capacity of Aceh government following 30 years of armed conflict. |
| Coordination Team for Rehabilitation and Reconstruction—TTN | • Established by presidential decree after 2006 earthquake in provinces of Yogyakarta and Central Java.<br>• Coordination team of national and provincial representatives.<br>• Improved coordination and communication between central and local governments. |
| **Japan** | |
| National Reconstruction Agency | • Formed after the March 11, 2011 earthquake and tsunami; still exists.<br>• National agency directly responsible to prime minister.<br>• Sets guidelines for local planning, approves local recovery plans, and coordinates work of national ministries as they implement reconstruction. |
| **New Zealand** | |
| Canterbury Earthquake Recovery Authority | • Formed following 2011 earthquake in Christchurch; expires April 2016.<br>• National agency reporting to special cabinet-level minister appointed for Canterbury Earthquake Recovery.<br>• Broad authority to lead recovery policy and planning and to manage critical recovery and rebuilding functions for national and local governments. |

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**TABLE 1**
**Recovery Management Experiences Around the World** (CONTINUED)

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|---|---|
| **Taiwan** | |
| 921 Post-Earthquake Recovery Commission | • Formed after 1999 earthquake in central Taiwan.<br>• Temporary national organization formalized by presidential decree; dissolved in 2006.<br>• Central government agency led by three ministers of state; included representatives from various national departments.<br>• Responsible for all post-earthquake recovery activities. |
| Morakot Post-Disaster Reconstruction Council | • Formed after 2009 typhoon in southern Taiwan.<br>• Central government agency modeled after the 9-21 Post-Earthquake Recovery Commission.<br>• Responsible for all relief activities and reconstruction. |
| **United States** | |
| Lower Manhattan Development Corporation | • Formed after the September 11, 2001, terrorist attacks; still in operation.<br>• Joint state-city corporation governed by 16-member board of directors (half appointed by New York governor and half by New York City mayor).<br>• Lead planning agency for reconstruction of Lower Manhattan; responsible for distribution of federal rebuilding funds. |
| Louisiana Recovery Authority | • Formed after 2005 Hurricane Katrina; expanded focus following 2005 Hurricane Rita; disbanded in 2010.<br>• State agency set planning policy for recovery, made recovery policy recommendations to the governor and state legislature, and provided oversight of state agency recovery activities. |

## Recovery Management Around the World

Governments tasked with post-disaster reconstruction face an extraordinary set of management challenges. The first is the compression of activities in time, focused in space, as cities built over the course of decades if not centuries are destroyed or damaged suddenly and must be rebuilt in a fraction of the time it took to construct them. From this tension develops a second challenge: a keen tension between speed and deliberation, as the various recovery actors in stricken communities move with urgency while aiming to make thoughtful and deliberate decisions, to ensure optimal long-term recovery. From both these phenomena a third challenge arises: the need for immediate access to a deep wealth of money and information—the two currencies of the post-disaster recovery environment.

To meet these demands, governments in every country after every large disaster create new relief agencies or significantly rearrange existing organizations. The most common reason for these post-disaster governance transformations is lack of capacity. Governments still need to attend to their normal daily affairs while they coordinate the reconstruction or reinvention of impacted communities, so they appoint an entity that can focus daily attention on rebuilding while coordinating the recovery-related activities of multiple government agencies. Commonly designed to serve a variety of purposes and governmental settings, these recovery agencies provide a range of substantive functions as they rebuild infrastructure, housing, and economic activity. They differ depending on the type and scale of coordination they provide; the scope of their authority, especially regarding the flow of money and information; and the level of government they serve—at either the national, state, or intergovernmental level.

