

# BUILDING TECHNICAL INFRASTRUCTURES TO SUPPORT SUSTAINABLE DEVELOPMENT AND TRADE

## DCMAS NETWORK – BACKGROUND PAPER

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This bulletin is a reproduction of the background paper developed by the Network on Metrology, Accreditation and Standardization for Developing Countries (DCMAS Network, formerly JCDCMAS). It has been reproduced by the permission of DCMAS. The bulletin provides information about the technical infrastructures of metrology, standardization and accreditation needed by countries for a sustainable development and participation in global trade. This bulletin is a revised edition of the previous version published in December 2005.

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## 1. Introduction

Technical regulations, metrology, standards and conformity assessment procedures (including accreditation) are used by societies to address issues of optimization of production, trade promotion, health, consumer protection, environment, security and quality, as well as to manage risk and areas of market failure. Their sound development and effective implementation enable sustainable development, build welfare and facilitate trade. Technical infrastructures directly contribute to achievement of the United Nations Millennium Development Goals and the action plan that resulted from the World Summit on Sustainable Development (WSSD) held in 2002 in Johannesburg.

However such activities may also act as impediments to economic efficiency; innovation and learning; the competitiveness of countries, or their ability to work collaboratively; and market access for goods and services for both developed and developing countries.

As a result, there is an increasing awareness of the need to discuss, compare and improve countries' abilities to determine, maintain and improve their infrastructure, practices, as well as international compatibility and recognition in these areas. This need extends to ensuring that the institutional frameworks (i.e. the technical infrastructure) to support these activities are effective, efficient and credible in the eyes of domestic constituencies and international partners.

Metrology, standards, and conformity assessment (including accreditation) are thus essential elements of technical infrastructures.

The World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement recognizes the contribution that international standardization can make to the transfer of technology from developed to developing countries, and the role that international standards and conformity assessment systems have in improving the efficiency of production and facilitating the conduct of international trade.

Both the WTO TBT and Sanitary and Phytosanitary (SPS) Agreements rely upon the efficient functioning of the underlying technical infrastructure to support the system and the exchange of products worldwide. Many developing economies lack the institutional frameworks and the technical infrastructure and practices necessary to meet obligations of the Agreements. Discrepancy between the technical infrastructures of developed and developing economies present significant obstacles for the implementation of the Agreements.

The WTO Doha Development Agenda recognizes technical cooperation and capacity building as integral elements of the development dimension of the multilateral trading system. Efforts to support the development of trade related capacity are key to ensuring that developing countries have the ability to implement obligations and exercise the rights of membership.

Developing countries recognize the creation of the underlying technical infrastructure as a key priority area for assistance and trade related capacity building<sup>1</sup>. Initiatives such as the New Partnership for Africa's Development (NEPAD) highlight market access as a key priority for developing countries. In particular, they cite standards, technical regulatory frameworks, metrology, and accreditation as key areas for capacity development.

## 2. DCMAS Network

The Network on Metrology, Accreditation and Standardization for Developing Countries (DCMAS Network, formerly JCDCMAS) was established by the principal international organizations that have mandates to strengthen technical infrastructures and deliver capacity building in metrology, standardization and conformity assessment (including accreditation).

The members of the DCMAS Network ([www.dcmas.net](http://www.dcmas.net)) are:

- International Bureau of Weights and Measures (BIPM) [www.bipm.org](http://www.bipm.org)

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<sup>1</sup> See: 'Survey to Assist Developing Country Members to Identify and Prioritise their Specific Needs in the TBT Field' (G/TBT/W/178).

- International Accreditation Forum (IAF) [www.iaf.nu](http://www.iaf.nu)
- International Electrotechnical Commission (IEC) [www.iec.ch](http://www.iec.ch)
- International Laboratory Accreditation Cooperation (ILAC) [www.ilac.org](http://www.ilac.org)
- International Organization for Standardization (ISO) [www.iso.org](http://www.iso.org)
- International Trade Centre (ITC) [www.intracen.org](http://www.intracen.org)
- Telecommunication Standardization Sector of ITU (ITU-T) [www.itu.int](http://www.itu.int)
- International Organization of Legal Metrology (OIML) [www.oiml.org](http://www.oiml.org)
- United Nations Economic Commission for Europe (UNECE) - Working group on Regulatory Cooperation and Standardization Policies (W.P.6) [www.unece.org](http://www.unece.org)
- United Nations Industrial Development Organization (UNIDO) [www.unido.org](http://www.unido.org)

The aim of the network is

- to exchange information on the effectiveness and range of initiatives taken by the collaborating bodies;
- to provide a means of pooling expertise and for enabling the collaborating organizations to take advice from each other and to invite participation in events they organize under their own programmes and initiatives;
- where agreed, to exchange information and/or revise papers originally developed by JCDCMAS which set out the benefits and aims of MAS in developing countries.

