

**QUALITY FOR AFRICA**



# **PAN-AFRICAN QUALITY INFRASTRUCTURE**

**Structure – Function – Impact**

## ACKNOWLEDGEMENTS

This background document is a result of an iterative structural process. The cornerstone has been laid in Nairobi, April 2011, when the chairpersons and secretaries of the Pan-African Quality Infrastructure (PAQI) institutions met the first time. At that meeting the four institutions

- African Accreditation Cooperation, AFRAC
- Intra-African Metrology System, AFRIMETS
- African Electro-technical Standardization Commission, AFSEC, and
- African Organisation for Standardization, ARSO

agreed to cooperate by regularly sharing information on each other's activities and whenever possible participating at each other's annual general assembly. The four pillars of the PAQI produced a document that has been presented to the African Union Commission (AUC) as a basis for engaging the latter to formalize the relationship between the African Union and the PAQI. Based on the document and various other engagement efforts, discussions took place between the AUC, PAQI and NEPAD representatives between April 2011 and November 2012.

It was thus agreed to have a second meeting of the PAQI institutions (Addis Ababa, November 2012) with the aim of updating each other on the developments realized in each structure, and to engage AUC officials in further developing the 'PAQI recognition by the AU' issue.

This meeting also considered the following two documents

- Pan-African Quality Infrastructure Document (Draft), and
- Integrated Pan-African Quality Infrastructure – Memorandum of Understanding concerning Standardisation, Accreditation and Metrology

which had been prepared as part of the formal development of the PAQI structures and also as a basis for future cooperation.

At the 3rd PAQI stakeholder meeting (Pretoria, February 2013) the Pan-African Quality Infrastructure Document was finalized. The signing of the Integrated Pan-African Quality Infrastructure – Memorandum of Understanding concerning Standardisation, Accreditation and Metrology, is considered as an institutional milestone for the improvement of quality for Africa.

The hard work of guiding and facilitating the process and drafting the Pan African Quality Infrastructure Document by Walter Okoko, NEPAD advisor, is duly acknowledged.

On the part of AUC special mention should be made of Mr Nadir Merah, Head of Trade Division, and Mr Hussein Hassan Hussein, Head of Industry Division, for their invaluable contributions and advice.

Dr Elsabe Steyn, AFRAC secretary, prepared the draft of the Memorandum of Understanding and coordinated its approval process.

Valuable inputs and technical advice were provided by the members of the stakeholder group:

Mr Hassan Shaarawi, AFRAC Chairperson (past)  
Mr Ronald Josias, AFRAC Chairperson  
Mr Mourad Ben Hassine, AFRIMETS Chairperson  
Mr Paul Date, AFRIMETS Vice Chair  
Mr Joel Kioko, AFRIMETS Vice Chair  
Mr Ivan Wills, AFRIMETS Secretariat  
Mr Claude Koutoua, AFSEC President  
Mr Paul Johnson, AFSEC Executive Secretary  
Dr Hermogène Nsengimana, ARSO Secretary General

Special mention and acknowledgement is made of the moderator, Dr Oswald Chinyamakobvu, for guiding the discussions and consolidating the PAQI document.

A word of appreciation is reserved for the Physikalisch-Technische Bundesanstalt, International Technical Cooperation, Germany, for funding not only this initiative but also supporting projects of the Pan-African Quality Infrastructure institutions. In this regard special mention is made of Ms Kathrin Wunderlich, PTB project coordinator, and Mr Martin Kaiser, the responsible PTB consultant.

Pretoria, March 2013

The PAQI initiative is supported by



# CONTENTS

ACKNOWLEDGEMENTS .....	II
CONTENTS .....	III
LIST OF ACRONYMS .....	VI
1. PREAMBLE.....	1
1.1 Background .....	1
1.2 Need for an Integrated Pan-African Quality Infrastructure .....	3
1.3 Benefits of a Pan-African Quality Infrastructure .....	3
2. THE PAN-AFRICAN QUALITY INFRASTRUCTURE (PAQI).....	5
2.1 Vision .....	5
2.2 Mission.....	5
2.3 Objectives.....	5
3. PROPOSED STRUCTURE .....	6
3.1 Structure of the Pan-African Quality Infrastructure.....	7
3.2 The PAQI Joint Committee .....	7
3.3 Relationship between the PAQI Joint Committee and the AUC.....	7
3.4 Functions of the Liaison Office/PAQI Joint Committee Secretariat.....	8
3.5 Financing of the Liaison Office/PAQI Joint Committee Secretariat .....	8
4. FUNCTIONS OF THE PAN-AFRICAN QUALITY INFRA-STRUCTURE ORGANIZATIONS AND CURRENT STATUS .....	9
4.1 The African Accreditation Cooperation (AFRAC) .....	9
4.1.1 Objectives .....	9
4.1.2 Programmatic Thrust.....	9
4.1.3 Financing .....	9
4.2 The Intra-Africa Metrology System (AFRIMETS) .....	10
4.2.1 Objectives and Programme Thrust .....	10
4.2.2 Financing.....	11
4.3 The African Electrotechnical Standardisation Commission (AFSEC) .....	11
4.3.1 Objectives and Programme Thrust .....	11
4.3.2 Financing.....	12
4.4 The African Organisation for Standardisation (ARSO).....	12
4.4.1 Objectives .....	12
4.4.2 Programme Thrust.....	12
4.4.3 Financing.....	13
5. IMPACT OF THE PAN AFRICAN QUALITY INFRASTRUCTURE BEING RECOGNISED BY THE AU .	14
6. CONCLUSION.....	15

