

INTERNATIONAL DEVELOPMENT IN PRACTICE

Ensuring Quality to Gain Access to Global Markets

A Reform Toolkit

Martin Kellermann

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Foreword

An efficient and effective quality and standards ecosystem—also referred to as quality infrastructure (QI)—is an essential ingredient for competitiveness, access to new markets, productivity improvement, innovation of new products, and environmental protection, as well as health and safety of populations. In short, QI is not only key to a country’s growth, but also essential in creating a safer, cleaner, and more equitable and well-integrated world.

QI can also be quite complex; thus, it is often sidelined from high-level political discussions or left out of a country’s reform agenda. Instead, practitioners focus on short-term gains or single and disparate components of QI without understanding the broader interrelationships within the QI ecosystem. QI is expansive and comprehensive: it encompasses not just standards, but also matters of accreditation, metrology, and calibration, as well as conformity assessment services, such as testing, inspection, and certification.

The World Bank Group and the National Metrology Institute of Germany (PTB) fully recognize the importance of QI as an ecosystem and, as a result, I’m extremely proud that we have worked with the PTB to produce the first-ever comprehensive QI diagnostics and reform guide. This guide is designed to help development partners and governments assess and analyze a country’s QI ecosystem; identify issues and gaps; and provide recommendations for how to bridge those gaps and build institutional capacities. This publication takes into consideration the achievements and lessons learned from previous reform experiences and seeks to expand on them to provide an effective set of good practices. It also provides access to an online diagnostic tool that uses a systematic methodology to assess a country’s QI ecosystem. This diagnostic is critical for understanding and identifying the gaps and shortfalls quickly, so that countries can efficiently and effectively identify areas for reform.

QI is, therefore, a relevant ingredient for achieving the World Bank Group’s twin goals of ending extreme poverty and promoting shared prosperity by the end of 2030 through competitiveness, trade, health and safety, and so on. This toolkit provides a useful framework for helping countries understand where and how to begin the reform process.

I hope this publication will encourage countries to take a more systematic review of their QI ecosystems and increase their visibility with both citizens and politicians. QI is indeed a complex matter, but it is of critical importance if countries want to meet the current and emerging demands of the global economy, reduce poverty, and share in global prosperity.

Caroline Freund

Director

Trade, Regional Integration, and Investment Climate

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The World Bank

Foreword

In today's highly competitive global markets, a country's ability to produce high-quality products is directly linked to its economic success. Product quality is at the root of Germany's economic growth and prosperity, with the trademark "Made in Germany" being a selling point across the globe.

Therefore, the German government is naturally committed to enabling its partners in emerging and developing countries to access new markets and strengthen their competitiveness by enhancing the quality of their products. In the framework of our technical cooperation, we place special emphasis on the core of our own quality production: a well-functioning quality infrastructure (QI). Such a QI system offers proof that products and services comply with the necessary market requirements regarding quality and safety. It can therefore boost trade and reduce trade costs, enhance technology transfer and innovation, increase investments and competitiveness, and protect consumers. The importance of QI for economic, ecological, and social development is reflected in the development agenda of the German government and the European Union. In the new German Aid for Trade strategy, we identified QI as one of the main pillars for enhancing the capabilities of developing countries to reap the benefits of free, fair, and safe trade.

Since 1963, the German government has entrusted the National Metrology Institute of Germany (PTB), a global player in metrology, with strengthening the QI systems in such countries. On behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), the PTB advises governments and ministries, promotes QI institutions, and supports small and medium-size enterprises. These objectives are realized following a demand-oriented and systematic approach, guided by international good practices. The outstanding effects of this cooperation are reflected in economic development and the strengthening of consumer protection.

We therefore greatly appreciate the partnership established with the World Bank Group in 2016, which increased our collaboration in the implementation of QI development cooperation and led to the elaboration of this QI diagnostic and reform toolkit. This product will help practitioners and governments to analyze and assess the QI system in a particular country in a holistic manner. It also provides an overview of international good practices, as well as recommendations

for QI reforms, coherent support for those reforms, and the necessary capacity development. Most important, it represents an offer to our partner countries to continue and intensify our cooperation in this important field. We therefore invite you to browse this publication and make use of the different instruments it offers.

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The World Bank and PTB team that oversaw and contributed heavily to this publication consisted of Andrei Mikhnev, World Bank lead private sector specialist; Wafa Aranki, World Bank senior private sector specialist; Bin Zhai, World Bank private sector specialist; Susanne Wendt, PTB project coordinator; Solomon Stavis, World Bank consultant; and Alexis Valqui, PTB consultant.

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About the Author

Martin Kellermann has more than 40 years of experience working in quality infrastructure (QI), first in the South African Bureau of Standards and thereafter as a consultant all over the world. He has worked in Central Asia, the Middle East, East Africa, West Africa, and East Asia, advising governments and QI institutions on policy, strategy, and the reengineering of business activities, as well as facilitating the drafting of national quality policies and QI legislation. During this time, he worked with the World Bank, National Metrology Institute of Germany, International Organization for Standardization, International Trade Centre, United Nations Industrial Development Organization, United Nations Development Programme, and many other organizations, and he has contributed to and authored multiple publications on QI.

