Joint ITU-UNIDO Forum on Sustainable Conformity Assessment for Asia-Pacific Region

(Yangon City, Republic of Union of Myanmar
25-27 November 2013)

UNIDO Activities on Capacity Building in the General Arena of Standards and Conformity Assessment Bhutan Experience

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Yangon City, Myanmar, 25
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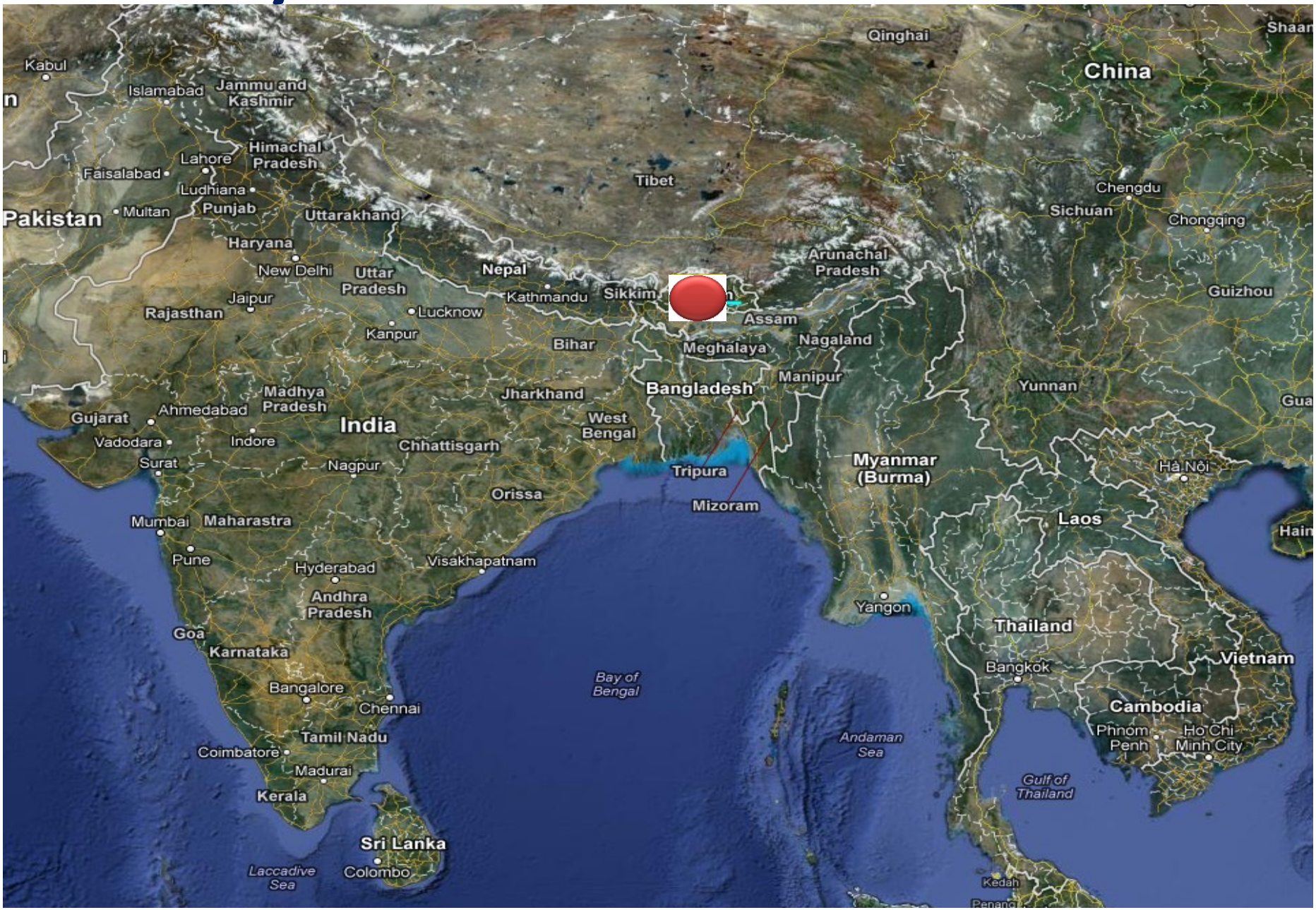
BHUTAN

Country - BHUTAN



Economy

- Tourism;
- Hydropower;
- Agriculture;

Area: 38,394 sq. km
Forest cover: 70.5%
National Language: Dzongkha
Population: 708,265
Predominantly Buddhist

National Sport

Industries

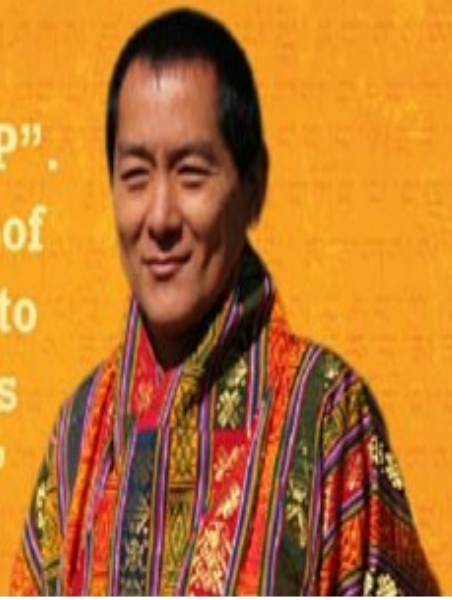
1. Production & manufacturing: 1,777
2. Services: 19,231

BHUTAN

GHO

GROSS NATIONAL HAPPINESS

"GNH is more important than GDP". The understanding of what humans need to make them happy is vital to our society."



