

INTERNATIONAL DEVELOPMENT IN PRACTICE

East African Community

QI Toolkit Case Studies

Martin Kellermann

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Abbreviations

AFRAC	African Accreditation Cooperation
AFRIMETS	Intra-Africa Metrology System
ARSO	African Organisation for Standardisation
BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
CEO	chief executive officers
EAAB	East African Accreditation Board
EABC	East African Business Council
EAC	East African Community
EASC	East African Standards Committee
EPA	Economic Partnership Agreement (EU)
EU	European Union
ISO	International Organization for Standardization
KEBS	Kenya Bureau of Standards
KENAS	Kenya National Accreditation Service
NSB	national standards body
PTB	National Metrology Institute of Germany
QI	quality infrastructure
RBS	Rwanda Bureau of Standards
SADC	Southern African Development Community
SQMT	Standardization, Quality Assurance, Metrology and Testing
SQMT Act	East African Standardization, Quality Assurance, Metrology and Testing Act
SQMT Protocol	Protocol on Standardization, Quality Assurance, Metrology and Testing
TBS	Tanzania Bureau of Standards
TBT Agreement	Agreement on Technical Barriers to Trade (WTO)
UNBS	Uganda National Bureau of Standards
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

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Abstract: The realities and challenges of establishing a harmonized regional approach to standards, metrology, accreditation, and conformity assessment in a recently established trade region to support intraregional trade are many and varied. One of the major challenges is usually the dismantling of long-established national quality infrastructure (QI) systems proving to be nontariff barriers, as shown in the East African Community.

EXECUTIVE SUMMARY

The current East African Community (EAC) became operational in 2000 with the signing of the EAC Treaty in 1999. It originally comprised Kenya, Tanzania, and Uganda. Burundi and Rwanda joined in 2007. A customs union was entered into in 2005, and a common market was launched in 2010. The German Federal Ministry for Economic Cooperation and Development (BMZ) funded a project, “Establishment of a Regional Quality Infrastructure in the East African Community (EAC),” which was implemented by the National Metrology Institute of Germany (PTB). The envisaged impact of the project was to enhance EAC integration through the harmonization of standards and technical regulation and to increase trade flows, thus contributing to economic growth and ultimately to poverty reduction.

The project was designed as a multilevel intervention, working on the meso level (institutional capacity building) as well as the macro level (policy and strategy reform). It was implemented in three phases over nine years with a total investment of €4.3 million:

- *Phase 1 (2004–07)* focused on the development of the enabling legislation—the East African Community Standardization, Quality Assurance, Metrology and Testing Act (SQMT Act) of 2006—and the establishment of the regional QI organizations.
- *Phase 2 (2007–10)* facilitated the realization of the requirements of the SQMT Act and supported improvements in the technical performance of the national QI organizations.

- *Phase 3 (2011–13)* consolidated selected strategic activities of the previous two phases to enhance the sustainability of the regional structures and built further technical capacity in national QI organizations, with a specific focus on Burundi and Rwanda.

Notable successes of the overall project, from 2004 to 2013, included the following (table 1):

- *Development and promulgation of the SQMT Act*, in cooperation with the East African Secretariat and the partner states, as the foundation of QI harmonization in the EAC.
- *Extensive support of the East African Standards Committee (EASC)* and its technical subcommittees at the policy and strategy levels and in operational activities. Many EAC regulations were developed to support the implementation of the SQMT Act.
- *Harmonization of more than 1,000 regional standards* after the development of a proper standards development procedure.
- *Development of accreditation bodies*. The East African Accreditation Board (EAAB) was established, and the Kenya National Accreditation Service (KENAS) was institutionalized. Accreditation focal points were established in other partner states. A pool of trained assessors was created for the accreditation of medical, testing, and calibration laboratories.
- *Training of inspectors and harmonization of inspection processes*, leading to fewer inspections of products moving across borders in intra-EAC trade.
- *Improvements in metrology*. The metrology laboratories of the national standards bodies (NSBs) achieved improvements in their measurement uncertainties and expanded the range of services.

TABLE 1 Snapshot of quality infrastructure (QI) reform in the East African Community (EAC)

BEFORE REFORM	AFTER REFORM
No legal framework existed at the regional level dealing with standards, metrology, accreditation, and conformity assessment to support the implementation of the EAC Treaty regarding products traded in the EAC.	The SQMT Act was developed in cooperation with the EAC Secretariat and partner states as the foundation for harmonizing QI services across the region. It was promulgated as EAC legislation in 2007 and was progressively implemented thereafter by partner states.
The system for the development and harmonization of regional standards was in its infancy and was noncompliant with international good practices.	A formal system for developing, approving, and adopting regional standards compliant with international good practices was developed in cooperation with the NSBs of partner states and implemented. By the end of the project, about 1,100 regional standards had been developed and published. Adoption of the same by partner states was ongoing albeit incomplete.
Reciprocal recognition of product quality assessments within the EAC did not exist. Products inspected and approved for marketing in one partner state had to be reinspected and reaproved before marketing in another partner states.	A start was made with the harmonization of the NSBs' product certification services, including peer reviews to determine compliance with international standards such as ISO/IEC 17065 and to engender trust among national authorities. Products falling within the scope of technical regulations that were certified in one partner state were beginning to be accepted in other partner states without further inspection, testing, and certification. Complete acceptance was envisaged for the future.
National QI services compatible with the WTO TBT Agreement requirements had been established for use by exporters but still lacked the international recognition required for the conclusion of an Economic Partnership Agreement between the EAC and the European Union.	Metrology laboratories in partner states achieved improvements in measurement uncertainties and increased the range of calibration services. The Kenya National Accreditation Service (KENAS) was institutionalized, and accreditation focal points were established in other partner states. Formal international recognition of metrology and accreditation was still in the future.

Note: NSB = national standards body. SQMT Act = East African Community Standardization, Quality Assurance, Metrology and Testing Act. WTO TBT Agreement = World Trade Organization Agreement on Technical Barriers to Trade. ISO/IEC 17065 refers to the international standard ISO/IEC 17065:2012, "Conformity Assessment—Requirements for Bodies Certifying Products, Processes and Services."

- *Successful integration of the EASC and EAAB into the Pan-African QI organizations*, namely the Intra-Africa Metrology System (AFRIMETS), the African Accreditation Cooperation (AFRAC), and the African Organisation for Standardisation (ARSO).
- *Increased private sector demand for NSB services*, which grew by more than 15 percent per year over the project period (2004–13).

However, at the conclusion of the project in 2013, several challenges remained:

- The pace of implementing the requirements of the SQMT Act at the national level was still slow because national interests outweighed regional integration goals.
- The EAC Secretariat found it difficult to provide adequate personnel to coordinate all the relevant QI operations between the regional and national levels.
- The involvement of the private sector remained low despite focused interventions in the second and third phases.
- Tanzania’s membership in both the EAC and the Southern African Development Community (SADC) hampered the implementation of EAC common market modalities. This case study is therefore, to some extent, incomplete because further developments of the EAC QI are not considered.

