



Africa's Infrastructure

A Time for Transformation



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Editors



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Africa Development Forum Series

The **Africa Development Forum** series was created in 2009 to focus on issues of significant relevance to Sub-Saharan Africa's social and economic development. Its aim is both to record the state of the art on a specific topic and to contribute to ongoing local, regional, and global policy debates. It is designed specifically to provide practitioners, scholars, and students with the most up-to-date research results while highlighting the promise, challenges, and opportunities that exist on the continent.

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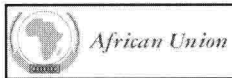
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Preface



This study is part of the Africa Infrastructure Country Diagnostic (AICD), a project designed to expand the world's knowledge of physical infrastructure in Africa. The AICD will provide a baseline against which future improvements in infrastructure services can be measured, making it possible to monitor the results achieved from donor support. It should also provide a more solid empirical foundation for prioritizing investments and designing policy reforms in the infrastructure sectors in Africa.

The AICD is based on an unprecedented effort to collect detailed economic and technical data on the infrastructure sectors in Africa. The project has produced a series of original reports on public expenditure, spending needs, and sector performance in each of the main infrastructure sectors, including energy, information and communication technologies, irrigation, transport, and water and sanitation. This volume synthesizes the most significant findings of those reports.

The first phase of the AICD focused on 24 countries that together account for 85 percent of the gross domestic product, population, and infrastructure aid flows of Sub-Saharan Africa. The countries are Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Côte d'Ivoire,

the Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Uganda, and Zambia. Under a second phase of the project, coverage is expanding to include as many of the additional African countries as possible.

The AICD was commissioned by the Infrastructure Consortium for Africa (ICA) following the 2005 G8 (Group of Eight) summit at Gleneagles, Scotland, which flagged the importance of scaling up donor finance for infrastructure in support of Africa's development. The World Bank is implementing the AICD under the guidance of a steering committee that represents the African Union, the New Partnership for Africa's Development (NEPAD), Africa's regional economic communities, the African Development Bank (AfDB), the Development Bank of South Africa (DBSA), and major infrastructure donors. Financing for the AICD is provided by a multidonor trust fund to which the main contributors are the United Kingdom's Department for International Development (DFID), the Public-Private Infrastructure Advisory Facility (PPIAF), Agence Française de Développement (AFD), the European Commission, and Germany's Entwicklungsbank (KfW).



A group of distinguished peer reviewers from policy-making and academic circles in Africa and beyond reviewed all major outputs of the study to ensure the technical quality of the work.

The Sub-Saharan Africa Transport Policy Program (SSATP) and the Water and Sanitation Program (WSP) provided technical support on data collection and analysis pertaining to their respective sectors.

This and other volumes analyzing key infrastructure topics, as well as the underlying data sources described above, will be available for download from <http://www.infrastructureafrica.org>. Stand-alone summaries are available in English and French.

Inquiries concerning the availability of data sets should be directed to the volume editors at the World Bank in Washington, DC.

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The task team leaders for the report were Vivien Foster and Cecilia Briceño-Garmendia, and the core team for the project comprised Aijaz Ahmad, Dominique Akele, Sudeshna Ghosh Banerjee, Carolina Dominguez Torres, Sophie Hans-Moevi, Elvira Morella, Nataliya Pushak, Rupa Ranganathan, Maria Shkaratan, and Karlis Smits.

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A technical advisory panel provided independent, external peer review on the quality of the background papers on which this report is based. The panel was cochaired by Shanta Devarajan (chief economist, Africa Region, World Bank) and Louis Kasekende (chief economist, African Development Bank), and comprised Adeola Adenikinju (professor, University of Ibadan, Nigeria), Emmanuelle Auriol (professor, University of Toulouse, France), Tony Gomez-Ibanez

(professor, John F. Kennedy School of Government, Harvard University), Cheikh Kane (independent expert on infrastructure finance), and Xinzhu Zhang (professor, Chinese Academy of Social Sciences, Beijing).

In order to ensure broad-based participation and consultation of World Bank technical practices, a number of internal peer review groups were formed to provide guidance and feedback on earlier drafts of the document. The individual groups and their members are as follows: *ICT sector*—Mavis Ampah, Philippe Dongier, Clemencia Torres, and Mark Williams; *irrigation sector*—Barbara Miller, Stephen Mink, and Ashok Subramanian; *power sector*—Philippe Benoit, David Donaldson, Vijay Iyer, Luiz Maurer, Rob Mills, Lucio Monari, Kyran O'Sullivan, Prasad Tallapragada, Clemencia Torres, and Tjaarda Storm Van Leeuwen; *transport sector*—Pierre Pozzo di Borgo, Michel Luc Donner, Michel Iches, Marc Juhel, Cornelis Kruk, Alain Labeau, Charles Schlumberger, and Kavita Sethi; *water supply and sanitation sector*—Ventura Bengoechea, Jaime Biderman, Matar Fall, Sarah Keener, Peter Kolsky, Alex McPhail, Eustache Ouayoro, Christophe Prevost, Caroline van den Berg, and Meike van Ginneken; *finance theme*—Gerardo Corrochano, Michael Fuchs, James Leigland, Anand Rajaram, Sudhir Shetty, Jyoti Shukla, Clemencia Torres, Marilou Uy, and Marinus Verhoeven; *poverty and inequality theme*—Judy Baker, Douglas Barnes, Ellen Hamilton, Julian Lampietti, and Kenneth Simler; *institutional*

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An editorial team comprising Bruce Ross-Larson, Steven Kennedy, and Joseph Caponio contributed significantly to improving the quality of the final manuscript submitted to the World Bank Office of the Publisher for publication.

Abbreviations

\$	All dollar amounts are in U.S. dollars unless otherwise indicated.	IPP	independent power producer
ADF	African Development Fund	JMP	Joint Monitoring Programme
AFRICATIP	Association Africaine des Agences d'Exécution des Travaux d'Intérêt Public	KenGen	Kenya Electricity Generating Company
AGETIP	<i>agence d'exécution des travaux d'intérêt public</i>	KPLC	Kenya Power and Lighting Company
AICD	Africa Infrastructure Country Diagnostic	MDG	Millennium Development Goal
AMADER	Agence Malienne pour le Développement de l'Energie Domestique et l'Electrification Rurale (Malian Agency for the Development of Domestic Energy and Rural Electrification)	NEPAD	New Partnership for Africa's Development
BPC	Botswana Power Corporation	NWSC	National Water and Sewerage Corporation
CEAR	Central East African Railways	O&M	operation and maintenance
CREST	Commercial Reorientation of the Electricity Sector Toolkit	ODA	official development assistance
DHS	demographic and health survey	OECD	Organisation for Economic Co-operation and Development
EASSy	Eastern African Submarine Cable System	PPI	private participation in infrastructure
GIS	geographic information systems	PSP	private sector participation
GNI	gross national income	SAT-3	South Atlantic 3/West Africa Submarine Cable
GSM	global systems mobile	SEACOM	South Africa–East Africa–South Asia–Fiber Optic Cable
IBNET	International Benchmarking Network	SODECI	Société de Distribution d'Eau de la Côte d'Ivoire
IBT	increasing block tariff	SOE	state-owned enterprise
ICT	information and communication technology	SSATP	Sub-Saharan Africa Transport Policy Program
IDA	International Development Association	TEAMS	The East Africa Marine System
		TEU	20-foot equivalent unit
		TIR	Transports Internationaux Routiers
		VoIP	Voice over Internet Protocol
		WiMAX	Worldwide Interoperability for Microwave Access
		WSS	water supply and sanitation

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