Sustainability & Environment Technical Committee

TC – 10

Background

Bhutan's approach to economic development is guided by the philosophy 'Gross National Happiness'. The conservation of environment has central role to the development philosophy to "secure ecologically balanced sustainable development, while promoting justifiable economic and social development" as required by the mandate of the Constitution of Bhutan. The health of our environment has firm correlation to the quality of life and economy for present and future generations.

The aggravating environmental challenges ensued by rapid pace of socio-economic development such as air pollution, water and sewage issues, waste management, soil contamination, climate change mitigation and adaptation have become emerging issues jeopardizing the public health and environment. The implementation of standards has become inevitable solutions to safeguard the environmental health.

The environmental standards helps to identify, manage, monitor and control their environmental issues in a "holistic" manner accrued by maintaining the process and activities friendly to the environment. The standards not only protects environment but also linked to business performance and profitability. These includes improving the corporate image, enhancing access to export markets and improving relationship with customers, regulators, the public and other stakeholders.

Technical Committee (TC)

1. Scope

To formulate national standards in the field of environmental quality (air, water and waste), environmental cross cutting issues (Climate Change and Solid Waste Management) and Environment Management System in support of sustainable development.

To formulate national standards in the field of environmental quality, Management Systems and cross cutting issues in pursuit of GNH.

2. Terms of reference

a.To liaise with and contribute to harmonization of regional and international standards
b. To act as mirror committee to regional and international standards technical committee
c. To comment and vote on national, regional and international standards within the scope of technical committee.

3. Composition

The committee must have adequate representation from relevant stakeholders to ensure proper balance for standardization. The TC will have membership ceiling of 15 experts and agencies from where the TC members nominated are but not restricted to;

Institution	Government		Private	NGO
	Academia	Non- Academia		
a. NEC	✓			
b. RSPN			✓	
c. BTFEC			✓	
d. UWICE	✓✓			
e. CNR, RUB	✓			
f. ABI		✓		
g. BCCI	✓			
h. DoFPS	✓			
i. BSB		✓		

NEC; National Environment Commission, RSPN; Royal Society for Protection of Nature, BTFEC;Bhutan Trust Fund for Environmental Conservation, UWICE; Ugyen Wangchuck Institute for Conservation and Environment, CNR;College of Natural Resources (Royal University of Bhutan), ABI; Association of Bhutanese Industries, BCCI; Bhutan Chambers of Commerce and Industry, DoFPS; Department of Forest and Park Services and BSB; Bhutan Standards Bureau.

4. Roles and Rights of TC members

Roles and Rights	Technical Committee	Remarks
a. Tenure	3 years	
b. Voting	✓	The TC members will have rights to vote and comment on whole document unlike

c. Commenting	✓	SCand WG having limitation to the defined scope of document.

Rationale to constitute TC - 10

Article 5 (Environment) of the constitution of Bhutan envisaged that every citizen of Bhutan should contribute to the protection of the natural environment, conservation of the rich biodiversity and prevention of all forms of ecological degradation including noise, visual and physical pollution through the adoption and support of environment friendly practices and policies.

The development and adoption of international and regional standards on environment does not fall under the TOR of existing committee is the primary reason to establish TC – 10 to carry out standardization outside the scope of existing technical committee. The TC – 10 would accrue greater desire to achieve sustainable development and conserve the natural capital through comprehensive study of environmental quality;

I. Waste

Rapid urbanization, increasing affluence, population growth and poor waste management threatened the public health and natural environment such as pollution of water, air and emission of greenhouse gases. The mounting waste problems called on the environment standards to deal the different waste (E-waste, Medical waste, industrial waste etc.) issues to maintain the overall health and wellbeing of our citizen at large.

The total amount of waste generated has increased substantially (per-capita waste generation was 0.53 kg individually per day as of 2008) and the wastes from medical facilities, industries and used electronic items are contributing hazards to human and environmental health. Therefore, there is a need to provide adequate technical capacity towards attaining "Zero Waste through maximizing resource recovery for creating sustainable waste management systems and protect the natural unique ecology of Bhutan".

The waste management standards establishes safe approaches to the collection , transport, processing or disposal, managing and monitoring of waste materials besides encouraging better resource management.