The collaborating bodies recognize that each organization has its own programme of activities and the policy and range of its activities is set by the policy of its Member States or appropriate governing body. Given this diversity, it is not intended that there would be a deliberate policy of coordination or joint activity.

Nevertheless, the DCMAS Network members will:

- meet annually at working level in order to exchange experiences, update each other on developments and see what scope there may be for supportive actions;
- actively seek to work with, and support the objectives of, global organizations such as the WTO as well as the UN system;
- liaise, on request, with international as well as local agencies that seek to introduce MAS programs in developing countries; and
- within available resources, develop suitable information that provides linkages to relevant activities of interest to developing countries and regions and, if possible, provide speakers and training material for seminars and events.

Participants will contribute expertise and their own resources in support of mutually agreed DCMAS Network objectives.

### **3. Technical infrastructure**

In order to achieve sustainable development and to fully participate in international trade developing countries require the necessary technical infrastructure and capacity to meet their obligations and to satisfy the technical requirements of the multilateral trading system (MTS). Normally, access to the following elements of a technical infrastructure is necessary:

- metrology services to ensure internationally recognized traceability of measurements and calibration of measuring instruments;
- the ability to formulate and promote national positions into the international standards development process, to access international standards once published and to assist in their implementation by economic players;

- conformity assessment systems to undertake assessments of goods and services against mandatory and voluntary requirements that result in claims of conformity (assessment activities may include testing, certification, inspection);
- peer assessment and accreditation systems to ensure that claims of conformity are credible and internationally recognized.

The establishment of technical infrastructure supports efforts to enhance trade and improve supply-side capacity and will enable countries to meet the export standards and technical requirements of export markets.

In addition, active participation in international metrology, standardization, and accreditation organizations is an essential element of capacity development.

The following sections provide more specific details on each of the components that make up the technical infrastructure.

### **3.1. Scientific and industrial metrology**

Metrology (measurement and physical/chemical standards) is an integral component of the technical infrastructure value chain. The metrological activities undertaken by National Measurement Institutes (NMIs) are to develop, maintain and disseminate national measurement standards appropriate to national needs, and to develop and transfer to users new measurement technology. The national measurement standards of a country provide the basis for activities such as calibration services, trade metrology services, conformance testing, accreditation etc., in both the regulatory and the voluntary sectors.

The Metre Convention is an inter-governmental treaty that provides the international infrastructure to enable Member States to develop national measurement standards at whatever level is required by a country, thus facilitating their international recognition and acceptance. It is therefore relevant to countries at all stages of technical development.

The Metre Convention has 54 Member States and 27 Associates (January 2010). It gives authority to the General Conference on Weights and Measures (CGPM), the International Committee for Weights and Measures (CIPM) and the International Bureau of Weights and Measures (BIPM), to act in matters of world metrology, particularly concerning the demand for measurement standards of ever increasing accuracy, range and diversity, and the need to demonstrate equivalence between national measurement standards.

### **3.2. Mutual recognition in metrology – the CIPM MRA**

The CIPM Mutual Recognition Arrangement (MRA), established in October 1999, provides for the international recognition and acceptance of national measurement standards and calibration and measurement certificates issued by signatory NMIs. The objectives of the CIPM MRA are to provide governments and other parties with a secure technical foundation for wider agreements related to international trade, commerce and regulatory affairs. Thus, it is intended to help eliminate technical barriers to trade (TBT) and instil greater confidence in the measurement capabilities of NMIs, particularly for the regulatory and accreditation communities.

An economic analysis of the benefits of the MRA, commissioned by the BIPM and undertaken by KPMG Consulting, found that a conservative estimate of the impact of the CIPM MRA in reducing TBTs is likely to be very large; a sum of at least US\$4 billion was mentioned in 2002.

The CIPM MRA has been recognized in trade negotiations such as the “Joint US-EC Declaration on Cooperation in Metrology in Support of Trade” as providing evidence of the equivalence of national standards of measurement. The combination of the CIPM MRA and national traceability systems conforming to ISO/IEC 17025 or to ISO Guide 34 gives regulators, legislators and international bodies such as the WTO objective evidence of the equivalence of measurements.

