



ASIA-PACIFIC
LEGAL METROLOGY FORUM

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Economy Report - 2017

Bhutan

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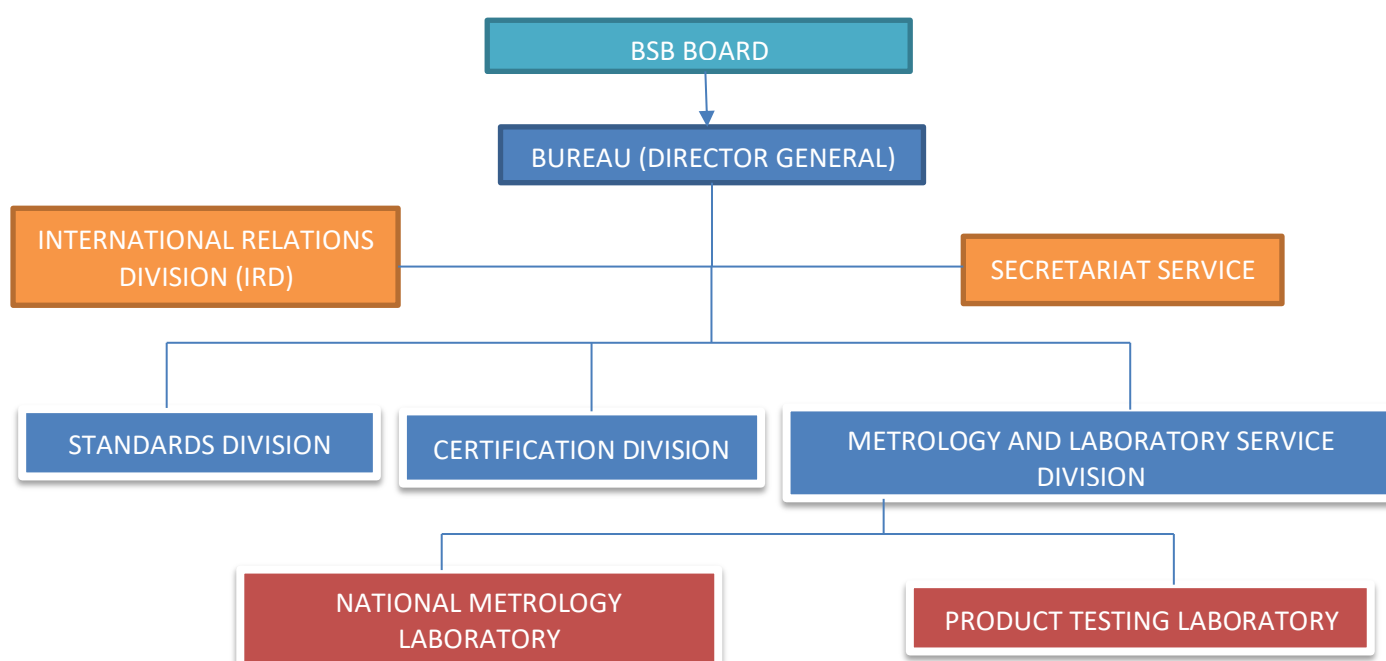
SECTION 1 – Organization and structure for metrology

Organization Structures

As per the Bhutan Standards Act 2010, Metrology, Product testing, Standards Development and Certification are all under the Bhutan Standards Bureau (BSB). Currently, Bhutan does not have a separate Legal Metrology Law. The National Metrology Laboratory (NML) under BSB looks after both Scientific and Legal Metrology.

National Metrology Laboratory set up in Bhutan in fairly new and just have a small set up with lab for Mass, Length, Temperature, Pressure and Volume parameters. However, the NML is accredited in mass parameter only as per the International Standards ISO/IEC 17025:2005.

The Organizational Structure of BSB is as given below:



International arrangements and engagement

Bhutan participated in several activities that were held under the framework of MEDEA.

1. Modernizing National Metrological Infrastructure Workshop, held in Malaysia, from 22 to 23 May 2017, attended by one representative.
2. Verification of Rice Moisture Meters, held in Malaysia, from 17 to 21 July 2017, attended by two representatives.
3. Train the Trainer Course on the Verification of Bulk Flow Metering System Using a Master Meter, held in Thailand, from 24 to 27 July 2017, attended by two representatives.
4. Verification of Weighbridges Workshop, held in China, from 26 to 29 September 2017, attended by two representatives.

SECTION 2 – Key activities of 2016/17

Legislative Frameworks

Since we do not have Legal Metrology Act, we are in the process of framing a guideline for undertaking legal metrology activities in collaboration with Office of Consumer Protection (OCP) to serve as basis to undertake such activities. There is however Consumer Protection Act and Rules which empowers BSB to undertake legal metrology activities.

Working with industry

We provide calibration service to Bhutan Agro Industries for their in-house testing laboratories and also to Bhutan Food and Agriculture Regulatory Authority (BAFRA) and other Laboratories.

Consumer Protection

As per the Consumer Protection Act 2012 and section 47 of the Consumer Protection Rules and Regulation 2016, all the weighing and measuring equipments for use in trade, industry or commerce markets shall be subject to:

- a. Verification, stamping or certification by Bhutan Standards Bureau prior to its use for commercial purpose, in accordance with requirements prescribed by Bhutan Standards Bureau
- b. Verification and stamping or certification by BSB after repair or modifications.