## LIST OF ACRONYMS

ACS	ARSO Central Secretariat	MLA	Multilateral Recognition Arrangement
AFRAC	African Accreditation Cooperation	MoU	Memorandum of Understanding
AFSEC	African Electro-technical Standardization Commission	MRA	Mutual Recognition Arrangements
AFRIMETS	Intra-African Metrology System	NEPAD	New Partnership African Development
AFT	Aid for Trade	NPCA	NEPAD Planning and Coordinating Agency
AMCEN	African Ministerial Conference on Environment	NMI	National Metrology Institute
AMU	Arab Maghreb Union	NSBs	National Standards Bodies
APLAC	Asian Pacific Laboratory Accreditation Cooperation	OAU	Organisation of African Unity
ARS	African Standards	OIML	Organisation Internationale de Métrologie Légale
ARSO	African Organisation for Standardization	PIDA	Programme for Infrastructure Development in Africa
ASHAM	African Standards Harmonization Model	PAC	Pacific Accreditation Cooperation
AU	African Union	PAQI	Pan-African Quality Infrastructure
AUC	African Union Commission	PT	Proficiency Testing
BIPM	Bureau International des Poids et Mesures	QI	Quality Infrastructure
CAADP	Comprehensive African Agricultural Development Programme	QMS	Quality Management Systems
CAB	Conformity Assessment Bodies	RECs	Regional Economic Communities
CAMI	Conference of African Ministers of Industrialization	RI	Regional Integration
CAMT	Conference of African Ministers of Trade	RT	Regional Trade
CEN-SAD	Community of Sahel-Saharan States	RMO	Regional Metrology Organisation
CIPM	Comité International des Poids et Mesures	SADC	Southern African Development Community
COMESA	Common Market for Eastern and Southern Africa	SI	International system of units
EA	European Accreditation	SQMT	Standards, Quality Assurance, Metrology and Testing
EAC	East African Community	THC	Technical Harmonization Committee
ECCAS	Economic Community of Central African States	TBT	Technical Barriers to Trade
ECOWAS	Economic Community of West African States	UNECA	United Nations Economic Commission for Africa
EPA	Economic Partnership Agreement	UN	United Nations
IAAC	Inter-American Accreditation Cooperation	UNIDO	United Nations Industrial Development Organization
IAF	International Accreditation Forum	WAQP	West African Quality Program
ICT	Information and Communication Technology	WSC	World Standards Cooperation
IEC	International Electro-technical Commission	WTO	World Trade Organisation
IGAD	Inter-Governmental Authority on Development		
ILAC	International laboratory Accreditation Cooperation		
ISO	International Organisation for Standardisation		
MDGs	Millennium Development Goals		

## 1. PREAMBLE

The attainment of the Millennium Development Goals (MDGs) remains a challenge for most African countries as this is closely linked to economic and social development. A well coordinated and integrated Pan-African Quality Infrastructure will boost both intra-African and Global trade, which could foster the attainment of the MDGs.

In order to

- boost intra-Africa trade,
- lay the basis for Africa's effective participation in global trade,
- strengthen her negotiating position with her major trading partners,
- ensure the acceptance of Africa's goods and services in export countries,
- provide for recognition of Africa's conformity assessment infrastructures as equivalent to those in the importing country, and
- ensuring public health, safety and the protection of the environment;

there is urgent need for a strong, sustainable and integrated approach to the continent's quality infrastructure, encompassing metrology, standards, accreditation and quality assurance. This is the essence for the establishment of a Pan-African Quality Infrastructure (PAQI) that is recognised by and integrated with the policy making bodies of the African Union (AU). Ultimately, this will ensure that the economic integration of Africa fully utilizes the potentials that quality brings in improving the competitiveness of African goods and services. A well-coordinated PAQI will contribute towards regional economic integration and but-tress market access of African goods and services in order to improve the current global market share of trade of Africa. It will also promote continent-wide industrial development by having an integrated framework for utilization of standards, measurement, conformity assessment and accreditation as foundations for conversion of primary products into value added goods that meet the requirements of global markets.

### 1.1 Background

In 2005 the World Trade Organization (WTO), realising that products from developing countries face a growing number of market requirements that are often difficult to comply with, launched the Aid for Trade (AFT) Initiative, with the aim of easing access of developing countries' products into international markets. While expounding on this initiative, UNIDO, in their 2009 publication, pointed out that there was need to upscale interventions to stimulate a critical mass of trade support capacity in developing countries and regions. It further pointed out that for this initiative to yield positive results, the private sector should be placed more prominently in the driver's seat. Trade, the report states, is now widely recognized by the international community, as a potential engine for export driven growth and wealth creation. Developing countries are therefore called upon to address trade related challenges, develop supply capacity, strengthen compliance related infrastructures and facilitate cross-border flows of goods and services.

In no continent is this call more relevant today than in Africa. This, it is argued, will put African goods and services at a competitive level against goods and services in the global market. There is therefore no doubt that regional integration, with a view to creating viable and sustainable markets, and availing wider economic space, remains a key strategy for Africa to transform itself from a continent of least developed and developing countries to a strong united block of developed nations. It is imperative that the region's economic space is widened to generate economies of scale for production and trade and to maximize on welfare functions.

