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WORLD METROLOGY DAY 2026

Metrology: Building Trust in Policy Making

Measured to Protect: How Legal Metrology Underpins Food Safety and Fair Trade

General Manager: Food and Associated Industries
National Regulator for Compulsory Specifications (NRCS)

Joint NMISA–NRCS Webinar | 20 May 2026 | 09:00 – 12:30

Measured to Protect: How Legal Metrology Underpins Food Safety and Fair Trade

On this World Metrology Day, the theme asks us to reflect on how trusted measurement supports policy making. I want to speak about what that means in the world of food — a sector that touches every South African household, every school feeding scheme, every fishing community, and billions of rands in export trade.

In 2024/25, the FAI Business Unit conducted 27 875 inspections. We issued 8 170 health guarantees for exported fish products. We facilitated R9.1 billion in export trade. We removed products worth R11.7 million from the market because they were unsafe or non-compliant.

Behind every single one of those numbers is a measurement. And behind every measurement is the measurement system that Legal Metrology exists to maintain.

"Food regulation without measurement is guesswork. And guesswork does not protect consumers, does not facilitate trade, and does not build trust in policy."

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The FAI Mandate: Protecting Consumers Across the Food Value Chain

The Food and Associated Industries Business Unit protects consumers and facilitates trade by regulating a focused but high-impact range of food products

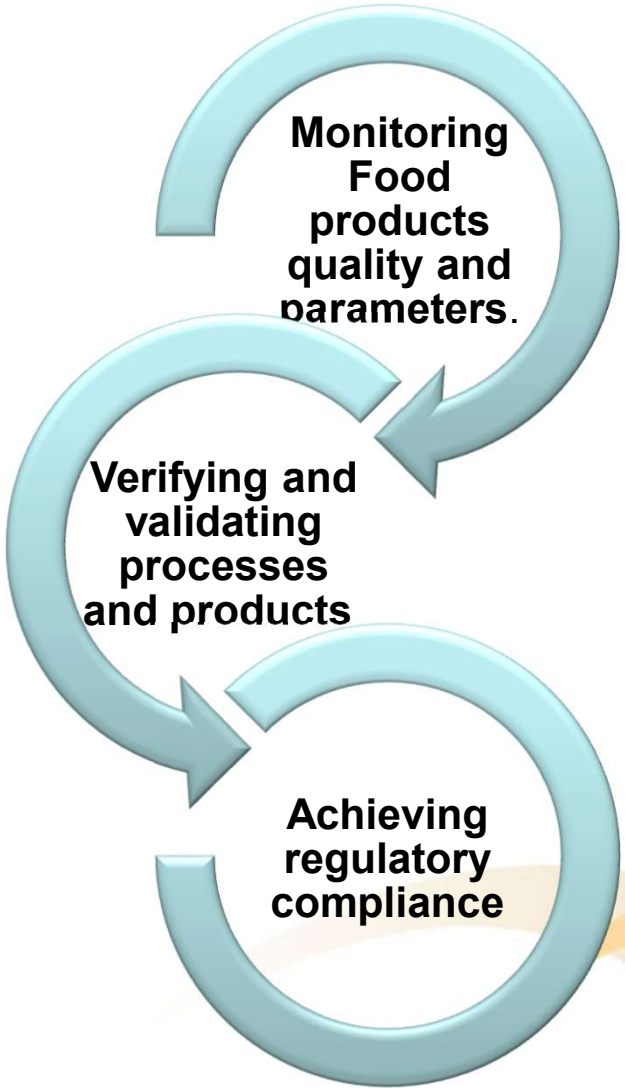
- Canned and frozen fish and fishery product including canned pilchards, sardines and tuna, and frozen hake
- Canned and processed meat products including canned corned meat and RTE meats
- Smoked, Smoke-flavoured and Smoked-dried finfish including Smoked Snoek
- Farmed live Gastropods and finfish including abalone and Trout
- Farmed and chilled bivalve molluscs — oysters and mussels

Core Functions

- Inspecting processing plants, cold stores, fishing vessels and ports of entry — stopping non-compliant products before it reach consumers.
- Sampling and Inspection of products and submitting it for testing in SANAS-accredited laboratories
- Issuing health guarantees for exported products
- The NRCS is recognised as South Africa's competent authority by the European Union, the People's Republic of China, Russia and multiple other trading partners
- Issuing compliance certificates for imported and locally produced products before they are released to the marketplace

Importance of Metrology in Food Regulation

- **Metrology ensures compliance to product specifications and quality**
- **It is involved in:**



”Legal Metrology is the custodian of measurement requirements”

Where Legal Metrology Meets Food Regulation

- **The connection between Legal Metrology and the Food and Associated Industries Business Unit operates at two fundamental levels**

- **Regulatory: Every Compulsory Specification and SANS that falls within the FAI scope contains measurement requirements such as mass, volume, declared quantity, drained mass and tolerance levels. When a product does not meet the measurement requirements, FAI refers it to Legal Metrology .**

- **Operational: quality management system, which underpins our ISO/IEC 17020 accreditation, requires that all instruments used in our inspections are calibrated to ensure accuracy of measurement. It is Legal Metrology that has the expertise and the designated infrastructure to perform those calibrations**

"FAI uses Legal Metrology documents as reference for every inspection we conduct. We could not certify a product, issue a health guarantee or raise a directive without that measurement foundation"

Why Metrology Matters in Food Manufacturing

Ensures accurate measurements

A foundation for operational efficiency and global competitiveness

Reduce time to market.

Improve production efficiency.

Enhance product quality and support Compliance with regulations

Builds consumer trust and supports fair trade practices

Calibrated Instruments: The Foundation of ISO/IEC 17020 Accreditation

ISO/IEC 17020 Requirements	• Provide Confidence and Credibility
Traceable to National/International Standards	• International and National standards • Traceability of Calibration Results
International Bureau of Weights and Measures	• Maintenance of international unit of mass
NMISA-Maintains Mass Standard	• Maintain Reference standards • For Food products its mainly Mass volume
NRCS - Legal Metrology	• Calibration of Mass meters • Volumetric Equipment

An FAI inspector uses a verified, calibrated scale to weigh a sample of canned fish at a processing plant.

Any break in the calibration value chain shall render the inspection unreliable and not credible. This make it difficult to defend the attestations in the health guarantee issued"

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Requirements mostly applicable in FAI

SANS	Scope	Applies To	Key Tests
• 289	• Packaging	• All goods	• Labelling rules
• 458	• Frozen foods	• Seafood	• Drain mass tests
• 1649	• Weighing instruments	• Approved & Verified scales	• Tolerances, accuracy

SANS 289: Labelling Requirements for Prepackaged Products

- The net quantity of the product must be declared in the prescribed units — mass, volume or count as appropriate to the product category.
- For solid food packed in a liquid medium such as canned pilchards, canned tuna or canned fish in brine — the drained mass must be declared in addition to the total net mass.
- This is critical: a consumer buying canned fish is buying the fish, not the brine
- The quantity declaration must appear in a minimum type size determined by the size of the package — ensuring the consumer can actually read and act on the information.
- Packaging must not be constructed or filled in a way that misleads the consumer about quantity — no false bottoms, no non-functional slack fill.

Is the standard that governs how quantities must be declared on the labels of prepackaged food products and is used by FAI inspectors to verify labelling compliance

Key Legal Metrology Requirements for Glazed Fish Products

Frozen & Glazed Products

Ice glaze is part packaging, not part of net quantity

Products in brine/oil must state drained mass

Inspector tests require thawing and drying per SANS 458 Annex D

Ensuring Accuracy, Consumer Protection, and Confidence in the Food Supply Chain

Accurate Measurements are Critical for:

- Correct food temperatures
- Ingredient quantities
- Shelf-life determination
- Nutritional labeling
- Contamination control

Risks of Inaccurate Measurements

- Food spoilage
- Unsafe consumption
- Incorrect dosages of additives
- Misleading nutrition information
- Product recalls

Legal Metrology:

- Protects consumers
- Supports food safety
- Ensures fair trade
- Enhances confidence in markets
- Facilitates international trade

Building Trust in Measurements

How Trusted Measurement Opens Global Markets for South African Food

Countries require

- Accurate labeling
- Verified weights
- Safe temperature records
- Compliance documentation

Results

- Improved market access and trade credibility.

Supports Global Commerce

- Harmonized measurement standards
- Reduced trade disputes
- Easier import/export verification

When for example the EU audits South Africa's food official controls, the integrity of the measurements contributes to establishment of compliance with International Legislation.

That is why metrology is not a technical detail, but a trade asset"

The Road Ahead: Measurement Challenges in the Food Sector

- **As we mark World Metrology Day 2026, I want to acknowledge both how far we have come and the work still ahead**
- **In 2024/25, four Compulsory Specifications were gazetted for public comment — for Dried Abalone and amendments to the specifications for Chilled Smoked Finfish, Frozen Fish and Marine Molluscs and Frozen Shrimps and Crustaceans. Each of these specifications contains measurement requirements. As we develop and revise them, we do so in alignment with OIML recommendations, Codex Alimentarius standards and the requirements of our trading partners**
- **The OIML D1 workshop held in Johannesburg in April 2026 — developing the institutional and legislative framework for national metrology systems across SADC is directly relevant to our work. The harmonisation of measurement legislation and labelling standards across SADC reduces technical barriers to trade. For South African food exporters, it means fewer re-labelling requirements and more predictable market access**

- **The challenges ahead include:**

- **Ensuring that the measurement infrastructure — verified instruments, calibration services, designated verification bodies keeps pace with the growth in our inspection volumes and the expansion into new product categories like aquaculture finfish**
- **Extending measurement awareness to SMMEs and emerging producers who may not be familiar with SANS 289 and SANS 458 requirements is a priority that our SEDFA partnership addresses**
- **Adapting our measurement frameworks as new product formats, digital labelling and IoT-based monitoring systems enter the food supply chain**

"Every new compulsory specification we publish, every new export market we open, every new SMME we bring into compliance — each depends on a measurement system that is accurate, traceable and trusted."

THANK YOU

Building Trust in Policy Making

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"Protecting health, Safety, the Environment and ensuring Fair Trade"