The CIPM MRA provides international recognition of the measurements made by accredited testing and calibration laboratories. Taking advantage of this relationship, the ILAC and the CIPM signed a Memorandum of Understanding (MoU) in November 2001 to ensure a sound, linked, technical framework to underpin cross-border trade arrangements and work towards the ideal of having products that are “tested once and accepted everywhere”.

### 3.3. Legal metrology

International activities in legal metrology are coordinated by the International Organization of Legal Metrology (OIML), and apply when there are legal or legislative requirements to be fulfilled. The OIML has 57 Member States and 58 Corresponding Members and, like the Metre Convention, is operated under an inter-governmental treaty. Its activities are coordinated by the International Bureau of Legal Metrology (BIML) operating under the International Committee of Legal Metrology (CIML).

Legal metrology specifications are produced within the OIML framework and find widespread adoption in developing as well as developed countries. The OIML also provides other valuable services such as a model law on metrology which sets out a number of considerations that should be assessed when setting up a national MAS infrastructure.

The OIML Certificate System for Measuring Instruments has been in operation since 1991. Its aim is to simplify the type (pattern) approval process for manufacturers and metrology authorities by eliminating costly duplication of application and test procedures. The Certificate System provides a manufacturer with the possibility of obtaining an OIML Certificate and Test Report indicating that a given measuring instrument type (pattern) complies with the requirements of relevant OIML International Recommendations. Certificates are delivered by Issuing Authorities in OIML Member States and are accepted by national metrology services on a voluntary basis. The Certificate System currently covers 47 categories of measuring instrument, and over 2200 Certificates have been issued by March 2010.

Due to the increasing importance of pre-packaged goods, particularly to the economies of developing countries, the OIML is currently developing an international system for their control.

The Framework for a Mutual Acceptance Arrangement on OIML Type Evaluations (MAA) was approved by the CIML in 2003. The MAA establishes the rules for a voluntary framework for the acceptance and use of test reports, validated by OIML Certificates, for type approval or recognition in relevant national or regional metrological control systems, and/or for issuing subsequent OIML Certificates. The MAA is implemented through separate "Declarations of Mutual Confidence" for each category of instruments.

The OIML's work for developing countries is coordinated by a Facilitator for Developing Country Matters. This person aims to increase the involvement of the legal metrology services and their representatives through personal contacts and use of the OIML web site. In this way, proposals on how best to carry out legal metrology activities, and how best to raise awareness, aim to stimulate the activities of developing legal metrology services, thereby giving them a voice. To encourage such developments, an "OIML Award for Excellent contributions to legal metrology in developing countries" has been established.

### 3.4. International documentary standards

Voluntary international standards and their use in technical regulations on products, production methods and services play an important role in sustainable development and trade facilitation through the promotion of safety, quality and technical compatibility. The benefits that are derived are significant<sup>2</sup>. Standardization contributes to the basic infrastructure that underpins society including health and environment while promoting sustainability and good regulatory practice.

The international organizations that produce International Standards and that are members of the DCMAS Network are IEC, ISO and ITU-T. IEC covers electrotechnology and handles three related conformity assessment systems: IECEE (electrotechnical equipment and components), IECEx (equipment used in explosive atmospheres) and IECQ (electronic components), ITU-T covers telecommunications and ISO covers nearly all other technical fields, a number of service sectors, management systems and conformity assessment.

International Standards, or national or regional adoptions of International Standards, assist in the operation of domestic markets, and also increase competitiveness and provide an excellent source of technology transfer to developing countries. They play an integral role in the protection of consumers and the environment.

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<sup>2</sup> See "The economics of standardization" (Manchester Business School, 2000), "Economic benefits of standardization" (DIN Deutsches Institut für Normung, 2000) and "Assessing the Presence and Impact of Non-Tariff Barriers on Exporters" (Standards New Zealand, 2002).

Developing countries face many trade-related standardization challenges. They require access to standardization infrastructures to engage in the global trading system. With the increasing globalization of markets, international standards (as opposed to regional or national standards) have become critical to the trading process, ensuring a level playing field for exports, and ensuring imports meet internationally recognized levels of performance and safety.

Standards can be broadly sub-divided into three categories, namely product, process and management system standards. The former refers to characteristics, related to quality, safety, etc, that a good should possess. Process standards refer to the conditions under which products and services are to be produced, packaged or refined. Management system standards<sup>3</sup> assist organizations to manage their operations. They are often used to help create a framework that then allows the organization to consistently achieve the requirements that are set out in product and process standards.