Kellermann holds a master's degree in mechanical engineering from Pretoria University. He has also studied accountancy at the University of the Witwatersrand's Graduate School of Business Administration and participated in the Executive Education Program of the Haas School of Business, University of California, Berkeley. Currently, Kellermann lives with his wife in South Africa.

Abbreviations

AFRIMETS	Intra-Africa Metrology System
AIDMO	Arab Industrial Development and Mining Organization
ARAC	Arab Accreditation Cooperation
ARSO	African Organization for Standardization
AS	Aerospace Standard
ASME	American Society of Mechanical Engineers
BIPM	International Bureau of Weights and Measures
BMWi	Federal Ministry for Economic Affairs and Technology (Germany)
BRC	British Retail Council
BSI	British Standards Institution
CAC	Codex Alimentarius Commission
CAC/RCP	Codex Alimentarius Commission/Recommended Code of Practice
CARICOM	Caribbean community
CE	Conformité Européenne
CEN	European Committee for Standardization European
CENELEC	Committee for Electrotechnical Standardization
CGPM	General Conference on Weights and Measures
CIPM	International Committee for Weights and Measures
CMCs	calibration and measurement capabilities
COMESA	Common Market for Eastern and Southern Africa
COOMET	Euro-Asian Cooperation of National Metrological Institutions
COPANT	Pan American Standards Commission
CPSD	Country Private Sector Diagnostic
CRM	certified reference material
CROSQ	Caribbean Community Regional Organization for Standards and Quality
CSA	Canadian Standards Association
DCED	Donor Committee for Enterprise Development
DIN	German Institute for Standardization
EAC	East African Community

EASC	Euro-Asian Interstate Council for Standardization, Metrology and Certification
ECE	Economic Commission for Europe
ECO	Economic Cooperation Organization
ECOWAS	Economic Community of West African States
EN	European Norm
ETSI	European Telecommunications Standards Institute
EU	European Union
EURAMET	European Association of Metrology Institutes
FDI	foreign direct investment
FSC	Forest Stewardship Council
FSSC	Food Safety System Certification
GDP	gross domestic product
GFSI	Global Food Safety Initiative
GLOBAL G.A.P.	Global Good Agricultural Practice
GSO	Gulf Cooperation Council Standardization Organization
GSP	good standardization practice
GVC	global value chain
HACCP	hazard analysis and critical control points
IAAC	InterAmerican Accreditation Cooperation
IAF	International Accreditation Forum
IATF	International Automotive Task Force
ICEx	IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres
ICRE	The IED System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE System)
ICT	information and communication technology
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Cooperation
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ITC	International Trade Centre
ITU	International Telecommunication Union
JPEG	Joint Photographic Experts Group
KCDB	Key Comparison Database (CIPM MRA)
LDC	least developed country
LNG	liquid natural gas
MRA	Mutual Recognition Arrangement (CIPM)
NAB	national accreditation body
NAFPs	national accreditation focal points
NGO	nongovernmental organization
NMI	national metrology institute
NQP	national quality policy
NSB	national standards body
NTM	nontariff measure
OECD	Organisation for Economic Co-operation and Development
OECD-DAC	Development Assistance Committee of the Organisation for Economic Co-operation and Development
OHSAS	Occupational Health and Safety Assessment Series
OIE	World Organisation for Animal Health

OIML	International Organization of Legal Metrology
OIML-CS	OIML Certification System
OIML MAA	Mutual Acceptance Arrangement
PAC	Pacific Accreditation Cooperation
PASC	Pacific Area Standards Congress
POP	Population index
PPP	public-private partnership
PTB	National Metrology Institute of Germany (Physikalisch-Technische Bundesanstalt)
QI	quality infrastructure
QI/POP	QI/Population (index)
R&D	research and development
RAB	regional accreditation body
RIA	regulatory impact assessment
RMO	regional metrology organization
RSO	regional standards organization
SA	social accountability
SADC	Southern African Development Community
SADCSTAN	Southern African Development Community Cooperation in Standards
SARSO	South Asian Regional Standards Organization
SCC	Standards Council of Canada
SDO	standards development organization
SDoC	Supplier's Declaration of Conformity
SI	International System of Units
SIM	Inter-American Metrology System
SMEs	small and medium enterprises
SPS	sanitary and phytosanitary
SPS Agreement	Agreement on Sanitary and Phytosanitary Measures (WTO)
TBT	technical barriers to trade
TBT Agreement	Agreement on Technical Barriers to Trade (WTO)
TC	technical committee
TL	telecommunication
UKAS	United Kingdom Accreditation Service
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNIDO	United Nations Industrial Development Organization
UPS	uninterruptable power supply
WEF	World Economic Forum
WHO	World Health Organization
WTO	World Trade Organization