Africa must protect its interests, hence the need to put in place, an integrated continental quality infrastructure with strong pillars for standardization, metrology, conformity assessment and accreditation. A functional Pan-African quality infrastructure must have strong linkages with the Regional Economic Communities (RECs) in Africa. The RECs in Africa have each established their own standards, measurement, conformity and accreditation systems, linking them to the national systems.

African political leadership has, on a number of occasions, pronounced itself on the need for Africa to put in place national standards bodies, national measurement and accreditation institutions, with strong voice and membership to international quality infrastructure institutions.

The Lagos plan of Action of 1980 was as a result of the African leadership's decision for the OAU and ECA to develop a framework detailing the Roadmap for the attainment of an African Common Market.

In 1991, the Abuja Treaty, creating the African Economic Community (AEC), was signed, fulfilling one of the major requirements of the Lagos Plan of Action. The Treaty recognizes the important role of quality infrastructure in the economic development of the continent.

Chapter XI, Article 67 of the Abuja Treaty lays out a common Policy on Standardization and Measurement Systems. This forms the basis for the (PAQI).

In this article:

*"1. Member States agree to:*

- a) *Adopt a common policy on standardisation and quality assurance of goods and services among member states; and*
- b) *Undertake such other related activities in standardisation and measurement systems that are likely to promote trade, economic development and integration within the Community; and strengthen African national and continental organisations operating in this field.*

*2. For the purposes of this Chapter, Member States agree to cooperate in accordance with the provisions of the Protocol concerning Standardisation, Quality Assurance and Measurement System."*

Since the signing of the Abuja Treaty, there has been significant progress in the establishment of national and regional quality infrastructure systems across the continent. At the continental level, progress has been witnessed in the development of PAQI bodies, which currently consist of the African Organization for Standardisation (ARSO), the African Electrotechnical Standardisation Commission (AFSEC), the Intra-Africa Metrology System (AFRIMETS),

and the African Accreditation Cooperation (AFRAC). These now form the main pillars of the PAQI (PAQI) architecture, with the ultimate purpose of benefiting national, regional and continental economies, through their collaboration and envisaged synergy.

According to UNECA's 2008 report on Africa's integration, lack of adequate quality infrastructure in roads, railways, electricity and other forms of energy, water, ICT and plant and equipment technology severely hampers production and sale of goods. To attain acceptable levels of quality, concerted efforts are needed to integrate the PAQI with economic integration in order to improve the quality of the physical infrastructure aforementioned. The PAQI, when properly integrated and coordinated, strengthens Africa's ability to achieve continental socio-economic goals in:

- a) intra-African trade;
- b) regional integration;
- c) Africa's trade with other countries and regions;
- d) industrial development;
- e) promotion of sustainable green economy;
- f) value addition and natural resource management;
- g) infrastructure development;
- h) improvement of the competitiveness of African goods and services;
- i) diversification of economies; and
- j) protection of public health, safety and the environment.

In the year 2010, intra-Africa trade remained low despite the positive trends in export growth. At the continental level, less than 10 per cent of total merchandise exports were destined to African countries. This low-level of intra-Africa trade illustrates the weakness of continental integration, highlighting the urgency with which RECs and the AU in collaboration with the PAQI institutions should deal with the obstacles, in terms of policy and resources regarding the development of quality infrastructure in Africa as a driver for trade.

## 1.2 Need for an Integrated Pan-African Quality Infrastructure

The African Union Commission Strategic Plan 2009-2012 under its Strategic pillar 2, paragraph 70, states:

*“It is intended that sustainable economic development will be achieved through accelerating infrastructure development to boost interconnectivity, reliability and cost effectiveness; promoting the growth of intra-Africa trade and investments and through integrating Africa into the global market”.*

*“In addition, promoting diversified industrialization; establishing a continental standards and quality assurance mechanism; developing the African private sector and informal economy; promoting agricultural development and food security through CAADP; promoting infrastructure development (including ICT, energy, transport and water infrastructure) through the PIDA and implementing programmes on productivity and competitiveness improvement – all these will also be prioritized in the context of responsible environmental and natural resource management.”*

The AU/NEPAD Africa Action Plan 2010-2015 under Trade, Industry, Market Access & Private Sector Development and Regional Integration in Africa spells out the following relevant objectives:

### Objective 1

*Building productive capacity and capabilities for converting comparative advantage into industrial competitiveness.*

### Objective 2

*Promoting actions that facilitate export of value-added products through the conversion of commodities into products.*

### Objective 3

*Enhancing trade linkages and market penetration for expanding the extent of the market for products.*

### Objective 4

*Promoting value chains by thinking globally and acting locally for job creation and poverty reduction.*

### Objective 5

*Developing small- and medium-sized enterprises (SMEs) and their linkages to large-scale enterprises for seizing opportunities for industrial expansion.*

### Objective 6

*Promulgating standardisation, accreditation, quality and metrology for effective global market integration.*

### Objective 7

*Fostering public-private sector partnerships (PPPs) for industrial development.*

### Objective 8

*Removing bureaucratic and administrative impediments to trade and investment.*

Substandard products and increasingly demanding market requirements are also identified as major challenges to the promotion of global and intra-Africa trade.

As a solution to these challenges, strategic objective 3 of the AUC Strategic plan (Promote sustainable economic development) sets out a strategy in paragraph 3.4 to “Establish a continental standards and quality assurance mechanism”. The structure of this Quality Assurance Mechanism is what is envisaged in Figure 2.

