Building linkages for export success

Trade Promotion Organizations and
National Standards Bodies working together

ISO

ITC

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ISO – International Organization for Standardization

ISO has a membership of 163* national standards bodies from countries large and small, industrialized, developing and in transition, in all regions of the world. ISO's portfolio of more than 18 300* standards provides business, government and society with practical tools for all three dimensions of sustainable development : economic, environmental and societal.

ISO standards make a positive contribution to the world we live in. They facilitate trade, spread knowledge, disseminate innovative advances in technology, and share good management and conformity assessment practices.

ISO standards provide solutions and achieve benefits for almost all sectors of activity, including agriculture, construction, mechanical engineering, manufacturing, distribution, transport, medical devices, information and communication technologies, the environment, energy, quality management, conformity assessment and services.

ISO only develops standards for which there is a clear market requirement. The work is carried out by experts in the subject drawn directly from the industrial, technical and business sectors that have identified the need for the standard, and which subsequently put the standard to use. These experts may be joined by others with relevant knowledge, such as representatives of government agencies, testing laboratories, consumer associations and academia, and by international governmental and non-governmental organizations.

An ISO International Standard represents a global consensus of the knowledge in a particular subject or process, whether it is the state of the art in that subject, or what is good practice.

* September 2010

International Trade Centre (ITC)

ITC : EXPORT IMPACT FOR GOOD

The International Trade Centre (ITC) is the joint agency of the World Trade Organization and the United Nations.

ITC MISSION

ITC enables small business export success in developing and transition countries by providing, with partners, sustainable and inclusive trade development solutions to the private sector, trade support institutions and policymakers.

ITC OBJECTIVES

- Strengthen the international competitiveness of enterprises through ITC training and support
- Increase the capacity of trade support institutions to support businesses
- Strengthen the integration of the business sector into the global economy through enhanced support to policymakers.

List of abbreviations and acronyms

APEC	Asia-Pacific Economic Cooperation
BIPM	International Bureau of Weights and Measures
CAC	Codex Alimentarius Commission
CBI	Centre for the Promotion of Imports from Developing Countries (Netherlands)
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CMC	Calibration and measurement capability
DSM	Department of Standards Malaysia
EAC	East African Community
EN	European Norm (Standard)
ETSI	European Telecommunications Standards Institute
EU	European Union
GAP	Good agricultural practice
HACCP	Hazard analysis and critical control point
IAF	International Accreditation Forum
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Cooperation
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ITC	International Trade Centre
ITU	International Telecommunication Union
MATRADE	Malaysia External Trade Development Corporation
MERCOSUR	Southern Common Market of Argentina, Brazil, Paraguay and Uruguay

MLA	Multilateral recognition arrangement
MoU	Memorandum of understanding
MRA	Multilateral recognition agreement
NEP	National enquiry point
NQI	National quality infrastructure
NSB	National standards body
OECD	Organization for Economic Co-operation and Development
OIE	World Organization for Animal Health
OIML	International Organization for Legal Metrology
QI	Quality infrastructure
SADC	Southern African Development Community
Sida	Swedish International Development Cooperation Agency
SIPPO	Swiss Import Promotion Programme
SMEs	Small and medium-sized enterprises
SPS	Sanitary and phytosanitary (measures)
TBT	Technical barriers to trade
TPO	Trade promotion organization
TSI	Trade support institution
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

Foreword

National standards bodies (NSBs) and trade promotion organizations (TPOs) have specific and important roles to play — NSBs as developers of national standards and representatives of their country in international and regional standardization organizations, TPOs as the source of much needed foreign market information, and facilitators of export trade. In most developing countries, the NSB is the national enquiry point as required by the World Trade Organization (WTO) Agreement on Technical barriers to trade (TBT), and may also be a provider of conformity assessment services. In many countries, little or no formal cooperation existed in the past between NSBs and TPOs.

This handbook is designed for those in NSBs, TPOs and government agencies supporting international trade to show the advantages of closer collaboration to assist exporters in your country.

The growth of international trade and the increasing importance of high level standards and technical regulation in developed markets presents greater opportunities for NSBs and TPOs to collaborate and create more opportunities for exporters to demonstrate compliance with market requirements and enhance national competitiveness.

This collaboration may assist any enterprise looking to export but especially small and medium-sized enterprises (SMEs) who find it difficult gaining the information necessary to evaluate and comply with market access requirements in another country.

To explore how such collaboration could be achieved, the ISO and ITC jointly organized a regional consultation on "Quality Management: Linking TPOs and NSBs for Export Success" in Malaysia in December 2009, partly funded by Sida.

This handbook is based on the outcome of that meeting, and reflects the position of those participating. The examples given are drawn from their shared experiences, and can be used by developing economies in all regions to review local situations. This handbook therefore offers pointers for any country to utilise in developing its own approach to help open avenues of collaborative effort between the national TPO and NSB to leverage their services for the benefit of local exporters.

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1. Introduction

To compete and succeed in today's trading environment, an overseas supplier must not only find a buyer, but must also ensure its products and services meet rigorous quality requirements (i.e. performance, perceived quality, conformity, reliability and durability) demanded by the customer, end user, and others in the global supply chain. While these requirements are much the same for all suppliers and create a level playing field, evidence [1] suggests that some suppliers find high standards and proof of compliance difficult to meet.

Exporters require:

- Information regarding voluntary, market related, mandatory or statutory requirements
- Capacity building and advisory services to meet and exceed these requirements economically and consistently
- Evidence of compliance with requirements acceptable to buyers and regulators.

All organizations must comply with many such requirements to access markets and sell their products. SMEs with fewer resources and limited information may find it especially difficult. The challenge is greater still for enterprises outside the market, particularly in obtaining the right information. This might include compliance with logistical, managerial and financial requirements, and proof of formal product and/or service quality. And in order to remain competitive in aggressive global markets, manufacturers must continue to innovate. Understanding and financing these challenges is crucial, as is estimating the potential profitability of the market and buyer they may have identified.

Governments develop strategies to facilitate export trade through initiatives and trade support institutions. Two such institutions that support manufacturers, producers and suppliers in accessing foreign markets are the TPOs and NSBs of the exporting country. The former can provide primarily intelligence and bring exporters and the market together, and the latter can contribute relevant information on quality and regulatory requirements, demonstrating compliance, and provide conformity assessment services. One would expect these organizations to have developed strong collaborative systems, since their services would seem to complement each other well. Yet in many countries TPOs and NSBs have to develop much, if any, cooperation.

To explore how such collaboration could be achieved, the ISO and ITC jointly organized a regional consultation on "Quality Management: Linking TPOs and NSBs for Export Success" in Malaysia in December 2009, partly funded by Sida. Senior NSB and TPO officials from 16 countries in East, South East and South

1) See *World Trade Report 2005: Exploring the links between trade, standards and the WTO,* World Trade Organization, Geneva 2005, see www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report05_e.pdf

Asia shared experiences, considered common challenges to strengthening inter-linkages, and discussed best practice cases. The list of participating countries and representatives is provided in Appendix II.

This handbook is based on the outcome of that meeting, and reflects the position of those participating. The examples given are drawn from their shared experiences, and can be used by developing economies in all regions to review local situations. Every country is unique, and no one model of cooperation can fit all situations. However, this handbook offers pointers for any country to utilise in developing its own approach, and make its own choices. In addition, the following guidelines can help open avenues of collaborative effort between the national TPO and NSB to leverage their services for the benefit of local exporters.

1.1 The consultations

The consultations were supported by papers developed by the NSB and TPO of each participating country, as well as those by ISO, ITC and international experts. All papers are available on the ITC website at http://www.intracen.org/eqm/events.

Consultations consisted of information sessions chaired by moderators from ISO, ITC or from invited international experts. Experts and participants explained the roles of NSBs and TPOs, and the scope of quality requirements in export markets. Value chain analysis was used to identify current and potential collaborative actions, and how to enable exporters meet and exceed market requirements with the support of NSBs and TPOs. Elements of possible partnerships and how these could be made to work were identified, and next steps by all the countries represented were discussed. The full programme is listed in Appendix I.

1.2 Clarifying some concepts

Several common misconceptions regarding standardization are re-defined here for clarity, since the concepts appear throughout this handbook:

- A standard is a formal document, established by consensus and published by a recognized body, that provides, for repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. Standards can therefore pertain to products and services as well as the processes or systems that are utilised to provide them. Generally speaking, standards are considered "voluntary", i.e. suppliers can choose whether they wish to comply with standards, even though they may be demanded by contract or considered desirable by the market place
- Technical regulations although covering much the same territory as standards, are generally not developed by consensus, are published by regulatory authorities, and compliance is demanded by law. Technical regulations are usually implemented when

market failures negatively impact on the health and safety of the population or the fauna and flora, and sometimes to protect consumers from large-scale deception. Frequently, technical regulations reference standards, and in some countries these are called compulsory or mandatory standards. Technical regulations frequently include packaging and labelling requirements

- SPS measures (sanitary and phytosanitary) are legal measures implemented by a government to protect human, animal or plant life in its territory from risks such as the entry, establishment or spread of pests, diseases and disease-carrying or disease-causing organisms. Hence, they endeavour to manage the risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs as well as risks carried by live animals or plants, or from the actual entry, establishment or spread of pests. These legal measures could include end product criteria, process and production methods, testing, inspection, certification and approval procedures, quarantine treatments, transport requirements for animals and plants, and packaging and labelling requirements related to food safety
- Conformity assessment is a collective term covering all the services needed to provide evidence that a product or service complies with a standard or a technical regulation. Conformity assessment can be provided by independent third parties, or by the supplier, depending on the purchaser or regulatory authority requirements. Conformity assessment includes inspection, testing, product or system certification, or any relevant combination of these. Metrology and accreditation are part of conformity assessment, and together with standards, are considered the three fundamentals without which any conformity assessment regime lacks credibility.

Reference to definitions can be found in Section 10, *References and definitions*. These are mainly based on two International Standards: ISO/IEC Guide 2:2004, *Standardization and related activities – General vocabulary*, and ISO/IEC 17000:2004, *Conformity assessment – Vocabulary and general principles*, and also the *WTO Agreements on Technical Barriers to Trade* and on *Sanitary and Phytosanitary Measures*.

2. Structure of this handbook

This handbook is an edited version of the conclusion paper which was largely based on the forum discussions in Malaysia, with additional information where relevant, and is structured as follows:

The role of quality for exporter competitiveness

Section 3 describes the extent to which quality requirements affect exports, and the implications for developing country exporters and support institutions. It also elaborates the complexity and scope of quality requirements.

The role of national standards bodies

Section 4 provides a general overview of the role of NSBs and the services they provide in standards development, provision of information on standards and technical requirements, conformity assessment or advisory services and technical regulations, and identifies potential NSB clientele.

The role of trade promotion organizations

Section 5 gives a general overview of the role and services of TPOs in providing information and market intelligence, capacity building and advisory services, and in connecting suppliers, manufacturers, and exporters with markets, discusses how TPOs can facilitate conformity assessment services, and lists potential TPO clientele.

Possible areas of collaboration

Section 6 provides guidance regarding possible linkages between the WTO TBT and SPS enquiry points, the NSB standards information services, and the TPO information services. These linkages include the sharing of information on current and future standards and technical regulations, private standards, and conformity assessment services. Tracking of notifications sent by WTO members is also covered, plus other possibilities, such as sharing of customer databases.

The section also deals with capacity building and advisory services regarding product and service compliance with export market requirements, and advises on obtaining and demonstrating such compliance. Other collaboration possibilities such as workshops and consultancies, cross membership in governance structures, technical committees or advisory committees are also reviewed.

Mapping quality-sensitive value chains

In Section 7 three generic value chains – agriculture and agro-processed foods, manufactured products (e.g. garments manufacturing) and tourism services – are given as specific examples of areas where NSBs and TPOs could provide quality management services that add value.

Making it all possible

Section 8 explores ways of initiating and maintaining a process of collaboration.

Conclusion and final sections

Sections 9 and 10 summarize the main points of the publication, and provide references and definitions, and appendices (programme, list of participants, example of ITC's capacity building modules to strengthen TSIs, and selected bibliography).

3. The role of quality in exporter competitiveness

To become and remain competitive in local and foreign markets one must meet challenges in[2]:

- *Product development*. The emphasis is on faster, more systematic quality processes to develop new products that meet rapidly changing global market requirements and customer preferences
- *Supply and purchasing*. Organizations require productive partnerships with suppliers, including outsourcing partnerships in other countries, to take advantage of the globalization of the supply chain
- *Training and human resources development.* Employees must be given quality tools, processes and support to enable them to continuously improve the business and its products
- *Economics of quality.* The costs of achieving customer satisfaction while absorbing the economic pressures of globalization must be systematically measured and managed
- *Hands-on management*. Managers must take a strong, strategic and hands-on approach to continuous management of innovation based on quality.

The concepts of "quality" and "innovation" feature prominently in such challenges. Quality has many dimensions beyond compliance with stated requirements or established standards. It can encompass performance of primary characteristics, including inferred quality or reputation, the probability of malfunction, and the amount of use before the product deteriorates. Therefore, organizations have a key need for:

- Comprehensive and up-to-date information on mandatory or "voluntary" technical requirements, either clearly specified in standards, or demanded by the market
- Capacity building and advisory services to assist in product design and development, international purchasing and supply chain management, quality management including costs, and innovation
- Prompt and cost-effective conformity assessment services to provide evidence that products conform to requirements, whether mandatory or "voluntary".

Innovation is increasingly fundamental to marketing success as global competition toughens. But even the most innovative products must conform with standards, especially those relating to health and safety. Similar arguments apply to products that must integrate with existing systems, particularly in electronics and communication. Conformity with standards, whether mandatory or voluntary, is therefore fundamental to gaining and maintaining

2) Source: "Spring into Action", by A.V. Feigenbaum in *Quality Progress*, November 2009 (www.qualityprogress.com)

market access, and is an essential part of total product quality, whether innovative or not. Mandatory requirements are generally contained in technical regulations and SPS measures, whereas voluntary requirements are found in standards.

Standards requirements, technical regulations and SPS measures differ greatly between products and markets, and can be quite daunting for any exporter or potential exporter. Whereas conformity with standards is a voluntary decision by the supplier, technical regulations and SPS measures have to be complied with by law.

3.1 Technical regulations and SPS measures

Governments develop and implement technical regulations and SPS measures for products that could have a damaging effect on the environment, or on the health and safety of the population. Technical regulations comprise requirements that are often comparable to standards for the same products, and administrative provisions that include conformity assessment requirements. SPS measures are similar and must also be considered, especially in the food sector.

All products falling within the scope of these two regulatory areas must comply with requirements as a mandatory or legal obligation. However, since some fall outside the scope, it is very important to establish whether a technical regulation or an SPS measure exists in the target export market for a product or service.

Technical regulations and SPS measures are normally valid for decades rather than years. This is an advantage for the supplier, as compliance must be consistently and continuously applied. But they can also become a barrier to innovation if they do not keep up with technical developments. Nevertheless, all suppliers must provide evidence of compliance. Hence, it can be argued that competitiveness is not determined by compliance with technical regulations or SPS measures, since they lead to a level playing field for all suppliers. However, if products or services do not comply with such requirements, then there is no way the supplier can enter the market. For SMEs in developing economies, they can be a formidable barrier to entry into lucrative developed economy markets. This is especially so of environmental and health regulations requiring complex and expensive conformity assessment services that may not be available locally.

3.2 Voluntary and private standards

At the next level are the many regional, national or international standards where conformity may be contractually demanded by the purchaser and therefore becomes a business decision for the exporter.