The TBT Agreement encourages the use of international standards, where appropriate. In fact, members are obligated to reference international standards in existing and new regulations. The Agreement also encourages members "wherever possible" to move towards the development of mutual recognition agreements and the harmonization of conformity assessment procedures and to accept the conformity assessment procedures of other members.

The five successive triennial reviews of the TBT Agreement reiterated the importance of WTO Members' participation in international standardization activities, with a view to good regulatory practice, conformity assessment procedures and standards on as wide a basis as possible. The Fifth Review (2009)<sup>4</sup> underscored the importance of basing technical regulations and conformity assessment procedures on relevant international standards, guides or recommendations in line with Articles 2.4 and 5.4 of the TBT Agreement. International standards should be an opportunity - a pool for technological know-how and an important link between research, innovation and markets - that can contribute positively to economic growth. As such, standards can contribute to promoting technical progress and are an important instrument to facilitate competition in markets, and transfer of technology between Members. The Fifth Review also emphasized the importance of transparency in the standards development process, at the national, regional and international level. Creating awareness among all interested parties, including Small and Medium-sized Enterprises (SMEs), of the importance of being involved in standardizing activities is seen as key. Broader stakeholder involvement helps ensure an open and transparent process. However, in spite of the advances made in increasing meaningful participation by developing country Members in standardizing activities in areas of interest to them, for many developing country Members challenges remain, both financially and technically. The TBT Committee encourages Members, Observer organizations and relevant bodies involved in the development of standards, to exchange information on initiatives implemented, successes achieved and obstacles encountered.

### **3.5. Conformity assessment**

Conformity assessment plays a critical role in sustainable development and trade. In developing countries conformity assessment activities are generally less developed than in industrialized countries.

ISO/IEC 17000 describes conformity assessment as 'demonstration that specified requirements relating to a product, process, system, person or body are fulfilled'. Conformity assessment procedures, such as testing, inspection and certification, offer assurance that products fulfil the requirements specified in regulations and standards.

There are many forms of conformity assessment that are specific/particular to the object being assessed (e.g. a product, or a service or a management system), and to the body undertaking the assessment (e.g. it may be the 'first party', such as the manufacturer of a product who is making a supplier's declaration of conformity (SDoC) using their own internal testing system, or a 'third-party' certification or inspection that is undertaken by an independent service provider (that could be a part of a government or a private company or IEC Conformity Assessment Systems).

In terms of sustainable development, developing countries must decide what types of conformity assessment are necessary for what purposes. One of the crucial decisions is whether to make conformity

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3 Well known examples of management system standards include the ISO 9000 series focused on quality management, the ISO 14000 series focused on environmental management and ISO 22000 series focused on food safety management systems.

4 See: WTO TBT Agreement 5th Triennial Review (G/TBT/26, paragraphs 24, 25 and 27)

assessment mandatory through government regulations in specific sectors, or whether to rely on the market to determine in a voluntary manner the conformity assessment requirements within the normal transactions between buyers and sellers.

This decision should be based on an assessment of the risks involved with a particular product or process, and on an understanding of the impact the associated costs and benefits will have on achieving sustainable development.

Barriers to trade may occur when conformity assessment requirements in countries differ, making products subject to duplicate testing, different types of testing, or multiple inspections. Products may be denied market access because the testing procedures or results are not recognized, or because those who performed the tests do not belong to a peer assessment scheme or are not accredited. If additional certification is required, this imposes further costs upon exporters in cases where mandatory product specifications differ from country to country. Duplication of effort associated with additional or separate conformity assessment procedures is costly, and effectively keeps some producers out of certain markets. According to an OECD study (1996)<sup>5</sup> standards and technical regulations, combined with the cost of testing and compliance certification, constitute between approximately 2 and 10 percent of overall production costs.

Conformity assessment was addressed during the WTO TBT five successive triennial reviews with agreement on a list of different approaches to the acceptance of conformity assessment results. Regardless of the type of conformity assessment (e.g. first-party, second-party, third-party, product, service, and management system), the importance of using international standards and guides<sup>6</sup> was underscored.