II. Water quality

The water quality is deteriorating in and around the urban areas compromising the drinking water quality, sanitation and hygiene. The adverse impact of climate change is further aggravating water problem for agriculture leading to scarce economic water supply for agriculture and industries. To improve the public health through safe supply of water, the standards on water quality in invaluable for management of drinking water utilities and for the assessment starting from sampling to distribution.

The standards provides guidelines for the assessment and for the improvement of the service to users which specifies the elements of drinking water and wastewater services of relevance and interest to users. The implementation of standards on treatment work intended for human consumption would help maintain human health besides contributing to environment water security.

III. Air quality

Air pollution is becoming one of the emerging issues and its quality is deteriorating, particularly in urban centres. Industrial enterprising, increase in vehicle number, mining/quarrying, road resurfacing and construction activities are the cause for deteriorating the air quality. Emission of greenhouse gases from those activities which contributes to global climate change, is also on the rise.

Most industrial areas have exceeded the threshold level of pollutant (Respirable dust; PM 2.5) posing serious threat to human health. The air pollution from domestic sources can be controlled by enforcing standards on Ambient air quality, Industrial emission, workplace emission and vehicle emission to safeguard the public health besides helping to prevent the reduction of crop productivity and contributing to reduce the emission of GHGs.

IV. Climate change

According to national GHG inventory, Bhutan is a net sink for greenhouse gases. However, with the developmental and economic activities, emission from energy, transport and industrial process has increased contributing to climate change. Standards on Environmental Labelling and declarations, environment Management and Environment communications helps organization to improve the organization's performance environmentally to contribute to Paris accord on climate change.

Bhutan is highly vulnerable to the adverse impacts of climate change. In addition to being a landlocked and least developed country with a fragile mountainous environment, high dependence of the population on agriculture and the significant role of hydropower for economic development increases the vulnerability. Bhutan also faces increasing threats from climate hazards and extreme events such as flash floods, glacial lake outburst floods (GLOF), windstorms, forest fires and landslides.

The inclusion of standards of communication on environmental impacts (ISO 14020, 14063, 21930) and promoting good environmental management and design (ISO 14000 family) in climate change policy and a long term comprehensive strategy will be useful to adaptation and mitigation of climate change to reduce the climate change impact.

V. Biodiversity

Biodiversity management can be improved by incorporating the environmental assessment process and reviewed ISO 14001:2015 takes the aspects of biodiversity through identifying the environmental impacts to build sound environmental management system in an organization.

ISO 37101- Standards for sustainable communities and cities takes in the context of biodiversity and ecosystem services through the philosophy of 'The preservation and improvement of the local, regional and global environment, especially the protection, restoration and enhancement of biological diversity and ecosystem services, including fauna, flora and genetic diversity is crucial to ensure safe and pleasant living conditions.'.

VI. Sustainability

An integrated analysis is required to successfully address complex development issues that balance social, economic, and environmental development. By bringing together the three dimensions of sustainable development into one framework, Standardization in the field of sustainability will include the development help both rural and urban areas become more sustainable.

Proposed subjects for standards formulation

Standards mapping has showed the environment standards are being used by the various institution mandatorily and voluntarily to protect and promote the environmental quality. The subject of standards formulation in 12th FYP will be based on **Bhutan Standards Act 2010**which requires the standards to foster national economy, benefit the health, safety and welfare of public, protect consumer and natural environment, promote industrial efficiency and facilitate the domestic and international trade.

Standards	12th Five year Plan (FYP)				
	1st year	2nd year	3rd year	4th year	5th year
a. Conversion of agency standards to national standards					
b. Standards contributing to GDP					
c. National concerns					

5.1. Conversion of agency standards to national standards

Regulatory bodies have enforced the environmental standards to the relevant organizations/stakeholders mandatorily. Standards Mapping Exercise conducted by BSB showed two sectorial environment standards *viz.Drinking Water Quality Standards* and *Environmental standards* focused on pollutants such air, water, effluents and noise are in enforcement. Conversion of these standards to Bhutan National Standards under the framework of 'Rule for Standards Development 'would accrue higher domino effect of standards besides having cross-boundary acknowledgement on standards.