An online review among stakeholders of the efficacy of the project at the end of 2013 indicated extremely solid progress at the NSB institutional level, but the review team rated overall progress in SQMT Act implementation at only 3.5 out of a possible 5. Criticisms were the lack of adoption of EAC regional standards at the national level, little change in consumer protection, and the lack of technology transfer.

REGIONAL AND COUNTRY CONTEXT

The EAC is an intergovernmental organization composed of five countries in the African Great Lakes region in eastern Africa: Burundi, Kenya, Rwanda, Tanzania, and Uganda.¹ The organization was founded in 1967, collapsed in 1977, and was revived again in 2000, after which it developed in fits and starts. The EAC is an integral part—one of several regional “pillars”—of the African Economic Community, an organization of African Union states for mutual economic development.

The EAC is also a potential precursor to the establishment of the East African Federation, a proposed federation of its members into a single sovereign state. A customs union went into effect in 2005. In 2010, the EAC launched its own common market for goods, labor, and capital within the region, with the goal of creating a common currency and eventually a full political federation. In 2013, a protocol was signed outlining the EAC members’ plans for launching a monetary union within 10 years.

Of the five EAC partner states, Tanzania is also a member of the Southern African Development Community (SADC), whereas Burundi, Kenya, Rwanda, and Uganda are members of the Common Market for Eastern and Southern Africa (COMESA). Tanzania used to be a member of COMESA but relinquished its membership in 2000. These multiple memberships create their own challenges, because any integration, especially common market developments,

demand the country's compliance with two sets of regional requirements, which are frequently incompatible. This is also true in the case of QI at the regional level, and especially of technical regulation regimes. Large differences in development level existed among the five partner states with respect to QI and technical regulation, with Burundi being the least developed.

QI HISTORY IN THE EAC

Consistent growth in low- and middle-income countries to promote socio-economic development and ecological sustainability is unlikely without access to the large markets of the global economy. An important intermediate step toward integration into the global economy could be participation in effective regional economic communities. However, a well-developed and regionally harmonized QI is a core element when it comes to reducing the unnecessary obstacles to trade, especially in the regional context.

Article 81 of the Treaty for the Establishment of the East African Community (signed in 1999) highlights standardization, quality assurance, metrology, and testing as preconditions for sustainable modernization in the EAC.² Hence, the partner states are committed to evolve and apply a common policy for standardization, quality assurance, metrology, and testing of goods and services produced and traded within the EAC. The first step in this direction was made with the approval of a Protocol on Standardization, Quality Assurance, Metrology and Testing (SQMT Protocol) by the EAC Council of Ministers in 2001.³

The NSBs of the three original EAC partner states—Kenya, Tanzania, and Uganda—set about realizing this protocol and established the East African Standards Committee (EASC) as the vehicle for discussing common challenges, developing East African standards, organizing training, and dealing with other relevant issues pertaining to the implementation of the protocol. But integration was slow; many challenges could not be appropriately addressed because of the difficulties in accepting regional approaches while considering national sensitivities. The following examples illustrate these difficulties:

- An analysis by international experts (Wallerath 2006) concluded that the process of harmonizing East African standards, although delivering a respectable number of standards each year, was not compliant with international good practices and principles as provided for in the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) and directives of the International Organization for Standardization and International Electrotechnical Commission (ISO/IEC). The analysis also found that the private sector was to a large extent absent from regional deliberations on standards.
- There were differences in the levels of development and technical capacity available in the various NSBs—differences that became even more apparent when Burundi and Rwanda became EAC partner states in 2007. Furthermore, the NSBs' technical capacities had not kept pace with technological development and were no longer sufficient for the countries' needs.
- As public entities, the Kenya Bureau of Standards (KEBS), Tanzania Bureau of Standards (TBS), and Uganda National Bureau of Standards (UNBS) were responsible for the implementation of mandatory standards through

inspection, testing, and certification. Yet none of them was required to demonstrate technical competency at the national level. A review of their systems and practices concluded that none of them complied with relevant international standards.

- No accreditation body had been established in any of the partner states, and the agreement between the Kenya, Tanzania, and Uganda NSBs at an extraordinary meeting of the EASC in 2004 to establish a regional accreditation body soon came to nought with the establishment of KENAS in Kenya (Elfring, Koch, and Peters 2007).

OBJECTIVES AND PROJECT COMPONENTS

The major support to realize the SQMT Protocol came from BMZ through its 2004–13 project, “Establishment of a Regional Quality Infrastructure in the East African Community (EAC).” The envisaged impact of the project was to enhance EAC integration and to increase trade flows, thus contributing to economic growth and ultimately to poverty reduction (Diergardt 2014).

The project was implemented by PTB in three phases (also illustrated in figure 5), with a total investment of €4.3 million over nine years:

- *Phase 1 (January 2004 to June 2007, €1.5 million)* focused on the development of the SQMT Act and the establishment of the regional QI organizations.
- *Phase 2 (July 2007 to December 2010, €2 million)* facilitated the realization of the requirements of the SQMT Act and supported improvements in the technical performance of the national QI organizations.
- *Phase 3 (January 2011 to February 2013, €0.8 million)* consolidated selected strategic activities of the previous two phases to enhance the sustainability of the regional structures and built further technical capacity in national QI organizations, with a specific focus on Burundi and Rwanda, which had acceded to the EAC in 2007.

Of the €4.3 million total investment, approximately €500,000 was invested in new equipment during the three phases.

The modalities of the technical development support were largely consultancy provided by international and local short-term experts, appropriate training programs, mutual assessments of the national QI organizations, and support from regional and international technical cooperation.

Objectives

The goals of the project were (a) to establish and improve the QI as an element of the regional integration process through the EAC Secretariat and QI institutions with participation by the private sector; and (b) to align the QI system with a new regional legal framework (that is, the SQMT Act) at both the regional and national levels.⁴

The project goals were twofold: First, harmonized quality assurance procedures and increased cooperation between the national QI institutions would facilitate exports from one partner state to another, and in this way increase intra-EAC trade. Second, building regional technical capacity in terms of improved measurement and testing capabilities would enable the private sector

to access more accurate, internationally recognized calibration and testing services to improve the quality of their products, thereby leading to increased exports, both regionally and internationally.

The goal of Phase 1 was therefore formulated as follows: “The SQMT Protocol is to be implemented, to ensure that the regional NQI⁵ activities are harmonised and aligned with international norms, and that the technical infrastructure can provide the services needed” (Elfring, Koch, and Peters 2007). After the completion of Phase 1—that is, after the promulgation of the SQMT Act—this was changed accordingly to the following: “As a component of the regional process of integration, the construct of the quality infrastructure is improved by the EAC Secretariat and the EASC technical committees with participation of the regional economic operators and the NSBs and adapted to the new legal framework (i.e., SQMT Act)” (Diergardt 2010).