Formal international standards are an established and proven approach to technological and global challenges. WTO disciplines in using standards as the basis for regulatory measures demand that "international standards" be developed by designated organizations in the case of the

SPS Agreement [3] or according to principles for international standards development in the case of the TBT Agreement. Formal international standards, such as those from ISO and the International Electrotechnical Commission (IEC), are prepared following such principles.

A distinction is made between international standards prepared using the principles set out in the WTO Agreements [4] and disciplines established through the *Code of Good Practice for the Preparation, Adoption and Application of Standards* [5], and other "private" standards that do not adhere to these principles and disciplines. Standards that are developed using processes open to worldwide participation, and that use these principles, are considered to be "international standards". ISO International Standards are developed within proven structures, operational approaches and participation models detailed in ISO/IEC's existing directives and development procedures [6]. While other standards may be developed that meet the needs of specific sectors or segments of the population, and may be perfectly valid and relevant for their purpose, they do not adhere to such disciplines, nor do they share other attributes of formal international standards. Several international standards – notably the management system standards ISO 9001 [7] and ISO 14001 (**see Figure 1**) – have become extremely important in the manufacturing and service sectors.

The use of international standards in support of public policy and regulation has increased in recent years, as countries have joined the WTO and have begun to apply TBT and SPS Agreement disciplines in using standards as a way of reducing barriers to trade.

Examples of regional standards are those of the European Union (EN), East African Community (EAC) and Southern African Development Community (SADC). Other bilateral and multi-lateral trade arrangements, as well as existing and new regional free trade agreements in different parts of the world, have also been major drivers to adoption of international standards. Organizations or trade areas, such as the Organization for Economic Co-operation and Development (OECD), Asia-Pacific Economic Cooperation (APEC), and Southern Common Market of Argentina, Brazil, Paraguay and Uruguay (MERCOSUR), encourage the use of international standards as a way of fostering trade within their membership, and with the rest of the world.

Standards at national level are too numerous to list, since nearly 150 of the 163 ISO member bodies publish national standards. Fortunately,

3) The SPS Agreement specifically names the Codex Alimentarius Commission (CAC); the World Organization for Animal Health (OIE); and the International Plant Protection Convention (IPPC) as organizations that produce "international standards" regarding food safety, animal health, and plant health respectively.

4) See Annex 4 on "*Decision of the Committee on Principles for the Development of International Standards, Guides and Recommendations with relation to Articles 2, 5 and Annex 3 of the Agreement*" contained in the Second Triennial Review of the TBT Agreement at **http://docsonline.wto.org/DDFDocuments/t/G/TBT/9.doc**

5) See **http://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm#annexIII**

6) See **http://www.iso.org/iso/standards_development/processes_and_procedures.htm**

7) The full titles and references of the various standards mentioned in the text are provided in Section 10.

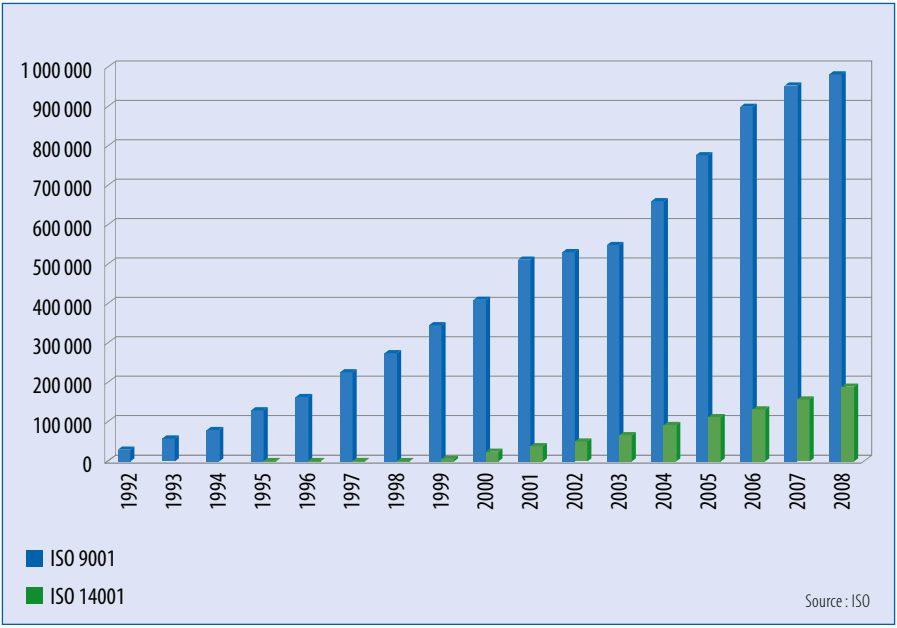

Figure 1 : ISO 9001 and ISO 14001 certificates issued worldwide

many are based on international standards, but full equivalence is not always achieved. In many countries, technical regulations are based on national standards or reference them as is. This means that information regarding national standards in target markets remains a key need of any exporter.

International standards are reviewed approximately every five years to ensure they remain useful and relevant. National standards have a similar life cycle.

There is a vast and growing number of non-governmental standards and significant differences in the bodies/organizations that develop them for areas such as governance, development approach and stakeholder engagement. ISO makes a distinction between "formal" international standardizing organizations as described above, and other "private" standards setters [8]. At least three important categories of private standards have evolved in the context of ISO's work, leading to efforts to harmonize or coordinate them with the ISO standards development system :

- Private standards in the information and communication technology (ICT) sectors (consortia and fora)
- Private standards from the retail and agri-food industry

8) A more complete treatise on the subject can be found in the ISO publication : *International standards and "private standards"* (ISBN 978-92-67-10518-5) available as a free download from the ISO website at : http://www.iso.org/iso/private_standards.pdf.

- Private standards related to social and environmental aspects.

Compliance with private standards is not a legal requirement, but is frequently a precondition for trading with some of the major purchasing groups or retailers in the developed economies. However, certification to these standards can be costly. The market reality is that they are in place, and current or potential exporters to such markets have to pursue compliance in order to be competitive.

Other private standards are those imposed by some of the large multinational retail organizations. These are developed as a consequence of intense competition among retailers and are used to gain a competitive advantage. These retail organization standards have a very short lifespan, typically one to two years, until competitive advantage has diminished and a new one has to be sought. Currently, these standards apply mainly to the food sector, but they may extend to other areas in the future.

4. The role of national standards bodies

NSBs provide a wide range of standardization and conformity assessment services, generally depending on how the national quality infrastructure (NQI) [9] is arranged. Therefore, before discussing the services an NSB may be able to provide, it is useful to briefly describe the elements of a quality infrastructure (QI) and their relationship to each other. The main elements and deliverables of a QI are shown in **Figure 2** [10].

For each of these elements national, regional and international structures have been established for many years. In the case of standardization, ISO, the IEC, the International Telecommunication Union (ITU) and Codex Alimentarius are well-known international organizations, and there are many more. The regional counterparts of the first three in the European Union, for example, are the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI). In other regions, a similar arrangement exists. The main international bodies for metrology are the International Bureau of Weights and Measures (BIPM), which deals mainly with fundamental metrology, and the International Organization for Legal Metrology (OIML), dealing mainly with legal metrology. As is the case for standards, many regional structures have been established to harmonize metrology issues at regional level. For accreditation, the two main international organizations are the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum (IAF), which deals mainly with system and product certification. Regional accreditation organizations also exist.

At the national level, a variety of organizational set-ups are possible. For example, separate national organizations may be established for standardization, metrology and accreditation, or all services are combined into one organization. The organizations making up the NQI may be public or private entities, or both. The mix is not uniform and there is no single, global best practice for the type of organizational set-up, even though some trends are developing slowly. In some countries, the NQI is guided by a national quality policy, in others it has developed more or less organically over many years. It is recognized by most experts, however, that an effective and efficient NQI is vitally important to the modern economy. In this handbook, only the NSBs are dealt with in any detail, even though the others are no less important.

Some standards bodies publish standards and provide related information services only – this type of specialization is mostly found in developed economies. Others, and this is the case in

9) See definition of the national quality infrastructure (NQI) in Section 10.

10) A more extensive discussion on the elements of quality infrastructures can be found for example on the website of the Network on Metrology, Accreditation and Standardization for Developing Countries at: http://www.dcmas.net.

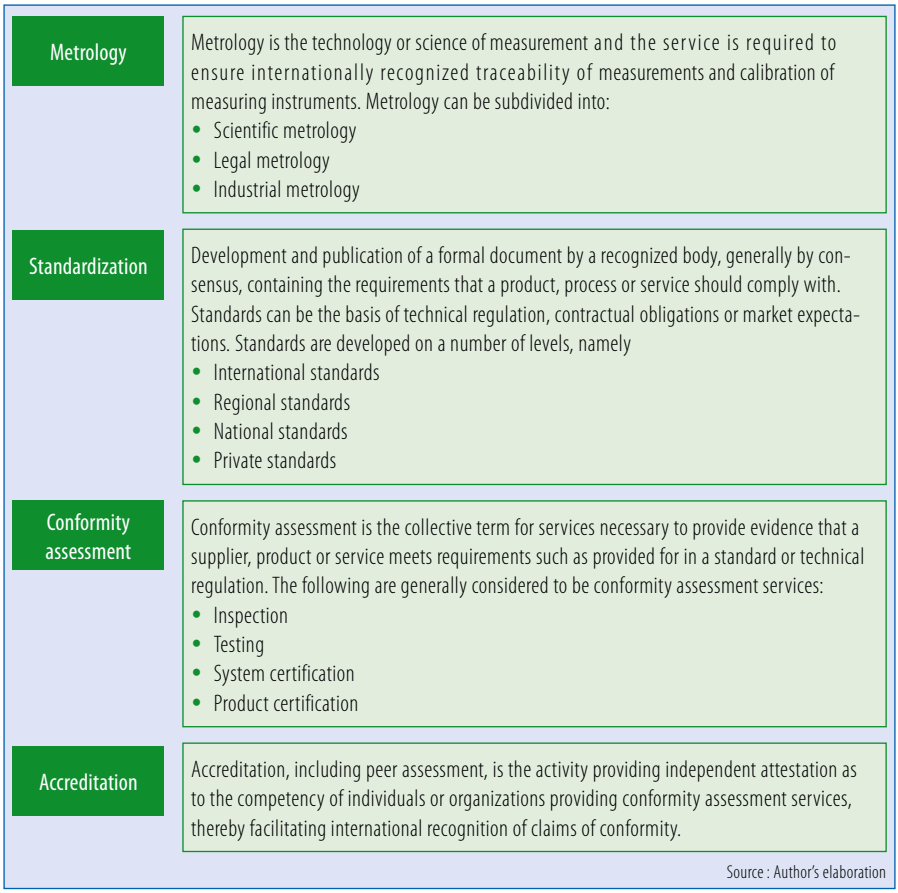

Figure 2 : Elements or services of a quality infrastructure

most developing economies, also provide many additional standardization related services such as consultancy, conformity assessment and training. An indication of the wide variety of services offered by NSBs can be seen in the breakdown of ISO member body services listed in *ISO Members 2009*[11] (**see Figure 3**).

Each of the above services are described in more detail below. In-depth discussions on standardization in industrial development, trade facilitation and on improving access to global markets can be found in the ISO/UNIDO publication "*Fast forward – National Standards Bodies in Developing Countries*"[12].

11) *ISO Members 2009*, Twelfth edition, ISBN 978-92-67-01174-5, ISO, 2009, see www.iso.org/iso/publications_and_e-products/governance.htm#PUB100029

12) *Fast forward – National Standards Bodies in Developing Countries*, ISBN 978-92-67-10477-5, ISO, 2008, see www. iso.org/iso/fast_forward.pdf

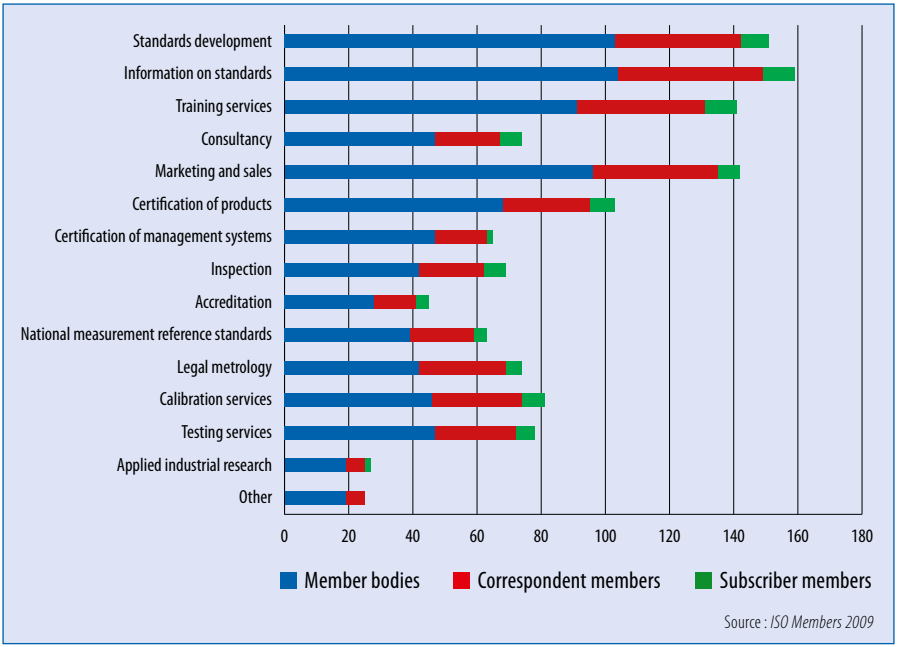

Figure 3: Services provided by ISO member bodies

Additional information on all aspects of conformity assessment and its role in international trade is provided in the joint ISO/UNIDO handbook: *Building trust – The Conformity Assessment Toolbox* [13].

4.1 NSB services

4.1.1 Standards development

As confirmed in the *ISO Members 2009* data, the majority of NSBs, however small, develop and publish national standards, i.e. 151 of 162. This is achieved through national technical committees that operate in accordance with principles laid down in the ISO/IEC Directives, and Annex 3 of the WTO TBT Agreement. Authorities, organized trade and industry, academia and civil society are normally represented. With few exceptions, most developing economies are "standards takers" rather than "standards makers", i.e. national standards are based on, adopted with some modifications, or are fully equivalent to international and/or regional standards. Even so, a progressive NSB would ensure that its country is adequately represented in relevant technical committees at the international and regional level, in order to protect national interests.

The NSB serves two major groups in developing standards. First, authorities need national

13) *Building trust – The Conformity Assessment Toolbox,* ISBN 978-92-67-10511-6, ISO, 2009, see www.iso.org/iso/casco_building-trust.pdf

standards as a basis for establishing technical regulations and SPS measures. Second, industry requires standards as the basis for design and manufacturing. Standards development programmes should therefore reflect the needs of these two groups. In view of the dynamic growth of international trade, national standards should remain as close to international standards as possible, i.e. national versions should be kept to an absolute minimum, in order to help industry connect with outside markets more easily.

4.1.2 Information on standards, conformity assessment procedures and technical regulations

Nearly all ISO member bodies provide information on national standards, as well as the major international standards such as ISO, IEC and Codex Alimentarius. The larger NSBs would also have access to the national standards of the major trading partners of the country. In view of the growing significance of private standards, NSBs in developing countries should consider providing information on these standards and associated conformity assessment procedures. In well organized NSBs this information service is staffed by professionals with a working knowledge of the subject matter in question, so that organizations seeking information on standards in foreign markets can be assured that the information received is accurate and up to date.

In addition, NSBs will sell individual national standards or sets of standards (i.e. building and electrical safety standards) or act as agents for the sale of foreign and international standards [14] as hard copies or in electronic format, i.e. CD-ROM. Standards can be downloaded through the Internet from the more progressive NSBs once the appropriate payments have been made electronically. Some NSBs also provide an updating service to selected customers, i.e. they are informed as soon as specified standards, whether national or foreign, have been amended, revised or re-affirmed.

Information on conformity assessment procedures and technical regulations in target markets is of similar importance to exporters. NSBs are well placed to access such information through their knowledge and international links. Such an information service would be a valuable addition to NSB portfolios in developing countries. WTO TBT and SPS enquiry points are also in a good position to provide information on technical regulations, as described later.

4.1.3 Training

Many NSBs provide training services in standardization, testing and certification, and most would include implementation of Hazard Analysis and Critical Control Point (HACCP), or management systems conforming to ISO 9001, ISO 14001, ISO 22000, or similar.

14) International standards of non-intergovernmental bodies such as ISO and IEC are generally subject to copyright and must be purchased. Others, from intergovernmental bodies such as OIML and the Codex Alimentarius Commission may be downloaded free of charge.

This general training is normally augmented by training and accreditation of quality auditors. Candidates for quality, environment, food safety, and other auditor training would typically be drawn from the staff of organizations implementing those management systems. Where the NSB is also responsible for metrology in the country, training in calibration systems at company level, or training of metrologists will also be major activities. NSBs can also become involved in the training and accreditation of other technical professionals such as those in non-destructive testing disciplines. All such schemes are guided by international standards such as ISO 19011 or ISO/IEC 17024.

Training is not considered a conflict of interest with the provision of conformity assessment services provided that the training is given in open forum and is generic in nature, i.e. not single company specific. Otherwise it is considered as consultancy and the caveats outlined in section 4.1.4 apply. Even if the NSB sets up the training/consultancy as a separate division from certification, the conflict of interest remains as far as the accreditation organization is concerned.

4.1.4 Consultancy services

As centres of excellence for technology, NSBs in developing countries are in an ideal position to provide consultative services regarding compliance with standards and technical regulations in target markets. This should be the case since NSBs are heavily involved in setting standards, participating in regional and international standardization activities, and in inspecting and testing products. Indeed, some 50 % of NSBs do offer such services, as confirmed by the list in **Figure 3**. The major caveat is that consultancy services can only be provided if the NSB does not also offer related testing and certification services. Otherwise, they would not be able to gain accreditation, as this combination is considered a conflict of interest.

In some organizations, the conflict of interest has been circumvented by establishing separate certification and consultancy operations, with totally separate managements under the auspices of a holding company. However, this issue is subject to change and it would be important for the NSB to obtain the latest information and rulings on conflicts of interest made by IAF and ILAC.

4.1.5 Accreditation

Accreditation is increasingly used as the basis for determining the technical competency of laboratories (testing and calibration) and certification bodies (product and system). Many NSBs provide accreditation services as part of their remit to establish proper standards in their country, as exemplified by Canada, Malaysia, Thailand and others. This is only meaningful if the NSB does not provide any conformity assessment services, as this would be seen as a serious conflict of interest.

The primary accreditation service customer would be any laboratory, whether private or public, and especially those that provide services with a public dimension (e.g. in technical regulation or SPS measure implementation)

or those that provide conformity assessment services for export markets. The same applies to inspection bodies, and system and product certification organizations.

International recognition of accreditation services is achieved by becoming a signatory to the multinational recognition agreements of ILAC (laboratories), designated "MRAs" and the IAF (certification systems), designated "MLAs". NSBs whose accreditation services have not been peer reviewed and acknowledged through the MRA with ILAC or the MLAs of IAF, will have a recognition problem – conformity assessment service providers not accredited by them may find that their services are not accepted in foreign markets.

4.1.6 Metrology

Metrology consists of three distinct domains – fundamental or scientific metrology, legal metrology and industrial metrology. NSBs in many economies are custodians of the national measurement standards, are involved in legal metrology (mostly in the form of trade metrology, a subset of legal metrology), and provide calibration services on request to industry and the authorities.

National measurement standards must demonstrate accuracy comparable to other national standards, with proven competency of the metrology laboratories, in order that the country's best calibration and measurement capabilities (CMCs) can be listed in the world-wide directory of the BIPM [15]. This is the first step to ensure that the measurements will be accepted elsewhere in international markets, but without it, the rest of the national metrology system is meaningless. Metrology services must be government funded, and therefore not paid by the customer.

Trade metrology is akin to technical regulation, since it is intended to ensure that trade based on measurements, i.e. mass, volume, length, etc., is an equitable process whereby measurements are made by instruments that meet minimum accuracy criteria. These instruments must meet defined standards before they can be used commercially, and must be calibrated and verified at stipulated intervals as defined by law to ensure their continuous compliance. The fundamental purpose of trade metrology is to ensure that trade at the national level is properly conducted, hence government is seen as the client. However, with the increase in pre-packed goods for the export trade, exporters use trade metrology services to ensure that their goods are accepted in foreign markets without having to be weighed or measured again.

Measuring equipment becomes less accurate over time, so calibration at regular intervals is necessary to ensure continued accuracy. NSBs in developing economies provide calibration services mainly to industry and laboratories, but also to authorities. In smaller countries the NSB is frequently the sole supplier of such services. In larger economies, private calibration laboratories increasingly augment the role of the NSB in this regard. However, it is important for the NSB to establish a proper national calibration system, i.e. to ensure

15) The list of CMCs can be accessed through the BIPM website at : http://www.bipm.org

traceability of measurement standards used by the calibration laboratories to international standards, if it acts as the national metrology institute, and to ensure that measurements are accepted in export markets.

4.1.7 Inspection, testing and certification

Inspection, testing and certification are the primary means of demonstrating to purchasers or authorities that products and services comply with standards. NSBs frequently provide inspection services to authorities covering imports or implementation of mandatory standards. These generally fall within the domain of technical regulations, i.e. they are mandatory requirements imposed by governments. Some countries allow pre-shipment inspection to take place in lieu of border-entry inspections. This is preferable since it prevents non-compliant product from being shipped. Industry may use NSB inspection services as a pre-shipment inspection before sending products to foreign markets if the NSB's inspection services are accepted abroad. Inspection services may also provide evidence that products comply with contractual obligations between the purchaser and supplier. This applies to government purchases locally or overseas. They should be accredited to demonstrate their competence, and certified to ISO/IEC 17020:1998, *General criteria for the operation of various types of bodies performing inspection*.

Testing services are provided to regulatory authorities for the implementation of technical regulations and SPS measures. Similarly, product manufacturers and suppliers need technically competent, independent third party testing services to satisfy customer demands, or determine whether products meet stated requirements or standards. In developing economies, the NSB together with other government laboratories are often the only testing service providers of note. For such testing services to be accepted, it is important that all individual laboratories should be certified to ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*. Simply being the national standards body (or ministry laboratory) is no longer an adequate criterion.

In the case of certification services provided by the NSB, the most important from an exporter's perspective are the quality and environmental management system standards ISO 9001, ISO 14001, and increasingly ISO 22000:2005, *Food safety management systems — Requirements for any organization in the food chain*. Compliance with HACCP is also important from a food exporter perspective. Certification to ISO/IEC 17021:2006, *Conformity assessment — Requirements for bodies providing audit and certification of management systems* is a prerequisite for the recognition of these system-related certification services.

Product certification services are important, particular for medical devices, and for electrical products intended for the North American market. In such cases the NSB can act as a subcontractor for product certification bodies operating in the target markets abroad. Such arrangements require the developing country NSB to demonstrate competence and negotiate specific arrangements.

4.1.8 Services excluded

While NSBs generally provide a broad range of services, there are some that are the responsibility of other organizations in most developing economies. The most obvious is the SPS domain which is separated from the NSB in most countries, and inspections and regulatory activities are the responsibility of other agencies. Hence, the control, inspection and approval procedures for plants and animals are generally not provided by the NSB. However, even in this case, NSBs may provide testing and certification of SPS measures where they are required by the authorities.

4.2 WTO TBT and SPS enquiry points

Some 60 % of NSBs (according to WTO Secretariat data) are the sole designated WTO TBT Enquiry Point, about 15 % share this responsibility with their line ministry, and a small percentage of NSBs provide the WTO SPS Enquiry Point for their countries. In the remainder of the WTO member states, the WTO TBT Agreement Enquiry Points are located in the ministry responsible for trade. The WTO SPS Enquiry Points are usually shared between the ministries responsible for health and agriculture.

WTO TBT Enquiry Points are established as an obligation under the WTO TBT Agreement to respond to questions from other WTO members regarding national standards, technical regulations, conformity assessment organizations and regimes, international and regional affiliations of local standardization, and conformity assessment organizations. Several WTO members have also expanded the role of the enquiry points beyond the obligations of the WTO TBT Agreement by providing information services to the domestic industry and trade sector.

Enquiry points must provide the following information:

- Current technical regulations (including legal metrology and compulsory standards)
- Current national standards
- Proposed new technical regulations
- Proposed changes to technical regulations
- Any requirements on assessing conformity with technical regulations or standards
- Any membership of the country's national organizations in regional or international organizations dealing with standards or conformity assessment
- Any bilateral or multilateral recognition agreements regarding all of the above
- The name and contact details of each organization responsible for any of the above information.

SPS Enquiry Points are similar in that they must provide information regarding any adopted or proposed sanitary or phytosanitary regulations, any control or inspection procedure, requirements for production processes and quarantine treatment. They must also answer questions regarding risk assessment procedures used by the authorities, including

factors taken into consideration when determining sanitary or phytosanitary protection requirements. Membership of national bodies in international and regional sanitary and phytosanitary organizations and systems, and of bilateral and multilateral agreements and arrangements, should be provided if requested. SPS Enquiry Points are mainly attached to the ministries responsible for agriculture and health (food safety), plant health and animal health, and are not usually part of the NSB remit.

Well organized enquiry points augment these services by providing alerts and advance warnings on technical regulations and SPS measures to be implemented by trading partners. The WTO Secretariat lists and makes available all such notifications from WTO members on a regular basis. These enquiry points review notifications, determine their relevance for the country and distribute them to industry and authorities for comment and information. They may even collate all the comments for further action by the trade professionals in the responsible ministries, i.e. transmitting a country position to the WTO member wishing to implement the measures. Exporters in developing countries benefit greatly if their enquiry points provide such a service.

4.3 Users of NSB services

The broad spread of potential and actual services provided by NSBs suggests that the range of clients can be equally varied. The first group would include authorities in the domestic market as well as potential export markets in need of information on national standards, either as a market requirement or as the basis of technical regulations and SPS measures. If the NSB acts also as the national enquiry point, then the authorities will expect the full spectrum of information as required by the WTO TBT and/or SPS Agreement(s). Where NSBs provide conformity assessment services, especially as preferred service providers with regard to technical regulations, then the authorities will make full use of such services – either in the case of pre-market product approvals, or to determine compliance of products in the market place. The NSB would normally charge for conformity assessment services, while information services would usually be provided free of charge, i.e. a "good-for-country" service financed through government funding mechanisms.

The second group of NSB clients would be industry, i.e. manufacturers and suppliers, ranging from multinational companies operating locally and in export markets, to the smallest SMEs. The spread of needs would be very similar to the authorities, but the focus would be different. They would be more interested in conformity assessment as a continuous service than information as a one-off requirement. Testing, certification and calibration will constitute the bulk of these services as long as the technical competence of the NSB can be demonstrated. Suppliers would generally demand compliance information through their industrial partners, i.e. the manufacturers, but might occasionally request conformity assessment services from the NSB directly. However, suppliers would be major customers for NSB information services, particularly in export markets.

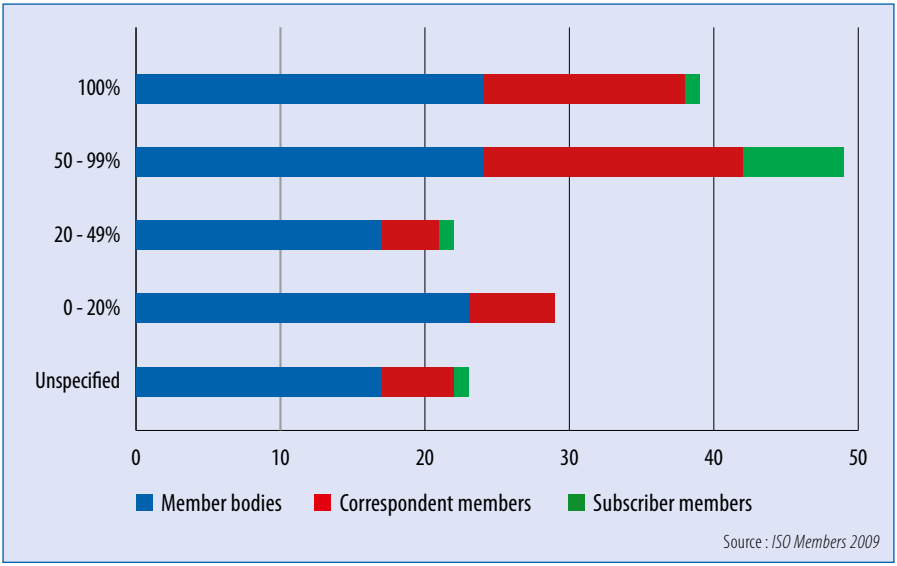

Figure 4: Government grant as source of revenue of NSBs

Thirdly, private individuals and the public sometimes make use of NSB information services ; although the cost of conformity assessment services is normally too high for the general public.

4.4 Funding of NSBs

NSB funding sources vary, depending on whether they are government departments, statutory bodies or private companies, and differ from country to country. In some countries, NSBs are totally funded by the state, and in others a large proportion of their budgets must be earned through conformity assessment services. If the NSB is a private organization, it must obtain payment from those benefiting from its services, including the state. Some NSBs even derive the bulk of their budgets from the administration of mandatory or compulsory standards and certification. Figure 4 shows the extent of government grants as a source of revenue among ISO members in 2009 .

NSB funding mechanisms are not particularly relevant to this handbook, with the exception of selected collaborative efforts between NSBs and TPOs. More important is the funding of collaborative efforts in " good-for-country " activities by the state. These are addressed in more detail in Section 8.2. Detailed information on NSB funding can be found in the ISO publication *Financing NSBs – Financial Sustainability for National Standards Bodies* [16].

16) *Financing NSBs – Financial Sustainability for National Standards Bodies*, ISO (International Organization for Standardization), Geneva, 2010, ISBN 978-92-67-10534-5, see http://www.iso.org/iso/financing_nsbs.pdf

5. The role of trade promotion organizations

Trade support institutions (TSI) exist in every country to help businesses develop, promote and sell their goods and services abroad – broad categories are shown in **Figure 5.** There is no standard format for a TSI and often more than one exists in each country. As an illustration of the functions and services performed by TSIs, Appendix III shows the TSI capacity building modules proposed by the ITC.

A TPO traditionally has a more limited role in "promoting" international trade. There may be more than one TPO per country, they are not homogeneous and can take many forms. In some countries they are part of government ministries (e.g. the Philippines), in others they are statutory agencies created by public law (e.g. Fiji), in others, private sector bodies (e.g. chambers of commerce in Austria). Sometimes they are a combination of public and private enterprise (e.g. Swedish Trade Council).

One TPO may represent smaller nations while larger nations may be represented by TPOs at regional and local/city levels. However, one is generally recognised as the national TPO in international meetings because of its public law and funding status. Nevertheless, export customers will use the most convenient TPO that can best meet their needs. A few TPOs

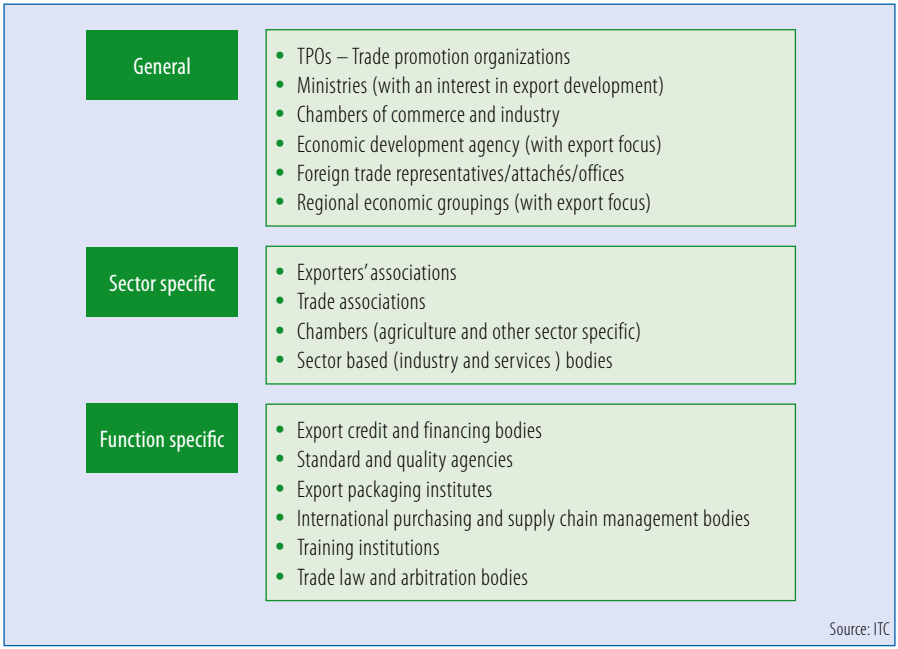

Figure 5 : Broad categories of TSI organizations

have responsibility for promoting tourism, but more combine their exporting role with that of promoting inward investment. As the customer base for tourism and inward investment promotion can be different from that of traditional exports, not all combinations have worked and there have been subsequent separations (e.g. Portugal).

5.1 TPO services

TPO services can be those demanded by the exporting community, perhaps in response to a customer needs analysis, or in response to an analysis of the requests received. TPOs may also use information from around the world to identify opportunities in markets and sectors as yet unnoticed by the country's exporters. This would be seen as proactive work by the TPO, with the balance of responsive and proactive services being at the TPO's discretion. A menu of possible TPO services is shown in **Figure 6.** However, many TPOs offer only a fraction of these because of limited resources or legal powers, customer demand, or competition from other TSIs. This handbook focuses on those functions with the greatest potential for collaboration with NSBs.

5.1.1 Information

The main objective of a TPO is to put sellers in touch with buyers abroad and facilitate the development of that contact. TPOs can provide information about buyers and sellers, for example size, turnover, contact details, market reputation, customer attitudes, competitiveness, methods of doing business, market size, etc., but rarely give advice on credit worthiness. This is the function of commercial bureaux. The TPO may include information on standards and technical regulations, but very few of those present at the consultation were doing so. MATRADE in Malaysia was an exception in sourcing this information on demand from its offices abroad. This however is labour intensive and TPOs are increasingly sub-contracting or buying-in the results of such work from commercial information providers. TPOs assemble and distribute information via publications, websites, selective e-mail and in person at enquiry points. They may also delegate this task to provincial offices and agencies closer to the exporter.

5.1.2 Promotion in target markets

Once a TPO has identified details of potential buyers and markets, and the exporter has decided to develop the opportunity, it can facilitate contact between buyer and seller. This could involve providing and/or subsidising participation by the exporter, either alone or with other enterprises, at an international trade fair. It can also organise buyer/seller missions to and from the target market. All these activities are aimed at developing the contact between buyer and seller, and making the exporter more aware of the export market conditions.

5.1.3 Support abroad

TPOs with networks of offices or representatives overseas can provide additional help to the country's exporters – this is particularly

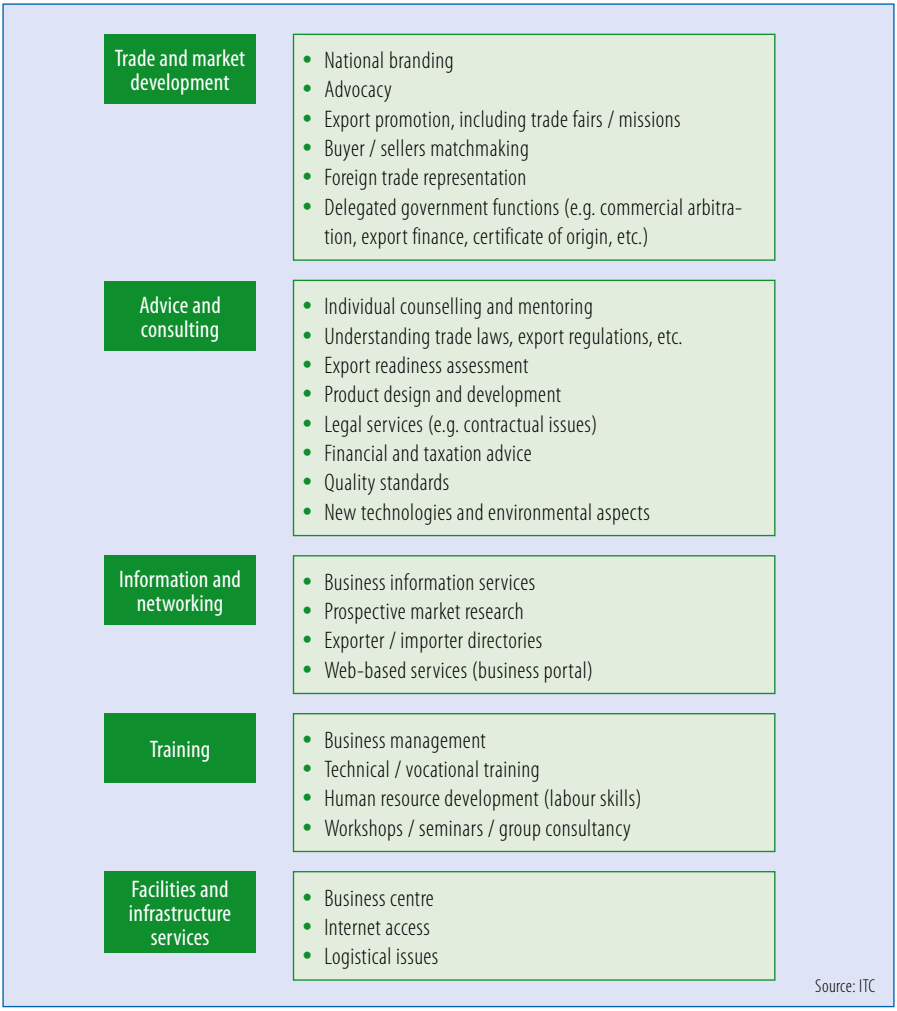

Figure 6 : Broad categories of TSI services

important for SMEs without agents or distributors in a new market able to deal with local requirements in the local language. SMEs often need to use the TPO's overseas offices, the country's embassy or other representatives to make these introductions and identify translation and interpreting services.

Larger TPOs with extensive overseas networks can assist exporters with such local market knowledge. However, TPO employees are expensive to relocate in foreign markets, and are usually supplemented by local staff who can provide local language capabilities and knowledge at lower cost.

Import promotion offices have been established in some developed economies to support SMEs from developing economies gain access to their markets. Typical examples include the Netherlands Centre for the Promotion of Imports from Developing Countries (CBI), or the Swiss Import Promotion Programme (SIPPO) [17].

5.1.4 Role of TPOs in trade development

The TPO focus changed with the arrival of the Internet, enabling exporters to search for market information directly rather than through a TPO, and to contact potential buyers via e-mail, business networking sites or electronic marketplaces. In response, some TPOs began to intervene earlier in the export process ("going-up-stream") to help exporters become export-ready in developing and adapting their products.

This has challenged TPOs to equip themselves with additional skills. If TPOs do not provide assistance in export-readiness then it may become the responsibility of separate small firms agencies (the United Kingdom's (UK) Business Link network is one example). Some TPOs (e.g. those of Sweden and Norway) in developed countries provide more detailed support ("going downstream") and offer full cost consultancy services in competition with the private sector. The same applies to some developing economies (e.g. MATRADE provides financial support to help SMEs improve packaging and labelling). Such extensions of TPO services could include help with standards and technical regulations.

5.1.5 Services excluded

TPOs in developed markets usually direct customers to sources of advice rather than themselves becoming involved in specializations such as packaging, transport, financing and insurance, which require knowledge and skills not usually possessed by government officials. Thus they have not traditionally provided information about technical regulations or standards required by exporters to meet market needs. In view of the globalisation of trade and greater movement of goods between countries, it is more important than ever that exporters have better information on market entry requirements. The function of this conclusion paper is to show how TPOs can add such assistance to their activities, and work with NSBs to bring this about.

5.2 Sectors supported

TPOs are accustomed to dealing with exporters shipping goods to foreign countries. This service has been extended to helping exporters set up overseas subsidiaries and generate profit from manufacturing abroad (outward investment). In parallel with globalisation and the transfer of manufacturing facilities to lower cost economies is a dependence on selling services (such as professional advice, construction activities, transport). TPOs have had to develop mechanisms to assist service suppliers, whether professionals – e.g. archi-

17) Link to import promotion organizations: http://www.tponetwork.net/importpromotionagencies.php

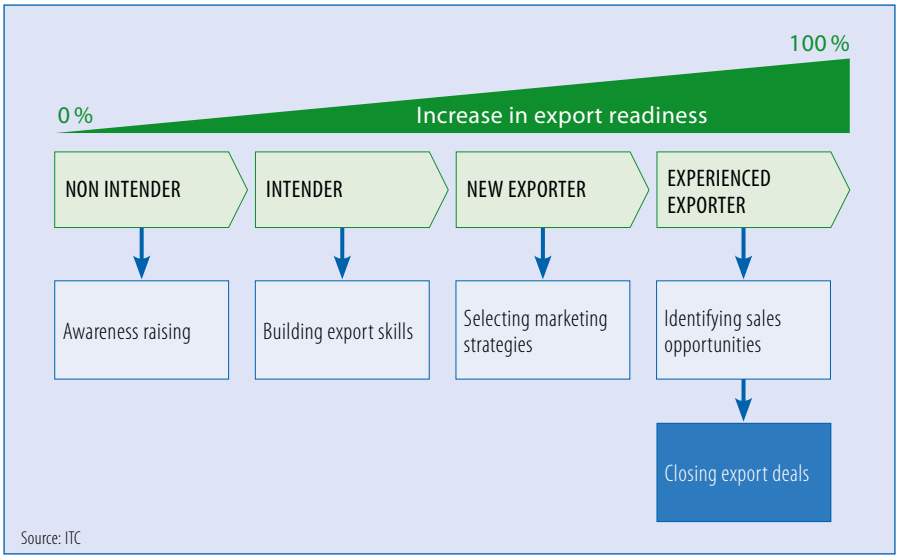

Figure 7 : Role of TPO varies according to the level of export readiness

tects, lawyers, accountants, or consultants – e.g. business or internationally tradable services. The tools developed for selling goods (e.g. trade fairs) are not necessarily relevant to selling services. Here, trade missions that concentrate on personal introductions have generally been more effective. However the provision of market information is common to selling goods and selling services.

Less developed countries are also interested in selling primary products abroad, typically raw materials, or agricultural products which may be further processed as food. While the tools used to assist the export of products can also be relevant, more extensive market information may be needed to assist a food exporter. Sometimes the promotion of agribusiness is handled by a ministry of agriculture or food, rather than the TPO. Thus in the context of collaboration with the NSB, the partner may be an organization other than the principal TPO.

5.3 Users of TPO services

Although the range of TPO services provided may seem quite wide, as shown in **Figure 7**, in reality it is relatively narrow. Surveys show that, even in developed markets like the UK, some 40 % of exporters are unaware of the existence of a TPO. Large companies tend not to need TPO services because they generally sell established products to established markets, and know their buyers and markets well. If they wish to enter a new market, they will probably appoint an agent or distributor, or set up a local office and not require TPO services. An exception might be a service organization,

such as a large distribution or construction company, requiring diplomatic support to reach decision makers in the local ministry. Service organizations such as banks, and professionals such as architects and surveyors will rarely call on the TPO because it is unlikely to have the necessary knowledge and expertise.

TPO customers tend to be SMEs. In most sectors, micro businesses are normally considered to be too small to export, particularly if substantial amounts of working capital or effort is required to penetrate a foreign market. SMEs wishing to enter new markets or sell new products into existing markets may seek TPO help to find buyers and undertake market research. Such a service is likely to be low cost or free of charge.

5.4 Funding and resources

5.4.1 Funding

National governments or regional and local authorities in most countries see economic benefits from selling goods and services abroad, so some or all TPO resources come from public funding. It is unusual for a TPO to be funded from sources other than government. Typically, where a service is available to all without customization to meet individual exporter needs, that service is provided free to the exporter at the point of delivery. Where some element of the service is customized (e.g. the TPO researches a specific market for an exporter) or is available selectively to a group of companies (e.g. a group wishing to exhibit at a foreign trade fair), those companies are expected to pay some or all of the extra cost of delivering this exclusive service. This may take the form of payment by the exporter to the TPO, or as a grant from the TPO to reimburse the exporter for part of its costs. Both methods have their advantages and disadvantages, e.g. a grant towards costs may be simple to administer, while recovering a service fee from an exporter can involve staff-intensive debt collection. The tendency to share support in this way is more common in developed economies, but may become more prevalent in developing countries with increasing demands on national treasuries.

5.4.2 Prioritization of resources

TPOs have finite staff, skills and financial resources. This applies equally to large TPOs in developed countries and small TPOs in developing countries. They cannot do everything and must make choices. Many already prioritise services by sector, countries of interest or type of organization. Unless exporters are prepared to finance additional services in technical requirements, standards, SPS measures and conformity assessment, TPOs must compare the importance of those services with the demand-driven services already supplied. In addition, TPOs must prioritize the initiatives and opportunities they have identified, and decide which resources should be diverted to the new services. It would be preferable for a TPO to undertake a market survey among exporters before deciding how resources might be redeployed. If the TPO is governed or advised by a committee of business representatives, this body could also be asked for its views.

6. Possible areas of collaboration

The consultations have indicated that few NSBs and TPOs have collaborated extensively or formally to date, so it is appropriate to list many of the collaborative efforts possible. Individual countries and their institutions should select those that make sense in the context of national customs and practices. The possibilities of cooperation discussed during the consultations are summarized in **Figure 8**, with details in the following sections.

6.1 Information linkages

Before exporting, organizations must obtain export market information relevant to their products or services in export markets so they can make the right decisions about compliance to requirements, or even if it is worth exporting at all. This might include information on potential buyers, market size, competition, price levels, market preferences, the transport and warehousing logistics involved, and so on. In addition, products may have to comply with technical regulations or SPS measures, undergo pre-shipment inspection, and carry product certification marks by law. Alternatively, exporters may have to demonstrate product compliance with voluntary standards (e.g. product certification marks) in order to gain market acceptance. Buyers may also demand compliance with voluntary or private standards as part of their contractual agreements.

The smaller the enterprise, the fewer people and less time it will have to research this information, so they may turn to agencies to do this for them. Having a choice of many agencies can make information available in more places more often, but to know who does what, and best, can be confusing. This has driven many governments to establish and maintain "one stop" or "first stop" enquiry "shops". Much of the required information can be provided by TPOs and NSBs, as described in sections 4 and 5. Hence, it would make sense to establish collaborative efforts to ensure the seamless delivery of information shared between NSBs and TPOs.

6.1.1 Information sharing between TPOs and NSBs

In summary, the information maintained by the NSB deals with standards, technical regulations, conformity assessment, and sometimes SPS measures. This information would be available in its own country, as well as regionally and internationally. The NSB should provide current as well as future information on developments through linkages to the national enquiry points for TBT and SPS, its peers, regional and international standardization organizations, and the WTO. NSBs have vast amounts of data on standards information and conformity assessment services through their technical committees and customer databases. They also communicate increasingly through websites, but would also selectively target committee membership, and identified industries and/or industry associations.

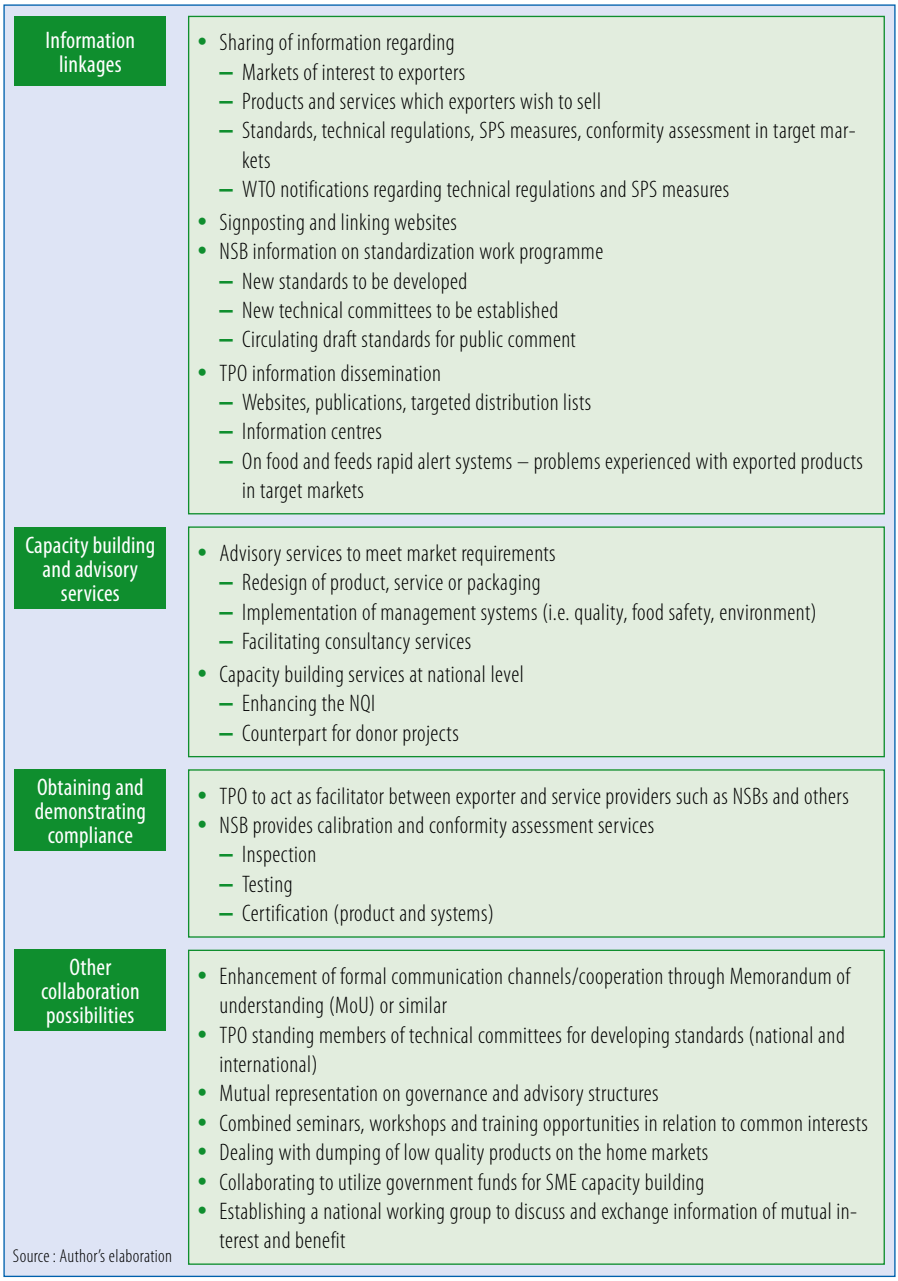

Figure 8 : Possible areas of cooperation between NSBs and TPOs

The TPO, on the other hand, identifies, collates, and makes available foreign – rather than national – market information. It is in touch with many organizations selling to foreign and not just national markets, and is better informed than the NSB about target export markets. TPO expertise lies in information about countries and market conditions, and its outreach should be via its offices abroad, its embassies and other diplomatic representatives. The TPO will also have mechanisms for making information through websites, publications, information centres and targeted distribution systems accessible to exporters.

The roles, capabilities and customer bases of NSBs and TPOs, though potentially overlapping, are more likely to complement each other. The same applies to information on standards, technical regulations and markets. It would therefore be helpful if NSBs and TPOs could consider:

- Sharing information about markets of interest to exporters (so that NSBs could inform TPOs about data they hold, and TPOs could inform NSBs about markets to target for information gathering)
- Sharing information about products and services which exporters wish to sell abroad (so that NSBs can alert TPOs when international discussions about new or amended standards take place, and TPOs can inform NSBs when it would be in the country's interest to participate in such discussions). This would enable NSBs to lobby in the interests of the private sector during the development of international or regional standards
- Sharing information about technical regulation notifications (if the NSB is the WTO TBT Agreement National Enquiry Point – see section 4.2) with a wider range of companies so they have the opportunity to comment via the National Enquiry Point to the national authority representatives at the WTO
- Referring to and sharing each other's customer database (where national law or customer agreements permit). This would enable NSB and TPO services to be sold or promoted to wider audiences, making each potentially more effective
- Making use of both information dissemination systems to broaden access to the information each has available
- Linking their respective websites, so that visitors are aware of the existence of the other organization, and connected easily through the link. This also helps traceability through Internet search engines.

6.1.2 Dissemination of NSB information

NSBs regularly disseminate information on the development of standards, such as:

- Determining the need for a national standard before commencing development
- Establishing new technical committees, subcommittees or working groups to develop national standards, or provide input to regional or international standardization activities
- Circulating draft standards for public comment before they are published

- Announcing the approval and publication of national standards, including those that are due to be declared compulsory by the authorities.

If the NSB is the WTO TBT Enquiry Point (and occasionally the WTO SPS Enquiry Point), and has developed value-added services regarding international technical regulation and SPS measures (see section 4.2), it may wish to distribute its summary of notifications to the WTO Secretariat regarding those regulations or measures to be implemented by WTO members, especially if they are trading partners of its country. These notifications must reach every stakeholder impacted by such implementation by a trading partner. These stakeholders should be given the opportunity to comment if necessary, the comments have to be collated, and then the authorities notified to take the matter up with the trading partner authorities, or with the WTO TBT or SPS Committee if necessary. This advance information could also be of great benefit to exporters wishing to protect or expand their markets.

In both situations, the NSB would have its own dissemination channels and stakeholder groups. These channels are both proactive and reactive. Proactive channels would normally include existing lists of industrial and authority stakeholders targeted individually by official letters, e-mails, faxes, etc. Associations and industry sectors would be among the stakeholder groups provided with such information. This is increasingly posted on NSB websites accessible to much wider audiences, although this is reactive, since they need to find the information for themselves. It would be extremely beneficial to the country if the NSB could utilise the TPO information dissemination mechanisms to augment its own, and reach a far broader audience. The TPO could add considerable value to the process by identifying specific stakeholders and by communicating information to them as quickly as possible, beyond making it available on websites and in information centres.

6.1.3 Dissemination of TPO information

TPOs can make information available to exporters via the following channels:

- Websites (either open access, or access limited to registered users)
- Distribution systems which attempt to match information to users by means of a pre-established profile (often known as Selective Dissemination of Information or SDI). This is normally by e-mail in countries where there is high take-up of ICT among SMEs, but by text (SMS) or postal delivery where the infrastructure or culture does not support e-delivery
- Publications
- Information centres (with personal, telephone or e-mail contact with TPO staff, or combinations of methods)
- Announcements in newspapers, trade magazines or on radio where other more targeted methods cannot be widely used.

The TPO is frequently the appointed centre where information on export problems and

failures are reported. In developed economies, these information centres are sometimes linked to rapid alert systems, especially in the food and feeds sector. The TPO should ensure that this information is also reported to the NSB, particularly if the issues arise out of inadequate testing and certification, in which case the NSB should be able to follow up and rectify the situation quickly. Such an action could potentially protect an entire industry in severe cases of failure, i.e. before a country's exports are "blacklisted" by a major developed economic community such as the EU. Obviously, the TPOs should collaborate closely with government trade officials since such cases may require official intervention and policy level action.

6.2 Capacity building and advisory services

A major issue for any exporter is to ensure that the products or services to be exported comply with stated requirements, whether technical regulations or contractual obligations. When it becomes clear that the product or service does not meet requirements, then the manufacturer or supplier must decide what should be done to render them compliant by asking, for example: *What investment is required? Should the products be redesigned? Is better manufacturing machinery required? Should inspection and testing be upgraded? Is the quality system in need of upgrading and certification?*

Frequently, and particularly in smaller organizations, there is too little capacity available in-house, and help from external sources is required. The question is can the TPO and/or the NSB provide such services?

6.2.1 Advisory services

If the NSB is accredited to provide conformity assessment services, it is highly unlikely that the same organization could help the exporter redesign the product or implement a quality management system, since this would be, in effect, a consultancy. If the NSB is not accredited for its conformity assessment services, it may provide such consultancy services, but then its testing and certification are unlikely to be accepted in a foreign market. In this case, the products in question will have to be (re)tested by an organization other than the NSB. The same would apply to management system certification.

However, the TPO is seldom organized in such a way that it could provide advisory/consultancy services of that kind. It essentially provides intelligence on foreign markets, and then connects potential suppliers and purchasers. Where a TPO can provide such advisory or consultancy services, it would be a very useful adjunct to the NSB's conformity assessment services, as the conflict of interest would not arise. In this case the NSB and TPO should cooperate closely to ensure that the TPO advisory/consultancy service is successful in helping upgrade the product, process or service so that it meets stated requirements, and can be tested and certified.

Where a TPO does not provide the required consultancy services, and the NSB also does not provide the advisory/consultancy services due to

conflict of interest, then it would be very useful if the TPO could inform customers where they could obtain such services. Likely channels would be industry/SME development organisations, sector specific TSIs, or consultancy firms with a good reputation. Finding the right adviser is obviously important. Word of mouth recommendations are often the best way of locating good consultants, since few countries have effective formal consultant approval systems.

6.2.2 Capacity building services

Capacity building in this context is largely focused on the development of new information, and the design, testing and certification capacity of the organizations that provide services to exporters, i.e. typically the NSBs and TPOs, to support the competitiveness of the export sector. The donor community always endeavours to establish working relationships with organizations that can act as the local partner in the country where it wishes to develop capacity. That partner can help the donor to channel support to the right organizations and needs. The NSB has been nominated for this role in many developing countries since substantial donor support has recently been channelled to develop testing, certification, metrology and accreditation capacity. However, in a few countries, the TPO has been given this responsibility because capacity building (i.e. quality management system implementation, good agricultural, transport and warehousing practices, etc.) goes beyond the NQI, and targets producers and suppliers as well.

In this case the TPO should involve the NSB from the start to determine the real capacity building needs of the country, especially from an accreditation, metrology and conformity assessment perspective, so that these can flow into the project design. If the NSB is the preferred partner of the donor organization, it should similarly involve the TPO. The TPO should have a better understanding of the product and services sectors that would benefit most from capacity building projects geared towards enhancing export performance.

6.3 Obtaining and demonstrating compliance

As discussed in Sections 4 and 5, it is clear that a demarcation exists between NSBs and TPOs regarding the provision of conformity assessment services. NSBs can and do provide conformity assessment services, whereas TPOs do not. But, in helping their customers access foreign markets, TPOs should have a good idea of the services offered by NSBs, and should be able to refer them to the correct NSB contact. This presupposes that NSBs maintain up-to-date calibration and conformity assessment databases, i.e. inspection, testing and certification services that are communicated to the TPO. It would also be helpful if TPOs and NSBs could identify specific contact personnel for this type of information.

If the NSB is not able to offer the appropriate conformity assessment services, then the TPO may direct customers to other national and accredited private sector conformity assessment

service providers or to foreign providers that could do the same. TPOs should note those global private sector conformity assessment bodies with established branches in developing countries or regions that provide recognised conformity assessment services.

TPOs can also act as facilitators in negotiating subcontracting arrangements between NSBs and foreign conformity assessment service providers. This could be particularly useful in product certification where the certification body in the target market would grant a licence to the manufacturer on the basis of testing and audits conducted by the NSB, or under subcontracting arrangements with other local conformity assessment bodies. In most cases, this will be more effective than bringing certification body auditors from abroad, and having the tests conducted overseas. The same arrangements may also be possible with CE-marking and notified bodies, even though there may be difficulties due to the legal implications for the notified body.

In some countries, TPOs are able to support SMEs with funds from the government or their membership to enable them to buy advice on adapting their products or services to meet foreign market needs, or achieve product or system certification. It would be helpful if the TPO could enlist NSB support to optimise the use of such funds, i.e. focusing on products and services where it will make a difference. The NSB is likely to seek recompense for the services rendered, and should not be expected to provide services below cost. A TPO should be prepared to see its financial support to SMEs passed on to the NSB.

6.4 Other collaborative possibilities

Beyond the collaborative possibilities already discussed are others that deal mostly with enhancement of formal communications between TPOs and NSBs.

6.4.1 Technical committees

NSBs operate technical committees that decide on national standards, and should ensure that all communications on committees and standards development are routinely sent to the TPO. The TPO should designate a secretariat or a specific person to act as the communication channel responsible for sending the information to the appropriate members and customers, and feeding reactions back to the NSB. Reporting on a new technical committee, or updating the membership of an established committee might be typical communications. The TPO might also recommend which organizations could contribute to the decision making process.

6.4.2 Governance and advisory structures

Many NSBs have a committee that acts as a standardization forum, advising NSB management on the services it should provide to stakeholders, and the strategic directions to take in standardization. Although not having a direct management or fiduciary role, the committee acts as a forum for stakeholders to voice opinions, concerns and needs on standardization. The NSB should invite the

TPO to join such a forum and participate regularly with management delegates.

If such a forum is not already in place, it might be useful for the NSB and TPO to jointly establish a national working group to discuss and exchange information on standards, technical regulations, SPS measures, conformity assessment procedures and services concerning export requirements in target markets. It could also make sense to invite TPO representation on the NSB council or board. Should the TPO have established similar governance structures, then the NSB could be invited to have comparable representation.

6.4.3 Conferences, seminars and workshops

Where capacity building for entry into foreign markets involves conferences, seminars and workshops, TPO and NSB representatives should be invited to contribute to the views of industry, suppliers and the authorities regarding the understanding of standards, technical regulation and conformity assessment. Such events can be very effective in enhancing capacities, particularly if organized with participation of overseas and local experts.

Box 1 – Typical standards awareness and promotion programmes

Malaysia (DSM)

DSM, the NSB of Malaysia, partners and cost-shares with a number of organizations and consumer associations to promote standards and their implementation, even though it is difficult to secure funding from government sources.

Thailand (TISI)

TISI, the NSB of Thailand, offers a 10 month training and consultancy programme for manufacturers, with consultancy support. It also provides consumer educational programmes for communities and schools, to promote standards.

Source: Presentation of Malaysia and Thailand at the consultation

7. Mapping quality-sensitive value chains

The value chain approach is used by many organizations to show how fragmented activities can be coordinated to reveal interconnections and inter-dependences between international traders and economic operators in different countries. Value chains highlight the fact that most products and services are produced by a complex and sequenced set of activities. Developments in global markets over the past few decades have greatly increased the complexity of inter-company linkages and the ways in which the activities of different organizations are coordinated. From a policy perspective, value chains are increasingly utilized to address two key issues in business development and trade promotion:

- How to mobilize, and work with, the private sector to promote development, reduce poverty, and shift from supply-side to demand-side interventions
- How to support the productive activities of small producers and marginalized populations in the context of globalization.

Developing a value chain for a product or service in a specific country will focus attention on the coordination of fragmented production and distribution systems, and the options open to an enterprise in managing relationships along the chain. It is also an opportunity to identify the points at which TPOs and NSBs could lend support. Any gaps can be easily identified, and programmes to develop appropriate capacities can be established. This may be more valuable to the SME sector than to large exporters already familiar with the sequence of processes and players, who have developed their own methods of dealing with potential gaps. In this section, three generic value chains – agriculture, garment manufacturing, and tourism – are given as examples.

7.1 Value chain analysis during the consultations

Value chains are not used much by NSBs or TPOs to determine the possible support they could provide to exporters. It is also clear that value chains for the same product are viewed differently in different countries, and must be developed anew each time. However, the process illustrates the value of reviewing entire value chains to identify key quality constraints affecting exports. It would then be possible to select specific activities to meet the constraints, enhance exporter competitiveness, identify the quality requirement at each link in the chain, and the body to provide the service.

The following sections and **Figures 9**, **10** and **11** provide a value chain analysis of the three chosen sectors. The colours of individual boxes represent players in the value chain and indicate whether the NSB or TPO can potentially provide information, conformity assessment or other services. Some linkages are colour coded to indicate that the TPOs are in a good position to connect the players.

7.2 Agriculture

Agriculture is the mainstay of many developing economies, both for local consumption and export. Agricultural produce is subject to complex technical regulation and SPS measures in developed economies and control of the value chain through standards, testing and certification, i.e. the "field-to-fork" principle, is commonplace. Hence it provides tremendous scope for NSB and TPO involvement. The generic value chain for agriculture (see **Figure 9**) provides an insight into these possibilities.

At the start of the value chain, growers require quality fertiliser, registered pesticides, water and soil analysis, heavy metals, pesticide residue and aflatoxin testing, etc. – all of which culminate in good agricultural practice (GAP) certification. Since storage and transport are also considered high risk in preserving the integrity of raw materials and produce, these activities must often be certified in compliance with relevant standards as well.

The same strict regime is required in processing plants that must demonstrate compliance to international standards such as HACCP or ISO 22000, or to private standards with a similar scope. These requirements may be imposed by regulatory authorities, or by major purchasers such as multinational retail organisations. All such conformity assessment services could be provided by the NSB, either independently or in collaboration with multinational or other private sector certification organizations. In addition, the NSB as the national WTO Enquiry Point is responsible for obtaining information from its counterparts in target markets.

The TPO can identify the country's main product strengths, and use its overseas outlets to match up market opportunities, provide standards information for known products and markets, and, with the NSB, develop packaging standards to ensure the integrity of the produce during transport. In some countries, food and feeds are such an important export category that specialised TPOs have been established. Close cooperation between NSBs and TPOs can be valuable, bearing in mind that the promotion of agribusiness is the responsibility of a separate ministry or agency in some countries.

7.2.1 Analysing the agriculture sector value chain

Figure 9 gives an example of how value chains can be used to determine the possible involvement of the NSB or TPO. This example is generic in nature, and does not represent any specific agricultural product or country. Due to the many differences between products, countries of origin and target market requirements, the exercise should be conducted with actual information before any definitive model can be presented for NSB or TPO involvement in a particular country.

In the diagram, the blocks representing the main markets are shown in blue and are linked to the national components of the value chain to indicate that the TPO has a potentially major role to play in bringing these entities together, or in supplying information to facilitate the

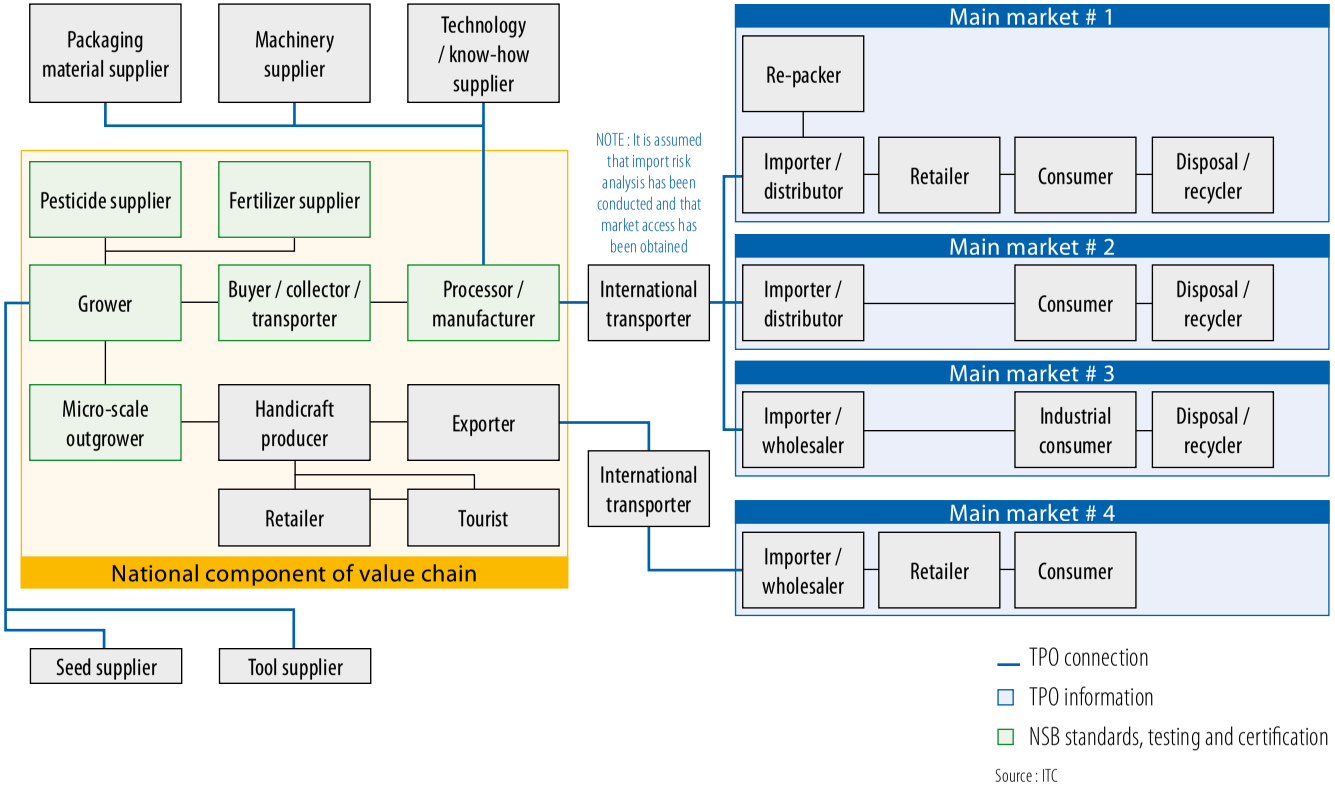

Figure 9 : Value chain – agriculture

marketing of the manufacturer's products. This also applies to manufacturers that supply the national value chain components with processing machines, packaging, etc., needed for the finished product. Blocks shown in green indicate that a technical requirement must be fulfilled, and that the NSB could provide the conformity assessment service.

One should carefully evaluate each of the value chain links with regard to technical requirements – most easily done in tabular form. For each of the links, e.g. pesticide supplier, grower, processor, etc., the technical regulations, SPS measures and market requirements to be fulfilled must be fully researched and listed with details, reasons for implementation, etc. Once services that could be provided by the local NSB and TPO are identified, those requiring foreign conformity assessment service providers become obvious.

Some links outside the national value chain, such as packaging material or machinery suppliers and international transporters, could in principle also be served by the local NSB, but it is likely that they would prefer to use the inspection, certification or laboratory services in their own country before exporting their products into the producer country.

7.3 Garment manufacturing

Figure 10 illustrates a garment manufacturing value chain typical of many developing economies. In an actual situation there would probably be many more sectors and sub-sectors, i.e. reality would be much more complex. The example presupposes that cotton is grown in the country, and that the subsequent value-added processes such as ginning, spinning, weaving and knitting also take place locally before the article is assembled by the garment manufacturer or tailor. They would also use foreign supplies of knitted or woven fabric. Garment manufacture is not usually subject to technical regulation, other than processes such as dyeing.

The example indicates that the possible involvement of the NSB and TPO is much wider than expected. For example, the NSB could be closely involved at the cotton growing stage in providing fertilizer standards and testing. Fertilizers are subject to obligatory standards in several developing economies, where the NSB is mandated to ensure compliance of imported or locally produced fertilizer. Although pesticides are usually controlled by regulatory agencies under the local ministry of agriculture, the NSB is frequently able to test for pesticide residues where relevant. The NSB can provide the same type of service right through the production chain, including ISO 9001 or ISO 14001 certification.

The TPO on the other hand should be able to provide information on foreign markets, and may be involved in helping producers locate raw material suppliers and international freight companies abroad, and link garment producers with importers, wholesalers or retailers in the target market. This is less so in the case of the major retail groups operating their own purchasing divisions. TPO information should also feed back to the NSB to coordinate with information regarding the required market standards. A case can be made for TPOs to become involved in the world of fashion, by

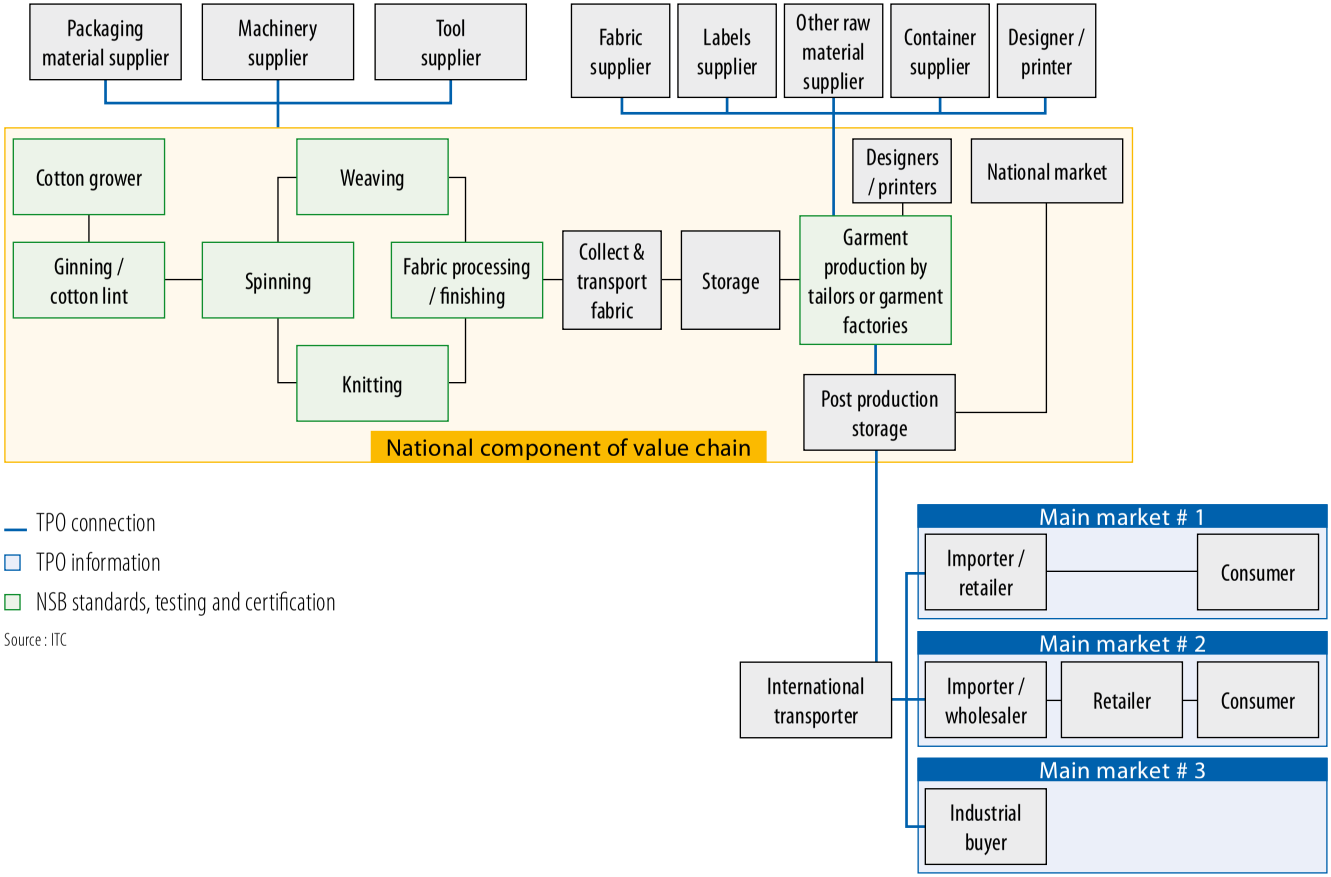

Figure 10: Value chain – garment manufacturing

helping garment manufacturers connect with fabric and clothing designers. In this way they could help SMEs, in particular, to understand current fashion trends and serve the unpredictable garment industry better.

Training in ISO 9001- and ISO 14001- based quality and environmental management systems, and in market requirements such as traceability, eco-labelling, social accountability, is required throughout the value chain – probably because few other product sectors are subject to as many consumer requirements. As such, garment manufacturing is a potentially important area for NSB and TPO involvement and collaboration.

7.4 Tourism

Tourism is a multi-dimensional service industry, so while the example is a simplified representation of the real world, it serves to illustrate a few principles. In most countries where the importance of tourism is recognized, the industry falls under the auspices of a specific government body or tourism board, other than the NSB. Therefore NSBs are not yet involved in tourism to the same extent as in the two previous examples. This may change in view of the growing need for international standardization in quality and service, and greater awareness of environmental issues among tourists. International standardization is already playing a much more important role in other service industries.

Nevertheless, NSBs have a potential role to play in providing the supply side of the tourism industry with standards information, testing and certification. Thus the TPO/NSB links in **Figure 11** are partially coloured to indicate potential connections. Certification of tourism organizations and tour operators normally falls outside the sphere of NSB activity, but there is no reason why NSBs should not maintain professional relationships with the relevant certification bodies serving the sector. Some members of the hotel and travel industry are already certified to ISO 9001 and ISO 14001, as environmentally friendly tourism grows.

The principal role of the TPO would be to help promote home market image building and tourism during trade fairs and similar events. This is as important as promoting any manufacturing industry, particularly as tourism is a major foreign exchange earner in many developing economies. Liaison between TPOs and tourism boards can be of significant value where home market image building is planned. The challenge however, is that the key TPO home country customers are more likely to be exporters than hotels, restaurants and tourism service providers. Similarly, the normal TPO target audience in foreign markets would be the retail consumer seeking to buy the product, rather than the business community.

The service sector is growing, and the international standardization community is increasingly involved in developing standards to provide guidance in the quality of service delivery. There is therefore scope for future NSB and TPO developments in the tourism sector of the service industry, and this is an opportunity that should not be missed.

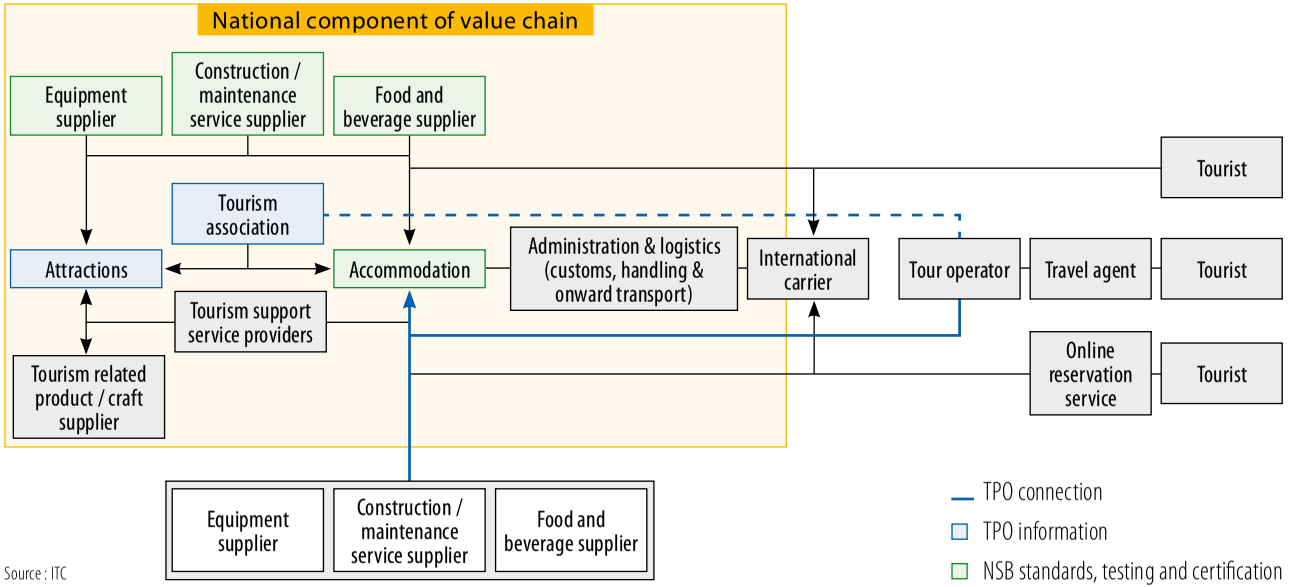

Figure 11 : Value chain – tourism

8. Making it all possible

In the preceding sections, a case has been made for closer cooperation between NSBs and TPOs, and better coordination of activities, to enable them to serve their local export communities more effectively. The question is, "How can this be initiated and sustained?" See **Figure 12** (next page) for a series of suggested initiatives to help in the development of country specific solutions.

The key strategy should be to maximise limited resources. See **Box 2** (page 58) as an example of suggestions made by the delegate from Papua New Guinea at the consultation, to serve as additional input for debate at national level.

At the consultation participating countries expressed some initial action points to initiate the collaboration and linkages between TPOs and NSBs, the related summary is reported in **Box 3** (page 60).

8.1 Policy framework

Specific practices in some countries may require an agreement to be entered into by the NSB and TPO, or that an MoU be signed between them, so that meaningful collaboration is formalised. The starting point could be an exploratory meeting between the managements of the two organizations, perhaps under the auspices of the relevant ministries to discuss the options outlined in this handbook, and highlight those for further consideration. In addition, if the business community is keen to promote TPO and NSB cooperation, then a senior businessperson might be invited to chair the meeting.

Once an understanding has been reached regarding possible areas of cooperation, then it should be formalized in an agreement or MoU to serve as guidance for staff of the two organizations. Because standardization, conformity assessment and technical regulations are constantly changing, it would be appropriate to revisit the agreement at regular intervals. Such meetings could also provide an opportunity to review the achievements of the previous year, to determine what has been of greatest benefit to exporters.

Where the country has a national export strategy and a standardization or national quality policy, such an agreement could be included. Since trade policy is usually the responsibility of the ministry for trade and industry, it would be prudent to involve the senior policy-making ministers early in the process to coordinate the planned TPO and NSB strategies with overall trade policy. If not, the two organizations may find that they are operating in a policy vacuum with poor support from government agencies. Aligning government policies to reflect collaborative efforts will also help strengthen the initial impetus, and in gaining public funding.

8.2 Challenges related to possible collaboration

All TPOs and NSBs face funding, manpower and other constraints, as reviewed under the following headings.

Formalize the cooperation	• Sign an initial MoU between the chief executive officers of the TPO and NSB committing to the pursuit of meaningful cooperation • Consider representation on each other's boards or councils, in full or in an observer or ex-officio capacity • Consider full representation and active involvement on each other's advisory forums if these exist • Establish a joint national working forum
Cultivate personal contacts	• Visit each organization to review its activities • Send staff representatives to the other headquarter for short periods to familiarize with issues and constraints, and foster better cooperation among staff at lower levels • Appoint named individuals in each organization responsible for liaison with the other, and provide the necessary resources
Make data bases work	• Post cross-referencing links, with scope notes, on both websites • Use existing international databases to extend own databases
Regional and social networking	• Reach out to each client base through inputs to each organization's newsletters, periodicals and other publications • Consider using social networking sites such as LinkedIn and Facebook to strengthen the contacts between individuals in the two bodies, recognising that human contact may be the best driver for collaboration • Use regional networking to spread the influence of the NSB and the TPO
Technical regulation and market failures	• Develop closer cooperation between the NSB and TPO, where the NSB, as the custodian of the National WTO Enquiry Points, can use the TPO's extensive contacts and address lists to raise industry awareness of technical regulations in target markets or with main trading partners • Develop close cooperation between the TPO and the NSB, where the TPO as recipient of rapid alert system information in export markets regarding product or service quality problems, can use the NSB's know how to help provide solutions and help industry maintain its market presence
Training, workshops, seminars and the like	• Organize workshops and/or seminars to sensitize manufacturers and suppliers to quality and technical regulations in target markets on a sectoral basis • Provide awareness and, where relevant, training in HACCP, ISO/IEC 17025, ISO 9001, ISO 14001, and ISO 22000 to manufacturers, suppliers, laboratories (private and public), consultants and quality auditors – particularly when in collaboration with donor organizations that could provide international experts as resource persons.

Source : Author's elaboration

Figure 12 : Making NSB and TPO cooperation work successfully

8.2.1 Funding of collaborative efforts

If the NSB and the TPO have agreed on collaborative efforts such as training, awareness campaigns and monitoring of international standards and technical regulations, who should pay for it? Should the organizations re-prioritise their spending or seek additional funding from the principal funding sources? These issues should be agreed at the outset to ensure that good intentions are not compromised by any misunderstandings over funding. This is even more important if the "good for country" activities of the two organizations are funded largely by the same ministry. In this case it might help to approach the ministry jointly. Any such funding request would be strengthened if the collaborative efforts reflect official government policies.

8.2.2 Priority areas

The TPO and NSB should focus their efforts where it will have the biggest impact on the value chain of exportable products and services, otherwise they may find that those efforts are spread too widely to be effective. For example, should the TPO promote existing products and services only, or should it also monitor technology and fashion trends in the target markets, feeding the information back to the industry and to the NSB for capacity building? Both approaches are covered in the best-resourced TPOs, but how might this be most effectively achieved in others? One way would be for the NSB and TPO to work together to develop a sub-sector value chain, and identify where their individual contributions and collaboration could enhance the export potential of the industry most.

8.2.3 Different ministries

The TPO and NSB are hosted by different ministries in some developing economies. This can make collaboration more difficult since every action must be approved by ministry officials, in other words, bureaucracy can get in the way of common sense. In this case it may be appropriate to develop an MoU to be agreed and signed by the senior official, e.g. the permanent secretary. This agreement would establish appropriate levels of collaboration on a day-to-day basis, and regulate funding. Similarly, ministries are sometimes split for political expediency and the NQI organizations are allocated to different parts of the split. In both cases the organizations should initiate the appropriate cooperation and communication channels, if necessary, through the relevant ministerial offices.

8.2.4 Different regulatory agencies

The fragmentation of the administration of technical regulations and SPS measures can be a major issue in developing and developed economies. Several ministries and agencies may be involved, e.g. health, labour, transport, housing, etc. Each will be responsible for regulations in its own area, although these can overlap (e.g. two authorities may be responsible for fax machines, one for electrical safety and the other for telecoms connectivity), but

Box 2 – The strategic framework – bringing it all together

Some facts

- Developing and least developed countries have limited resources to address all export quality requirements
- There is a distinct lack of communication and understanding between NSBs and TPOs
- TPOs maintain contacts with the business community and industry sectors
- NSBs have linkages with standards and quality institutions locally and abroad
- Trade negotiations increasingly make reference to standards and quality

A strategic approach to maximise impact

- TPOs to identify exports that have the potential to become major export earners
- TPOs to develop specific trade policies for those exports
- NSBs to advise TPOs on export quality requirements
- NSBs to evaluate the available export quality support infrastructure
- Where the country lacks in capacity, TPOs and NSBs could make joint funding submissions to the government
- Where the country lacks in capacity, the NSB could also collaborate with its counterparts abroad
- NSBs to develop and publish national standards or adopt international standards for those export commodities
- With the publication of national standards, NSBs should liaise with research and development institutions involved with such exports
- NSBs to participate actively in the development of international export standards.

Guiding principle

Focusing limited resources on projects that will give a bigger return is better than allocating those resources thinly across many areas.

Source : *Presentation of Papua New Guinea at the consultation*

the coordination between ministries and the NSB may be weak or nonexistent. This can make it difficult for the exporter to obtain the necessary information and conformity assessment certification. There are no easy solutions, although high quality national enquiry points, NSB and TPO information services can alleviate the situation.

8.2.5 Lack of infrastructure

TPOs and NSBs in many developing economies often do not have the necessary infrastructure and manpower capacity to support testing laboratories, auditing, national accreditation, metrology and calibration and meet the technical requirements of the more sophisticated markets. This is a serious obstacle to providing help to exporters since buying these services from abroad is an added expense that can render them less competitive. While donors are normally willing to support laboratory infrastructure development, these donor projects generally do not encompass buildings, environmental controls and running costs. These would be the responsibility of the institution or the government of the country receiving the aid.

Major problems can arise when the amount of business does not warrant the establishment of an NQI service. Between 200 to 250 laboratories and certification organizations are required to make an accreditation body self-sufficient, and then it can take up to seven years to obtain international recognition. Nevertheless, without proper accreditation, an NQI service would have difficulty gaining acceptance in foreign markets. Alternatively, accreditation services can be obtained from internationally recognized foreign accreditation bodies, although this is usually a more expensive option. In this case, the government may have to accept the foreign accreditation body as the *de jure* national accreditation body. The NSB can play a major role in facilitating such an agreement.

These are challenging issues because the investments required can significantly exceed the capacity of the NSB, TPO and government. However, cooperation between the NSB and the TPO can help build the necessary infrastructure for those products that would make a real difference to the export performance of the country, through a willing donor community.

8.2.6 Lack of downstream links

In some developing economies, the NSB and TPO may not have strong links to the industrial, manufacturing, and business association networks that could support them in their endeavours. Often this is because they tend to be governmental-style bureaucracies, and not yet familiar with adopting the "friend of industry" role. This can only be rectified by TPOs and NSBs themselves through intensive repositioning. Such a programme should start with a change in thinking, with the objective of becoming a service-orientated organization proactively serving its stakeholders, rather than a government office reacting to requests.

Box 3 – Linking NSBs and TPOs – initial action points from participating countries

- The TPO representative should call a meeting with the TBT and SPS enquiry points to improve communication and share understanding of the quality and technical regulations and SPS measures, and consider potential responses
- Post links to the TPO and NSB on each website, and update existing search engines to include TPO/NSB links. These will be extended to all TSIs to make it easier for enterprises to find the support service they require
- Now that the national TPO and NSB have met during the consultations, they should meet again in their home country. As these organizations usually sit under the same ministry, it may not be necessary to develop a formal policy framework. In promoting collaboration, the intention is to work towards a national workshop attended by all exporters. ITC and ISO expertise will be sought to help move this process forward
- An *alumni* should be established between countries participating at the consultation to identify joint projects that could be implemented
- Following the formal report to the TPO and NSB CEOs regarding the consultation outcomes, a meeting is to be held with TPO and NSB colleagues to plan the way forward
- Partnerships between TPOs and NSBs have been strengthened during the consultation. The intention is for this to continue in the home country, including developing a plan for future collaboration to be communicated throughout the country
- The experiences of other participating countries will be shared back home. Existing portals will be upgraded to contain relevant information on quality. It was noted that challenges exist in strengthening TPO/NSB relationships due to different mandates and lead ministries
- Exporters will be provided with greater access to information held by the NSB, and to facilitate this, one officer from the TPO and NSB will be designated as direct liaison with the partner organization
- An MoU will be drawn up between the NSB and TPO to support mutual cooperation in providing assistance in the area of quality to SME clients
- Collaboration with business associations is planned to highlight the quality issues faced by their members.

Source : *Presentation of participating countries at the consultation*

9. Conclusion

Although international trade is increasing, there is a risk that the growing complexity of quality and regulatory requirements will become insurmountable obstacles to exporters from developing countries. This is especially so of the SME sector. Potential exporters therefore need considerable help with:

(i) Information about the regulatory and market requirements for their product or service

(ii) Services to determine compliance of the product or service with requirements

(iii) Support in redesigning the product or service until it does comply.

NSBs and TPOs have been established in most developing countries. They have specific mandates, even though they frequently fall under the ministry responsible for trade. The NSB is the custodian of national standards and the representative of the country in international and regional standards organizations. In most cases the NSB also provides conformity assessment services. The TPO, on the other hand, is the source of much needed market information and acts as a facilitator to support trade. In combination, these two organizations can provide the support that exporting SMEs require. Unfortunately, in most developing countries, cooperation between the NSB and the TPO is often weak or nonexistent. To achieve such cooperation requires:

(i) A better understanding at government policy level of the services on offer, reflected in policy documents

(ii) A willingness to collaborate by NSB and TPO management

(iii) A willingness to connect information systems in a meaningful way

(iv) Agreement to provide training and consultancy in standards implementation.

The paths forward for such cooperative efforts, presented in this handbook, are based on discussions between NSB and TPO representatives from many countries who met at the joint ISO/ITC workshop in Kuala Lumpur. Different avenues of cooperation are outlined to reflect country and organizational differences. Nevertheless, it would be highly beneficial if NSB and TPO organizations in developing countries could cooperate more closely to serve their nations and SME sectors better.

Cooperation can lead to stronger and more comprehensive support systems for the export industry of a developing economy, enhanced competitiveness for its exporters, and, ultimately, to a better quality of life for all its peoples. Both ISO and ITC are willing to support such efforts, and would welcome information on success stories, to help refine the thinking and guidance given in publications and promotional activities.

10. References and definitions

10.1 References

- *ISO/IEC Guide 2:2004, Standardization and related activities – General vocabulary,* International Organization for Standardization, Geneva
- ISO 9001:2008, *Quality management systems – Requirements*, International Organization for Standardization, Geneva
- ISO 14001:2004, *Environmental management systems – Requirements with guidance for use*, International Organization for Standardization, Geneva
- ISO/IEC 17000:2004, *Conformity assessment – Vocabulary and general principles*, International Organization for Standardization, Geneva
- ISO/IEC 17020:1998, *General criteria for the operation of various types of bodies performing inspection*, International Organization for Standardization, Geneva
- ISO/IEC 17021:2006, *Conformity assessment – Requirements for bodies providing audit and certification of management systems*, International Organization for Standardization, Geneva
- ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*, International Organization for Standardization, Geneva
- ISO 22000:2005, *Food safety management systems – Requirements for any organization in the food chain*, International Organization for Standardization, Geneva
- ISO/TS 16949:2009, *Quality management systems – Particular requirements for the application of ISO 9001:2008 for automotive production and relevant service part organizations*, International Organization for Standardization, Geneva
- SA 8000:2008, *Social Accountability*, Social Accountability International, New York

10.2 Definitions

Most of the following definitions have been obtained from ISO/IEC guides and standards, or from WTO agreements, as indicated in parenthesis. For some, two definitions are provided to indicate differences of interpretation that should be considered, depending on the context of the discussion.

Accreditation [ISO/IEC 17000]

Third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks.

Conformity assessment [ISO/IEC 17000]

Demonstration that specified requirements relating to a product, process, system, person or body are fulfilled.

NOTE 1 – The subject field of conformity assessment includes activities such as testing, inspection and certification, as well as the accreditation of conformity assessment bodies.

NOTE 2 – The expression "object of conformity assessment" or "object" is used to encompass any particular material, product, installation, process, system, person or body to which conformity assessment is applied. A service is covered by the definition of a product.

Conformity assessment [WTO TBT Agreement]

Any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled.

Explanatory note:

Conformity assessment procedures include, *inter alia*, procedures for sampling, testing and inspection; evaluation, verification and assurance of conformity; registration, accreditation and approval, as well as their combinations.

Inspection [ISO/IEC 17000]

Examination of a product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgement, with general requirements.

NOTE – Inspection of a process may include inspection of persons, facilities, technology and methodology.

Metrology [International Vocabulary of Metrology – Basic concepts and general terms and associated terms (VIM)]

The science of measurement and its application.

NOTE: Metrology includes all theoretical and practical aspects of measurement, whatever the uncertainty or the field of application.

National Quality Infrastructure [Author's definition]

The National Quality Infrastructure (NQI) can be understood as the totality of the institutional framework (public or private) required to establish and implement standardization, metrology (scientific, industrial and legal), accreditation and conformity assessment services (inspection, testing, and product and system certification) necessary to provide acceptable evidence that products and services meet defined requirements, be they demanded by authorities (i.e. in technical regulation) or the market place (i.e. contractually or inferred).

Sanitary or phytosanitary measure [WTO SPS Agreement [18)]]

Any measure applied:

(a) To protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms

(b) To protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs

(c) To protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests

(d) To prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.

18) **www.wto.org/english/docs_e/legal_e/15-sps.pdf**

Sanitary or phytosanitary measures include all relevant laws, decrees, regulations, requirements and procedures including, inter alia, end product criteria; processes and production methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transport of animals or plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; packaging and labelling requirements directly related to food safety.

Standard [ISO/IEC Guide 2]

Document, established by consensus and approved by a recognized body, that provides, for repeated and common use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of an optimum degree of order in a given context.

NOTE – Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.

Standard [WTO TBT Agreement [19]]

Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Standardization [ISO/IEC Guide 2 [20]]

Activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context.

NOTE 1 – In particular, the activity consists of the processes of formulating, issuing and implementing standards.

NOTE 2 – Important benefits of standardization are improvement of the suitability of products, processes and services for their intended purposes, prevention of barriers to trade, and facilitation of technical cooperation.

Technical regulation [WTO TBT Agreement]

Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Testing [ISO/IEC 17000]

Determination of one or more characteristics of an object of conformity assessment, according to a procedure.

NOTE – Testing typically applies to materials, products or processes.

19) **www.wto.org/english/docs_e/legal_e/ursum_e.htm#dAgreement**

20) **www.iso.org/directives**

Appendix I : Programme of the consultation workshop

Tuesday 1 December 2009

08:30 – 09:00
Registration

09:00 – 09:30

Welcome

Welcome address from hosts (MATRADE and DSM) and organizers (ISO and ITC).

Dato' Noharuddin Nordin, CEO, MATRADE

Mr. Beer Budoo, Director, Development and Training Services, ISO

Mr. Shyam K. Gujadhur, Senior Adviser on Standards and Quality Management, ITC

Mrs. Fadilah Baharin, Director General, Department of Standards Malaysia (DSM)

09:30 – 10:00 Coffee Break

10:00 – 10:30

Introductions

Each TPO and NSB participant to briefly introduce themselves.

10:30 – 11:30

Session 1 : Exporter Competitiveness and Quality

This session sets the scene. We explore the meaning of quality, investigate to what extent quality requirements are affecting exports, and what the implications are from the perspective of developing country exporters and support institutions.

Moderator : **Mr. Rajinder Raj Sud**, Consultant, ISO

Speaker : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

11:30 – 13:00

Session 2 : Role of NSBs

Here we seek to gain a greater understanding of the role of NSBs. What are the mandates and challenges of NSBs? What are the constraints and opportunities they face? How can NSBs contribute to the work of TPOs, as far as quality issues are concerned, to foster export development and competitiveness?

Moderator : **Mr. Beer Budoo**, Director, Development and Training Services, ISO

Speaker : **Mr. Riyaz Ahmed Memon**, Director (WTO), Pakistan Standards and Quality Control Authority

13:00 – 14:00 Lunch Break

14:00 – 15:30

Session 3 : Role of TPOs

Here we seek to gain a greater understanding of the role of TPOs. What are the mandate and challenges of TPOs? What are the constraints and opportunities they face? How can TPOs contribute to the work of NSBs, as far as quality issues are concerned, to foster export development and competitiveness?

Moderator : **Mr. Bertrand Jocteur-Monrozier**, Senior Adviser, Trade Support Institution Strengthening, ITC

Speaker : **Mr. Alan Reynolds**, International Consultant, ITC

15:30 – 16:00 Coffee Break

16:00 – 17:30

Session 4 : Scope of Quality Requirements

Quality-related considerations exist at three levels: at supply-side, the business environment, and market-entry. How should these issues be addressed at each level by the policy makers, NSBs and TPOs, and by exporters? What are the linkages between the developmental impacts that may accrue from addressing these quality-related issues in the country?

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

Speakers:

Mr. Martin Kellermann, International Consultant, ITC

Mr. Deo Muni Shakya, Deputy Director General, Nepal Bureau of Standards and Metrology

Wednesday 2 December 2009

09:00 – 09:30

Session 5 : Introduction to Mapping Quality-Sensitive Value Chains

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

09:30 – 11:00

Breakout Series A : Mapping Quality-Sensitive Value Chains

This session builds upon the "Scope of Quality" session. Participants will map quality considerations at each stage along the generic value chains and highlight implications for policy makers, NSBs and TPOs, and for exporters. What are the key considerations and possible responses for each of the key sectors? The mapping will be undertaken in parallel breakout sessions for three broad sectors:

Agriculture and Agro-processing :

Map all quality considerations along a generic agriculture and agro-processing value chain and investigate the possible responses.

Moderator : **Mr. Rajinder Raj Sud**, Consultant, ISO

Manufactured Goods:

Map all quality considerations along a generic manufactured goods value chain and investigate the possible responses.

Moderator : **Mr. Martin Kellermann**, International Consultant, ITC

Services :

Map all quality considerations along a generic services value chain and investigate the possible responses.

Moderator : **Mr. Alan Reynolds**, International Consultant, ITC

11:00 – 11:30 Coffee Break

11:30 – 12:00

Reporting and Conclusions : Breakout Series A

Moderators of each breakout session will report on the conclusions and outcomes.

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

12:00 – 13:00

Session 6 : Bridging the Gaps

We look at what the NSBs and TPOs currently do and the issues that have come out of the previous sessions in order to perform a preliminary gap analysis in capacities, competencies, and support services.

Moderator : **Mr. Alan Reynolds**, International Consultant, ITC

Speakers:

Mr. Didit Yuan Permamadi, Centre of International Cooperation on Standardization, National Standardization Agency of Indonesia

Ms. Tupou Raturaga, General Manager, Fiji Islands Trade and Investment Bureau

13:00 – 14:00 Lunch Break

14:00 – 14:30

Session 7 : Introduction to Enabling Exporters to Meet and Exceed Quality Requirements

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

14:30 – 16:00

Breakout Series B : Enabling Exporters to Meet and Exceed Quality Requirements

Three parallel breakout sessions will take place to review :

Information :

What are the roles of TPOs and NSBs in providing information on quality requirements to exporting enterprises? What kind of information should they provide?

Moderator : **Mr. Alan Reynolds**, International Consultant, ITC

Capacity-building and Advisory Services :

What capacity-building and advisory services should TPOs and NSBs provide to export-oriented enterprises? How should such services be delivered?

Moderator : **Mr. Rajinder Raj Sud**, Consultant, ISO

Obtaining and Demonstrating Compliance :

What are the respective roles of TPOs and NSBs in enabling exporters to obtain and demonstrate compliance?

Moderator : **Mr. Martin Kellermann**, International Consultant, ITC

16:00 – 16:30 Coffee Break

16:30 – 17:00

Reporting and Conclusions : Breakout Series B

Moderators of each breakout session will report on the conclusions and outcomes.

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

17:00 – 18:00

Session 8 : Elements of the Partnerships – Key Considerations

What linkages currently exist between TPOs and NSBs? What are the key challenges faced by TPOs and NSBs to optimise impact resulting from such linkages? What are the key ingredients that should be taken into account to ensure a productive and mutually beneficial partnership between these institutions?

Moderator : **Ms. Ludovica Ghizzoni**, Adviser on Export Quality Management, ITC

Speakers:

Mrs. Dayani Dahanayake Yapa, Assistant Director (Marketing and Promotions), Sri Lanka Standards Institution

Mr. Senen Perlada, Director, Bureau of Export Trade Promotion, Philippines

Thursday 3 December 2009

09:00 – 09:30

Session 9 : Introduction to Making the Partnership Work

Moderator : **Mr. Beer Budoo**, Director, Development and Training Services, ISO

09:30 – 11:00

Breakout Series C : Making the Partnership Work

Three parallel breakout sessions will take place to review:

Capacities and Competencies :

What capacities and competencies at the operational level are needed to make the partnership between TPOs and NSBs work?

Moderator : **Ms. Roswitha Franz**, Project Manager, Development and Training Services, ISO

Resources and Networks :

What resources and networks are needed for an effective partnership between TPOs and NSBs?

Moderator : **Mr. Bertrand Jocteur-Monrozier**, Senior Adviser, Trade Support Institution Strengthening, ITC

Formal versus informal partnership arrangements/governance mechanism :

Do formal or informal partnership arrangements/ governance mechanisms make the partnership between TPOs and NSBs work? What kind of arrangements and mechanisms should be taken into account to ensure the partnership between these institutions works?

Moderator : **Mr. Alan Reynolds**, International Consultant, ITC

11:00 – 11:30 Coffee Break

11:30 – 12:00

Reporting and Conclusions : Breakout Series C

Moderators of each breakout session will report on the conclusions and outcomes.

Moderator : **Mr. Beer Budoo**, Director, Development and Training Services, ISO

12:00 – 13:00

Session 10 : The Strategic Framework – Bringing it all Together

Here we bring together all of the considerations in a strategic approach to quality management that links TPOs and NSBs for maximum impact.

Moderator : **Ms. Sophie Krantz**, Adviser, Export Strategy and Competitiveness, ITC

Speakers:

Mr. Dan Yansom, Assistant Director, Technical Standards Division, National Institute of Standards and Industrial Technology, Papua New Guinea

Mr. Pema Khandu, Foreign Trade Officer, Department of Trade, Ministry of Economic Affairs, Bhutan

13:00 – 14:00 Lunch Break

14:00 – 15:00

Session 11 : Operationalizing the Partnership

What are the practical implications to formalise the partnership between NSBs and TPOs?

Moderator : **Mr. Martin Kellermann**, International Consultant, ITC

Speakers:

Mr. Chandranath Som, Director, Federation of Indian Export Organizations, Ministry of Commerce, India

Mr. Ridzwan Kasim, Director of Standards, Standards Malaysia

15:00 – 15:45 Working Coffee Break

15:45 – 17:00

Session 12 : Country Responses – the Next Steps

Country participants will be asked to jointly describe what follow-up activity they propose to undertake, once back in their country, to initiate TPO and NSB collaboration and to specify their likely technical assistance needs to implement such activity.

Moderator : **Mr. Shyam K. Gujadhur**, Senior Adviser on Standards and Quality Management, ITC

Speaker : **Mr. Beer Budoo**, Director, Development and Training Services, ISO

Appendix II : List of participants of the consultation workshop

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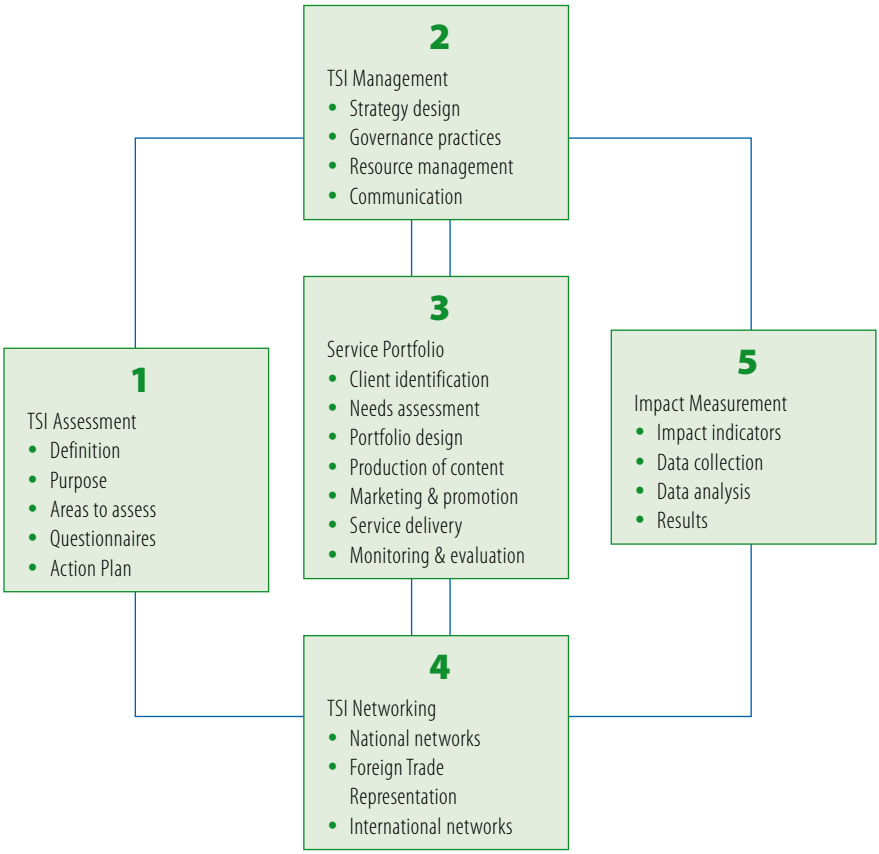
Appendix III : ITC's capacity building modules to strengthen TSIs



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