National governments handle very large disasters at the top political tier, mobilizing financial resources from national reserves or international aid and providing capacity support to lower levels of government in the disaster-stricken locality. When large disasters transcend state or provincial boundaries, national governments also assume active roles in developing recovery policies, and they create recovery organizations to assist them. Examples include Japan's National Reconstruction Agency, established after the 2011 earthquake and tsunami; New Zealand's Canterbury Earthquake Recovery Authority, created after the 2010 and 2011 earthquake sequence in Christchurch; and China's General Headquarters for Earthquake Relief following the 2008 disaster in Wenchuan. Each of these international bodies hewed to the national administrative leadership, derived authority from the top rung of government, and articulated policies approved by the reigning administration.

Similarly, state-level recovery agencies are usually created in direct response to disasters that affect a region or other subnational jurisdiction.

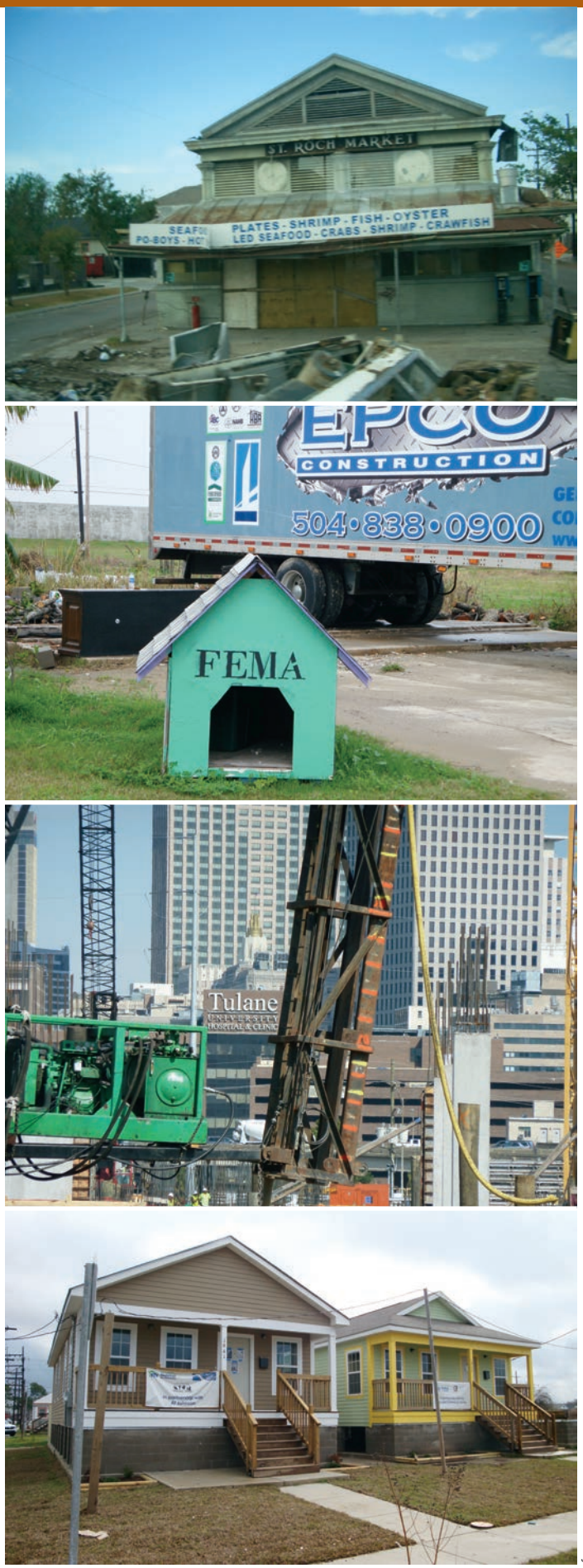
The authorities and legalities of these entities are more limited by their authorizing body's secondary, subnational position in government. Examples include the Gujarat State's Disaster Management Authority (GSDMA), created after the 2001 earthquake in western India; Louisiana's Recovery Authority, founded after Hurricane Katrina in 2005; Victoria State's Bushfire Reconstruction and Recovery Authority (VBRRA), established after the 2009 Australian bushfires; and Queensland State's Reconstruction Authority, founded after the summer 2010–2011 floods in Australia.