The broad objectives of the project could therefore be considered as follows:

- Establishment of a legal framework for a regional QI
- Development and harmonization of regional standards
- Reciprocal recognition of quality assessments within the EAC
- Establishment of WTO TBT Agreement-compatible and internationally recognized national QIs for use by exporters and as a precondition for the conclusion of an Economic Partnership Agreement (EPA) between the EAC and the European Union (EU).

Whereas the broad objectives of the project remained basically the same over the three project phases, specific indicators were adopted at the beginning of each phase according to the progress achieved at the QI policy level. The project indicators were formulated mostly at the outcome level, as follows:

- Improved technical capacities of the national QI institutions
- Increased collaboration between national QI institutions
- Greater participation by the private sector in the development of EAC standards
- Increased demand for quality management certification by the private sector
- Establishment of a pool of regional assessors for accreditation purposes
- Improvements in intraregional trade flows.

Additional indicators in Phase 3 related specifically to improved national QI service provision in the new EAC member states of Burundi and Rwanda, underlining the focus of capacity development toward narrowing the existing gaps between national QI systems in the EAC.

Design and implementation

The three-phase project was designed in partnership between the EAC Secretariat and German development cooperation structures, as well as in close consultation with national QI institutions of EAC partner states. Project partners were the EAC Secretariat and PTB, acting on behalf of the BMZ.

Phase 1: 2004–07

During Phase 1, the project focused on establishing the legal framework at the regional level and on capacity development for the EAC Secretariat and its

technical committees. Capacity development in the national QI organizations was also undertaken. Phase 1 included these important elements:

- *SQMT Act.* The development of SQMT Act was high on the project agenda. A draft bill for this act was developed in close cooperation with the Directorate of Customs and Trade of the EAC Secretariat and the EASC. On completion, it was signed off by the chief executive officers (CEOs) of the three NSBs constituting the EASC at that time: Kenya, Tanzania, and Uganda. The bill was considered by the East African Legislative Assembly in 2006 and promulgated as an EAC Act. By the beginning of 2007, it had been assented to by the heads of state of Kenya, Tanzania, and Uganda, and hence came into effect in the same year. The SQMT Act replaced the SQMT Protocol, which had become technically outdated and was no longer in line with international good practices.

The SQMT Act provided the framework for the establishment of the national standards, metrology, and accreditation organizations and their main responsibilities in each partner state. It gave legal certainty to or established the regional QI organizations (the EASC and a regional accreditation board, respectively) to foster cooperation in these QI sectors. The SQMT Act established a coordination office in the EAC Secretariat and established the legal standing of the EAC standards. Other hallmarks of the SQMT Act are harmonization and coordination among the national QI institutions as well as the supremacy of regional approaches over national ones.

- *Standards development procedures.* Many standards, nearly 500, had already been harmonized as regional standards even though their publication was still a problem. The mechanism for this harmonization was reviewed and found to be out of sync with international good practices and the WTO TBT Agreement; for example, the private sector was only marginally involved in the process. A new methodology, the Procedure for the Development of EAC Standards (EASC 2005), was developed in cooperation with the EASC technical subcommittee responsible for standards development, approved by the EASC, and implemented. All the published standards were reviewed, and some of them were withdrawn as no longer required; others were reaffirmed or revised in accordance with the new procedure.
- *Laboratory proficiency testing.* The testing laboratory sector was supported in conducting proficiency tests that are important to demonstrate their technical competency.⁶ Approximately 25 laboratories from all five partner states participated. Personnel of four NSBs were trained, and the testing laboratories were provided with the necessary equipment to design and conduct such proficiency tests themselves—KEBS for flour, the TBS for salt, the UNBS for edible oil, and the Rwanda Bureau of Standards (RBS) for sugar.
- *Laboratory management systems and accreditation.* Some personnel of the testing and calibration laboratories were trained in the implementation of management systems in accordance with ISO/IEC 17025 (“General Requirements for the Competence of Testing and Calibration Laboratories”) and ISO/IEC 15189 (“Medical Laboratories—Requirements for Quality and Competence”).⁷ This helped them to implement these systems in such laboratories (a prerequisite for accreditation) and at the same time provided KENAS with a pool of technical assessors at the regional level. A few laboratories were accredited by internationally recognized accreditation organizations.

Phase 2: 2007–10

Phase 2 was characterized by the implementation of the provisions of the SQMT Act, particularly (a) mutual recognition of conformity assessment procedures (ensuring that testing and certification in EAC countries follows the same procedures); (b) development of the competence of metrological and testing services; and (c) increased cooperation with the regional private sector (that is, fostering participation in technical committees for the development of standards and the increased use of the improved technical capabilities of the national QI). Specific project indicators for the success of this phase included the following (Wallerath 2008):

- EAC private industry increased its participation in the development of EAC standards in at least five sectors.
- Cooperation agreements were reached between at least two of the NSBs concerning service delivery (10 agreements by the end of 2010).
- Sixty percent of the EAC private sector stated that, by the end of Phase 2 of the project, the cross-border trade in products and services has been significantly improved in terms of cost and time savings as a result of the implementation of the QI-supported technical regulation regime.
- The EAC private sector's demand increased for quality and environmental management certification emanating from the region as measured by the ISO annual reports on ISO 9000 (quality management) and ISO 14000 (environmental management) certificates issued worldwide.
- In Rwanda, the private sector gained access to a growing scope and number of calibrations and was using them.
- In Burundi, two EAC-relevant calibration and testing services were being established.

In addition to these indicators on the technical level, a tremendous amount of strategy and policy consultancy as well as logistical support for intraregional meetings and training sessions were provided to the EAC Secretariat, the EASC and its technical committees, and the East African Business Council.

Phase 3: 2011–13

Phase 3, starting in 2011, further enhanced the strategic orientation of the EAC Secretariat and national QI institutions by continuing support for the implementation of the SQMT Act. Emphasis was placed on the consolidation of achievements and sustainability of outcomes, and the Burundi and Rwanda NSBs received special attention to lift their technical competency to a level closer to the NSBs of Kenya, Tanzania, and Uganda. Some of the specific indicators of success in Phase 3 included the following:

- At the end of the project, a representative group of the QI stakeholders (NSBs, trade and industry ministries, the EAC Secretariat, and the private sector) were asked to evaluate the progress achieved from implementing the SQMT Act and improving the cooperation between the national QI institutions during the nine years of the project (Diergardt 2014). The evaluation would use a scale of 1 to 5, where 1 would mean no change, and 5 would mean more change than anticipated.
- Private sector demand for quality and environmental management certification from the region rose by at least 15 percent.
- The RBS indicated that Rwandese industry required at least 15 percent more calibration services from RBS at the end of 2012 than at the end of 2010.