5.2. Standards contributing to GDP

Bhutan's environmental services values USD 15.5 billion $year^{-1}$ more than country's GDP of USD 3.5 billion year-1(Kubiszewski*et al.,*2013). The monetary value of USD 289.46 million was tapped to contribute towards GDP of the country (National Statistics Bureau, 2017) which is

1.8% of the total value of environmental services. Although, it's difficult to convert environmental services into monetary terms, there still lies the space to explore processes and methods to tap the services and convert into monetary terms. The standardization on processes to obtain the services will be the key part to convert the environmental services into monetary benefit. This will improve the service generation besides aiding to conservation of green resources.

5.3. National concern

The pressure on environment quality is on rise and the cross cutting issues on solid wastes and climate change became the recent national concern to safeguard the livelihood of people both in rural and urban areas. The population growth is correlated to increased resource use which attributes to increasing wastes. The problem calls adequate technical capacity to tackle the issue through maximum recovery for sustainable waste management. Waste management standards establishes safe approaches to the collection , transport, processing or disposal, managing and monitoring of waste materials besides encouraging better resource management.

Bhutan nested in fragile ecosystem is at the mercy of climate change. The developmental and economic activities has increasingly contributed to climate change. Standards on Environmental Labelling and declarations, environment Management and Environment communications helps organization to improve the organization's performance environmentally to contribute to Paris accord on climate change.The inclusion of standards of communication on environmental impacts (ISO 14020, 14063, 21930) and promoting good environmental management and design (ISO 14000 family) in climate change policy and a long term comprehensive strategy will be useful to adaptation and mitigation of climate change to reduce the climate change impact.

6. Benefit of environment standards

The availability of national standards on environment would bring robust environment management system, procedure and requirements in place in Bhutan. The standards that will be developed by this committee will consider all environmental issues relevant to its operations, such as air pollution, water and sewage issues, waste management, climate change mitigation and adaptation, and resource use and their efficiency.

Environment standards not only protects environment and biodiversity but also linked to business performance and profitability. These includes improving the national & corporate image, enhancing access to export markets and improving relationship with customers, regulators, the public and other stakeholders. The environment standards would accrue sustainability though aiding the fulfilment of environmental responsibility as enshrined in the constitution of Bhutan to trade-off between ecologically balanced socio-economic development plans and initiatives.

Although the manufactured products are eco-friendly designed and are aligned to some environmental requirements for compliance, but does not cater and assure all environmental protection and conservation issues, due to which there is requirement of an environment management system standards to resolve and tackle other important environmental concerns in a holistic approach. Therefore, there is a need of a technical committee on sustainability and environment at BSB to undertake standardization activities and at the same time all management standards implementations ensure continual improvement and takes care of the environmental problem within the organization's systems and at the national level.

Sub-Committee (SC)

1. Terms of Reference

To draft national standard within the defined scope of standardizationin the field of environment.

2. Member composition

Sub-Committee may constitute members from parent TC with or without additional members from outside. The SC will have membership ceiling of 6-7 experts in current practice.

Institution	Government		Private	NGO
	Academia	Non- Academia		
a.				
b.				
c				
d. BSB				

1. Roles and rights of SC members

Roles and Rights	Sub Committee	Remarks
a. Tenure	3 years	
b. Voting	×	Commenting will be restricted only to SC's defined scope of standardization
c. Commenting	✓	

2. Proposed subjects for standards formulation

The proposed subject for standardization will be assigned when deemed necessary under the TC's subject of standardization.

Working - Group(WG)

1. Terms of Reference

To carry out the defined task in the standardization process as assigned by TC and SC.

2. Member compositions

The group will be an independent experts generally not more than 5 members. The membership to the group does not necessarily come from the parent TC or SC.

Institution	Government		Private	NGO
	Academia	Non- Academia		
a.				
b.				
c.				
d.				

3. Roles and rights of WG members

The working groups are generally deemed to be ad hoc in nature and the parent TC or SC may review the need to continue the working group or dissolve it once the task assigned has been concluded.

Roles and Rights	Working Group	Remarks
a. Tenure	Until the tasks is completed	Commenting will be restricted only to WG's defined section of standards document.
b. Voting	×	
c. Commenting	✓	

4. Proposed subjects for standards formulation

The proposed subject for standardization will be assigned when deemed necessary under the TC's and SC's subject of standardization.

