

# SUPPORTING BUSINESS ENVIRONMENT REFORMS

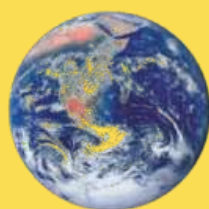
PRACTICAL GUIDANCE  
FOR DEVELOPMENT AGENCIES

ANNEX: Supporting Quality Infrastructure in Developing and Transitional Economies



August 2014

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# DCED

The Donor Committee for Enterprise Development

# **Supporting Business Environment Reforms: Practical Guidance for Development Agencies**

Annex: Supporting Quality Infrastructure  
in Developing and Transitional Economies

Donor Committee for Enterprise Development (DCED)

[www.Enterprise-Development.org](http://www.Enterprise-Development.org)

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## PREAMBLE

In 2008 the Donor Committee for Enterprise Development (DCED) published guidance for donor and development agencies in their support of business environment reform in developing countries, entitled *Supporting Business Environment Reforms: Practical Guidance for Development Agencies*.<sup>1</sup> Since the publication of this guidance, increasing attention has been given to a number of specific and closely related topics, which have been published as annexes to the original guidance. In 2011, an annex on supporting reforms that promote formalisation was published and in 2013, additional annexes on industrial policy and measuring business environment reform results were published.

This annex focuses on how donor and development agencies can support Quality Infrastructure (QI) in a broader context of business environment reforms. It is based on a series of deliberations by the DCED Business Environment Working Group, including a detailed technical report.<sup>2</sup> It presents common principles on the importance of a modern and market-oriented QI framework as an integral part of a sound business climate.

## ACKNOWLEDGEMENTS

This annex is the result of collaborative work between the Business Environment Working Group of the DCED, the Swiss State Secretariat for Economic Affairs and the United Nations Industrial Development Organization. The technical report was drafted by Martin Kellermann and Daniel Paul Keller and the annex was prepared by Simon White.

We would like to thank the members of the DCED Business Environment Working Group (BEWG) who supported the development of this technical publication and also contributed to its development by providing their experiences from quality infrastructure reform. The BEWG currently includes the Danish International Development Agency (Danida), the Netherlands Ministry of Foreign Affairs, the Department of Foreign Affairs, Trade and Development Canada, the European Commission (EC), the German Federal Ministry of Economic Cooperation and Development (BMZ) and the German Agency for International Cooperation (GIZ), the International Development Research Centre (IDRC), the International Labour Organization (ILO), the Swiss Government (SDC and SECO), the United Nations Industrial Development Organisation (UNIDO), the UK Department for International Development (DFID), the United States Agency for International Development (USAID) and the World Bank Group.

Furthermore, the technical report was commented and peer-reviewed by the members of the Network on Metrology, Accreditation and Standardization for Developing Countries (DCMAS), namely the Bureau International des Poids et Mesures (BIPM), the International Accreditation Forum (IAF), the International Electrotechnical Commission (IEC), the International Laboratory Accreditation Cooperation (ILAC), the International Organization for Standardization (ISO), the International Trade Centre (ITC), the International Telecommunication Union (ITU), the Organisation Internationale de Métrologie Légale (OIML) and the United Nations Economic Commission for Europe (UNECE).

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<sup>1</sup> The guidance is available in [English](#), [French](#), [Spanish](#) and [Arabic](#).

<sup>2</sup> Technical report: Keller, D. & Kellermann, M. (2015) *Analysis of donor practices in supporting Quality Infrastructure reforms, Working Paper*, DCED. [https://www.enterprise-development.org/wp-content/uploads/QIBestPractices\\_WorkingPaper\\_updated2015-1.pdf](https://www.enterprise-development.org/wp-content/uploads/QIBestPractices_WorkingPaper_updated2015-1.pdf)

## KEY MESSAGES

**Standards and technical regulation have a profound influence on international trade.** Trade volumes have risen steadily in the past decade and as a result it is crucial that the quality infrastructure (QI) of a country provide demonstrable evidence that the products and services of private enterprises meet the demands of markets and regulatory authorities.