1. Promotion of [Sustainable Development]

2. Preservation and promotion of [Cultural Values]

3. Conservation of the [Natural Environment]

4. Establishment of [Good Governance]

GROSS NATIONAL HAPPINESS

1. Psychological Well-Being

2. Standard of living and happiness

3. Good governance

4. Health

5. Education

6. Community vitality

7. Time use and happiness

8. Cultural diversity and resilience

9. Ecological diversity and resilience

Institutional Set - up

Background of the Organization:

The BHUTAN STANDARDS BUREAU an autonomous body established in the year 2010 under the **'Bhutan Standards Act 2010'.**

But became an autonomous Agency only in '2011'

The **Board** (highest policy making body) for BSB established and Chairman appointed.

CORE OBJECTIVE

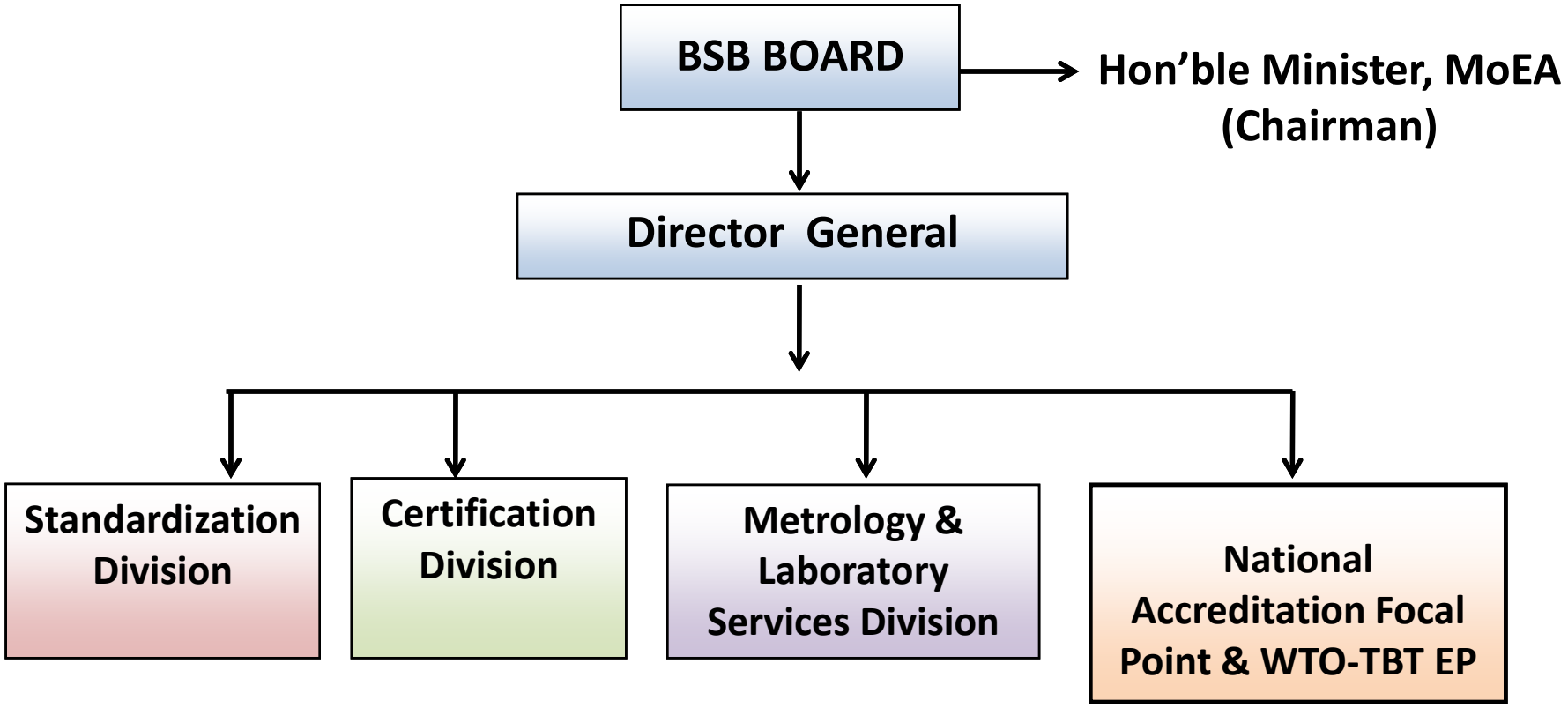
'Facilitate Trade, provide market access and ensure QUALITY of Products in the Market'