Role of Chairman

The chairperson of the committee is responsible for the overall management of the committee and subcommittee and working groups under it. The chairman shall:

a) Act in a purely national capacity divesting himself of an organizational point of view, thus he cannot serve concurrently as the nominee of an organization
b) Guide the secretary of the committee/subcommittee in carrying out his duty
c) Conduct meeting with a view to reaching agreement on the committee drafts
d) Ensure at the meeting that all points of view expressed are adequately summed up so that they are understood by all present
e) Ensure at the meeting that all decisions are clearly formulated and made available in written form by the secretary for confirmation.

Role of Member Secretary

The member secretary besides being the secretary of the committee is also a member of the committee and is expected to play a full part in its technical work. The member secretary is especially responsible for:

a) Arrangement of meeting in time in consultation with Chairperson
b) Submission of documents, preparation of committee drafts, arranging for their circulation and treatment of the comments received
c) Preparation of meetings including:
    i) Preparation of agenda and arranging for its circulation
    ii) Circulation of all documents on the agenda
    iii) Compilation of comments on documents which appear on the agenda.
d) Recording of decisions taken in the meeting
e) Preparation of the minutes of meeting and arranging for its circulation
f) Assist the Committee in preparation of draft standards
g) Follow up actions and Implementation of decisions taken
h) Coordination with standard work in related fields and collection of information from, for example, foreign standards, published papers and books
i) Guiding the committee on the principles and practices adopted by BSB and International Standard bodies
j) Updating information on the committee composition and Program of work on BSB Website quarterly.

The Member Secretary has a particular duty to ensure the drafts for wide circulation and final drafts are prepared according to the guidance given in BSB Rule for Structure and Drafting of Bhutan Standards 2017.In all circumstances Member Secretary shall work in close liaison with the Chairperson of the Technical Committee.

Role of Committee Members

Technical committee members should be experts within their field and also be able to be team players. To achieve the best possible outcome, technical committee members are expected to attend all meetings. The TC members shall;

a) Prepare thoroughly before technical committee meetings

b) Contribute to technical committee work between technical committee meetings – this may include researching, drafting, or reviewing the available standards

c) Responsible for expressing their organizations' views, rather than their own and for keeping their organizations well informed about current projects.

ANNEXURE

Current Members of Sustainability and Environment Technical Committee (TC-10)

Name	Position Title	Organization	Membership position
Dr. OM Katel	Senior Lecturer	CNR	Principal
Ms. Chogyel Wangmo	Associate Lecturer	CNR	Alternate
Mr. Sangay Wangchuk	Head, CFST	UWICE	Principal
Dr. Kaka Tshering	Dy. Chief Forestry Officer	UWICE	Alternate
Mr. Ugyen Lhendup	Chief Program Officer	BTFEC	Principal
Mr. Tenzin Khorlo	Chief Environment Officer	NEC	Principal
Ms. Choki Wangmo	Dy. Chief Env. Officer	NEC	Alternate
Mr. Tashi Norbu Waiba	Sr. Forestry Officer	DoFPS	Principal
Mr. Jigme Tshering	Sr. Project Officer	RSPN	Principal
Mr. Yeshey Dorji	Sr. Research Officer	BCCI	Principal
Mr. Ugyen Chophel	----------	BCCI	Alternate
Mr. Annop Ghalley	Sr. Manager	ABI	Principal
Mr. Pema Namgyal	Program Officer	ABI	Alternate
Ghaley	Asst. Program Officer	BSB	Member Secretary
Mr. Phurpa Wangdi			

NEC; National Environment Commission, **RSPN**; Royal Society for Protection of Nature, **BTFEC**; Bhutan Trust Fund for Environmental Conservation, **UWICE**; Ugyen Wangchuck Institute for Conservation and Environment, **CNR**; College of Natural Resources (Royal University of Bhutan), **ABI**; Association of Bhutanese Industries, **BCCI**; Bhutan Chambers of Commerce and Industry, **DoFPS**; Department of Forest and Park Services and **BSB**; Bhutan Standards Bureau.

Prepared by;

Member Secretary