A third class of organizations are designed to operate between levels of government, such as the Lower Manhattan Development Corporation, created as a state and city partnership for recovery planning and funding following the September 11, 2001, terrorist attacks in New York City. Another example, the Rehabilitation and Reconstruction Agency (BRR) created in Aceh, Indonesia, following the 2004 tsunami, consisted of three independent agencies whose membership came from a wide range of local and national stakeholders. Likewise, the Indonesian government's Coordination Team for Rehabilitation and Reconstruction (TTN), following the 2006 earthquake in Yogyakarta and Central Java, was designed to provide a bridge between national agencies and local agencies, and it also monitored and investigated local implementation issues.

In some cases, governments choose to modify or adapt existing institutions and procedures to help manage recovery. For example, Chile established a national interministerial task force after the 2010 earthquake and tsunami, but the existing Ministry of Housing and Urban Development took on expanded roles and responsibilities and managed the national planning and implementation efforts.

## The Mastery of Money, Information, Collaboration, and Time

Considering these factors, common to all post-disaster recovery settings, our research demonstrates that the key to governing large-scale crises effectively is the mastery of money, information, collaboration, and time. For this article, we offer here some best practice examples and lessons learned from our various country-organization studies.




**Destruction and reconstruction in New Orleans after Hurricane Katrina in 2005.**

***1. Managing Money: Sourcing and distributing recovery funding efficiently, effectively, and equitably.***

When large amounts of public funds are involved in a disaster cleanup, the true power over the recovery resides with the level of government that controls the flow of money and how it is acquired, allocated, disbursed, and audited. Sometimes, the recovery organization assumes all or some of these powers, and sometimes all funding authority continues to reside where it did before the disaster, in the same legislative and administrative branches. Important functions in the post-disaster environment include setting policies and priorities for allocating large sums of recovery funding and establishing accounting systems that allow for timely disbursal of critical financing while also providing transparency and minimizing corruption.

Some organizations, such as India's state-level GSDMA, are established specifically to collect all the recovery funds in one place and then allocate and disburse them. Some, such as one of the three legs of Indonesia's intergovernmental BRR, are created to independently audit and monitor the expenditures of recovery implementation organizations. In contrast, the state-level Louisiana Recovery Authority recommended funding priorities to the state and provided oversight as needed, but it had no direct control over recovery funds. Japan's National Reconstruction Agency received national funding and allocates that money to the relevant national ministries and local governments.

***2. Increasing Information Flows: Effectively gathering, integrating, and disseminating information to enhance decision making and actions by all recovery actors.***

A critical demand is to accelerate and broaden the flows of information among recovery actors about the dynamics of reconstruction actions and emergent opportunities. This challenge includes the planning and public engagement processes that provide information to citizens and institutions involved in the recovery, facilitate communication and innovations among recovery actors, and convey citizen concerns to government agencies and NGOs in a timely manner. It also includes providing information between both governmental and nongovernmental organizations and establishing forums to facilitate coordination.

In Victoria, Australia, after the 2009 bushfires, national and state leaders worked with affected communities to form more than 30 local recovery committees, which were then charged with developing a community recovery plan that identified local priorities and projects. These committees were used by state and national governments as focal points for local funding distribution and by local communities to raise additional funds and establish local policy guidance for rebuilding. In Yogyakarta, Java, after the 2006 earthquake, TTN kept a variety of local and national agencies mutually informed of each other's activities—which, in turn, helped to provide early alerts to officials regarding potential problems.

A critical function appropriately provided by a government-supported agency is the acquisition, synthesis, and distribution of basic information on damage, reconstruction activities, population, social and economic issues, and various recovery indicators. Such agencies issue regular progress reports and monitor recovery indicators, as both Japan's National Reconstruction Agency and New Zealand's Canterbury Earthquake Recovery Authority have done, using a variety of communication mechanisms, including website postings, press releases, newsletters, and forums. Frequent information from credible sources can help to ensure that all actors understand the current recovery environment, and it can also help reduce the spread of rumors and misinformation.