MANDATE

As per the provisions of the Act, the *Bureau* shall have the mandate to:

1. Develop **National Standards** and facilitate their implementation;
2. Establish and operate **Metrological referral and calibration** laboratories;
3. Establish and operate **Product testing infrastructure**;
4. Carry out/operate **Product and management system certification** schemes;
5. Permit, coordinate and facilitate **Accreditation** of laboratories and certification bodies;
6. Oversee the implementation of **Regional & International trade Agreement** related to standards & technical barriers to trade;

Organization Structure - BSB

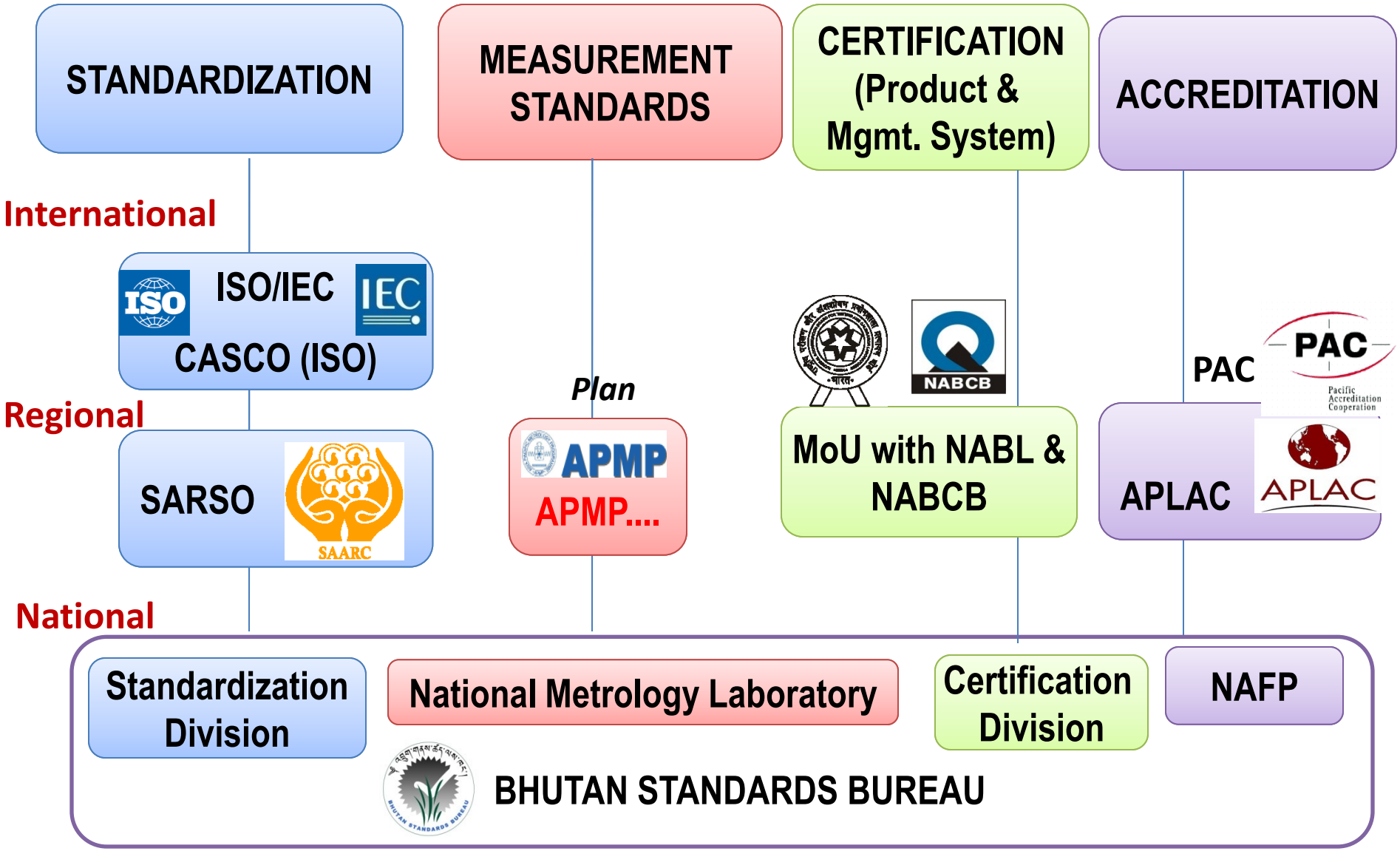


BOARD MEMBERS:

1. **Minister (MoEA), Hon'ble Chairman**

2. Secretary, NEC Secretariat (Member)
3. Director General, Tourism Council of Bhutan (Member)
4. Executive Director, BAFRA, MoAF (Member)
5. CEO, Bhutan Electricity Authority, MoEA (Member)
6. General Secretary, BCCI (Member)
7. General Secretary, Association of Bhutanese Industries (Member)
8. General Secretary, Exporters' Association of Bhutan (Member)
9. **Director General, BSB (Member Secretary)**