Therefore, the BSB has initiated verification of weights and measures used in Businesses starting last year in collaboration with the Office of Consumer Protection (OCP). However, BSB will only provide verification service and the regulatory functions lie with the OCP.

Major projects

Since the current National Metrology is established and operated from the same building where we also have the Product Testing Laboratory, the office has plans to build a separate Metrology Laboratory Building. The design of the building has also been completed with the funding assistance of UNDO. But so far we have failed to construct it since we couldn't source funding.

If we could secure funding for construction of a separate Metrology building, it will be a huge achievement for the country and the Bhutan Standards Bureau. We are still pursuing with our Government for Funding and we are also seeking outside donors to construct this Laboratory.

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

Separate Metrology Laboratory Building

Currently, the National Metrology Laboratory (NML) is located in the first floor of the office building where there is Product Testing laboratory on the ground floor. The Product Testing Laboratory produces vibration while the tests are being conducted which is not ideal for NML. Moreover, as per international standards, vibrations or shocks locally produced or from the surroundings should not affect measurements in the length and mass standards rooms. Therefore, the BSB has plans to construct a separate NML building as soon as possible.

Increase in Scope of Accreditation

The NML is accredited only for Mass and Length parameters so far and we are now working on increasing the accreditation in Volume, Pressure and Temperature.

Therefore, the following additional equipment are planned to be procured:

No	Item	Specifications	Qty	Recommended Suppliers	Approximate Cost, USD
1	Automatic flake ice Machine	<p>To provide flake ice from distilled water.</p> <p>Storage temperature : 0.5 °C</p> <p>-Will be used as laboratory ice for the determination of freezing point of water in a Standards measurement laboratory.</p> <p>-The distilled water will be supplied from an overhead tank, built inside the laboratory at a height of about 2m</p> <p>-Air cooled</p> <p>-Housing and storage bin should be made of stainless steel material No.14301</p> <p>-Out put : 70kg/day</p> <p>-Capacity of storage bin : 30kg.</p> <p>-Power supply : 230V, 50Hz</p>	1	<p>1. Ice-O-Matic 11100 East 45th Ave. Denver, CO. 80239 USA</p> <p>Phone: 303-371-3737 800-423-3367</p> <p>Fax: 303-371-6296</p> <p>Email: customer.service@iceomatic.com tech.service@iceomatic.com</p> <p>2. Hubbard Systems 106 Claydon Business Park, Gt. Blakenham, Ipswich, Suffolk, IP6 0NL <u>UK</u></p> <p>Tel: 01473 350045 Email: enquiries@hubbardsystems.co.uk</p>	3500

No	Item	Specifications	Qty	Recommended Suppliers	Approximate Cost, USD
2	Storage container(Dosing tank) for storage of distilled water	Made of PE, natural colored with a stopcock Capacity : 60 Litres Diameter : 400mm Height : 600mm		1 Labsco, Germany 2.Tamson Laboratory Equipment	600
3	Water triple point cell	Diameter of inner cell : Not less than 11 mm Uncertainty : ± 0.0001 °C	2	1. Isothermal Technology Ltd. 2. Fluke Inc.	1700
4	Dewar for Water triple point cell	Inside diameter : Not less than 20 cm Inside Depth : Not less than 50 cm	1	1. Isothermal Technology Ltd. 2. Fluke Inc.	900
5	Set of Faden thermometers	Range : 0 to 300 °C Type : Solid Bulb length : from 50mm up to 300mm in steps of 10mm	1 set	1. Karl Schneider & Sohn	1800
6	Set of Optical Parallels (set of 4)	Diameter : Approximately 30mm Thickness: 12.00mm,12.12 mm,12.25 mm and 12.37mm Flatness : Not more than 0.1 μ m Parallelism : Not more than 0.2 μ m Case : To be supplied in protective case. Calibration : Flatness to be certified with calibration certificate.	1 set of 4	1. Mitutoyo 2. Mahr GmbH	800
7	Set of optical flats	Diameter : 45 mm Flatness : 0.1 μ m Case : To be supplied in protective case. Calibration : Flatness to be certified with calibration certificate.	1 set	1. Mitutoyo Inc. 2. Mahr GmbH	200
8	Dry ice maker	Portable dry ice maker to make dry ice from liquid carbon dioxide consisting of a pressure gauge, connecting tube and coupling for connection to CO ₂ cylinder	1	1. SCIOLOGEX, LLC. 1275 Cromwell Avenue, C-6 Rocky Hill, CT 06067 USA International Telephone: +1 (860) 436-9221 Fax: 860-436-9745 info@SCIOLOGEX.com	1100

No	Item	Specifications	Qty	Recommended Suppliers	Approximate Cost, USD
9.	Top loading balance 10 kg capacity	Max capacity : 12000 g Readability : 0.01 g Repeatability : Not more than 0.01 g Stabilization time: Not more than 2 s Sensitivity drift: Not more than ± 6 ppm/ $^{\circ}$ C Calibration : Facility to calibrate with external weight Interfaces: USB Host / USB Device / RS232 Manuals: Operating and technical manuals including details of repair and adjustment. Power : To suit 230 V, 50/60 Hz supply..	1	1. Mettler-Toledo 2. Sartorius 3. Kern & Sohn	5000