***3. Supporting Collaboration: Building sustainable capacity and capability for long-term recovery through genuine collaboration and coordination, both horizontally among local groups and vertically among different levels of government.***

Vertically organized, hierarchical agencies—with clear organizational charts and streamlined channels of communication—are usually not well suited to manage disaster recovery, because the lack of "connecting flow" across vertical hierarchies limits collaboration as well as the flow of new and updated information among organizations. U.S. national agencies involved in recovery, for example, are more adept at administering individual programs than they are at solving complex problems that cut across governmental institutional boundaries.

By contrast, horizontally organized agencies can promote interagency coordination and infor-

mation sharing, allowing individual groups to adapt to new contexts and information while remaining responsible to their parent organization. If multiple states or local jurisdictions are involved, cooperation among multiple jurisdictions is essential. Technical assistance and capacity building for the key recovery actors is also important for building local capabilities to sustain long-term recovery.

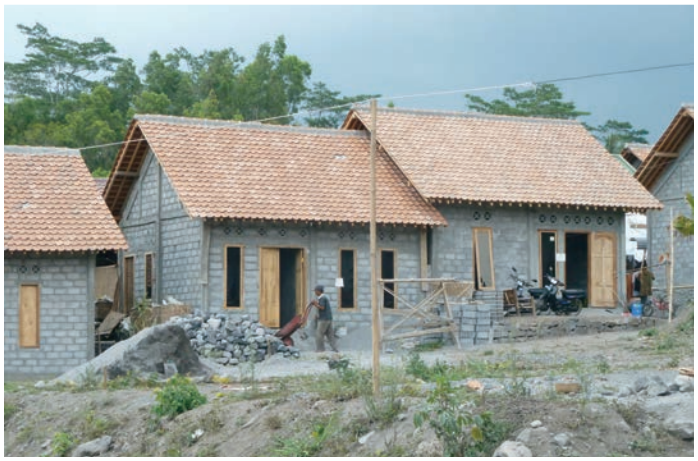
After Hurricane Katrina in 2005, Governor Kathleen Blanco appointed the members of the Louisiana Recovery Authority, so it was technically an extension of the state-level administration. But the legislature eventually formalized it. As an intentionally bipartisan body, it operated independently as it interacted with both U.S. national officials and local governments, made policy recommendations, and provided oversight of state agency recovery activities. Even though its power was limited to making policy recommendations, it was able to exert considerable influence at multiple levels in a very politically contentious atmosphere. It also collaborated with U.S. national agencies to set standards for long-term community recovery planning and helped match technical assistance and provide other planning resources at regional, local, and neighborhood scales.

Because they carried the authority of state leaders, India's GSMDA and Queensland Australia's reconstruction authority were able to successfully coordinate the activities of other state agencies. Similarly, Chile's MINVU and Taiwan's national recovery agencies have had the centralized authority to coordinate activities of other national agencies. Abhiyan, an NGO officially endorsed by the Gujarat government in India but without any defined governmental authority, also played a crucial role in coordinating the work of hundreds of NGOs and in establishing a network of local subcenters to provide information and technical support.

The hierarchical recovery process after the 2008 Wenchuan Earthquake in China succeeded in quickly reconstructing buildings, but it left little room for local innovation, as it lacked genuine local capacity building and involvement in decision making. Because local conditions were not always considered, economic recovery appears to be uneven.

Likewise, in many tsunami-affected communities in the Tohoku region of Japan, recovery has stalled because the hierarchical system established under the national government and the National Recovery Agency leaves insufficient room for local

**Buildings toppled and rebuilt following the 2008 Wenchuan earthquake in China.**

**Devastation and reparation after recent disasters in Indonesia.**

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innovation. Furthermore, within the complex and powerful Japanese ministry system, the National Reconstruction Agency lacks power to compel actions by other ministries.