National Quality Infrastructure - BSB



BACKGROUND

SMTQ PROJECT - UNIDO

Brief Background of the SMTQ Project

Main Technical Barriers and Impediments for Export

Inadequacy of:

- ***Standard formulation*** and dissemination of this information.
- Laboratory capabilities for ***Precision Measurement*** and *Testing*.
- Internationally accepted ***conformity assessment systems.***

Improved quality and productivity to compete in global markets

The UNIDO/NORAD SMTQ programme:

Phase 1 (2003 – 2007);

This was a preparatory phase to assess the specific needs of the Bhutan and establish/strengthen basic SMTQ institutional structure such as **standards organizations, TBT enquiry point, weights and measures verification system.**

Phase 2 (2007 – 2012);

Follow up on the master plan for Standards, Metrology and Testing institutions developed in the phase-1.

This included strengthening of **Standards Institution and Metrology in Bhutan.**

IMMEDIATE OBJECTIVE:

'To strengthen the Standards cell in the Bhutan Standards Bureau and its Metrology laboratory'

The programme aimed *to facilitate the industrial development and export capabilities and spur the economic growth in Bhutan by reducing Technical Barriers to Trade through the strengthening of institutional structures and national capacities in standards, metrology, testing, quality and conformity assessment*.

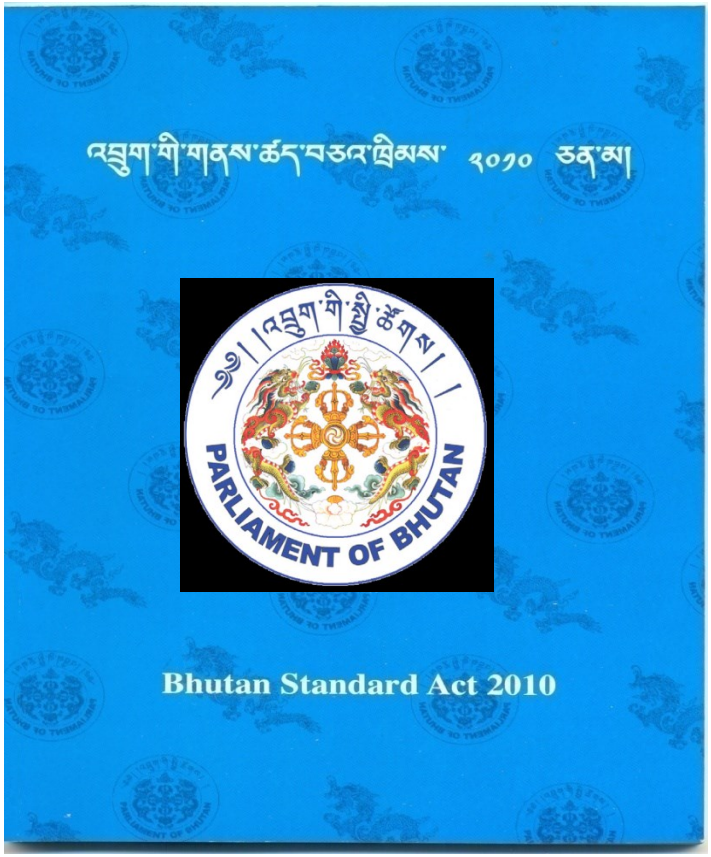
ACHIEVEMENTS OF THE SMTQ PROJECT

PHASE I & II

ACHIEVEMENTS OF THE SMTQ PHASE I & II

Bhutan Standards Act 2010 – Drafted in the year 2008 and finally endorsed by the parliament of Bhutan in the year 2010

Establishment of Bhutan Standards Bureau



Bhutan Standards Act 2010

ACHIEVEMENTS OF THE SMTQ PHASE I & II

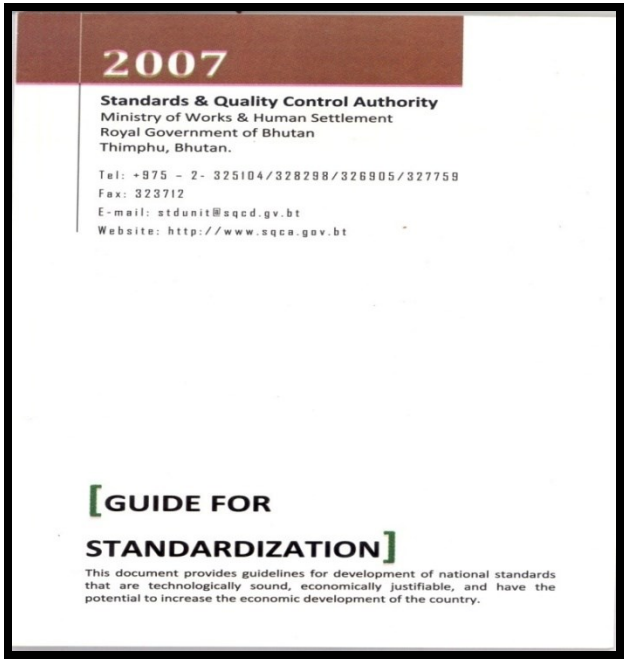
OUTPUT 1:

Capability built in the Standards Cell for Adoption of Standards:

1. Arranged training of the standards cell in adoption of international standards and standards of trading partners to facilitate trade;

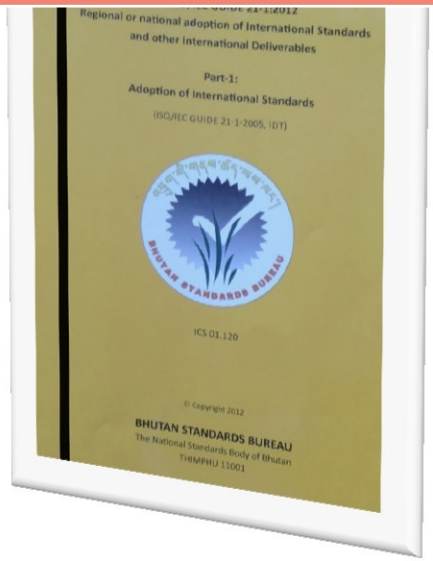
   Mission by Mr. A.K.Bahl, TBT Expert during

2. Published, Printed and distributed:
   'Guide for Standardization'



ACHIEVEMENTS OF THE SMTQ PHASE I & II

Sl. No.	TC No.	TC Name
1.	TC-01	Civil Engineering Technical Committee
2.	TC-02	Food & Agriculture Technical Committee
3.	TC-03	Electrical & Electronics Technical Committee
4.	TC-04	Basic & Management System Technical Committee
5.	TC-05	Pharmaceuticals and Traditional Medicines Technical Committee
6.	TC-06	Textiles Technical Committee
7.	TC-07	Wood and Timber Products Technical Committee
8.	TC-08	Mechanical Engineering Technical Committee
9.	TC-09	Graphical Symbols Technical Committee



13 – IEC Standards

11 – ISO/IEC Management System Standards

ACHIEVEMENTS OF THE SMTQ PHASE I & II

OUTPUT 2:

WTO TBT Enquiry Point/ Standards Information Centre strengthened;

Familiarization for WTO-TBT Enquiry Point -
Training for the Enquiry point in TISCI (Bangkok) and Spring Singapore.

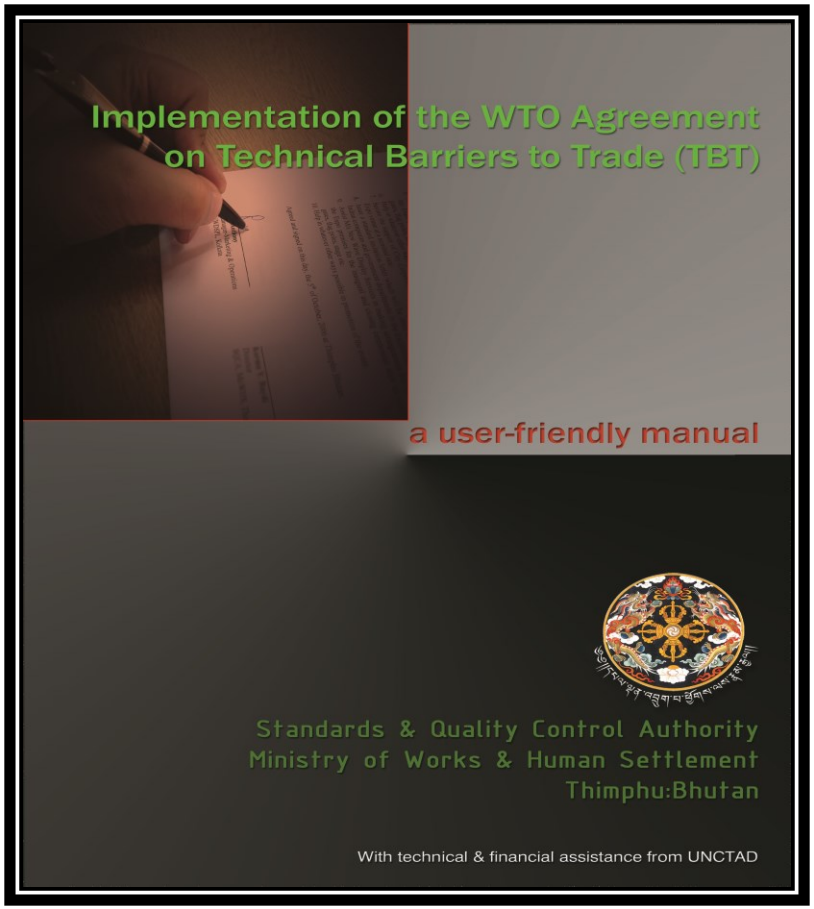
ACTIVITY: Established a dissemination system for standards and technical regulations to the industry and exporters;

Stakeholders sensitized on TBT issues TBT notifications downloaded.