- The Burundi Bureau of Standards and Quality Control (BBN) was able to provide calibration services for temperature, volume, and mass in accordance with international norms.

Overall project picture

The project's focus was primarily on the transfer of knowledge and best practices of QI systems through short-term training, South-South cooperation, advisory assignments, and study visits. It facilitated the exchange of know-how and experience among QI institutions and stakeholders in the region; financed training and knowledge transfer from more-developed national QI institutions in the EAC to their counterpart institutions and colleagues in Burundi and Rwanda; and supported regional QI conferences through finance and advice. Raising the awareness of the private sector so that it plays a greater role in QI system development was a specific focus starting with Phase 2.

Support was provided in the form of highly competent short-term expert assignments. The project had no permanent office or presence in the region but was coordinated from the PTB head office in Braunschweig, Germany. The EAC Secretariat in Arusha, Tanzania, provided coordination support in this respect.

The project was designed specifically as a multilevel intervention. It provided advice at the strategic and policy decision levels to the EAC Secretariat, the EASC and its technical committees, and the top management of the national QI institutions. The project balanced these contacts with interventions at institutional levels, the aim of which was to establish appropriate technical and organizational capacities.

The project followed the requirements of the Paris Declaration, enhancing ownership (intensive joint planning with partners and stakeholders, transfer of knowledge for future-oriented topics such as WTO compatibility, sensitizing for greater private sector participation, and so on).⁸ The project did well in harmonizing its approaches with programs supported by other development partner organizations—such as the United Nations Industrial Development Organization (UNIDO), the German Agency for International Cooperation (GIZ), and TradeMark East Africa—and endeavored to foster transparency and accountability through a well-developed system of monitoring inputs, outputs, and outcomes.

OUTCOMES

Overall, the project met its set objectives. The specific outcomes and impacts are discussed below on the basis of the defined indicators. Because the regional QI system had to be established almost from scratch, the project was highly dynamic and produced new intervention areas, for which indicators had to be defined during the implementation process.

QI system legislation. The SQMT Act was developed in collaboration with the EAC Secretariat and partner states and is the foundation for any QI harmonization in the region. It entered into force in 2007 and provides for the standards, quality assurance, metrology, and testing of products produced or traded in the EAC. At the end of the project, the SQMT Act still needed to be fully implemented in all EAC member countries, requiring that national QI

institutions meet all its requirements and that standards be fully harmonized. The substantive advice given particularly the national QI institutions in Burundi and Rwanda was well received and is reflected in the institutions' organization and activities.

Harmonization of standards. During the project, 1,100 regional standards were harmonized, although they had not yet been fully adopted at the national level in all the partner states. The standards covered a wide range of goods, from food to construction materials. Harmonized standards reduced nontariff barriers (NTBs), because national standards could no longer be used for protective purposes—for instance, one EAC partner state prohibiting the marketing of products from another partner state on account of a difference in national standards. Participation by the private sector in regional meetings for the development of standards was increasing but still relatively low.

Accreditation services. A pool of trained assessors for the accreditation of medical, testing, and calibration laboratories was established. Furthermore, support and consultancy facilitated the establishment of the EAAB in 2009. KENAS was institutionalized, and a system of establishing national accreditation focal points in the other EAC partner states was accepted in principle, although it was not fully realized in each country by the end of the project. Once such focal points have been established in the other EAC partner states, KENAS should be able to accredit laboratories in all partner states in collaboration with these focal points. Regional industries and laboratories can realize significant savings (up to 50 percent because of lower travel and personnel costs) when an internationally recognized regional body can competently carry out such accreditations.

Conformity assessment. Capacities for the regional harmonization of inspection procedures and product certification schemes were further developed in the individual countries in a significant way, as the mid-term evaluations showed (Elfring, Koch, and Peters 2007). National inspectors were trained according to international inspection and certification standards and conducted joint inspections at the ports of Mombasa and Dar es Salaam. These activities built confidence in the inspections and product certifications of other EAC partner states. Reciprocal recognition of product certification should spur intraregional trade and lead to cost savings, because duplicate testing will be avoided.

Metrology. All metrology laboratories in the EAC had either achieved improvements in measurement uncertainty⁹ or increased the range of measurands for which they could offer calibration services. The private sector in Rwanda, for example, could use local calibration services for electricity and pressure, rather than sending samples to Kenya. Annual regional proficiency testing rounds were successfully implemented. The latter is important for analytical laboratories to build up international recognition and improve the quality of their test results.

International links. The project supported the integration of the East African Metrology Structure (EAMET) into AFRIMETS, and of the EAAB into AFRAC. Liaisons with regional and international standardization bodies (for example, ARSO and ISO) were established. The advantages of such integration and

liaisons lie in reciprocal recognition of standards, metrology, and accreditation supporting conformity assessment, which facilitates trade. In addition, these Pan-African organizations give a voice to small African countries and can defend their interests in international forums.

Ownership. Although the position of the principal standards officer in the EAC Secretariat was initially financed by the project, the relevance of the project convinced the Secretariat to take over these costs, which underlines the level of ownership achieved.

Confidence building. The project supported confidence building in national authorities regarding regional integration processes and led to more active collaboration and cooperation between national QI institutions. This helped to reduce some mutual suspicion that existed between partner states regarding who benefits most from EAC free trade. The project also increased professional confidence within and between NSBs. Closer cooperation among the institutions at the staff level contributed to the exchange of ideas on priorities and strategic direction, thereby helping national QI institutions to determine their future direction.

Intraregional trade. The records of national QI institutions show that the private sector is increasingly using their services; particularly, the NSBs of Burundi and Rwanda indicated a 30 percent growth in the sale of services. An impact study based on a private sector survey and in-depth case studies revealed that border procedures had been streamlined following interventions by the EAC Secretariat and national QI institutions, and intraregional trade has increased (Musunguzi, Jenders, and Diergardt 2011). The study plausibly confirmed that the project has contributed to these improvements but also highlighted the need to further improve the harmonization of the QI services.

FINAL EVALUATIONS

The project was designed specifically to intervene at two levels, namely the policy and strategy level on the one hand, and on developing technical capacity in the national QI organizations on the other. Whereas the outcomes of the interventions at the policy and strategy levels are difficult to measure quantitatively, some examples of the outcomes of the technical capacity development are shown in the following sections.

Increased use of national QI services

The ISO publishes an annual survey of the number of ISO 9001 (“Quality Management Systems—Requirements”), ISO 14001 (“Environmental Management Systems—Requirements with Guidance for Use”), and other quality management system certificates that have been issued by accredited certification bodies. The results for the EAC partner states over the duration of the project are shown in tables 2 and 3. The project indicator—that these should show 15 percent growth each year—is fulfilled for the ISO 9001 certificates, even though the growth has come in fits and spurts.