The quality infrastructure will also provide the necessary underpinnings that enable African businesses to compete nationally, regionally and internationally, meet customer requirements and manage risks.

### 1.3 Benefits of a Pan-African Quality Infrastructure

An integrated PAQI will have the following benefits as envisaged in Objective 6 of the 2010-2015 AU/NEPAD African Action Plan and Chapter XI, Article 67 of the Abuja Treaty:

- a) Capacity Development of relevant bodies in standardisation, measurement, conformity assessment and accreditation in a more unified way;
- b) Enhancement of consumer protection and improvement of living standards of the citizens of Africa in line with MDGs;
- c) Support of African technical regulatory framework with a view to removing unnecessary technical barriers to trade;
- d) A common quality policy and quality infrastructure will be realized at a continental level to facilitate economic integration of Africa;
- e) Cost effective standards, measurement, conformity assessment and accreditation services in Africa will be realized;
- f) It will provide a platform for the participation of African countries in quality infrastructure activities and exchange of knowledge in the fields of interest to boost inter-Africa and intra-African industrialization and trade;
- g) Fast tracking the adoption and implementation of common policies on measurement, standardization, conformity assessment and accreditation among Member States to promote industrialisation and trade in Africa;
- h) Harmonization of Regional Economic Community standards and conformity assessment procedures as well as accreditation to enhance market access and global trade around the WTO procedures;
- i) Support programmes for infrastructure development in Africa such as PIDA;
- j) Support to SPS programs where they interface with TBT issues.



## 2. THE PAN-AFRICAN QUALITY INFRASTRUCTURE (PAQI)

### 2.1 Vision

To be an efficient, effective, sustainable and internationally recognized PAQI contributing towards achievement of African socioeconomic goals.

### 2.2 Mission

To strengthen the regional and global competitiveness of Africa's goods and services and contribute towards an improved quality of life for the African people through prudent use of standards, measurements, conformity assessment and accreditation.

### 2.3 Objectives

- a) To promote the development of a coherent PAQI supporting the objectives of African integration in accordance with the Abuja Treaty;
- b) To strengthen the development and implementation of African policies on Standards, Measurement, Conformity Assessment and Accreditation that supports the realization of Africa's Economic integration and environmental sustainability;
- c) To provide timely Standards, Measurement, Conformity Assessment and Accreditation solutions to the region whilst upholding the values of openness, transparency and consensus;
- d) To develop effective relations with the AU and RECs in order to promote and reinforce the role of PAQI as a tool for supporting AU policies that enhance intra-African and global trade to improve quality of life;
- e) To represent Africa on all matters pertaining to standards, metrology, conformity assessment and accreditation; and
- f) To secure adequate funding for the PAQI to support capacity development in Standards, Measurement, Conformity Assessment and Accreditation in close collaboration with international partner organizations.