Awareness Workshop organized

ACTIVITY: Publication, Printing and distribution of user friendly manual on **'Implementation of the WTO Agreement on TBT'.**

Printed and distributed to all relevant stakeholders.



OUTPUT 3:

Technical Information Center;

'To create a data base on standards from major trading partners, technical regulation of different countries having bearing on Bhutanese international trade and conformity assessment procedures'

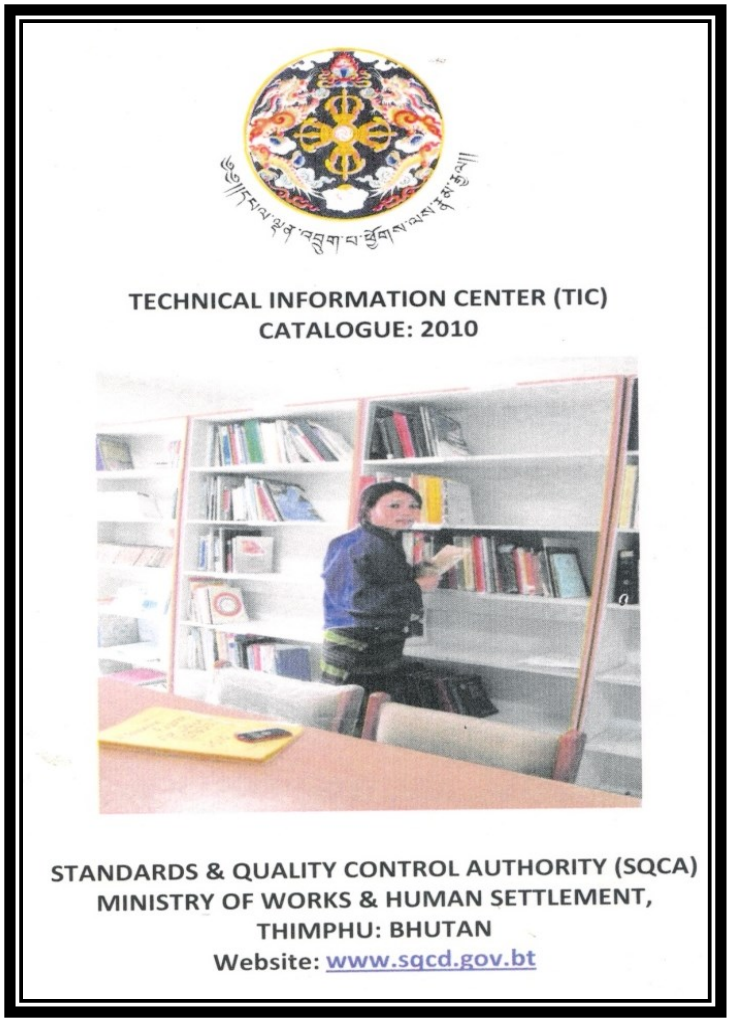
Study visit of two officials from BSB to the three-week comprehensive Technical Information Centre Management Training at Paibare, Inc. Philippines – August 2008;

Technical Information Centre

1. Published, printed and distributed:
   'Technical Information Center Catalogue'

2. ICS & ISONET Manual have been made available in the Library;

3. Win Isis-free Library software has been downloaded from the UNISCO website, and been installed.
(As recommended by the UNIDO consultant)



OUTPUT 4:

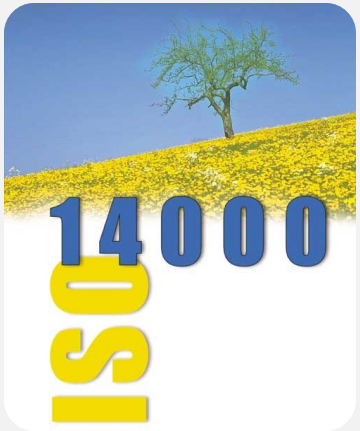
ISO Certification:

3 companies certified for ISO 9001:

1. *Jigme Mines*
2. *Jigme Industries*
3. *Bhutan Polythene Company*

3 companies certified for ISO 14000:

1. *Jigme Mines*
2. *Jigme Industries*
3. *Bhutan Carbide and Chemicals Ltd.*



OUTPUT 5:

Awareness created about *SA 8000* and *OHSAS 18000* Standards.

ACTIVITIES:

Two awareness seminars on SA 8000 (Thimphu and Phuentsholing) conducted from in 2008.