Increasingly, research shows that if residents are partners in reconstruction planning, they are tolerant of delays, and they are more satisfied with the results. Still, even the best examples of decentralized processes involve an agency at the top establishing the framework and rules. This trend strongly suggests that governments should resist the urge to manage the details of reconstruction and act less as managers and more as coordinators and facilitators of the process.

***4. Balancing Time Constraints: Effectively meeting the immediate and pressing local needs of recovery while also successfully capitalizing on opportunities for long-term betterment.***

Governments face a balancing act as they confront the tensions between speed and deliberation, and between restoration and betterment. The most fundamental way to address these challenges is to increase information flows, as described above. But recovery agencies have found several other specific ways to attain both speed and improvement.

To hasten reconstruction, there are often opportunities to streamline normal bureaucratic processes of decision making, especially regarding construction permits, without compromising quality. Because such processes often involve multiple agencies, a recovery agency can be helpful to the extent that it can facilitate or compel line agencies to cooperate more effectively.

New Zealand's parliament conferred upon the Canterbury Earthquake Recovery Authority and its minister a wide range of unilateral powers that would enable the timely and coordinated recovery of greater Christchurch. Parliament continued the emergency authorities granted under previous legislation and extended the expiration date of those authorities where appropriate; permitted the minister to acquire land compulsorily; and allowed the suspension of any part or all of the national land use, local government, and transport management, plans or policies developed under various acts. It directed CERA to prepare a draft recovery strategy within nine months of its authorization. Similarly, it issued the Christchurch city council a nine-month deadline to draft a recovery plan

for the city's damaged central business district.

Most recovery agencies include disaster risk reduction in their reconstruction policies. A common recovery slogan is "build back better." The slogan of the Louisiana Recovery Authority was "Safer, Stronger, Smarter." The easiest form of post-disaster betterment is to adopt disaster-resistant building standards. The incorporation of new structural standards need not slow down the rebuilding process, but land use improvements such as relocating neighborhoods or entire communities can require considerable time for planning and land acquisition. These projects involve difficult tradeoffs between speed, design quality, and public involvement. New Zealand is undertaking a major buyout of neighborhoods that sustained heavy damage in the 2010–2011 earthquakes and remain vulnerable to damage from future tremors. Japan is encouraging relocation of coastal communities from tsunami hazard areas, and some of these will likely take up to ten years to complete.

One way to manage these goals simultaneously is to support participatory planning processes to create long-term betterment while also trying to meet immediate needs. In many cases, professional planners worked with neighborhoods—in Japan, Chile, New Orleans, and Bhuj, India, for example—but each project also involved difficult compromises in order to meet time constraints. Victoria and Queensland's creation of local recovery planning committees, however, are great examples of state and national support systems that helped build local capacity to carry forward the rebuilding processes over time.

## Next Steps in our Research

Governments know that their task is to manage information and money flows among many actors in a compressed time. Up to this point, we have identified many examples of how to accomplish this. But, even better, we would like to be able to create menus of organizational and process choices, based on combinations of disaster magnitude and scope and economic, political, environmental, and governmental contexts.

We also have several remaining questions: Why do many of the same institutional problems continue to appear from one disaster to the next, and is there a way to avoid repeating some of them? What are the effective outcomes—negative and positive—of these institutional arrangements that may inform future leaders facing similar reconstruction challenges? What specific kinds of technical assistance and capacity building should international donors and national governments focus on providing for local governmental and non-governmental organizations, so they can do their jobs better during the recovery process? In large-scale disasters, how do the tiered goals of a recovery (i.e. rebuilding households, neighborhoods, cities, regions, nations) relate to each other, in terms of consistency, efficiency, and effectiveness? And what happens when these disaster-related organizations cease to exist? Is the local capacity and capability in place for long-term community sustainability? By studying varied national and organizational experiences, we can better understand how the time compression phenomenon of post-disaster recovery affects other theoretical constructs guiding public policy and city management; planning, land development and growth management; and fiscal and capital management.

### ABOUT THE AUTHORS

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