### 3. PROPOSED STRUCTURE

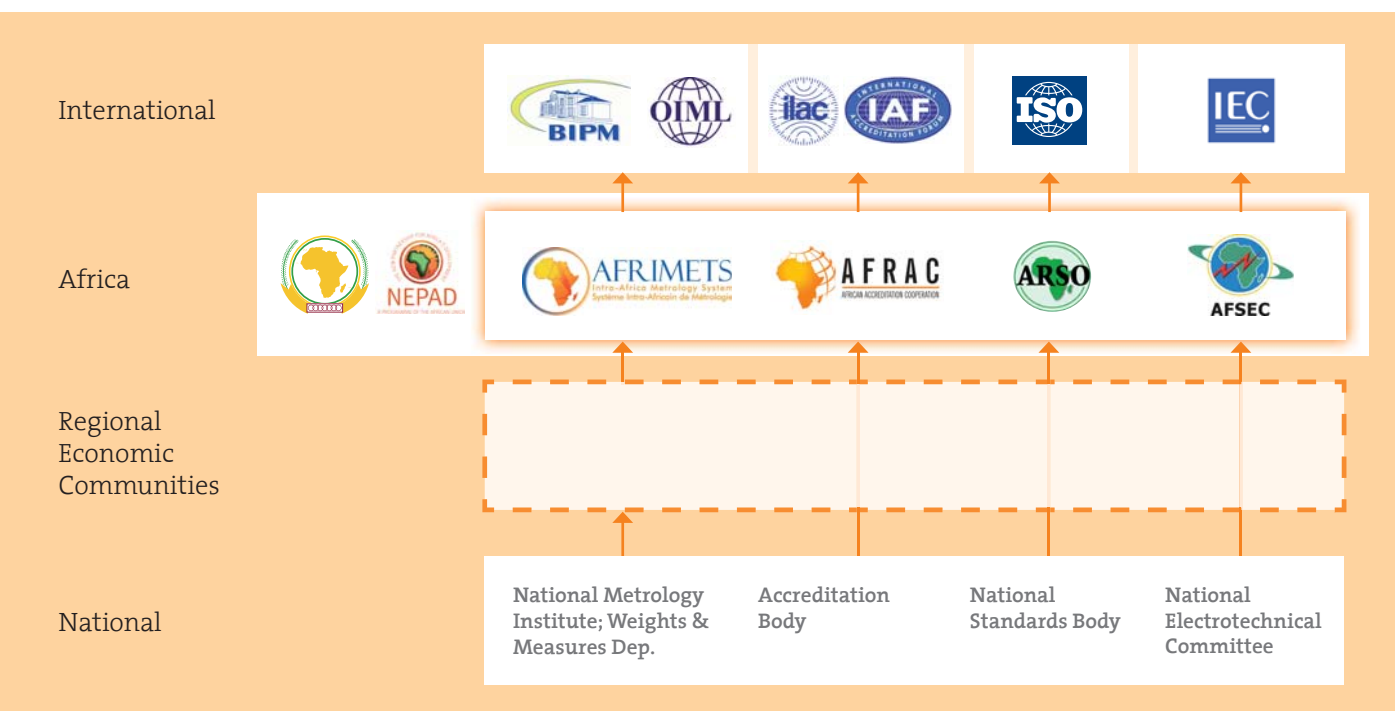


Figure 1: International quality infrastructure

The global architecture of quality infrastructure talks to the following components: metrology, standardization and accreditation and the way they are interrelated. At the international level metrology is represented by BIPM and OIML, standardization is represented by ISO and IEC, and accreditation is represented by IAF and ILAC as depicted in Figure 1.

#### 3.1 Structure of the Pan-African Quality Infrastructure

Based on the existing PAQI bodies (ARSO, AFRAC, AFRIMETS, and AFSEC), and in accordance with international norms and best practices, the proposed structure is as indicated in Figure 2.

#### 3.2 The PAQI Joint Committee

In order to further the cooperation objectives of the PAQI a joint PAQI committee called the Joint Committee is in place. The members of the Joint Committee consist of the Chairperson or nominated representatives of each PAQI

pillar and some stakeholder representatives (RECs, AUC, NEPAD, ICPs) participate as observers by invitation. The Chairperson of the Joint Committee is elected from within the PAQI representatives. The Secretariat is provided by the Chairperson's organisation.

The Secretariat is both a PAQI Joint Committee office as well as the liaison between the Joint Committee and the stakeholders, AU and others.

The Secretariat works with the four pillars (AFRAC, AFRIMETS, AFSEC, and ARSO) through the PAQI Joint Committee in formulating policies that use standards, measurements, conformity assessment and accreditation to drive infrastructure development and sustainable exploitation of African resources.

#### 3.3 Relationship between the PAQI Joint Committee and the AUC

Issues of standards, measurement, conformity assessment and accreditation are cross-cutting and span all departments of the AUC. It is proposed that the Joint Committee Secre-



Figure 2: Integrated PAQI Structure

tariat would serve as the liaison office between the PAQI Joint Committee and the AUC via the Trade and Industry Commission. The office should work very closely with the NEPAD Planning and Coordinating Agency (NPCA), to realize the objectives of the AU.

The Joint Committee Secretariat submits proposals for Africa-wide programmes that have far reaching effects to the respective contact point with draft decisions for consideration by PRC, through the established channels. The Joint Committee Secretariat liaises with PRC to advocate for policies to be considered in the Agenda of the AU Summits. He/She will also marshal support within PRC, through established channels, for the policies to be decided upon by the Executive Council of AU.

When decisions have been made either by the Summit or the Executive Council, they shall be expeditiously passed for action by the relevant quality infrastructure body.

### 3.4 Functions of the Liaison Office/ PAQI Joint Committee Secretariat

The Liaison Office shall be responsible for:

- Collating the proposals from PAQI bodies regarding policy directions on Quality Infrastructure in Africa;
- Providing logistic and administrative services to the Joint Committee; and
- Maintaining close working relationships with the leadership and technical levels of AUC organs to ensure quality infrastructure policies are submitted for consideration at the Executive Council and the AU Summit.

### 3.5 Financing of the Liaison Office/ PAQI Joint Committee Secretariat

The organisation hosting the Chairmanship will provide the necessary resources for the operations of the Joint Committee Secretariat/ Liaison office.

## 4. FUNCTIONS OF THE PAN-AFRICAN QUALITY INFRA-STRUCTURE-ORGANIZATIONS AND CURRENT STATUS

### 4.1 The African Accreditation Cooperation (AFRAC)

The African Accreditation Cooperation (AFRAC) was established in 2010 following three years of extensive consultative preparatory work including the development of its bylaws and project document. AFRAC held its first general assembly in September 2010 in Cairo Egypt.

AFRAC is a cooperation of accreditation bodies, subregional accreditation cooperations and stakeholders whose objective is to facilitate trade and contribute to the protection of health, safety and the environment, in Africa and improvement of Africa's competitiveness. In order to achieve the above objective, AFRAC will build confidence in African produced goods and services thus facilitate their acceptance on the global market through Mutual Recognition Arrangements (MRA).

The mission of AFRAC is thus to cooperate in building capacity in African accreditation with the goal of sustaining an internationally acceptable mutual recognition arrangement.

#### 4.1.1 Objectives

The objectives of the African Accreditation Cooperation are the following:

- a) To support trade in Africa and enhance global market access by removing technical barriers to trade, and in both the voluntary and regulatory areas;
- b) To facilitate the recognition of conformity assessment certificates and reports worldwide;
- c) To improve the competitiveness of African goods and services; and
- d) To facilitate health and safety of the public and the environment.