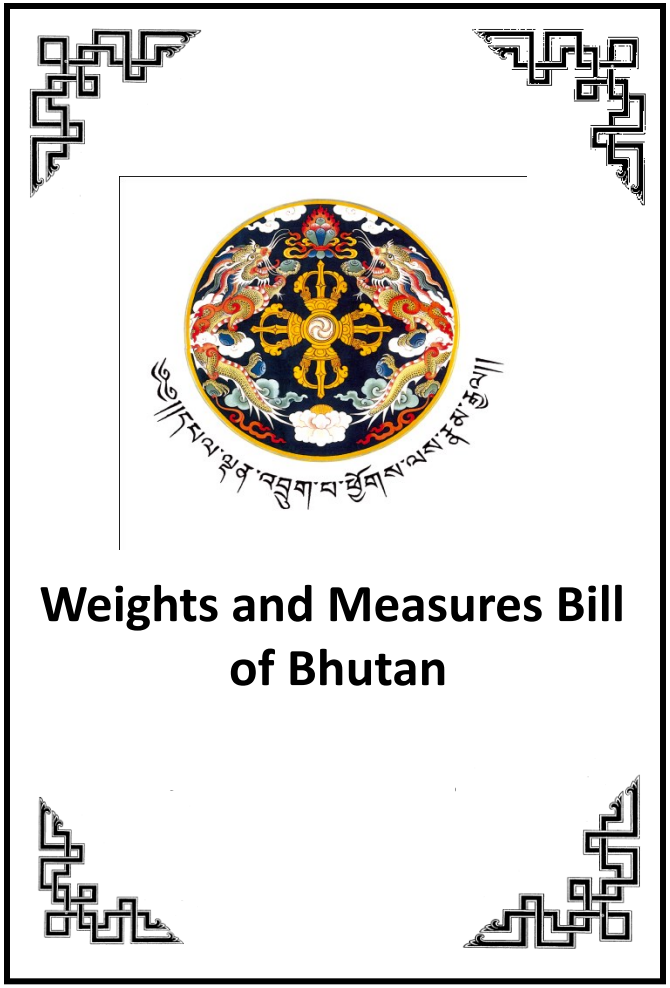
Two awareness seminars on OHSAS 18001 conducted in the year 2009.

Output 6

Legal and Industrial Metrology Laboratory Established

1. Legal Document:

Weights and Measures Act
DRAFTED



2. Purchase: Metrology Equipments

AREA	Equipments	Status	Purpose
Mass	1. Secondary standard weights of denominations: kilograms 1,2,2,5 & 10; grams and milligrams each of denominations 1,2,2,5,10,20, 20,50, 100,200,200 and 500; 2. Working standard weights of denominations as above plus two 20 kg weights; 3. Weight sets, Class M1, M2 and M3. 4. Precision weight 50 kg; 5. Standard balances capacities Capacity 300gms, Capacity 60kg; 6. E1, Analytical Balance 7. E1 Precision balance – 3 Nos.	In Operation	Verification of working standard weights Verification of commercial weights Legal Metrology Verification of weighing balances Verification of commercial weights & measures Verification of standard weights and measures
Length	1. Measuring tape calibrator, 1000mm; 2. Secondary Standards meter bar; 3. Working standards meter bar;	In operation	Verification of commercial length and measures
Temperature	Dry block calibrator (50^0 to 650^0 C);	In operation	Calibration of temperature measuring devices;
Pressure	1. Digital Pressure Calibrator (0 to 400 bars);	In operation	Calibration of Pressure gauges
Volume	1. Working standard capacity measures: denominations as above plus 10 liters; 2. Secondary standard capacity measures; denominations 1,2 & 5 liters; 20,50,100,200 & 500 milliliters;	In operation	Verification of working standard capacity measures

Metrology Equipments supplied from UNIDO till date:

Manpower: Metrology

Area	***Numbers***
Head	1
Length	3 Engineer – 1 Lab. Tech - 2
Mass	3 Engineer – 1 Lab. Tech - 2
Temperature/Pressure	3 Engineer – 1 Lab. Tech - 2
TOTAL	**10**

3. Capacity Building & Human Resource Development:

i. Training by Mr. Christopher John JENKINS, Metrology Expert – *August 2008*

Training on Calibration:
Length, Mass and Temperature measurement
Field Visits:
Petro fuel dispenser, cloth and grocery shops

ii. Training by Mr. Vellingiri, Metrology Expert

February to March 2009
Additional inhouse Training delivered to Metrology staff on length, Mass and Temperature measurement

iii. Training for Metrology inspectors (MoEA and BSB) conducted in IILM, Ranchi, India

16th to 30th April 2010

iv. Training for Metrology inspectors (MoEA and BSB) conducted in IILM, Ranchi, India

16th to 30th April 2010

v. Training in-house:

Calibration of Mass;
Uncertainty calculations;
Familiarization on ISO 17025
– Mr. L.S Tanwar
October – November 2010

vi. Institutional Visit to Metrology Institutes of Singapore, Philippines and Thailand

From 9th -19th August 2011

To familiarize Metrology establishments of the South East Asia & to understand the laws, rules and regulation regarding the Weights and Measures.

vii. Mr. T.S Tewari & Dr. Tripurari Lal (May 2012)

1. Procedure for Calibration of Mass, Length and Volume

2. Provide training on calibration of mass & on length parameters.

3. Calculate uncertainty in measurement.

4. Determine Best Measurement Capability for applied entire range of mass and length and as per the scope of application for NABL Accreditation.

viii. Dr. Tripurari Lal May 1st to 13th May 2012

i. Develop calibration procedures;

ii. Provide training on calibration of mass & on length parameters.

iii. Calculate uncertainty in measurement.

iv. Determine Best Measurement Capability for applied entire range of mass and length and as per the scope of application for NABL accreditation.

