

# 2 The Quality Infrastructure

The definition of the quality infrastructure (QI) used in this publication is the following:

The system comprising the organizations (public and private) together with the policies, relevant legal and regulatory framework, and practices needed to support and enhance the quality, safety, and environmental soundness of goods, services, and processes.

The quality infrastructure is required for the effective operation of domestic markets, and its international recognition is important to enable access to foreign markets. It is a critical element in promoting and sustaining economic development as well as environmental and social well-being.

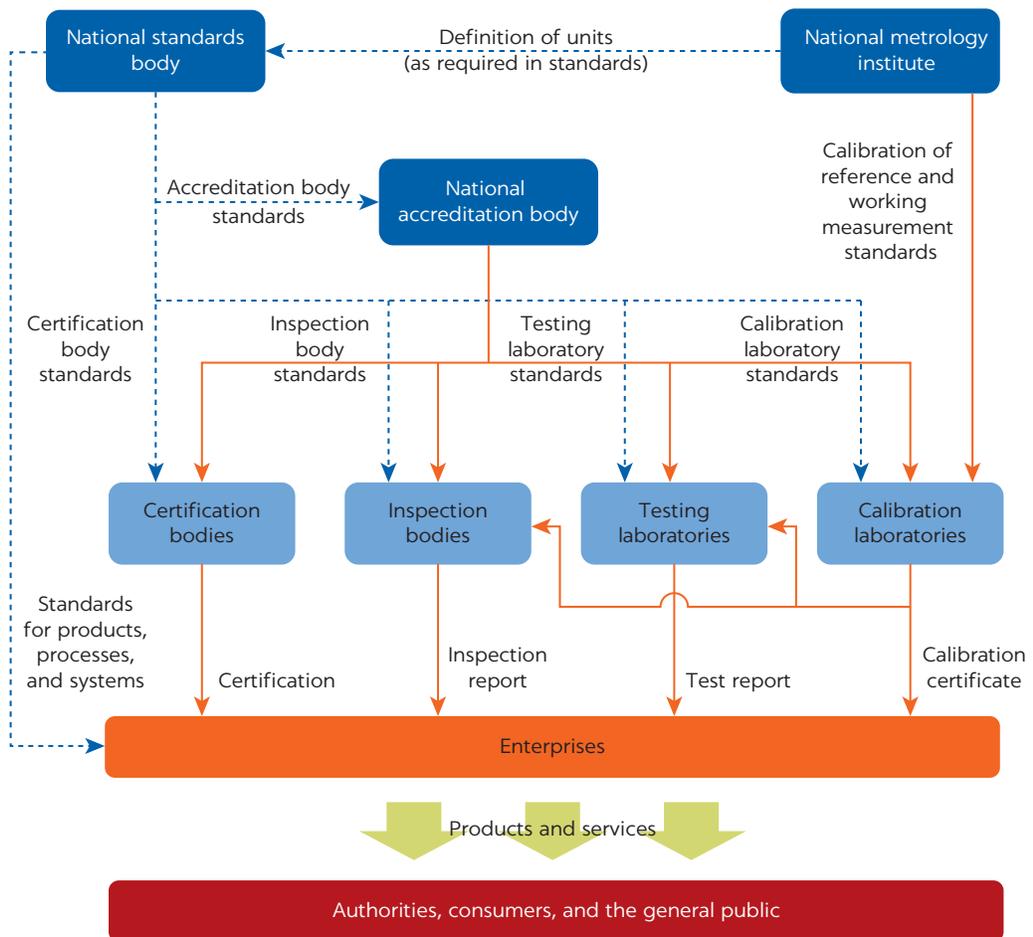
It relies on metrology, standardization, accreditation, and conformity assessment.

From this definition, the QI can be considered to consist of three core elements, without which its other parts cannot operate optimally. These are standards, metrology, and accreditation. The services based on these three core elements include calibration (part of the metrology system) and inspection, testing, and certification (collectively referred to as conformity assessment). The relationships among the QI elements at the national level are illustrated in figure below.

All of these could be voluntary in nature—that is, compliance is a choice of the supplier or the purchaser; noncompliance is not a legal offense. However, governments do require mandatory compliance in specific instances, known as technical regulations, in which case noncompliance then becomes a legal offense. The development and implementation of technical regulations utilize all the core elements and services of the QI, and QI implementation is further enhanced by market surveillance.

The QI may also be considered at the regional and international levels, where a vast number of intergovernmental and nongovernmental institutions have been established over the years. Over and above the regional and international institutions dealing with the core elements of the QI, there are numerous multinational companies providing a wide range of conformity assessment services in many countries.

**FIGURE P2.1**  
**The national quality infrastructure**



Source: Adapted from Guasch et al. 2007.  
Note: Dashed lines designate “standards and definitions”; solid lines designate “conformity assessment processes.”

Conformity assessment is defined as the demonstration that specified requirements relating to a product, process, system, person, or body are fulfilled (ISO and IEC 2004b). Generally speaking, as noted earlier, the elements of conformity assessment include inspection, testing, and certification. Calibration is considered part of metrology and not as conformity assessment.

Module 3 covers one of the core QI elements—standards—specified in the definition above. The other core elements—metrology and accreditation—are covered in modules 4 and 5, respectively. Module 6 then discusses conformity assessment, which collectively refers to a number of services based on these core functions. Module 7 covers technical regulations, and module 8, how the QI infrastructure functions as a flexible public-private partnership system.