### **3.6. Accreditation**

Accreditation is the 'third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks' (ISO/IEC 17000). Accreditation allows regulators and industry groups to make an informed decision when selecting a laboratory, certification body or inspection body, as it demonstrates competence, impartiality and capability. It helps to underpin the credibility and performance of goods and services. Accreditation bodies around the world, which have been evaluated by peers as competent, have signed mutual recognition arrangements that enhance the acceptance of products and services across national borders. The purpose of these arrangements, the ILAC Mutual Recognition Arrangement (MRA) and the IAF Multilateral Recognition Arrangement (MLA), is to create an international framework to support international trade through the removal of technical barriers. There are three MLA currently being managed by IAF; Quality Management Systems, Environmental Management Systems, and Product Certification. The ILAC MRA currently covers Testing (ISO/IEC 17025; ISO 15189) and Calibration (ISO/IEC 17025).

The International Accreditation Forum (IAF) is a global association of accreditation bodies, certification/inspection body associations, industry associations and other stakeholder organizations and scheme owners involved in conformity assessment activities in a variety of fields, including management systems, inspection, products, services and personnel.

The International Laboratory Accreditation Cooperation (ILAC) is an international cooperation of laboratory and inspection accreditation bodies formed more than 30 years ago to help remove technical barriers to trade. ILAC has a membership consisting of accreditation bodies and stakeholder organizations throughout the world. It is involved with the development of laboratory and inspection accreditation practices and procedures, the promotion of laboratory and inspection accreditation as a trade facilitation tool, the assistance of developing accreditation systems, and the recognition of competent test and calibration facilities around the globe. ILAC actively cooperates with associated international bodies in pursuing these aims.

The principal aim of the IAF and ILAC arrangements is as relevant today as it was when they were first established, and that is to support the freedom of world trade by eliminating technical barriers to trade. The creation of an international network among accreditation bodies removes the need for suppliers to have their products or services re-evaluated in each country they enter on a commercial basis. The key to the

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5 See "Trade and Competition: Frictions after the Uruguay Round" (OECD, 1996).

6 Developed by the ISO Committee of Conformity Assessment (CASCO)

arrangements is that the results of accredited organizations are recognized as equivalent by signatory accreditation bodies. In this way, certificates issued by accredited organizations can therefore be accepted throughout the world.

Internationally-agreed standards and accreditation play an important role in the support of competitive markets and cross-border trade. This is increasingly important as supply chains are ever-extending to new overseas markets as businesses seek to lower costs or satisfy contract terms, whilst maintaining a level of confidence that products are technically compatible, to specification, and safe.

In such complex markets, reassurance in the measurements, tests, inspections, and certification performed in another jurisdiction is essential. Without these standards, the free exchange of goods and services would be hampered by technical barriers, thereby increasing costs for importers and consumers. Global acceptance of accredited certificates is a central pillar of accreditation as the harmonization of assessment requirements and processes at a worldwide level, provides businesses and regulators with confidence that products entering the market conform to specification, meet national legal and regulatory requirements, and will therefore serve to protect public interests in general.

The use of an internationally recognized accreditation regime by a country signatory to the WTO/TBT Agreement also allows that country to rely on the terms of the agreement to establish the competence of their conformity assessment system. Section 6.1.1 of the TBT Agreement states that, "...verified compliance, for instance through accreditation, with relevant guides or recommendations issued by international standardizing bodies shall be taken into account as an indication of adequate technical competence."

The lack of access to accreditation programmes in developing countries is a key factor preventing their full integration into the established world trading system.

Developing an accreditation infrastructure can be a daunting task for a national government. The task is not however impossible as illustrated by the success of accreditation bodies in the Asia Pacific, African, Eurasian and American regions<sup>7</sup>.

The establishment of regional accreditation bodies is another mechanism being used to provide developing countries with access to accreditation services, in cases where it may not be feasible to establish and sustain a separate accreditation infrastructure in each country.

#### **4. An integrated approach to development assistance for technical infrastructures**

In terms of assisting developing countries to create and maintain appropriate technical infrastructures an integrated approach is called for. By this it is meant that a holistic consideration of a country's needs is required, and a plan of action be agreed. If this can be achieved by the developing country, then assistance efforts can be coordinated and synergies between the various parts of the technical infrastructure established. Once established these synergies provide the technical infrastructure with its identity and strength, and enable it to contribute to the country's sustainable development and trade potential.

Each of the above parts of the technical infrastructure is interdependent on the others. Metrology and physical standards provide the basis for accurate measurements, the accepted performance of which can then be written in international documentary standards, which can in turn then be used as the basis for conformity assessment activities, and those activities can then be accredited, peer assessed or both.