Although no definitive internationally accepted structure for the provision of QI services exists, good practices have evolved that must be taken into consideration. **Metrology, standards and accreditation are essential. Without these, calibration and conformity assessment services cannot function properly.** Governments need to **establish a policy environment** that outlines the responsibilities of government and gives space to the private sector for service delivery.

**International recognition of the national quality institutions is of vital importance for conformity assessment services to be accepted in the export markets.** National metrology institutions have to ensure their calibration and measurement capabilities are internationally recognized, traceable and reflected in the key comparison database managed by the *Bureau International des Poids et Mesures*. National standards bodies need to be actively involved in the relevant international and regional technical committees. The national accreditation body has to gain international recognition through the multilateral recognition arrangements that the International Laboratory Accreditation Cooperation and the International Accreditation Forum manage.

**Sustainability of established QI organisations depends on a number of key issues.** Governments have a responsibility to provide for the finances of the fundamental QI institutions (i.e., metrology, standards and accreditation). Commercial QI service delivery should be determined through appropriate market mechanisms.

**Food safety is an important intervention area for QI.** Food standards include safety and quality issues that are subject to both the World Trade Organization's Sanitary and Phytosanitary Measures and the Agreement on Technical Barriers to Trade. While in the past national standards bodies in developing countries took on the responsibility for implementing mandatory food standards, this is now increasingly undertaken by dedicated food safety agencies. This transition requires careful management.

QI reforms should **focus on the ability of firms to compete, conform and connect.** The ability to market products and services requires firms to compete – to meet the quality standards required by the market at prices that provide an adequate return on capital. To do this, firms must be able to conform – by accessing quality infrastructure services that verify compliance with the relevant standards. Ultimately, companies need to be supported to better *connect* their products and services to potential buyers or markets.

## INTRODUCTION

The term “quality infrastructure” (QI) refers to the policy and institutional framework that governments establish to provide evidence that products and services meet the requirements set by regulatory authorities and the market place. QI consists of a number of institutions and service providers, and can only function properly when all these are in place. The foundational parts of a QI are the standardization, metrology and accreditation. The QI framework describes a way of measuring, standardising, assessing and certifying the products and services businesses produce.

While business environment reform promotes the development of vibrant and competitive markets in which private firms start-up and operate, QI focuses on the products and services these firms provide. Suppliers are increasingly challenged to provide products and services that demonstrably meet the requirements, specifications or standards at price levels that the market is prepared to pay. Formally requested or indicated by market preferences, such a demonstration may consist of inspection, testing, certification or any combination thereof by the supplier or a party independent from both the supplier and the purchaser. Whichever way, the results will only be credible if the institutions providing the evidence are technically competent and acceptable to the market and regulatory authorities. The organizations within a QI have an influential role: the way in which QI is governed may increase costs and risks of doing business and impede or accelerate competition for the private sector.

Donor and development agencies that support business environment reform<sup>3</sup> in developing economies are interested in the ways in which QI can be effectively established and sustained. This requires careful assessment of the current state of the country’s QI, the design of interventions to improve QI, the management of support programmes, and the sustainability of QI over the long term. Governments play an active role in the establishment, enforcement and sustainability of QI. However, QI also consists of a number of services which can be privately provided. While governments frequently establish such service providers, the private sector should play an increasing role at providing commercial services that include calibration laboratories, testing laboratories, inspection bodies and certification bodies for systems, services, products and persons.

## KEY ELEMENTS OF QUALITY INFRASTRUCTURE

### ***Quality policy***

A quality policy articulates the government’s vision and strategy for QI development. Quality policy is closely connected to industrial development, export, trade promotion and consumer protection, among other policy domains. To be complete, a quality policy should also deal with technical regulations that are mandatory by law. A well-developed quality policy can have a positive impact on industrial development and as such will have a marked effect on trade. It is incumbent on government to develop a quality policy carefully and align it with country realities (i.e., resource constraints, political structures, business environment), market demands, international good practice, and formal agreements. It is also important that the policy be reviewed regularly.

### ***Metrology***

The National Metrology Institute (NMI) is responsible for ensuring that measurements of a country can be traced to the international system of units. This facilitates the acceptance of products, processes, measurements and testing in local and foreign markets. This is done through the

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<sup>3</sup> Business Environment Reform is here taken to mean a complex of policy, legal, institutional, and regulatory conditions that govern business activities. It is a sub-set of the investment climate and includes the administration and enforcement mechanisms established to implement government policy, as well as the institutional arrangements that influence the way key actors operate.

establishment and maintenance of national measurement standards that are either primary (i.e. fundamental scientific realizations that have been subject to international comparisons) or national measurement standards traceably calibrated to primary measurement standards held by another NMI. These national measurement standards are then used to calibrate the working standards of calibration laboratories and legal metrology departments to complete the traceability chain down to the users of measuring equipment. Originally, these measurement standards dealt mainly with physical quantities, such as mass, temperature, length, and pressure. Today, other areas such as chemical metrology have become an important part of the National Metrology Institute activities.

### ***Standards and technical regulations***

Industry standards and technical regulations have a major influence on trade. There are public and private standards. Public standards are normative and voluntary documents developed by technical committees through a consensus process that is open to all stakeholders and published by recognised standards organisations at national, regional or international level for general use. A National Standards Body (NSB) is normally responsible for overseeing the development and publication of national standards. It must ensure that the development of national standards is aligned with international requirements, such as the World Trade Organization's Agreement on Technical Barriers to Trade. The development of public standards should be based on demand and undertaken in a transparent and consultative process that involves all stakeholders in particular the private sector. Increasingly, standards are also developed outside the auspices of national, regional, and international standards bodies: Private standards are developed by specific interest groups or organisations for their own, explicit purposes. Private standards are developed by sectoral organisations, including non-governmental organisations, business associations and major retailers.

### ***Accreditation***

National accreditation bodies are responsible for formally recognising that laboratories of various kinds (e.g. testing, calibration, etc.), certification bodies, inspection bodies, proficiency scheme providers and good laboratory practice test facilities are competent to carry out specific tasks. The accreditation process is based on international standards. Accreditation has become a prerequisite for the recognition of the results from conformity assessment service providers against a technical regulation and in the market place at the local and international level.

### ***Conformity assessment***

Conformity assessment providers are responsible for inspecting, testing and certifying. They provide evidence that a product, process or service meets the requirements of a standard or technical regulation. Manufacturers, purchasers or an independent third party can provide this evidence. Conformity assessment service providers can be public or private. In developed economies, governments mostly leave conformity assessment to the private sector. In developing economies where governments have initially been establishing these services, the trend is for them to withdraw as soon as private sector service providers can take over.

### ***Food safety***

Food safety is an important issue, not only for the export of food and feeds to foreign markets, but also for domestic trade and consumption. Food safety refers to the potential risks to human health associated with the consumption of domestic and foreign food products. It is a key domain of public health. Food safety is a crosscutting issue that touches on all aspects of the QI system. Donor and development agencies that support QI in food safety are encouraged to pay particular attention to the institutional arrangements so as to ensure there is a clear definition of mandates. International guidelines and options have been developed by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) that recommend the adoption of

either an integrated approach or a unitary food safety authority. In both cases responsibility for food safety is defined at all levels of the supply chain.

## **PRINCIPLES**

Donor and development agencies can support governments and their partners in the development of an effective and sustainable QI framework by adhering to the following principles.

### **Principle 1: Analyse demand and supply for quality services to set the right priorities**

Gain a clear understanding of demand and supply for quality services in the country or region in order to set the right priorities. Donor support needs to be geared towards strengthening those quality-related services that are in demand, but not currently available or accessible. The assessment should include: (a) an analysis of demand; (b) a supply-side mapping of the available QI in the public and the private sector; and (c) a gap analysis. Identify the priority needs of both public and private sector clients to ensure that their demands are met. While beneficiary institutions that operate as profit centres are often interested in developing only those services that are potentially profitable this may leave gaps in other areas that are critical for export capacity or consumer protection. It is important to stimulate, but not distort QI markets, taking into account the public goods that these services provide.

### **Principle 2: Technical assistance to the national QI and regional QI systems must always be integrated in a holistic approach**

Support can be provided in three areas: (i) Regional governance issues dealing with harmonization of standards and technical regulation, and the mutual recognition of conformity assessment, (ii) establishment of a regional QI service for expensive services for which only a small national need exists in the members of a region, and (iii) specialist regional bodies which are the link between the national and international regimes.

### **Principle 3: Embed technical assistance to building QI into a longer term planning, going beyond a single phase project**

Strengthening national QI is a long-term undertaking. As with other forms of business environment reform support, this requires donor commitment beyond a single project funding cycle. A long-term plan should be established for the development of QI. This allows governments and other programme partners to mobilize their contributions to ensure assistance is sequenced with international input and harmonised with support from other key stakeholders, including the industry and non-government organisations. It is best to embed projects into a longer-term plan for assistance over several project phases. Planning should be aligned with beneficiary government's own planning.

### **Principle 4: Combine national and trans-national approaches**

Trans-national approaches to QI reform seek to strengthen regional institutions and require regional cooperation frameworks and institutions. Strengthening regional frameworks requires parallel support to national QI to bring all countries to the level where they can participate and contribute to the regional framework. Delegating national functions to a regional body does not replace basic QI at the national level. All countries must still be able to respond to certain basic metrology and testing needs. Specialisation of laboratories and other service providers in a region is meaningful if those services are accessible to users of all countries. Thus, trans-national support is often only effective if it is combined with support to individual countries.



**Principle 5: Support integrated regional approaches**

Regional approaches deliver assistance to several countries through a single project. In this way, donor and development agencies can capitalise on economies of scale and scope. Those countries in the region that lag behind benefit from the expertise and experience of the more advanced countries. However, these asymmetries may disproportionately benefit the dominant, more advanced country and widen the gap between participating countries rather than narrowing it. Economies of learning should be encouraged by sharing experience among countries in the region and by coordinating project inputs. It is important to strengthen existing formal and informal regional cooperation structures between quality institutions and to help less advanced countries of the region access the expertise that is available in the region's more advanced countries.

**Principle 6: Cooperation with organisations that are directly responsible for QI is most effective**

The selection of the right partner institution is crucial. In order to ensure ownership, projects need to be anchored in the right institutions. For QI projects, which might cover areas that fall into the competences of several organisations, it might be necessary to work directly with several partners. The selection of the counterpart organisation should not be influenced by factors such as historical bias, institutional rivalry or political considerations. Creating win-win situations when building up new institutions or transferring responsibilities from one organisation to the next are important. Identifying the right counterparts requires a careful mapping of the national QI.

**Principle 7: Strengthen demand and supply of quality services in parallel**

Donor and development agencies should take a two-pronged approach to developing quality systems that combine strengthening the demand and supply for quality-related services in parallel. While often overlooked, quality demand is an important driver for the development of national QI. Important domestic drivers are consumers, local export firms, international investors, and international buyers who call for improvements in the national QI and monitor their implementation. Quality conscious societies have mechanisms for consumer protection that can often be strengthened along with supporting the involvement of consumers in formulating quality policies.

**Principle 8: Promote institutional autonomy**

Institutional autonomy helps to build effective QI. The financial and organisational autonomy of QI institutions provides incentives to improve the quality of service and better cater to customer needs. Public service providers should be encouraged to develop a certain degree of autonomy so they can respond to market demands. There are different models of financial autonomy, ranging from institutions that remain within the core administration but are allowed to keep a percentage of revenues, through to public service providers operating under a public company model. Achieving autonomy is also likely to require the strengthening and capacity building of QI institutions through staff training and the improvement of governance and management systems. Twinning arrangements with more advanced peers in other countries has often proved helpful, especially when it comes to the development of specialist skills. Twinning international with national experts is an effective and sustainable way of knowledge and skills transfer.

**Principle 9: Consider maintenance and operating cost of expensive laboratory equipment**

Because the cost of operating and maintaining laboratory equipment can be expensive it is important to address these issues in the project design stage. Equipment provision and financial support to accredit laboratories are often a core element of QI projects. Donor and development



agencies should help beneficiary institutions to plan, coordinate and communicate their procurement requirements, which should include requirements for the environmental conditioning of laboratory buildings. Detailed specifications should be defined and agreed upon prior to purchasing equipment. Agencies can also help QI institutions to establish a costing and pricing system that takes into account the purchase, maintenance, operating and amortisation costs of equipment as well as the cost of renewing accreditation. Where institutions do not have access to sufficient financial resources, it may be an option for donors to consider funding extended maintenance warranty packages as a part of their support. For countries with very limited access to state funding and where clients are not able to pay the full costs of laboratory services, donor and development agencies could consider subsidised services. A plan for the gradual phasing out of these subsidies should also be formulated.

**Principle 10: Balance programme alignment needs with technical oversight and guidance**

Donor and development agencies should aim to strike a balance between commitments that align aid delivery and aid effectiveness (e.g., managing for results), while considering the specific absorption capacities of each country and its institutions. Ensure efficient and effective implementation by maximising local ownership and sustainability calls for delivery modalities that are tailored to the institutional capacities of counterparts. Where development agencies have the choice to decide on delivering modalities, forms of “joint-execution” or “mixed execution”, combined with mutual accountability, should be considered. Sub-contracting elements of projects to local counterparts is also a good way to gradually move towards more partner-led implementation, as are forms of joint-decision making.

**Principle 11: Establish an active and diverse steering committee**

Since building QI involves many different stakeholders, active and diverse project steering committees should be established. Within the steering committee it may be useful to distinguish between stakeholder involvement and strategic project decision-making. Steering committees should be kept abreast of all important financial data in order to make well-informed decisions. Sharing financial data with counterparts is also a good way of capacity building, as it allows counterpart institutions to gain experience in planning their own projects in the future.

**Principle 12: Strengthen financial and operational monitoring systems**

Whether decision-making power is centralized or delegated to the field or counterparts, implementation risks need to be minimized. This can be achieved by strengthening financial and operational monitoring systems. For example, the European Union complements evaluations with result-oriented monitoring. The *DCED Standard for Measuring Achievements in Private Sector Development* also provides a framework and approach to monitoring. The task of monitoring complex projects may be commissioned externally, at least for strategically important projects with high implementation risks. Prior to implementation, all project partners should agree on project governance, management and monitoring structures.

**CONCLUSION**

Design and reform of QI systems have become increasingly recognised as a critical element of an enabling business environment. The contribution of a quality infrastructure and its services to regulatory authorities, private sector and consumers has to be seen in the wider context of an enabling business environment, be this national, regional or international. Only a good integration of quality infrastructure into an overall business environment will allow private sector to prosper, to be competitive and to generate and maintain employment opportunities in the spirit of an inclusive and sustainable economic development.

## RECOMMENDED READING AND RESOURCES

Bennett B., Loewe P. *Independent Evaluation, Bangladesh, Maldives, Nepal, Sri Lanka, Strengthening Institutional and National Capacities Related to Standards, Metrology, Testing and Quality*, (funded by NORAD). Vienna: UNIDO. 2009 (published on [www.unido.org](http://www.unido.org))

Bennett B., Keller D. *Independent Evaluation, Trade Capacity – Building: Enhancing the Capacities of the Tanzanian Quality Infrastructure and TBS/SPS Compliance Systems for Trade*. Vienna: UNIDO. 2008 (published on [www.unido.org](http://www.unido.org))

Bennett B., Keller D. *Independent Evaluation of Enhancing the Capacities of the Mozambican Food Safety and Quality Assurance System for Trade*. Vienna: UNIDO. 2008 (published on [www.unido.org](http://www.unido.org))

Bennett B., Loewe P., Keller D. *Thematic Evaluation Report, UNIDO activities in the area of Standards, Metrology, Testing and Quality (SMTQ)*, (co-funded by SECO). Vienna: UNIDO, 2010 (published on [www.unido.org](http://www.unido.org))

*Building institutions for market*. World Development Report 2002. Washington: World Bank

Building trust - The Conformity Assessment Toolbox, Geneva: ISO Central Secretariat. 2010 (co-published with UNIDO)

Donor Committee for Enterprise Development (DCED). *Strategic Industrial Policy and Business Environment Reform: Are they Compatible?*. Working Paper by John Weiss, Geneva, 2013

*Diagnostics for industrial value chain development: An integrated tool*. Vienna: UNIDO. 2011

*Export Quality Management: A Guide for Small and Medium-Sized Exporters (2<sup>nd</sup> Edition)*. Geneva: International Trade Centre (ITC). 2011. ISBN 978-92-9137-399-4

*Fast Forward: National Standards Bodies in Developing Countries*, Geneva: ISO Central Secretariat. 2008. ISBN 978-92-67-10477-5 (co-published with UNIDO)

*Financing NSBs: Financial Sustainability for National Standards Bodies*, Geneva: ISO Central Secretariat. 2010. ISBN 978-92-67-10534-5

Foss, I. (et al). *Development of trade in Africa: Promoting exports through quality and safety*. Stockholm: SIDA. 2004. ISBN 91-586-8403-4

Guash J. L., Racine J.-L., Sánchez I., Diop M. *Quality Systems and Standards for a Competitive Edge*. Washington DC: The World Bank. 2007. ISBN 0-8213-6894-X

*Legal Metrology and International Trade*, Geneva: International Trade Centre (ITC), 2004,

Hartmut J., *Summary of the evaluation of the project „Support of a Pan-African Quality Infrastructure“*, Berlin: Physikalisch-Technische Bundesanstalt (PTB). 2011 [https://www.ptb.de/cms/fileadmin/internet/fachabteilungen/abteilung\\_9/9.3\\_internationale\\_zusammenarbeit/docs/ptb\\_summary\\_evaluation\\_panafrica\\_2012.pdf](https://www.ptb.de/cms/fileadmin/internet/fachabteilungen/abteilung_9/9.3_internationale_zusammenarbeit/docs/ptb_summary_evaluation_panafrica_2012.pdf)

*IAF ML 4:2012, Policies and procedures for a multilateral recognition arrangement on the level of single accreditation bodies and on the level of regional groups*. Quebec: International Accreditation Forum

*International standards and “private standards”*. Geneva: ISO Central Secretariat. 2010, ISBN 978-92-67-10518-5

*International Trade Forum Magazine*, International Trade Center: West Africa Quality Programme: A regional approach to competitiveness, October 2012

*ISO/IEC Directives, Parts 1 and 2: Procedures for technical work*. Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC Guide 2:2004, Standardization and related activities – General vocabulary.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC 17000:2004, Conformity assessment – Vocabulary and general principles.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC 17020:2012, Conformity assessment -- Requirements for the operation of various types of bodies performing inspection.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC 17021:2011, Conformity assessment -- Requirements for bodies providing audit and certification of management systems.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC 17025:2005, General requirements for the competence of testing and calibration laboratories.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/IEC 17065:2012, Conformity assessment -- Requirements for bodies certifying products, processes and services.* Geneva: ISO Central Secretariat and IEC Central Office

*ISO/TS 16949:2009, Quality management systems -- Particular requirements for the application of ISO 9001:2008 for automotive production and relevant service part organizations.* Geneva: ISO Central Secretariat

Jenders, S. *Summary of the report on the mid-term evaluation of the project “Establishment of a Regional Quality Infrastructure in the East African Community (EAC)”.* Berlin: Physikalisch-Technische Bundesanstalt (PTB). 2010

Keller, D. *Independent Mid-Term Review of Trade Capacity Building for Ghana, funded by the Swiss State Secretariat for Economic Affairs (SECO) and implemented by UNIDO.* Hanoi. 2009, (unpublished)

Keller, D., Loewe, P. *Independent Evaluation of Trade Capacity Building in the Mekong Delta Countries of Cambodia, Lao PDR and Vietnam through Strengthening Institutional and National Capacities Related to Standards, Metrology, Testing and Quality (SMTQ),* (funded by NORAD - Phase II). Vienna: UNIDO. 2011 (published on [www.unido.org](http://www.unido.org))

Keller D., Mrad F. *Independent Evaluation Report, Increase Access to Export Markets for Lebanese Products and Improvement of its Quality Infrastructure to increase TBT/SPS Compliance (MACLE),* (funded by SECO). Vienna: UNIDO. 2010 (published on [www.unido.org](http://www.unido.org))

Kellermann, M.G. *Thoughts on a National Quality Policy.* Discussion Paper 4/2011. Braunschweig: Physikalisch-Technische Bundesanstalt (PTB). 2011

Lindahl, C. *Norway’s Trade Related Assistance through Multilateral Organizations: A Synthesis Study.* Report 8/2011. Oslo: NORAD (published on [www.norad.no](http://www.norad.no))

Loewe P., Keller D. *Independent Evaluation Report, Post WTO Accession Support to Viet Nam: TBT/SPS Compliance Capacity Development related to Key Export Sectors,* (funded by SECO). Vienna: UNIDO. 2011 (published on [www.unido.org](http://www.unido.org))

Loewe P., Pieris N., Jayasinghe S. *Independent Evaluation Report, Impact of UNIDO SMTQ projects in Sri Lanka.* UNIDO: Vienna. 2012 (published on [www.unido.org](http://www.unido.org))

*Making Private Standards Work for You.* Vienna: UNIDO. 2010

Miesner, U. *Contributions of quality infrastructure to regional economic integration.* Braunschweig: Physikalisch-Technische Bundesanstalt (PTB). 2009

*OIML D1:2004, Elements for a law on metrology.* Paris: OIML

*OIML D3:1979, Legal qualification of measuring instruments.* Paris: OIML

*OIML V2-200:2007, International Vocabulary of Metrology – Basic and general concepts and associated terms (VIM)*. Paris: OIML

Racine, J.-L. (Editor), *Harnessing Quality for Global Competitiveness in Eastern Europe and Central Asia*. Washington DC: The World Bank. 2011. ISBN 978-0-8213-8509-8

*Reference Manual for Quality Infrastructure Building Blocks*. Vienna: UNIDO Trade Capacity Building Branch. 2011 (e-book)

Sanetra Dr C., Marbán R. M. *The answer to the global quality challenge: A National Quality Infrastructre*. Braunschweig: Physikalisch-Technische Bundesanstalt (PTB). 2007

*The Roadmap to an Accreditation System*. Braunschweig: Physikalisch-Technische Bundesanstalt (PTB)

*Supporting Business Environment Reforms: Practical guidance for development agencies*. Donor Committee for Enterprise Development, August 2008 ([www.Enterprise-Development.org](http://www.Enterprise-Development.org))

UNIDO Evaluation Group, *Independent Evaluation, East African Community, Trade Capacity Building in agro-industry products for the establishment and proof of compliance with international market requirements in EAC*, (funded by NORAD). Vienna: UNIDO. 2011 (published on [www.unido.org](http://www.unido.org))

UNIDO, *Implementing an Energy Management System – Practical Guide*. Vienna: UNIDO. 2013

WAQP: West Africa Quality Programme, Vienna: UNIDO. 2013  
[https://www.unido.org/sites/default/files/2015-04/WAPQ\\_EN\\_0.pdf](https://www.unido.org/sites/default/files/2015-04/WAPQ_EN_0.pdf)

*World Development Report 2003, Building Institutions for Market*, Washington: World Bank. ISSN 0163-5085

*World Trade Report 2005, Exploring the links between trade, standards and the WTO*. Geneva: World Trade Organization

*World Trade Report 2012, Trade and public policies: A closer look at non-tariff measures in the 21st century*. Geneva: World Trade Organization