TABLE 2 ISO 9001 quality management certificates issued in EAC countries, 2005–12

YEAR	2005	2006	2007	2008	2009	2010	2011	2012
Burundi	0	0	0	0	0	0	0	0
Kenya	169	183	204	257	264	12	278	480
Rwanda	1	1	1	1	1	0	0	2
Tanzania	20	14	12	12	8	3	3	48
Uganda	45	45	42	44	44	54	80	17
EAC	235	243	259	314	315	89	341	527
Growth (%)	n.a.	+3.4	+6.6	+21.2	+0.3	-71.8	+8.2	+54.5
Average annual growth, 2005–12: 22%								

Source: Diergardt 2014, from International Organization for Standardization data.

Note: n.a. = not applicable. EAC = East African Community. ISO 9001 refers to the standard, “Quality Management Systems—Requirements”: <https://www.iso.org/standard/62085.html>.

TABLE 3 ISO 14001 environmental management certificates issued in EAC countries, 2005–12

YEAR	2005	2006	2007	2008	2009	2010	2011	2012
Burundi	0	0	0	1	0	0	0	0
Kenya	11	23	22	28	18	0	33	32
Rwanda	0	0	0	0	0	0	0	2
Tanzania	2	4	5	3	4	3	1	30
Uganda	2	3	3	6	6	6	13	8
EAC	15	30	30	38	28	9	47	72
Growth (%)	n.a.	+100	0	+26.7	+28.3	-67.8	+67.8	+53.1
Average annual growth, 2005–12: 52%								

Source: Diergardt 2014, from International Organization for Standardization data.

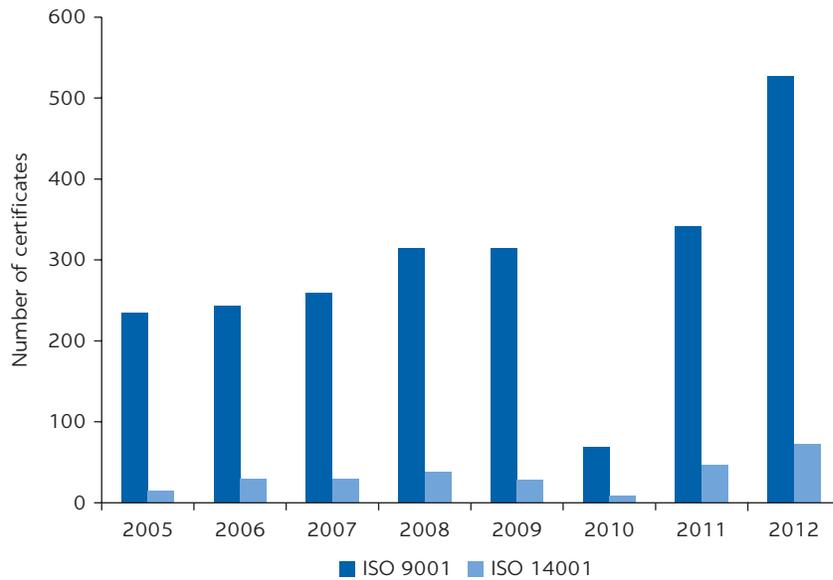
Note: n.a. = not applicable. EAC = East African Community. ISO 14001 refers to the standard, “Environmental Management Systems—Requirements with Guidance for Use”: <https://www.iso.org/standard/60857.html>.

The growth in ISO 14001 certificates was even better (table 3), even though growth was from the very low base in 2005.

The figures for the EAC as a whole are graphically shown in figure 1, showing a steady growth over most of the project. Whether the project was the sole impetus for the growth in ISO 9001 and ISO 14001 certificates is debatable, but the growth does give an indication of the impact of the project outputs regarding training and consultancy for quality management systems. The dramatic decline in 2010 cannot be explained, including by the ISO. It could be that the data for the EAC were not captured accurately in that year.

The metrology services of the Burundi and Rwanda NSBs received special attention during the project, and it was expected that they should have experienced a growth of 15 percent in their calibration services from 2010 to 2012. This did not transpire (figure 2). The figures for the Rwanda Bureau of Standards show a big slowdown from the 2010/11 financial year to the next, but this can be explained by the fact that the laboratories were undergoing major renovations supported by the project during that time. Some metrology equipment had been installed in the Burundi Bureau of Standards and Quality Control, and personnel had been trained, but metrology services still had yet to commence by the end of 2012.

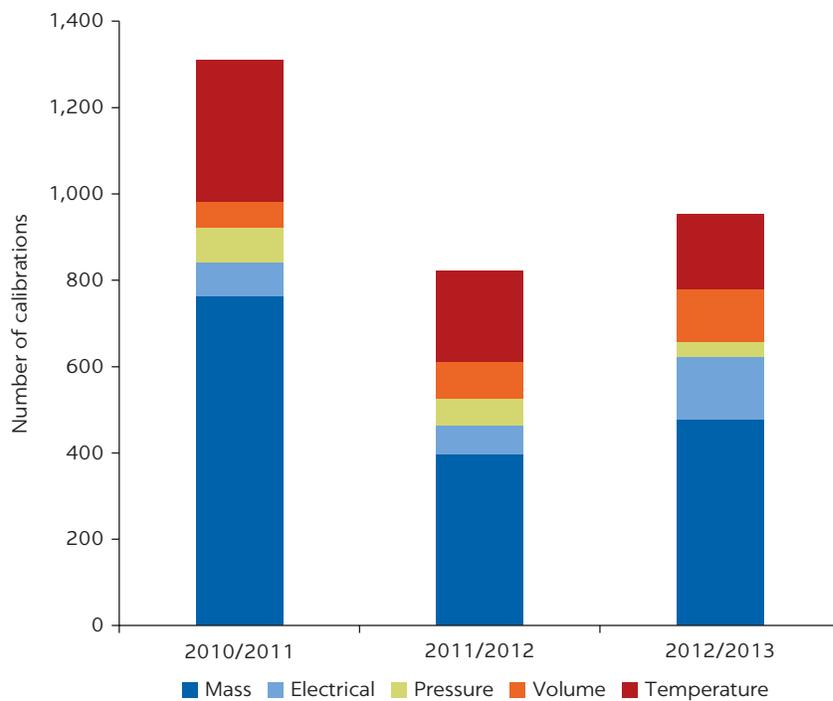
FIGURE 1
ISO 9001 and ISO 14001 certificates issued in the EAC, 2005-12



Source: Diergardt 2014.

Note: EAC = East African Community. ISO 9001 refers to the standard, "Quality Management Systems—Requirements": <https://www.iso.org/standard/62085.html>. ISO 14001 refers to the standard, "Environmental Management Systems—Requirements with Guidance for Use": <https://www.iso.org/standard/60857.html>.

FIGURE 2
Calibrations, by type, provided by the Rwanda Bureau of Standards, 2010/11–2012/13



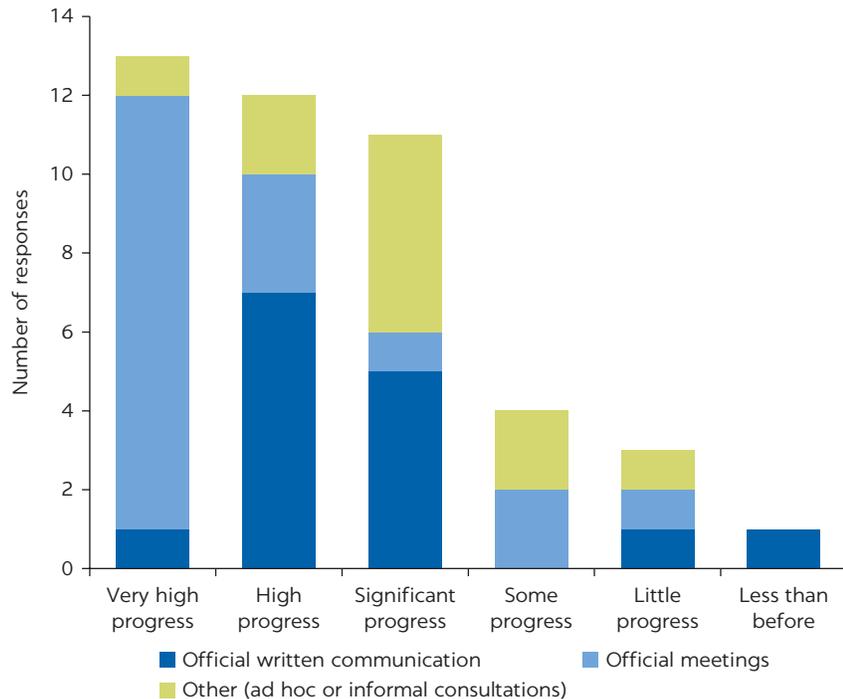
Source: Diergardt 2014.

Overall progress

As the final indicator of the project in Phase 3, an online evaluation was conducted with a representative group of the QI stakeholders (NSBs, trade and industry ministries, the EAC Secretariat, and the private sector) to evaluate the project’s overall progress with the implementation of the SQMT Act and the improvement of the cooperation between the national QI institutions. Although the number of respondents was a bit on the low side, the results show that the interactions between the organizations had increased significantly (figure 3). On the one hand, this is probably because of the many official meetings that were facilitated through the project; on the other hand, an increase in informal exchanges was also observed (Diergardt 2014).

The progress in implementing the SQMT Act was not seen as being as significant as the progress in national QI organization interaction (figure 4). There was progress, but it is evaluated as between “some progress” and “high progress” and just meets the project indicator target of 3.5. Respondents were critical about the lack of progress in the areas of technology transfer and in implementing regional standards in national law, even though they acknowledged the progress achieved in harmonizing the standards regionally. The respondents also gave low ratings to “enhancing consumer protection,” where they viewed the project as having little if any influence. The facilitation of trade was a positive, and that came about through the alignment of the NSBs’

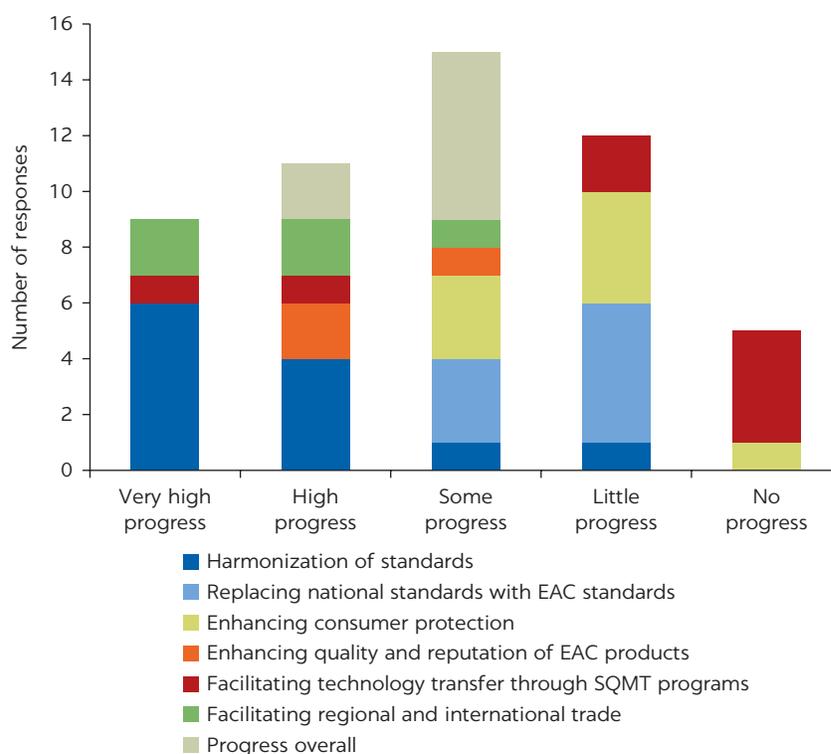
FIGURE 3
Stakeholder ratings of progress in interaction, by type, among East African national QI organizations, 2010–12



Source: Diergardt 2014.

Note: Figure illustrates responses to the question, “How do you rate the progress of interaction between East African SQMT [standardization, quality assurance, metrology, and testing] institutions/organizations over the last three years?”

FIGURE 4
Stakeholder ratings of progress, by type, in implementation of the SQMT Act, 2010–12



Source: Diergardt 2014.

Note: Figure illustrates responses to the question, "How do you rate the progress in implementing the SQMT Act over the last three years?" EAC = East African Community. SQMT Act = East African Community Standardization, Quality Assurance, Metrology and Testing Act of 2006.

certification processes across the region as well as through the recognition of each other's product certification marks for the implementation of mandatory standards.

These responses about the impact of the project indicate how difficult it is to quantify progress in absolute terms. At best, only indications or tendencies can be shown, because it is virtually impossible to isolate the influence of a specific intervention such as this project among the overabundance of influences that shape developments in a complex political and trade environment such as the EAC.

CHALLENGES

National industrial development priorities were at times in conflict with EAC integration principles. Despite the existence of regional legislation, member countries often delayed or even rejected the implementation of the SQMT Act at the national level, while the EAC Secretariat lacked a mechanism for sanctions. Integration is therefore a difficult, slow, and sometimes even frustrating process for the EAC Secretariat. This is not a question of lack of

political will toward EAC integration, but rather a matter of short-term priorities (also lobbied for by the national industrial sector) versus medium- and longer-term goals.

Up to 2014, the EAC member states were in the process of negotiating an EPA with the EU, which would accelerate QI harmonization. There were, however, significant challenges in this regard. The EAC partner states Kenya, Tanzania, and Uganda have promulgated many mandatory standards, and the respective NSBs derive substantial parts of their budgets from the administration of such standards. Hence, the interest in reducing the number of national mandatory standards and implementing modern technical regulations based on harmonized standards is rather low. The system of mandatory standards as implemented is arguably noncompliant with some of the WTO TBT Agreement principles and is seen as unnecessarily trade restrictive by trading partners.

Problems encountered also relate to available administrative capacities. The EAC Secretariat is seeking to remain a lean organization, but substantial additional staff is required to coordinate and support the implementation of the SQMT Act. Private sector involvement is a precondition for an efficient QI. The SQMT Act provides for extensive participation by the private sector, not only in the development of East African standards but also in all other areas of QI and the respective decision-making bodies. However, the private sector was still hesitant about taking the opportunity to influence regional standards and the QI setup in the region. It was not yet sufficiently aware of the impact and benefits that QI has on business in terms of export opportunities and productivity.

Finally, changing well-entrenched national QI systems toward a harmonized, WTO-compatible regional QI system takes longer than had been anticipated when planning the project. To some extent, the project has been able to react flexibly to accommodate such delays, but much remains to be done.

PRIVATE SECTOR ENGAGEMENT

During the Phase 1 of the project, it became obvious that the harmonization and integration of the QI in the EAC were driven for the most part by the NSBs. The private sector was largely absent from the regional meetings and activities, even though the NSBs argued that the private sector was engaged in technical committees at the national level, and hence was involved in regional discussions by default. That this did not always lead to a happy outcome was shown by the heavy disagreements that surfaced regarding the development of regional standards for sugar and the inspection of second-hand vehicles. These disagreements stayed on the agenda of the EASC for several years without being resolved.

Hence, the private sector was progressively being targeted during the second and third phases of the project—for example, as follows:

- During the midterm evaluation in 2010, the evaluation team had in-depth discussions with the relevant national business associations in Kenya, Tanzania, and Uganda to form an opinion on the relevance of the project interventions from a private sector perspective, especially regarding cross-border challenges within the EAC that related to mandatory standards, distrust in

inspection and test results of one partner state by the other, and costly reinspections before products could clear import inspection controls. This led to changes in the project intervention modalities.

- Regarding private sector involvement in standards development, the project supported a workshop jointly with UNIDO and the East African Business Council (EABC) for private sector stakeholders. The workshop informed private sector participants on standards issues and sensitized them for greater involvement. However, the participation of the private sector in the harmonization and development of East African standards remained low, most likely because of (a) the low relevance of East African standards in view of the existing mandatory standards in the partner states; (b) the way in which the EASC subcommittee on standards dealt with standards from many sectors in one meeting, necessitating the participation of many private sector participants from each sector, as opposed to the few from the NSBs; and (c) the costs of private sector participation in meetings at the regional level.
- In Phase 2, an East African standards platform was established, as a structure within the EABC, that operates as a counterpart to the public institutions in harmonizing standards and technical regulations across the region. Its strategy, among others, included cooperation with the EASC toward a common East African technical regulation framework to ease the disparities in technical regulation development and administration experienced by the private sector that hinder intraregional trade. The Standards Platform also actively engages with the Trade and Customs Directorate at the EAC Secretariat on standardization and technical regulation matters that have a bearing on trade. TradeMark East Africa continued support for the Standards Platform after the PTB project ended.

KEY SUCCESS FACTORS

Important for the success of the project was the high level of ownership of the EAC Secretariat, which was demonstrated, for example, by the creation of a new “principal standards officer” position at the secretariat level to coordinate activities between the stakeholders.

The good institutional and professional relationships that existed between the relevant QI officers in the EAC Secretariat, QI institutions at the country and regional levels, and German development cooperation was very important. Because of its independence, expertise, and neutrality, PTB was perceived as an honest broker and was accepted by all stakeholders. Equally important for the success of the project were the generally good working relationships among the QI institutions of the various EAC partner states. This facilitated the smooth transfer of knowledge and was particularly effective in strengthening capacities.

The whole project was embedded in a Pan-African approach, integrating sub-regional quality organizations into intra-African associations to become an integral part of the international quality networks (figure 5). The East African QI organizations benefited enormously from their memberships in AFRIMETS, ARSO, and AFRAC. Against the backdrop of globalized trade and globalized quality requirements, this international perspective was an imperative for the sustainability of the project.

The holistic approach of the project, working on the meso level (institutional capacity building) as well as the macro level (policy reform), was also reflected in the close cooperation with other development partner organizations and could be regarded as another factor of success. The project was part of a larger effort by German and international development organizations aimed at regional integration and trade development in the EAC. Coordination took place both within the region and between the head offices of PTB and, for example, UNIDO. The cooperation was of mutual benefit for the development partner organizations and was welcomed by the project partners.

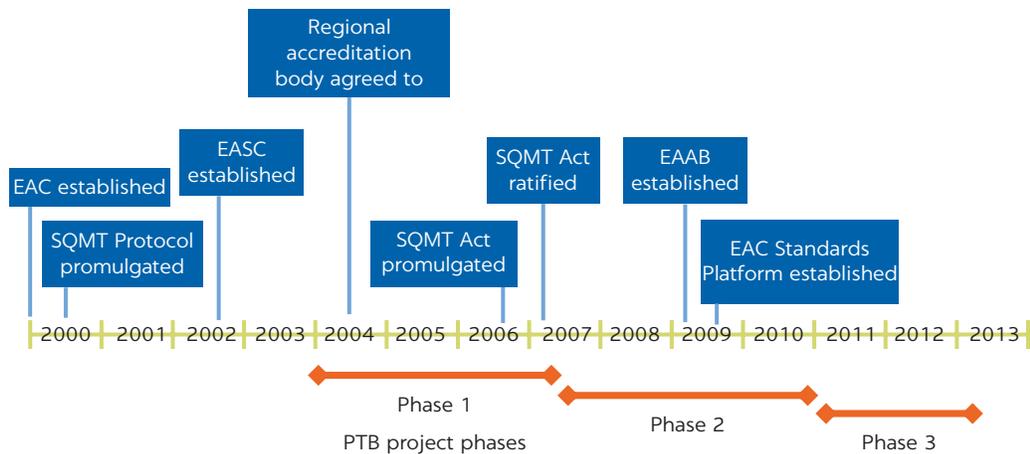
The project provided support at a time when demand for QI services, particularly certification according to ISO quality or environmental management standards, was growing strongly in East Africa. Such growth in demand has apparently enhanced the status that QI institutions have in the eyes of EAC member governments and the private sector, which is another factor for success.

LESSONS LEARNED

The lessons learned from this intervention relate not only to methodological matters—such as whether the right indicators were set and their relevance for measuring real progress—but also to much broader issues.

Although the project indicators measured the envisaged impact quite well, they could not reflect all aspects that emerged during the implementation period. The design of QI projects is always complex, and that is especially true for this highly interconnected regional project. Therefore, it became necessary to adjust the original project design at intervals in collaboration with the project partner and to incorporate new intervention areas (like the integration of regional QI organizations into Pan-African QI associations) that were not always measured by an indicator. Thus, it is helpful if projects allow for such flexibility.

FIGURE 5
Timeline of QI project interventions and notable achievements, 2000–13



Note: EAAB = East African Accreditation Board. EAC = East African Community. EASC = East African Standards Committee. PTB = National Metrology Institute of Germany. QI = quality infrastructure. SQMT Act = East African Community Standardization, Quality Assurance, Metrology and Testing Act.

An intervention like this one can be considered successful if it achieves a high degree of ownership, innovation, and networking among local stakeholders. This increases the likelihood of realizing a sustainable increase in trade performance and thus poverty reduction (impact level). Consequently, indicators should be defined on the outcome level and concentrate on the measurement of “structural changes” (that is, capacity) and other framework conditions, rather than looking solely at export success or trade performance (such as medium- or long-term outcome or impacts) in order to show whether an intervention is sustainable. Still, changes in trade and economic performance should also be monitored and linked to the intervention.

It became clear during project implementation that regional integration is not yet fully owned by the private sector. The sector still mostly thought nationally and were not sufficiently aware of the benefits of regional harmonization. The private sector sometimes takes time to recognize and appreciate a regionally harmonized QI system. Hence, when implementing similar projects, care should be taken to ensure that the private sector is involved from the beginning, because the public-private dialogue plays a key role in the efficacy of such projects.

Awareness among QI institutions of the close interrelationship between QI and trade also needs to be developed further. In a globalized economy, the role of national QI institutions changes from one of technical or supervisory bodies to one of trade facilitators. They need to recognize the importance of the impact of their services on the economy, meaning they must strengthen their strategic orientation. The project has tried to rise to this challenge by facilitating an enhanced public-private dialogue and organizing a strategic retreat lasting several days for the senior management of QI institutions.

Although the project had a regional focus, the national context proved to be crucial. National concerns must be considered seriously and cannot be disregarded, because laws and decisions agreed to at the regional level have to be implemented and enforced by national authorities. Thus, awareness-building activities and the full transparency of decision-making processes are pivotal issues. Extensive stakeholder consultations may require a great deal of time and financial resources, but they are essential for reaching a sustainable consensus.

The ownership of the project by the EAC Secretariat has been enhanced because of the absence of a separate project office and resident management structure. Furthermore, the lean structure of management and coordination of the project has allowed savings to be made on administrative funds that could then be used for practical support measures.

CONCLUSION

The EAC project, although small in volume, was able to contribute to regional integration and to an understanding of the importance of QI for enhancing trade, both within national administrations and the private sector. A strong element of the project was the partnership between institutions that are closely related in terms of their roles and their own professional understanding, thus facilitating knowledge transfer and capacity development. The strong links of the East African QI system to supranational associations produced a win-win situation, and the EAC economy is profiting from this Africa-wide alignment of regional approaches.

The East African economy has benefited from the improvement and harmonization of the QI system in many ways. Owing to mutual recognition of product certification marks, streamlined inspection procedures, and regional standards, cross-border trade has become easier, and products are able to comply with quality requirements in new export markets. The lack of private sector participation has remained a worrying factor, even though the project provided for specific private sector interventions in the second and third phases. Ensuring strong private sector involvement right from the beginning is therefore indicated for future projects.

NOTES

1. South Sudan was approved as the sixth member of the EAC in March 2016. At the time of writing, it still had to ratify the treaty to formally accede to the EAC.
2. “The Treaty for the Establishment of the East African Community,” signed November 30, 1999, and entered into force July 7, 2000 (since amended December 14, 2006, and August 20, 2007): <https://www.eac.int/documents/category/key-documents>.
3. “Protocol on Standardization, Quality Assurance, Metrology and Testing,” East African Community Secretariat, Arusha, Tanzania: <http://repository.eac.int/handle/11671/1644>.
4. “The East African Community Standardization, Quality Assurance, Metrology and Testing Act, 2006,” published August 1, 2007, East African Community Supplement No. 1, *Gazette of East African Community* Vol. AT 1-003, No. 002: http://www.eac-quality.net/fileadmin/eac_quality/user_documents/3_pdf/EAC_SQMT_Act_2006_Scan_.pdf. The details of this act are described in section 3.2.1.
5. “NQT” is the abbreviation of National Quality Infrastructure in the original project documentation. In this case study, “QI” denotes “quality infrastructure,” and the abbreviation is further identified as being regional or national.
6. Proficiency testing is the determination of an individual laboratory’s performance in conducting specific tests or measurements and the monitoring of its continuing performance through the use of interlaboratory comparisons.
7. Current standard ISO/IEC 17065:2012 is titled “Conformity Assessment—Requirements for Bodies Certifying Products, Processes and Services”: <https://www.iso.org/standard/46568.html>. Current standard ISO/IEC 15189:2012 is titled “Medical Laboratories—Requirements for Quality and Competence”: <https://www.iso.org/standard/56115.html>.
8. The Paris Declaration was the result of a meeting of more than 100 high-income and low- to middle-income countries in Paris in 2005. It lays out a practical, action-oriented road map to improve the quality of aid and its impact on development, putting in place a series of specific measures for implementation and establishing performance indicators that assess progress. It also calls for an international monitoring system to ensure that donors and recipients hold each other accountable—a feature that is unique among international agreements. It is arranged around five principles: (a) *Ownership*, meaning low- and middle-income countries set their own strategies for poverty reduction, improve their institutions, and tackle corruption; (b) *Alignment*, meaning donor countries align behind these objectives and use local systems; (c) *Harmonization*, meaning donor countries coordinate, simplify procedures, and share information to avoid duplication; (d) *Results*, meaning low- and middle-income countries and donors shift focus to development results and results get measured; and (e) *Mutual accountability*, meaning donors and partners are accountable for development results. Many developing projects established after 2005 incorporated these principles. (See “The Paris Declaration on Aid Effectiveness,” Organisation for Economic Co-operation and Development: <https://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm>.)
9. Measurement uncertainty is a parameter that characterizes the dispersion of values that could reasonably be attributed to the measurand (that is, the quantity to be measured). Metrology service providers strive to minimize the measurement uncertainty—that is, by providing accuracy of measurement levels as high as is technically possible.

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