While these parts are interdependent, it is recognized that for many countries the cost of providing for all of these activities at their most advanced level is prohibitive. Even in the case of developed countries there are variations on how sophisticated each part of the technical infrastructure is, and there are many cases

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<sup>7</sup> A large portion of the signatories to the Pacific Accreditation Cooperation (PAC) Quality Management System Multilateral Recognition Arrangement (MLA) are considered to be developing countries. PAC members operate within the framework of the International Accreditation Forum (IAF) and in cooperation with other regional groups of accreditation bodies around the world. In a communiqué (IAF-AM-02-023) following the 16th Annual Meeting of the International Accreditation Forum (IAF) on 21 and 26 September 2002 it was announced that: The IAF "... was able to welcome the admission to membership of ... SADCA (Southern African Development Co-operation in Accreditation) as a Special Recognition Regional Group ..."

where some parts of the infrastructure may be jointly owned or shared between one or more countries, or that the services of another country are relied upon altogether.

What is important for sustainable development and trade purposes is to ensure the societies and industries in developing countries have access to a technical infrastructure that reflects their specific needs.

To provide for an integrated approach to developing technical infrastructures, the DCMAS Network members recommend that assistance be based on:

- a thorough needs assessment for all parts of the economy, including sectors that are domestically, societal or import focused, and those that are more trade and export focused;
- the understanding that there is no ready-made model for technical infrastructures, either in terms of the components that are required, the degree of sophistication they should have, or the way that technical infrastructure services can be delivered, and as such developing countries themselves must make these policy decisions and provide their ongoing political commitment to those decisions;
- careful consideration of the assessed needs and based on the type and appropriate sequencing of assistance to ensure technical infrastructures are built in a sustainable and planned manner;
- a clear articulation of the resource and finance that will be required to sustain the necessary technical infrastructure on an ongoing basis; and
- that the development of national technical infrastructures not preclude consideration of bi-lateral or regional service delivery options that may achieve better economies of scale. These latter approaches need to be cognizant of the historical, political and cultural sensitivities that exist between countries.

Achievement of an integrated approach also requires cooperation and coordination with international partners and organizations responsible for the delivery of technical assistance and capacity building, such as ITC<sup>8</sup> and UNIDO<sup>9</sup>. The Network on Metrology, Accreditation and Standardization for Developing Countries (DCMAS Network) was established to bring together all specialized organizations that operate at an international level and that are active in promoting and implementing MAS activities (metrology, accreditation, standardization and conformity assessment) as a tool for sustainable economic development. International specialist organizations with technical expertise and funding agencies must work together to strengthen and improve the effectiveness of technical infrastructure capacity building. Collaboration with partners is the key to efficient utilization of resources and to long term, sustainable development. Effective development assistance needs a coordinated approach, which is both bottom-up demand-driven and a country-owned process undertaken in partnership with aid agencies.

## 5. Conclusion

The provision of development assistance aimed at strengthening the technical infrastructures of developing countries is necessary for everyone's sustainable development, and to enable developing countries to effectively participate in global trading activities, including becoming signatories to international agreements.

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8 ITC is the joint agency of the World Trade Organization and the United Nations. As the development partner for small business export success, ITC's goal is to help developing and transition countries achieve sustainable human development through exports.

9 The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations, whose mandate is to promote and accelerate sustainable industrial development in developing countries and economies in transition; and to work towards improving living conditions in the world's poorest countries by drawing on its combined global resources and expertise.

## Annex I

### Glossary of acronyms

BIPM	International Bureau of Weights and Measures
CIPM	International Committee of Weights and Measures
IAF	International Accreditation Forum
IEC	International Electrotechnical Commission
IECEE	IEC System of Conformity Assessment schemes for Electrotechnical Equipment and Components
IECEX	IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres
IECQ	IEC Quality Assessment System for Electronic Components
ILAC	International Laboratory Accreditation Cooperation
ISO	International Organization for Standardization
ISO/CASCO	ISO Committee on conformity assessment
ITC	International Trade Centre
ITU-T	Telecommunication Standardization Sector of ITU
DCMAS	Network on Metrology, Accreditation and Standardization for Developing Countries
MoU	Memorandum of understanding
MRA	Mutual recognition agreement/arrangement
MTS	Multilateral trading system
NMI	National Metrology Institute
OECD	Organization for Economic Cooperation and Development
OIML	International Organization of Legal Metrology
PAC	Pacific Accreditation Cooperation
SPS	Sanitary and Phytosanitary (WTO)
SADCA	Southern African Development Community in Accreditation
TBT	Technical Barriers to Trade (WTO)
UNECE	United Nations Economic Commission for Europe
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization