
6 Background to the Review and Approach

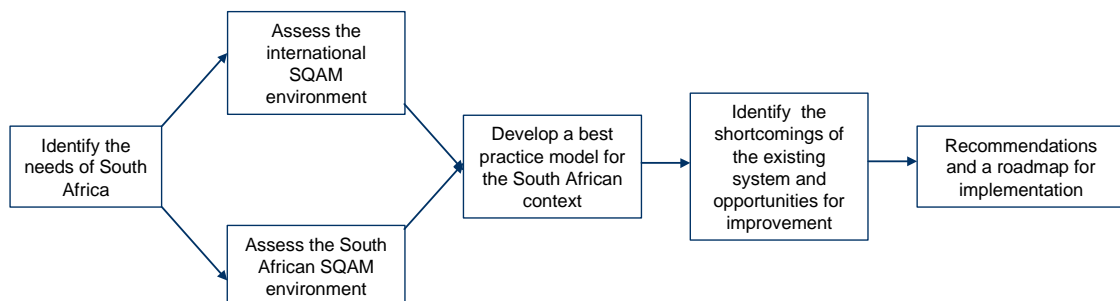
A subcommittee of the Trade and Industry Chamber of the National Economic Development and Labour Council (NEDLAC) commissioned a review of the South African SQAM infrastructure. The committee prepared the terms of reference for the review, and in an open tender process selected the following consultants to conduct the review:

- Bentley West Management Consultants (South Africa).
- National Association of Testing Authorities (Australia).
- National Measurement Laboratory of CSIRO Division of Telecommunications and Industrial Physics (Australia).
- Standards Australia International Limited (Australia).

The ultimate objective of the Review is to improve and enhance the competitiveness of South Africa's suppliers of products and services by ensuring that the SQAM infrastructure supports them in the most efficient manner.

The conduct of the Review was based on the approach of building understanding of all domestic and relevant international issues including research of past studies, the gathering of required information both domestically and through targeted international research, followed by in-depth analysis and the formulation of recommendations as appropriate.

Throughout the review there was regular interaction with major stakeholders, including the counterpart group coordinating the Review team's progression through the various phases of the project. The following flowchart and descriptions of its elements illustrate the overall methodology and project steps:



The needs of South Africa: The needs of South Africa from SQAM are the underlying factors that have to be considered when developing an optimum SQAM infrastructure for the country. The assessment of needs in this context ensures the relevance of the recommendations to the South African situation. The needs of the country are determined from four perspectives:

- International factors that will have an impact on the SQAM infrastructure.
- The environment in which it operates.
- South African national imperatives which are the overall socio-economic objectives and within the country; and
- The needs of stakeholders (SQAM institutions, consumers, government, labour, business, and SMME's).

The needs of stakeholders were established through a variety of mechanisms including public hearings, formal submissions on the Terms of Reference, questionnaire-based industry surveys, discussions with the primary institutions, round-table discussions with industry representatives, and assessment of prior research conducted. A total of 115 individual stakeholders, representative of all stakeholder groups, provided input through one or more of the above mentioned mechanisms.

International and domestic assessment: An extensive assessment of the international and domestic SQAM infrastructure was conducted. It was done from both a broad perspective that included an assessment of fundamental issues relating to strategy, governance, functions, funding, and performance of individual institutions, as well as from a narrower perspective related to specific Terms of Reference.

The international assessment consisted of visits to specifically selected countries (their SQAM institutions and their SQAM-related government departments), as well as a questionnaire-based survey of other countries. Australia, the United Kingdom, Brazil and Malaysia were visited, and Colombia, the USA, Germany, Sweden, the Netherlands, Singapore, Iceland and New Zealand were targeted through a questionnaire.

The domestic assessment included the analysis of the formal submissions received from primary SQAM institutions and other role-players in the SQAM environment, as well as follow up discussion sessions with the relevant organisations.

Best practice model, feature comparison and gap analysis: Best practices are derived from the analysis of international and domestic practices, with the needs of South Africa, in its unique situation, being taken into account to ensure they are best practices within a South African context. A comparison of the current South African situation with the best practice model indicated specific areas of strength, as well as areas for improvement.

Recommendations and recommendations roadmap: Recommendations are formulated to close existing gaps within the South African SQAM infrastructure, and to exploit opportunities. The viability of implementation of such recommendations was considered, as well as the risks associated with implementation. The requirements for the successful implementation of recommendations were therefore also broadly identified.

These recommendations are influenced by the best practice model and it is recognised that many recommendations will have to be implemented over a period of time. The *Way Forward* at the end of this Executive Summary provides a sequence of activities, a “roadmap”, that outlines how the South African SQAM infrastructure might be expected to evolve through progressive implementation of the Review’s recommendations.

7 South African Needs

The needs of South Africa, within a regional and global context, from the SQAM infrastructure are the key drivers of this review. The country needs are used as the basis on which to define the “ideal” SQAM infrastructure for South Africa against which the “current” situation and recommendations are formulated that will enhance the ability of the SQAM infrastructure to meet the needs of the country.

The following table headlines the needs of the country and links these needs through to the implications for SQAM. That is, what activities or qualities does the SQAM infrastructure need to achieve to satisfy South Africa’s current and future needs?

Country needs and the implications for SQAM

Country needs	Implications for SQAM
<p>International trends</p> <ul style="list-style-type: none"> • Globalisation • Changing regulatory regimes. • Changes in corporate status of SQAM institutions. • Regulatory reform • Accountability to government by SQAM institutions • Closer interactions with industry. • Technological advances 	<ul style="list-style-type: none"> • Participation, credibility and accountability • Mutual Recognition Agreements (MRAs) – trade facilitation • Elimination of Technical Barriers to trade (TBTs) • Harmonisation • Global competitiveness • Value added services • Sectoral industry focus • Support for SADC Trade Agreement implementation • SMME focus • Technology diffusion
<p>National imperatives</p> <ul style="list-style-type: none"> • Job Creation and Industrial Growth • Industrial Competitiveness • Regional Integration • National Human Resource Development • Development of SMMEs • Development of Indigenous Business • Adequate protection of the consumer 	
<p>Stakeholder derived needs</p> <ul style="list-style-type: none"> • Strategic direction and coordination • Management and control of technical regulations • Business/ user orientation • Relevance • Funding optimisation • Accountability and transparency 	<ul style="list-style-type: none"> • Integrated strategic planning • Multiple stakeholder needs driven • WTO requirements • Accessable to domestic stakeholders • Efficient and cost effective • Responsive - Industry “pull” rather than technology “push” • International recognition and harmonisation • Technology transfer and diffusion • Industry involvement (management, technical) • Optimum positioning, no-conflict of interest and no duplication • Technical excellence • First and third world considerations • State of development • SMME focus • Appropriate levels and targeting • Appropriate management processes • Delivery oriented • Measurable and accountable • National interest, rounded service • System viewed as ethical and operating in public interest • Clear delineation between public interest and commercial activities • To government for public interest funding • To clients with operational rules and requirements fully transparent • To international peers as required

The above summary is distilled from an analysis of the following:

- The need for the country to respond to international trends in its environment.
- The needs derived from national imperatives.
- The needs of the various stakeholders.

a) The need for South Africa to respond to international trends

Internationally, the Review found that SQAM environments are currently being influenced by at least seven distinct factors. They were:

- **Effects of globalisation on trade and SQAM institutions:** Considerable investment was apparent in the development of international recognition of counterpart SQAM institutions through establishment of extensive networks of mutual recognition arrangements (MRAs) This is considered necessary to support efforts to reduce technical barriers to trade.

Another current feature of globalisation is the significance of regional bodies, and their influences on the activities of SQAM institutions. A number of international MRAs are now being developed at the regional level both in government to government agreements and in MRAs amongst SQAM institutions. Regional bodies are also being used much more comprehensively to act on behalf of more global, international arrangements.

Increasing levels of adoption of international standards is another significant globalisation effect on SQAM institutions. All countries visited highlighted their need to invest heavily in representation on regional and international standards bodies, to ensure appropriate consideration of the needs of industry and others in their economies for development and adoption of international standards.

- **Impacts of changing regulatory regimes:** In developed countries, regulatory regimes have, in the main, become less prescriptive over recent years. This is providing SQAM institutions with opportunities to service conformity assessments of industry, utilities etc against codes of practice needed to provide confidence in a deregulated market.
- **Changes in corporate status of SQAM institutions:** Most of the countries surveyed in this Review have had significant changes over the past five years in the corporate status of one or more of their SQAM institutions. Some have moved out of government and many have

been established as not-for-profit organisations. Others have been required to separate non-core, national activities from other commercial or market competing activities.

- **Needs for better national coordination of technical regulations:** All countries visited in this Review have experienced difficulties in coordinating information on technical regulations. This is also experienced at a regional level and provides great challenges for SQAM institutions and the organisations they service to remain abreast of the multiple technical requirements of their trading partners .
- **Greater accountability to government by SQAM institutions:** The expectations of SQAM institutions from their governments is starting to become clearer with these typically now being formally defined and usually tied to funding and performance management. A number of governments were reviewing the roles and positioning of their various SQAM institutions during the course of this Review.
- **Closer interactions with industry:** Levels of inputs from industry to the operations, policies and services of SQAM institutions varied from country to country, and from type of institution to institution. It was widely recognised, however, that alignment with the needs of industry, is vital to the success of SQAM.
- **Technological advances:** Technological advances are having an impact on SQAM organisations in a variety of ways. Advances in manufacturing, information and communication technologies are reducing lead times for new product development and time to market realisation. This is placing increased pressure on SQAM organisations to increase their flexibility and responsiveness to the market to ensure that the standards development process does not lag too far behind the rate of change of technology. Communication technologies such as video-conferencing are enabling organisations to transcend time and distance barriers. The international SQAM environment, which is characterised by international cooperation in many activities such as standards development, is increasingly benefiting from such technologies. The influence of the Internet is more pronounced in some organisations than others. For standards development organisations it is presenting new channels and opportunities for the sales and marketing of products.

b) The needs derived from South Africa's national imperatives

The relevant needs derived from the national imperatives of South Africa are as follows:

- **Job Creation, Industrial Growth and Industrial Competitiveness:** Job creation has been identified as both a national and Presidential imperative and is a function of many factors including general economic growth, export led growth, SMME development and foreign direct investment. One of the primary purposes of the SQAM infrastructure should be to facilitate efficiency and competitiveness of South African industry, which is essential to growth and job creation.
- **Regional Integration:** South Africa has stated that regional integration is core to its current trade policy. In SADC, there are a number of SQAM related issues as far as harmonisation of standards, legal metrology and trade metrology are concerned. For mutual confidence under a free trade environment it will be imperative that appropriate structures are developed to demonstrate compliance with technical regulations. Critical success factors for SQAM are international linkages and the ability to satisfy WTO/ TBT requirements. South Africa has strong international representations for all SQAM activities and as such can continue to be the international conduit for all of the SADC members currently unable to be represented.
- **National Human Resource Development:** The development of human resources in South Africa is a key national imperative. The creation of a skilled human resource base will help plug one of the key resource gaps in South Africa. The role of the SQAM institutions, in this regard, is to ensure appropriate communication, training, and provision of information to enable the communities to understand the roles and importance of standards, quality, accreditation and metrology.
- **Development of SMME's:** SMME's are widely recognised as a potential engine for growth and the creation of employment opportunities. SQAM institutions must meet the service needs of SMME organisations to ensure their development and growth.
- **Development of Indigenous Business:** South Africa has a large sector of its population active in what can best be described as "indigenous business". This ranges from areas that produce items such as African art and curio items, indigenous medicines and other products, such as paints. Specific needs in this sector includes standards which provide products with enhanced credibility, greater integration into the mainstream economy and, of growing importance, protection of intellectual property for indigenous art.

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- **Adequate protection of the consumer:** The needs of consumers globally will continue to be based on the needs for information and protection from harmful or defective products and services. Often without realising it, consumers rely on the SQAM to provide such protection and there is a cost to provide the necessary regulation. The urban and natural environments are also the subjects of increasing concern both in South African and internationally. SQAM needs to provide confidence to the general community that decisions to protect the environment are based on reliable and credible technical information.

c) Stakeholder derived needs

The stakeholders of the SQAM environment can be placed into two categories:

- The SQAM “clients”, which include the Government, conformity assessment service providers, industry and consumers.
- The SQAM infrastructure, which consists of the primary official institutions namely the SABS, the NML, SANAS as well as conformity assessment service providers and the various organisations active in the quality arena.

The needs are different since the first group has requirements from the infrastructure and the second has needs which enable it to support the needs of its customers. An extensive analysis of the needs of the various stakeholders indicated that the needs are often conflicting. By comparing the needs of stakeholders in the four countries visited as part of this Review it facilitated identification of the relevance of similar needs in South Africa. The following major stakeholder needs were identified:

- **Strategic direction and coordination:** While most SQAM planning is done on an institutional basis, certain long term strategic decisions may need to take account of the actions of other SQAM institutions and may have a significant impact on their operations. There is, therefore, a need for some coordination between SQAM bodies and some SQAM-wide strategic planning. The extensive involvement of stakeholders is seen as key to successful long term planning of individual SQAM institutions as well as coordination of long term strategy development.
- **Management and control of technical regulations:** South Africa is actively involved in international trade and is a signatory to the World Trade Organisation’s Technical Barriers to Trade Agreement (WTO/TBT). Accordingly, South Africa needs an effective and efficient technical regulation system that takes into account its limited resources (financial and skills) while supporting the country’s obligations to the WTO/ TBT Agreement.

The regulatory environment within South Africa needs to be harmonised at provincial and national level so that regulations do not create artificial trade barriers within the domestic market. This is critical since domestic market success is often the springboard for export success. This need in South Africa for some effective centralisation of the technical regulation system has led to a key series of recommendations from the Review's findings.

- **Business/ user orientation:** For SQAM to meet the needs of business, the following are considered to be key requirements:
 - **Cost effective SQAM:** SQAM needs to provide its services in an efficient and, to the extent possible, a cost competitive basis. While many SQAM institutions (for valid reasons) are national monopolies, business needs to have a choice between a variety of service providers such as laboratories and other conformity assessment organisations, all operating in a level competitive environment. Accreditation assists provision of a level technical competence playing field amongst the community of available services.
 - **Responsive SQAM:** The SQAM infrastructure needs to regard business as its client and support it in its endeavours. This includes maintenance of ongoing awareness of customer needs and adoption of a customer-service culture.
 - **International recognition and harmonisation:** International credibility of South African business is enhanced by a SQAM infrastructure which itself is internationally recognised. Business needs the SQAM infrastructure to conclude mutual recognition agreements (MRAs) and particularly for foreign recognition of testing and certification results. The ability of the infrastructure to conclude additional agreements is facilitated by the level of international recognition the infrastructure has previously managed to achieve. In South Africa's case, its relevant SQAM institutions have already developed very comprehensive networks of international MRAs.
 - **Technology diffusion:** Business needs to have access to advanced technology (such as that developed through advances in measurement science) that keeps pace with developments in their industries. The building and maintenance of technical excellence within the SQAM institutions, and the diffusion of this expertise into industry, improves its competitiveness and the quality of its products and services.
 - **Industry involvement at both technical and strategic levels:** It is valuable for industry to be involved at both the technical and strategic levels of the SQAM infrastructure. This assists the setting of priorities for SQAM resource allocations to assist existing and emerging demands of industry, and ensures that the SQAM institutions are focussing

their attention on the real needs of industry rather than on their perceptions of those needs.

- **Optimum positioning, with no conflicts of interest and no duplication:** The need for appropriate positioning of SQAM institutions relates to the possibility that their national interest roles and activities may conflict with (or be perceived to conflict with) any purely commercial functions they undertake. Ideally, the major SQAM Institutions should not be competing with one another in their national roles, or perform functions that belong elsewhere. One essential principle is that any government funding support for the national interest functions of SQAM institutions should not subsidise any areas where they operate in a competitive market. A further principle is that SQAM institutions should not compete with their clients in any areas where they directly provide such services to their clients. For example, a national measurement institute should not compete for calibration services at levels where their client is providing such calibration services.
- **Technical excellence:** Technical excellence is a critical success factor for an effective and efficient SQAM infrastructure. Institutions need to ensure that they build and maintain levels of scientific and technological expertise. These skills need to be transferred to industry and used to improve the international credibility of the infrastructure. Institutional arrangements need to be such that this building of technical excellence is facilitated.
- **Relevance:** South Africa, being a developing nation, has specific socio-economic objectives. It is important that SQAM institutions consider both the developing and developed aspects of the economy as well as their regional obligations.
- **Funding optimisation:** South Africa is a country with many resource constraints and Government funding for SQAM needs to be balanced against the many competing priorities of health, education, welfare, security etc. This means that SQAM must very clearly articulate the value of its contribution to the country in the context of national goals and objectives. Furthermore, the SQAM model needs to ensure that there is no artificial cross-subsidisation between institutions, or within institutions.
- **Accountability and transparency:** The activities of the various SQAM institutions need to be open and subject to scrutiny and should not be dominated by any vested interests such as government, academic, or business interests. The SQAM system must be viewed as ethical and operating in the public interest. This can only be achieved through financial transparency and transparency of the operational rules that apply to their national roles. For maintenance of international MRAs, SQAM institutions are obliged to be accountable to their international peers. This involves them being subject to rigorous

evaluations by their international counterparts for compliance with international codes of best practice. This has significant costs but is an essential national investment in maintaining credibility for the SQAM infrastructure and the industries it serves.

8 Special Characteristics of South African Needs

When assessing the needs of South Africa as a country particular notice needs to be taken of those issues that make South Africa different. Some of these special, local features include the following:

- The South African economy has both first and third world components.
- Much of South African industry remains inwardly focused and has yet to address the realities of international competition. An intense focus on competitiveness as well as an external market orientation needs to be attained.
- South Africa operates in a regional context where many of the neighbouring countries are far behind in terms of state of economic and technical development, availability of resources, and the ability to meet the requirements of global trade.
- The South African economy, through necessity, is undergoing the transition from a pure commodity-based economy to a value-adding producer.
- The South African economy is also undergoing a shift from being highly regulated to a more competitive environment through the privatisation of many formerly state owned enterprises as well as the deregulation of specific markets.