



AFRIMETS 2018-2019

The Highlights

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Outline

- Introduction
- Intra-Africa Metrology System
- African Continental Free Trade Area
- Quality Infrastructure
- Measurements for trade
- Metrology in Africa
- Revised International System of Units, SI
- Summary



Introduction

- Measurements have been carried out for as long as civilization has existed
- In Africa, the early Egyptian civilization had a well established measurement system
- Accurate and reliable measurements will always be a requirement of any organized society



Introduction

- Metrology in Africa was, until recently, limited to national matters with limited regional or international interaction
- The advent of Regional Economic Communities (RECs) introduced cross-border measurement cooperation to support their trade regimes
- The establishment of the African Union (AU) has necessitated inter-RECs measurement cooperation



Introduction

- To participate in international metrology programmes, Africa's metrology community identified the need to cooperate beyond the RECs
- The Southern African Development Community Cooperation in Measurement Traceability (SADCMET) took this lead role for some time

Note: SADCMET is an organ of the Southern African Development Community (SADC)



Brief history

- SADC MET represented Africa internationally but with limitations due to its association to one REC
- This informed the initiative to create a Pan-African Regional Metrology Organization (RMO)
- AFRIMETS establishment started with a kick-off workshop at Midrand, South Africa in March 2006



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Brief history

- Three rounds of the *AFRIMETS MoU Task Force* meetings followed between May and September 2006 at the same venue and delivered the final MoU
- 1st AFRIMETS General Assembly (GA) held in July 2007 at Midrand, South Africa
- AFRIMETS MoU signed during this GA with a representation of 38 African countries



Mandate

- Promote the development of scientific, industrial and legal metrology issues across Africa
- Operate a fully-fledged Regional Metrology Organization (RMO)

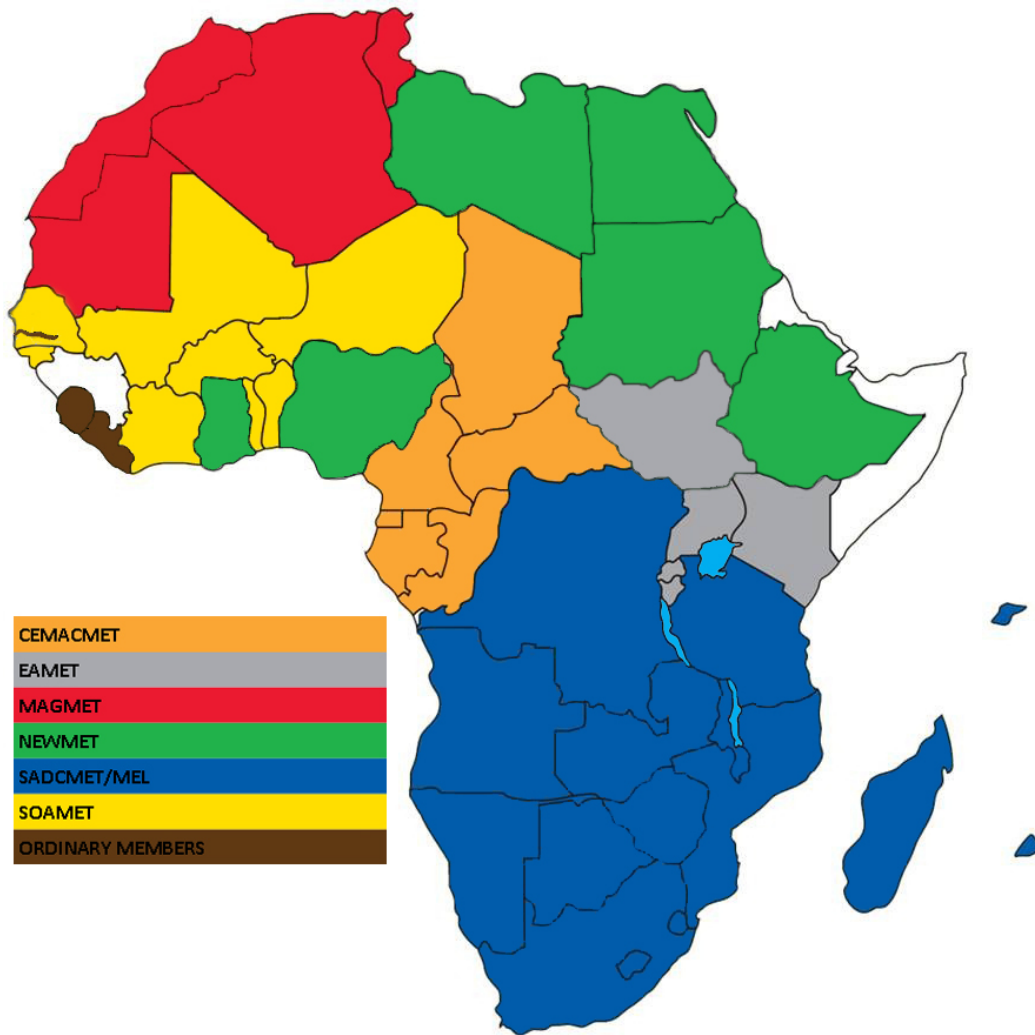
Note:

RMO in accordance with Mutual Recognition Arrangement (MRA) of the International Committee for Weights and Measures (CIPM)



Intra-Africa Metrology System - AFRIMETS

Membership





African Continental Free Trade Area

- The African Continental Free Trade Area (AfCFTA) is an initiative of the African Union, AU
- AfCFTA is a free-trade agreement initially signed by 44 of 55 AU member states in Kigali, Rwanda on 21 March 2018
- The agreement creates the largest free-trade area in terms of participating countries since the formation of the World Trade Organization

Note:

The AU, established on 9 July 2002, is a continental union consisting of the 55 countries of Africa. Its headquarter is in Addis Ababa, Ethiopia.



Towards One African Market



African Continental Free Trade Area

AfCFTA aims to:

- Create a single continental market for goods and services eventually leading to a customs union
- Resolve the challenges of multiple and overlapping REC memberships ...

Note:

AfCFTA brings together 55 countries with a combined population of more than one billion people and a combined GDP of more than US \$3.4 trillion



Towards One African Market



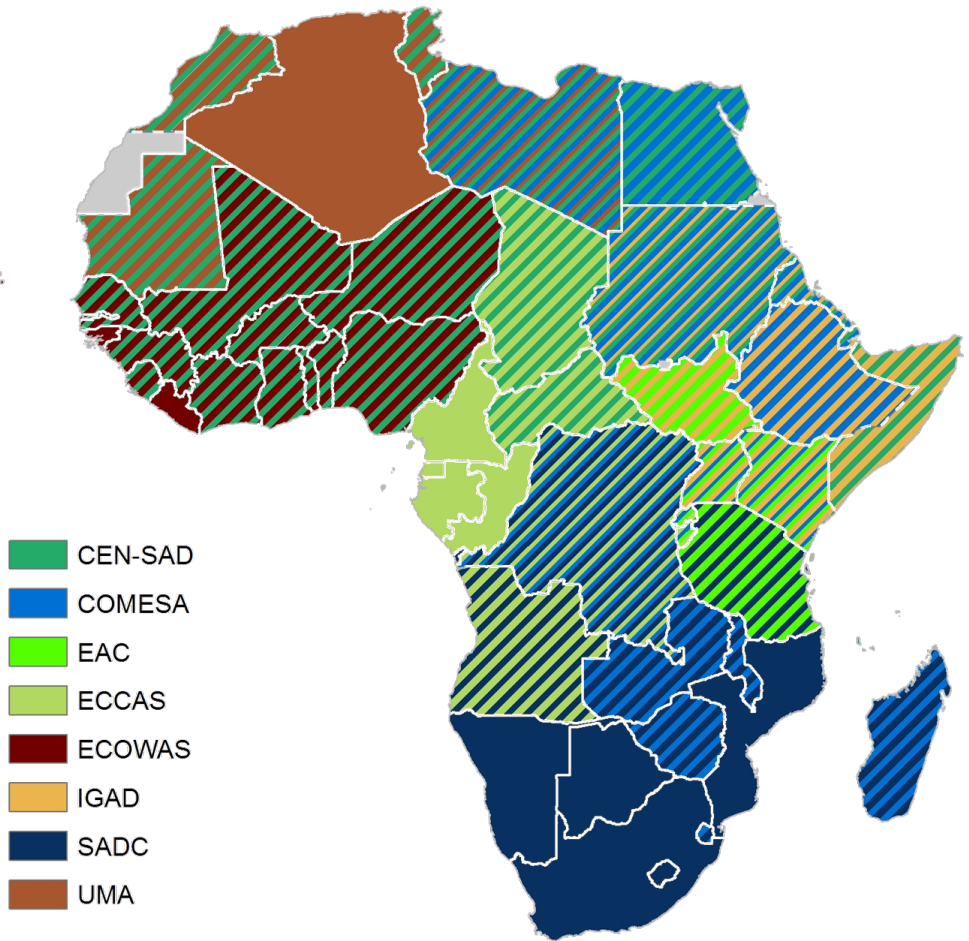
African Continental Free Trade Area

AfCFTA and the RECs

- To date, 54 countries have signed the AfCFTA Agreement - only one country is yet to sign up
- 27 countries have since ratified the Agreement
- Instruments signed:
 - Protocol on Trade in Goods
 - Protocol on Trade in Services
 - Protocol on Rules and Procedures on the Settlement of Disputes



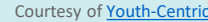
Towards One African Market

- 
- CEN-SAD
 - COMESA
 - EAC
 - ECCAS
 - ECOWAS
 - IGAD
 - SADC
 - UMA

Mechanisms of the AfCFTA



- Common market





Quality Infrastructure



What does it mean for the Continent and in terms of the AfCFTA?

- Enhanced product quality and compatibility
- Enhanced safety and health
- Decreased (negative) environmental impact
- Increased trade opportunities
- Facilitating innovations to the market place



AFSEC





Quality Infrastructure



- AU requires a functional quality infrastructure to successfully deliver the AfCFTA
- The Pan-African Quality Infrastructure (PAQI) forum answers to this need
- PAQI is constituted by four pillar organizations:
 - African Organisation for Standardisation (ARSO)
 - African Electrotechnical Standardization Commission (AFSEC)
 - African Accreditation Cooperation (AFRAC)
 - Intra-Africa Metrology System (AFRIMETS)
- Measurements underpin the activities of a sound Quality Infrastructure

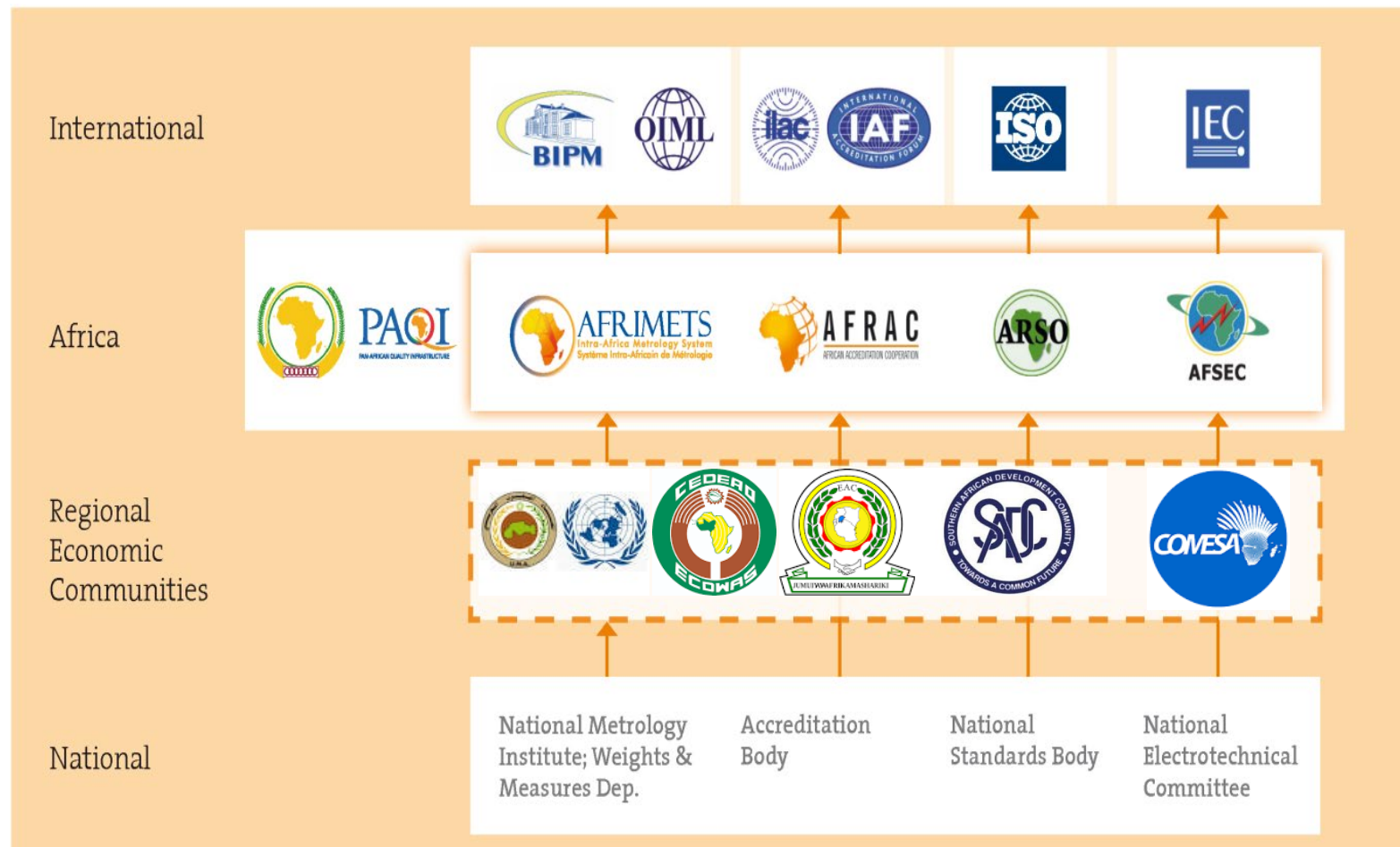




Quality Infrastructure

PAQI - Linkages

PAN-AFRICAN QUALITY INFRASTRUCTURE





Measurements for trade

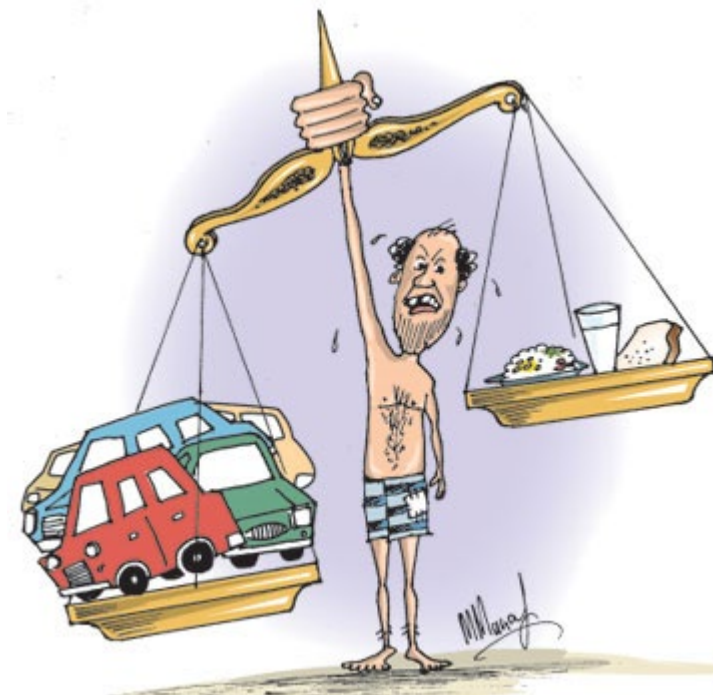
The trade of fruit, cereal, meat and manufactured products, has a large number of technical measures (SPS and TBT) that require accurate measurement





Measurements for trade

Measurement deficiencies create trade imbalances!



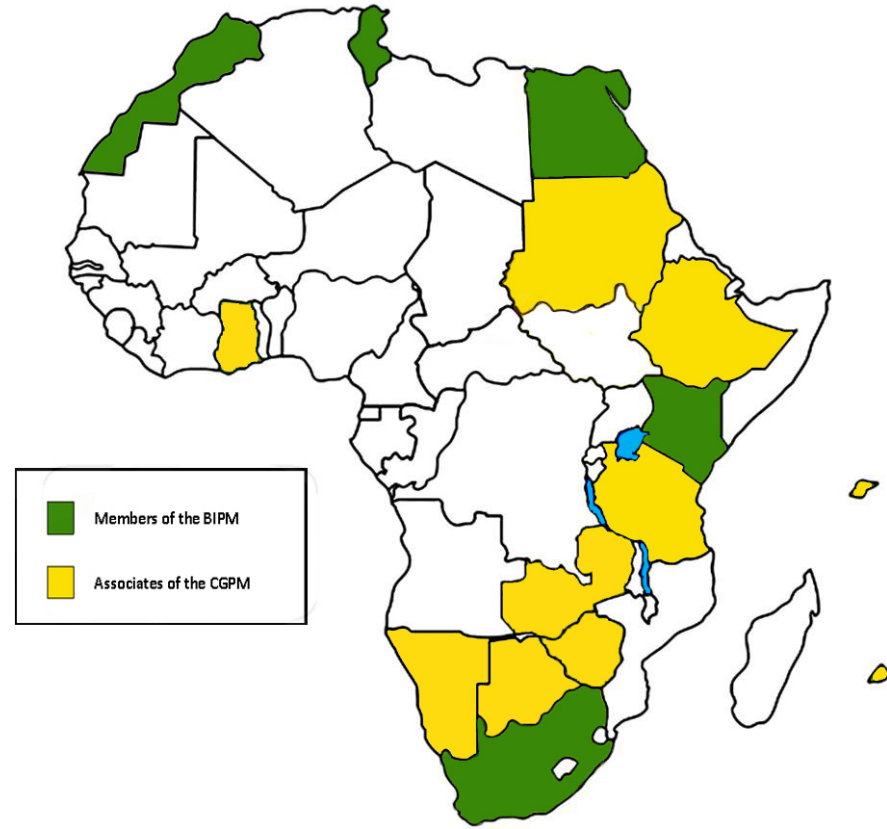


Metrology in Africa BIPM Membership

2007

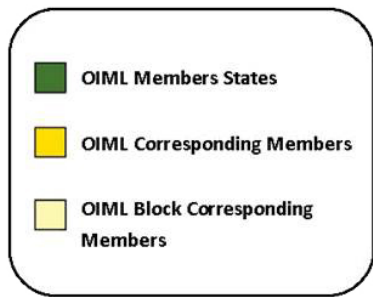


2019



Metrology in Africa

OIML Membership





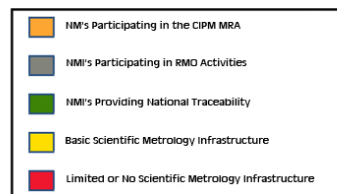
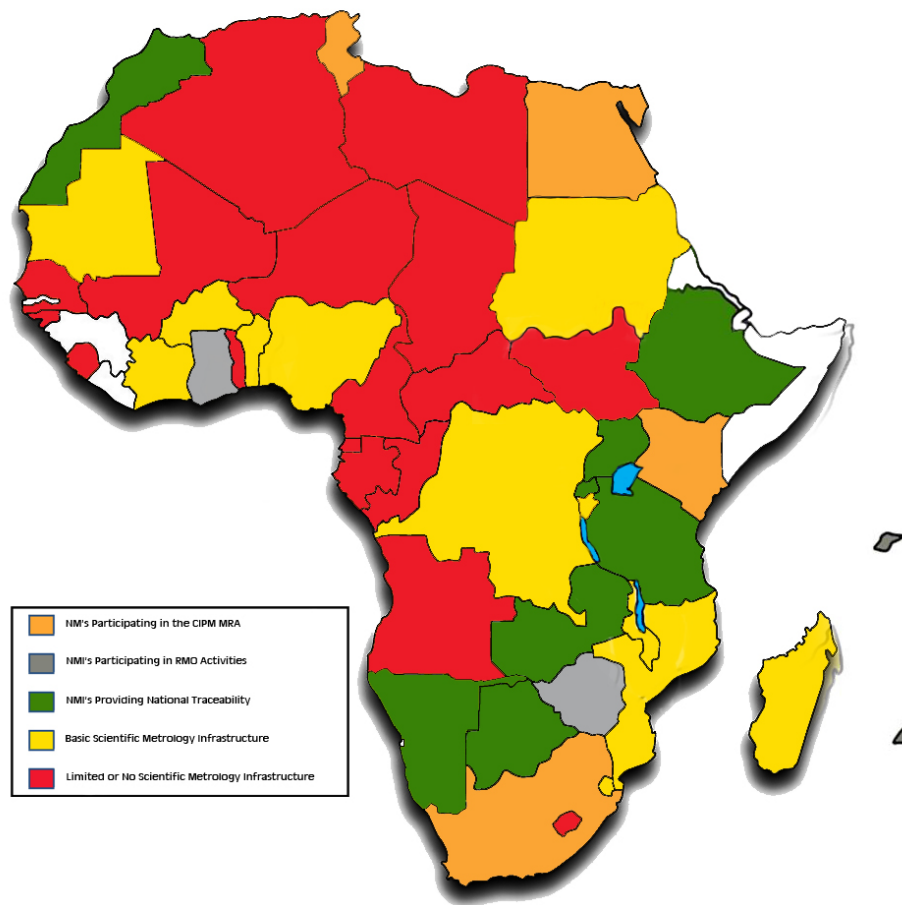
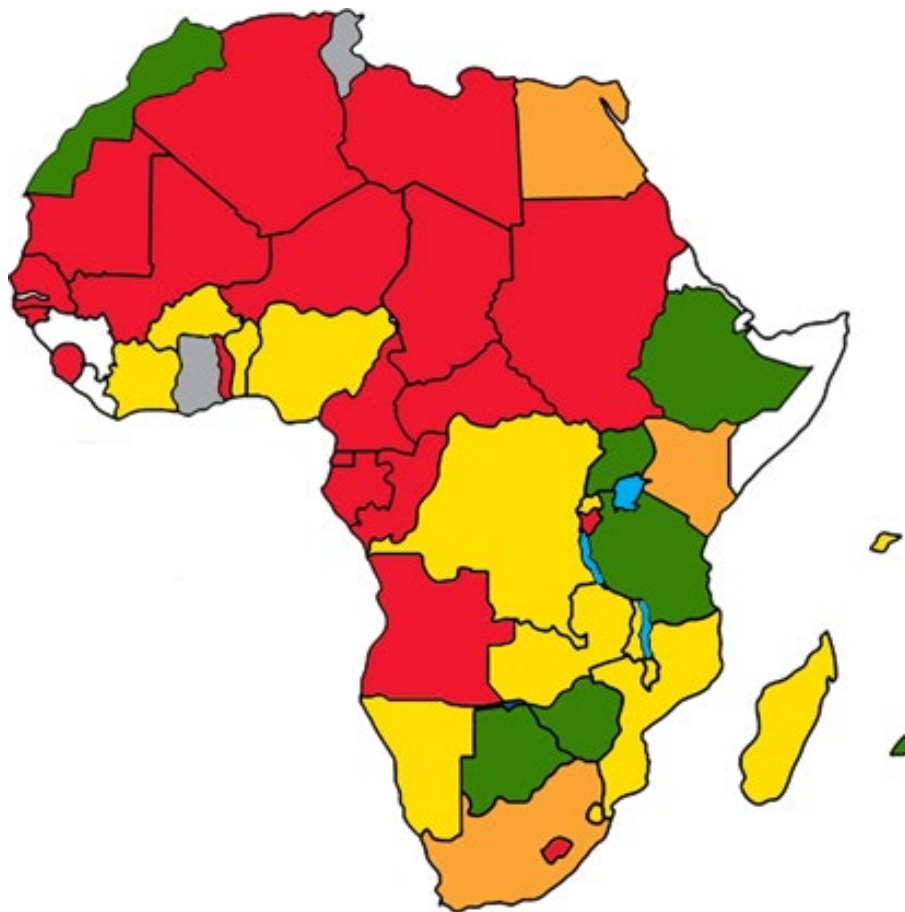
Metrology in Africa

Scientific Metrology Categorisation

2007



2019





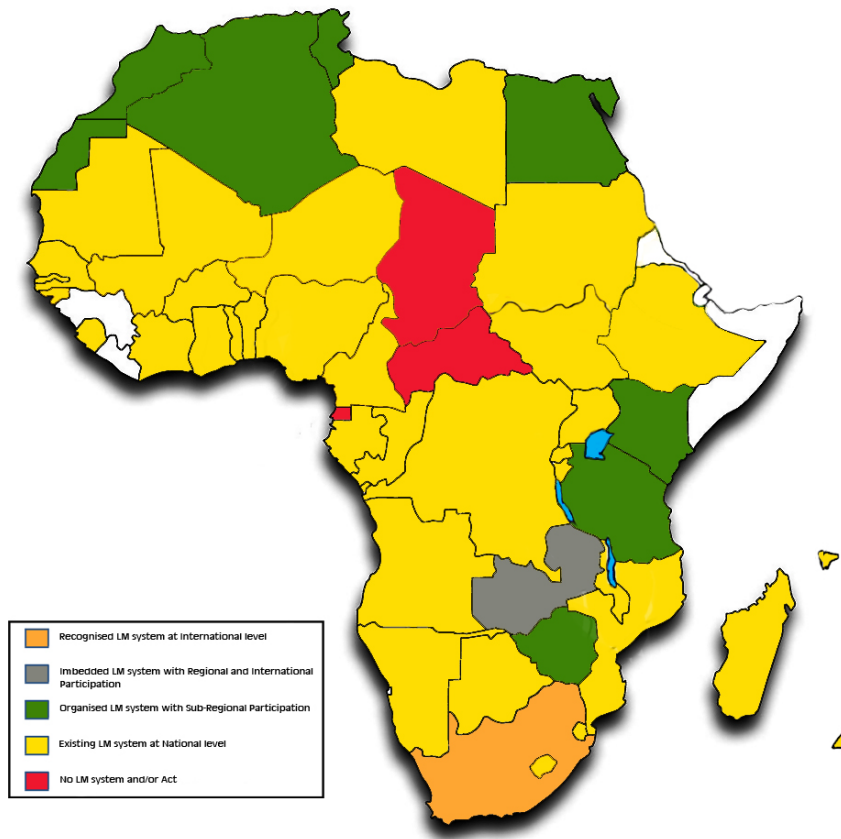
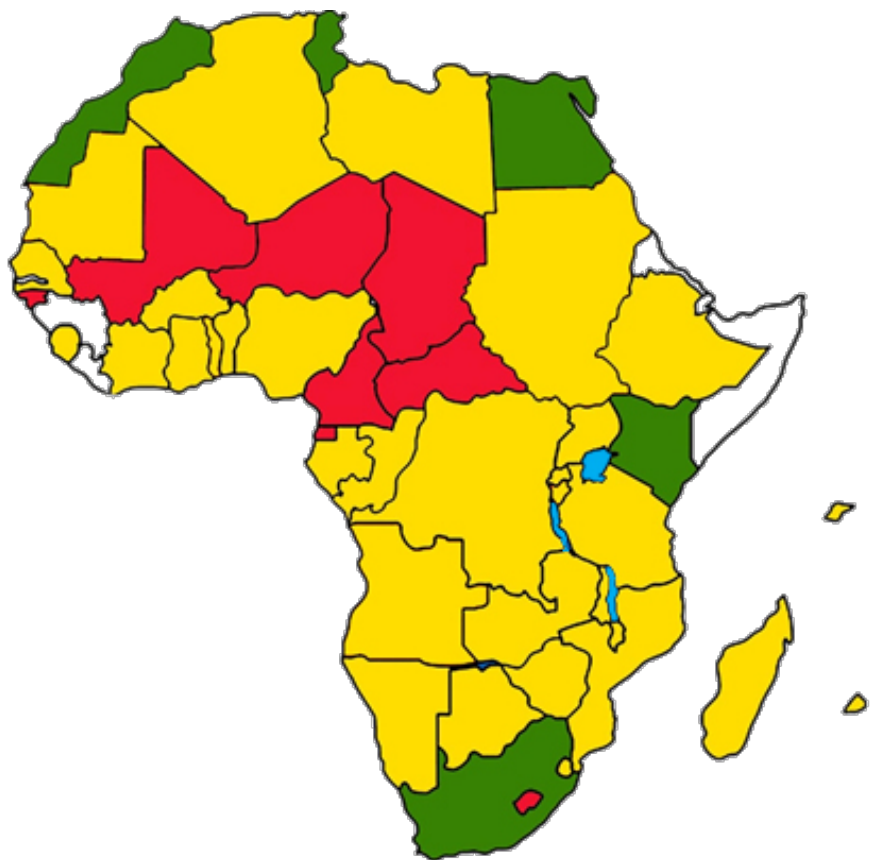
Metrology in Africa

Legal Metrology Categorisation

2007



2018





Metrology in Africa

Calibration and Measurement Capabilities (CMCs)

- 637 CMCs published in the KCDB from AFRIMETS - up from 535 in 2017
- Significantly, more countries (8) are contributing to this number of CMCs

• NMISA	(RSA)	=	533
• NIS	(Egypt)	=	39
• KEBS	(Kenya)	=	17
• DEFNAT	(Tunisia)	=	14
• SIRDC	(Zimbabwe)	=	13
• ZMA	(Zambia)	=	11
• NSI	(Namibia)	=	7
• BOBS	(Botswana)	=	3



Metrology in Africa

Plans and focus areas

An extra-ordinary Directors meeting was held in Pretoria, South Africa on 14 May 2019 to discuss amongst others membership fees

It was preceded by a one-day conference on the role of metrology in Industry 4.0 and followed by a two-day conference on the Revised SI with the title **“Shortening the Traceability Chain for Africa”**

Concrete plans were presented by South Africa, Kenya, Egypt and Tunisia on how to ensure the primary realization of the units of mass, temperature and current in terms of the Revised SI

Mycotoxins



Multiple
toxins in
maize &
wine

Aflatoxins
in African
ground nuts



Metrology in Africa Plans and focus areas

- ✓ Africa Matrix Reference Materials
- ✓ Kibble (Watt) balance
- ✓ Avogadro project
- ✓ Nanoscience and Technology
- ✓ Primary Acoustic Gas Thermometer





Metrology in Africa

Plans and focus areas

In support of accredited testing facilities:

- Produce calibration solutions
- Introduce a Proficiency Testing (PT) scheme category within the comparison framework





Metrology in Africa

Plans and focus areas

- Assist countries to improve testing facilities in support of the of the AfCFTA:
 - Identify crucial measurements to support trade
 - Identify testing capability gaps for export products
 - Establish testing hubs for export products
- Services database for metrology institutes (peer reviewed acceptance of capabilities for trade)





Revised International System of Units, SI

- On 16th November 2018, at the 26th meeting of the General Conference on Weights and Measures (CGPM), BIPM's Member States voted to revise the SI, changing the world's definition of the **kilogram**, the **ampere**, the **kelvin** and the **mole**
- This decision, which came into effect on 20th May 2019, means that all SI units are defined in terms of constants that describe the natural world
- This will assure the future stability of the SI and open the opportunity for the use of new technologies to implement the definitions





Summary

- Metrology in Africa is now integrated into the international metrology system
- AFRIMETS has contributed greatly to this integration process
- AFRIMETS along with the other Quality Infrastructure organizations is playing a key role in the realization of the African Continental Free Trade Area (AfCFTA)





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THANK YOU