List of Weights, Length & Volume Calibrated & Verified ……..

#	Name of Shop	Types of Weight
1	Hati Grosary T/khang	10kg[HD], 5kg[bs], 2kg[oo], & 1kg[BF]
2	Ugyen T/khang	2kg[HD] ,1kg[MM]
3	Buthi T/khang	1kg x 2[HD]
4	Dema T/khang	5kg ,2kg[MAA], 2kg[PO]
5	Dogar T/khang	10kg, 2kg[M1] ,1kg[HD]
6	Darsing Meet shop	10kg[HD] ,5kg ,2kg ,1kg ,500g
7	R.K Meet Shop	2kg[HD] ,1kg[HD], 500g[BP]
8	Yakthuba Meet Shop	2kg[HD], 500g[PC]
9	P.Wang Meet Shop	20kg[PC], 10kg[HD] ,500g[BP] ,1kg[HD], 2kg[BP]
10	T.L Meet Shop	20kg[PC] ,10kg[HD], 500g[BP] ,1kg[HD], 2kg[BP]
11	Kalpana Meat Shop	20kg[HD], 10kg[CW] ,500g[HD] ,2kg[HD] ,1kg[HD],200g[HD]
12	Seven Star Meat Shop	20kg[HD], 10kg[PC], 5kg[HD], 2kg[BEW], 1KG[ONI], 500g[H]
13	A.K Meat Shop	20kg[HD], 10kg[HD], 5kg[HD], 2kg[HD], 500g[PC], 200g[HD], 100g[BEW], 50g[CW]
14	D.K Meat Shop	10kg[HD], 5KG[PC], 2KG[HD], 1KG[BP], 500G[NCH], 200G[PC]
15	Pop Meat Shop	20KG[HD], 10KG[MAA], 5KG[DAS], 2KG[MAA], 1KG[HD], 500G[HD], 200G[HD]
16	Meat Shop	20KG[HD], 10KG[PC], 5KG[NAA], 2KG[SGW], 1KG[HD], 1KG[BEW], 1KG[HD], 500G[KE], 500G[BEW]
17	Lhams Meat Shop	20KG[HD], 10KG[HD], 5KG[HD], 2KG[HD],1KG[MI], 500G[HD]
18	G.M Meat Shop	5KG[SICO], 2KG[MAA], 1KG[HD], 1KG[HD], 500G[BEW], 500G[HD], 200G[HD], 100G[HD], 50G[SCW]
19	Om Meat Shop	20KG[HD], 10KG[HD], 5KG[HD], 5KG[HCW], 2KG[HD], 1KG[HD], 500G[BEW], 200G[HD], 100G[MI]
20	Fuel Stations	Thimphu (8 fuel Stations)
21	Druk Iron / Taj Tashi / Bhutan Agro / DGM (govt. lab.)	Weights

Year: 2009, 2010, 2011, 2012 & 2013

Accreditation in BHUTAN

A. Accreditation of Metrology Laboratory in the following parameters:

1. **Mass &;**
2. **Length;**

NABL

National Accreditation Board for Testing and Calibration Laboratories

Department of Science & Technology, India

CERTIFICATE OF ACCREDITATION

NATIONAL METROLOGY LABORATORY

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

Bijug Lam, Below Hotel River View, BSB Campus, Thimpu, Bhutan

in the discipline of

MECHANICAL CALIBRATION

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number C-0964

Issue Date 01/08/2013

Valid Until 31/07/2015

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

Shally Sharma, Convenor

Anil Relia, Director

Dr. T. Ramasami, Chairman

Accreditation in BHUTAN

B. National Food Testing Laboratory under BAFRA, MoA&F – Accredited by NABL, India, March 2013

OUTPUT 7:

Product Certification Body (ISO/IEC 17065):

- ***Quality Manual finalized;***
- ***Scheme of Testing and Inspections finalized;***
- ***Procedures finalized;***
- ***Forms and Formats finalized;***

OUTPUT 8: Awareness

1. Awareness workshop

July 2012

2. Brochures developed and distributed:

i. BSB profile;

ii. Metrology: Its benefits and the services

iii. Accreditation related services;

UNIDO - SMTQ Phase III Project

Objective of the project

The Phase 3 objectives build on the achievements of Phase 2 and the lessons learned to establish the desired SMTQ infrastructure and ensure measures are in place to make the initiatives sustainable using local resources:

Bhutan:
Achieve Accreditation of the food-testing laboratory of BAFRA with a full scope of testing, strengthen the metrology and construction products certification schemes of BSB and determine the best approach to encourage the national use of management systems.

OUTPUTS OF PHASE SMTQ Phase III

- ✓ Measuring instruments calibrated throughout Bhutan with international acceptance of calibration certificates;
- ✓ An operational BSB Product Certification Body;
- ✓ Management Systems Supporting Societal Objectives;

THANK YOU

FOR YOUR KIND ATTENTION