#### 4.1.2 Programmatic Thrust

- a) To foster collaboration amongst member states having national or multi-economy accreditation bodies;
- b) To assist and support the establishment of national or multi-economy accreditation bodies as needed;
- c) To create and maintain a system for the recognition of accreditation bodies in member states or multi-economy states within the framework of and consistent with global MRA/MLA international requirements;

- d) To coordinate, cooperate and liaise with regional and international organizations concerned with accreditation such as the International Laboratory Accreditation Cooperation (ILAC), the International Accreditation Forum (IAF), Inter American Accreditation Cooperation (IAAC), Asian Pacific Laboratory Accreditation Cooperation (APLAC), Pacific Accreditation Cooperation (PAC) and European Accreditation (EA);
- e) To represent Africa in all matters of accreditation within the international forum;
- f) To promote and expand the recognition and acceptance of the mutual recognition arrangement in Africa and internationally in both the voluntary and regulatory areas; and
- g) To develop and manage training and technical assistance programs for transferring expertise and technical information, sharing of information and activities identified to assist new or developing accreditation programs, among present and potential members;
- h) To harmonize accreditation practices within Africa in compliance with international requirements;
- i) To establish an information system (data base) including for example information on accreditation bodies, proficiency testing (PT) schemes and assessors;
- j) To promote the development of training and assessment programmes, in the areas of accreditation and conformity assessment.

#### 4.1.3 Financing

AFRAC is required to be appropriately self-sustaining in terms of the costs for its day to day operational activities. However, AFRAC would require financial support from the AUC and/or Development Partners to function effectively in representing AUC in matters of accreditation within international fora e.g. participation in the ILAC and IAF meetings and also for specific projects required to assist Member States in developing their accreditation infrastructure.

AFRAC's operations will be funded from the following sources:

- a) Money allocated by Member States who hold the Chair and Secretariat
- b) Membership fees;
- c) Training fees;
- d) Fees generated as a result of projects;

- e) Developing partner's funding support; and
- f) AUC support for specific projects and international liaison.

## 4.2 The Intra-Africa Metrology System (AFRIMETS)

The Intra-Africa Metrology System (AFRIMETS) was formed in the year 2006 with membership drawn from Subregional Metrology Organizations (SRMO). The Principal members of AFRIMETS are the 6 subregional metrology organizations, CEMACMET (CEMAC), EAMET (EAC), MAGMET (AMU), NEWMET (ECOWAS, COMESA), SADC MET/MEL (SADC) and SOAMET (UEMOA). The major mandates of AFRIMETS are:

- a) to promote harmonisation of scientific, industrial and legal metrology issues across Africa and to operate as a fully-fledged RMO, in accordance to the Mutual Recognition Arrangement of the International Committee for Weights and Measures, the CIPM MRA; and
- b) to facilitate inter and intra Africa trade through use of accurate measurements and ensuring safety, health of consumers and environmental protection.

Accurate, internationally acceptable measurement is crucial to ensure competitive manufacturing, to foster trade and to protect the consumer. The collective term for the process to establish traceability to the international system of units (SI), disseminate this traceability to industry (manufacturing and service), the health sector, law enforcement and environmental monitoring, and to enforce accurate measurement where it impacts consumer health or safety, is called metrology.

Metrology has two components:

- a) Scientific and Industrial Metrology – realisation of the measurement units, develop and maintain physical national measurement standards and determine their comparability to other national (or international) measurement standards. This is then disseminated to customers through calibration of reference standards of calibration laboratories, or directly to measurement facilities in industry. For chemical measurements, certified reference materials, traceable to national standards, are produced. Scientific

and industrial metrology is undertaken by Metrology Institutes either as stand-alone bodies, part of science councils or in many countries in Africa, by a Metrology section within National Standards Bodies.

- b) Legal Metrology (Weights and Measures) – inspects the measurement community for compliance to technical regulations that stipulates measurement requirements for legal purposes. This assesses the validity of measurements for use in trade within a country or a region. It forms a basis for common trade between individuals and facilitates consumer protection. In Africa Legal metrology is represented mostly by departments of Weights and Measures in governments, or in some countries by National Legal Metrology Bodies.

Prior to 2006 there was no pan-African organization to improve the accuracy of measurement and ultimately the acceptance of test results generated in Africa. This changed with the establishment of AFRIMETS, which currently has 44 member NMIs. AFRIMETS is internationally recognized as the regional metrology organization (RMO) for Africa by the International Committee for Weights and Measures (CIPM) through the International Bureau of Weights and Measures (BIPM) and the International Organisation of Legal Metrology (OIML).

### 4.2.1 Objectives and Programme Thrust

The overall objectives of AFRIMETS are to:

- a) Create awareness in Metrology in Africa at all levels of society and government;
- b) Assist in the development and/or strengthening of the metrology infrastructure in each country/subregion on the continent;
- c) Contribute to the development of a conformity assessment and regulatory infrastructure as required and to promote equity in trade;
- d) Contribute to the development of the metrological infrastructure required to protect the environment and to promote the general well-being of the population, including its health, safety and the protection of consumers from fraudulent dealings where measurements are used as the basis for the transaction;
- e) Improve the traceability of measurement standards within Africa to the International

System of units (SI), establish comparability with other national measurement standards (especially with the main trading partners) and to generally promote the International Committee of Weights and Measure's Mutual Recognition Arrangement (CIPM MRA) and the objectives of the Metre Convention;

- f) Encourage measurement traceability in Africa through recognised calibration services; and
- g) Promote the adoption of International Organisation of Legal Metrology (OIML) technical recommendations or other relevant international standards as technical regulations wherever possible and harmonise technical regulations in Africa in order to minimise technical barriers to trade.

#### 4.2.2 Financing

The budgetary requirements to support the AFRIMETS Secretariat are mostly met by member countries. Due to the technical nature of metrology, pan-African representation at international level is done by metrology experts from the member countries and is sponsored by the national metrology bodies. Financial assistance is needed for promotional activities, attendance of three to four meetings per year where Africa must be represented by a group of technical experts and transport of artefacts.

AFRIMETS operations will be funded from the following sources:

- a) For the Secretariat: A combination of Money allocated by Member States who host the Secretariat, and donor or AU funding;
- b) For benchmarking exercises: Member State NMIs that pilots the exercise, and donor or AU funding for the discussion meetings and for transport of artefacts. Proficiency testing schemes should be self sustainable;
- c) For Technical infrastructure in Member States: Allocations for Metrology from Member States and Developing partner funding;
- d) For pan-African exercises such as attendance of Quality Infrastructure meetings: AU or donor funding; and
- e) Eventually a membership fee will be charged to assist with funding. This is not foreseen until 2016.

### 4.3 The African Electrotechnical Standardisation Commission (AFSEC)

AFSEC was established in February 2008 as a result of a collaborative effort among stakeholders and underpinned by the Algiers declaration of the Conference of African Ministers of Energy on 17<sup>th</sup> February 2008, wherein member states were encouraged to support the operationalization of AFSEC as a subsidiary body of the African Energy Commission (AFREC). AFREC reports to the Commissioner for Infrastructure and Energy.

With the support of the African Energy Commission (AFREC), the African electrotechnical Commission (AFSEC) was established. The secretariat is currently hosted in South Africa, until a permanent office can be established.

African infrastructure and especially electrotechnical standards and conformity assessment systems are still at a nascent stage of development in most countries in Africa. Common standards and conformity regimes in the electrotechnical area, if well configured will have a multiplier effect especially in electricity generation and transmission (power pools and common manufacturing facilities) and trading in electrical systems, and in support of universal access to electricity.

#### 4.3.1 Objectives and Programme Thrust

The objectives of AFSEC are to:

- a) Improve the wellbeing of the African populations, mainly by the promotion, development and application of harmonized standards on the entire continent in order to improve access to electricity;
- b) Meet the needs of the African continental market with competence;
- a) Ensure the preeminence and the maximum use of its standards and compliance assessment methods on the African continent;
- b) Assess and improve the quality of the products and services covered by its standards;
- c) Create the conditions guaranteeing the interoperability of the complex systems;
- d) Increase the efficiency of the industrial processes;

- e) Facilitate the trade on the African continent by removing the different technical obstacles, thus opening up new markets and furthering economic integration and economic growth;
- f) Offer to the industry and users a framework of dialogue making it possible to achieve considerable savings in the design, quality products and services;
- g) Contribute to the improvement of the health and safety of persons; and
- h) Contribute to the protection of the environment by offering to the parties concerned an efficient infrastructure for the improvement, maintenance, and distribution of a coherent set of standards.

#### 4.3.2 Financing

AFSEC is funded in part by membership fees, with contributions from supporting organizations. A five-point scale of fees based on the GDP of the member's country has been agreed. The costs of running the secretariat are currently partly subsidized by South African organisations under an interim arrangement with AFSEC for a part-time secretariat during the start-up phase.

## 4.4 The African Organisation for Standardisation (ARSO)

The African Organisation for Standardisation (ARSO) in her current state is Africa's intergovernmental standards body formed by OAU (currently AU) and UNECA in 1977 in Accra Ghana. The fundamental mandate of ARSO is to develop tools for standards development, standards harmonization and implementation of these systems to enhance Africa's internal trading capacity, increase Africa's product and service competitiveness globally, and uplift the welfare of African consumers creating a continental standardization forum to influence future prospects in international trade referencing for Africa's benefit and advantage.

Increased trade and closer economic cooperation between developing countries represent a considerable potential for development, but realizing this potential represents a major challenge especially in creating viable, sustainable and effective continental standardization infrastructure. This forms the basis for ARSO

Strategic direction as summarized in her Vision, Mission and Goals.

#### 4.4.1 Objectives

There are four Strategic Objectives of ARSO as given in the ARSO Strategic Framework 2012 – 2017:

- a) Strategic Objective 1: Establish a standards harmonization system that supports a sound regulatory framework;
- b) Strategic Objective 2: Disseminate harmonized standards and guidelines to support intra and inter African and international trade and industrialization;
- c) Strategic Objective 3: Strengthen ARSO work-management capabilities for the sustainability of the Organisation; and
- d) Strategic Objective 4: Promote maximum and effective participation of Members and other stakeholders.

The strategic objectives are aligned with the AUC Strategic objectives and are intended to speed up the economic integration of Africa in line with the Abuja Treaty.

#### 4.4.2 Programme Thrust

In carrying out its mandate, ARSO seeks to:

- a) Harmonise national and/or sub-regional standards as African Standards and issue necessary recommendations to member bodies for this purpose;
- b) Initiate and coordinate the development of African Standards (ARS) with references to products which are of unique and advantageous interest to Africa;
- c) Encourage and facilitate adoption of relevant international standards by member bodies;
- d) Promote and facilitate exchange of experts, information and cooperation in training of personnel in standardisation knowledge and implementation methodologies(activities);
- e) Coordinate the views of its members at the international standardization forums such as ISO, IEC, Codex and other international Organisations concerned with Standardization activities; and
- f) Create appropriate bodies in addition to the organs of the organisation for the purposes of fulfilling its objectives.

Currently ARSO has formed 12 Technical Harmonization Committees to harmonize African Standards. The Technical Harmonization Committees include:

- 1) Agriculture and Food Products
- 2) Basic and general Standards
- 3) Building and Civil Engineering
- 4) Chemical & Chemical Engineering
- 5) Electro-technology
- 6) Environmental Management Systems
- 7) Mechanical Engineering and Metallurgy
- 8) Natural Resources
- 9) Quality Management Systems
- 10) Services
- 11) Textiles and Leather
- 12) Transport and Communication

Any other Technical Harmonization Committee shall be formed and put to work upon request by the African Union Summit, the African Union Commission, or directorate of the AUC under instruction from the AUC, any Regional Economic Community summit or secretariat, a member state, or a group of nations within the AU.

As part of its mandate and in line with the Strategic Objectives, ARSO will in addition perform the following activities:

- a) Draft policy documents for inspection and certification activities in Africa based on the CASCO toolbox or any other African knowledge certification tooling system for certification and inspection;
- b) Draft common procedures for product and system certification in Africa;
- c) Develop and implement a mark of conformity for African products;
- d) Create a forum for certification bodies across Africa to share their knowledge and experiences to assist African Certification Bodies in capacity development;
- e) To host the African Register of Certified Auditors and Experts; and
- f) Assist member countries to identify human resources for use in certification by use of the Database of African Experts in standards and conformity assessment.

#### **4.4.3 Financing**

ARSO is funded mainly by membership fees, with contributions from National Standards Bodies. This funding meets the costs of running the Central Secretariat but does not adequately cover its programmes.

The budget deficit for programmes is partly funded through support of development partners.



## 5. IMPACT OF THE PAN AFRICAN QUALITY INFRASTRUCTURE BEING RECOGNISED BY THE AU

Having an integrated PAQI that is recognised at the AU/AUC level will:

- a) Result in a common Policy on Quality Infrastructure and implementation mechanisms at a continental level;
- b) Guide the policy on quality infrastructure at continental level leading to better utilization of quality infrastructure resources available on the continent;
- c) Speed up the adoption of common policies on standardization and quality assurance of goods and services among African countries and promote industrialisation and trade in Africa;
- d) Enable Africa to have a common regulatory objective and therefore a common reference system and voice in determining trends that affect African economies and interests globally;
- e) Facilitate harmonization of African National and Regional Economic Community standards and conformity assessment procedures;
- f) Facilitate Capacity Development of African quality infrastructure institutions in a more unified way;
- g) Lead to reduction of the risk for business and its customers by assuring them that accredited Conformity Assessment Bodies (CABs) in Africa are competent to carry out the work they undertake thus giving overall assurance in quality of products and services;
- h) Underpin Multilateral Trade agreements with internationally recognised quality infrastructure policies and harmonized standards, technical regulations and conformity assessment procedures;
- i) Leverage funding for metrology, standardization, conformity assessment and accreditation activities at the national and continental levels, and motivate for donor funding in support of African quality infrastructure programs;
- j) Enable Multilateral Recognition Arrangements (MLA) between accreditation body members in order to contribute to common conformity assessment procedures that promote intra-African and global trade; and
- k) To facilitate protection of consumers in Africa.

## 6. CONCLUSION

The pillars of the PAQI are already in existence. They are all busy working and implementing their programmes. The clear evidence of this is their active participation in the COMESA-EAC-SADC-Tripartite-Standards, Metrology, Conformity Assessment and Accreditation Experts Meetings. This direction and mode of working needs to spread to cover the other regions of the continent and should be given support.

It is therefore necessary that PAQI is accorded formal recognition by the AU to actively support the AU prioritised economic development programmes as integral organs of the Union. This will go a long way in capitalising on the pool of knowledge available within the continent and tooling it to best serve the continent. It will also empower and strengthen the pillars in their operations and endeavours, as they represent the continent and advocate on its vision, mission and core values in international meetings.

ARSO, AFSEC, AFRIMETS and AFRAC have worked hard and are already recognised by the relevant international organisations in their fields of operation. ARSO is recognised by the International Standards Organisation (ISO); AFSEC is recognised by the International

Electrotechnical Commission (IEC); AFRIMETS is recognised by the Bureau International des Poids et Mesures (BIPM) and the Organisation Internationale de Métrologie Légale (OIML); and AFRAC is recognised by the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum (IAF). These pillars form the basic framework of the PAQI architecture.

The recognition and full utilisation of the latent potential in PAQI will not only enhance the negotiating power of the African Leadership in international trade negotiations, like Economic Partnership Agreements (EPAs), bilateral and multi-lateral agreements, but will also ensure that the product and service supply chain is well developed, in terms of sustainable capacity for meaningful trade. PAQI has the capacity and network to handle and sort out compliance related infrastructure and service bottlenecks and facilitate cross-border flows of goods and services and their entry into the competitive international market.

PAQI will speed up the drive towards regional integration and regional trade and hence be pivotal in the creation of sustainable and viable markets. It will be a tool to fight poverty, create jobs and wealth.



[www.intra-frac.com](http://www.intra-frac.com)



[www.afrimets.org](http://www.afrimets.org)



[www.afsec-africa.org](http://www.afsec-africa.org)



[www.arso-oran.org](http://www.arso-oran.org)

