

Final Draft  
For public comments



# NATIONAL STANDARDIZATION STRATEGY 2021-2023



**Government of Nepal**  
**Ministry of Industry Commerce and Supplies**  
**Nepal Bureau of Standards and Metrology**  
**Balaju, Kathmandu Nepal**

**January, 2021**

To standardize a method is to choose out of many methods the best one and use it. Standardization means nothing unless it means standardizing upward.

**Henry Ford** (July 30, 1863 – April 7, 1947)

Foreword  
( to be written)

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# 1. INTRODUCTION

## 1.1 BACKGROUND

Standards make human life simpler and easier. Standards have become part of our daily life. They determine whether a plug fits into a socket, whether one mobile phone connects with another, whether a container fits on a ship, or whether we understand traffic signs when driving in another country. They also determine whether water is considered fit for consumption by humans.

Standardization supports economic growth, enhances competitiveness, and fosters technological development. It is a tool to protect consumers and support public policies for promoting trade on one hand and address health, safety, and environmental concerns on the other. It decreases cost of production, enhances quality of produce; reduces associated risks, wastages and cost of compliance set forth by the public sector. SMEs can also take benefit by utilization of appropriate standards.

Nepal Bureau of Standards and Metrology (NBSM) is the national standard body (NSB) in the country and develops voluntary standard which is used across the country. The process follows consensus decision of the committee consisting of stakeholders representing different sectors.

### Benefits of Standards for SMEs

- a) Help improve the quality of goods and services
- b) Help to drive growth, cut costs and increase profits
- c) Give the business a competitive edge
- d) Open markets for goods and services of SMEs
- e) Open the door for new customers and strengthen the existing business
- f) Help SMEs to compete with bigger enterprises
- g) Enhance the credibility of SMEs
- h) Sharpen business practices and increase efficiency
- i) Strengthen marketing activities, and
- j) Help SMEs to comply with technical and other regulations.

Ref.: Good Standardization Practices, ISO, 2019

It is the obligation of Nepal Bureau of Standards and Metrology (NBSM) to position standard development activities to focus on the wellbeing of the people and economic growth of the country, through identification of the need of the market and application of appropriate strategy and good standardization practices.

This **National Standardization Strategy (NSS)** has been prepared to provide clear strategies and action plans for standard development activities in order to achieve the overall objective of economic and social development of the country. This strategy is also expected to serve the requirement of the Code of Good Practice for Preparation, Adoption and Application of Standards under WTO TBT agreement.

## **1.2 NEPAL BUREAU OF STANDARDS (NBSM)**

Nepal Bureau of Standards and Metrology (NBSM), as a National Standard Body (NSB), developing national standards for the country. It was established in 1976 as the National Institute of Standards (NIS) which was renamed as Nepal Bureau of Standards (NBS) in 1981. It was renamed in 1986 as NBSM after merger with Department of Weights and Measures. Along with standard development, NBSM is also providing conformity assessment services that includes product, process and system certification, and laboratory testing. This organization is also working as National Metrological Institute (NMI) providing scientific and legal metrological services.

## **1.3 JUSTIFICATION FOR A NEW NSS**

In order to meet the challenges for standard development activities in the changing context of economic and social development of the country; and to make the process of standard development more effective and efficient, NBSM has to adopt a clear vision, strategies and action plans and create an ecosystem for the development of appropriate standards through effective and efficient means. This National Standardization Strategy (NSS) has been prepared with the following objectives:

- To adopt clear vision, mission, objectives and action plans of the organization for standard development activities in line with the WTO TBT requirements of Code of Good Practice
- To enhance stakeholder engagement through improved communication
- To identify the need of the market and the society related to standards
- To help formulate clear and implementable work programme for standard development

## **1.4 OUTCOME OF THE NSS**

The following are the two key outcomes of the NSS:

- Development of organizational vision, mission, objectives and action plans
- Define a guideline for preparation of biannual work programme for standard development

## **1.5 METHODOLOGY**

The following methodology was adopted to formulate the NSS:

- A multi-stakeholder committee constituted by NBSM developed a draft of the strategy containing organizational vision, mission, objectives and action plans for standards.
- The finalized draft was published in the website of NBSM for comments.
- Relevant comments were incorporated in the final draft and was sent to Nepal Council for Standards (NCS) for discussion.
- The NSS was finally adopted by the council.

## **1.6 STRUCTURE OF THE NSS**

This document is divided into four parts. Background, the existing situation, introduction of NBSM and justification of a new NSS is covered in the Introduction part. In the second part, assessment of the standard development activities followed by NBSM is presented. An evaluation of the existing practice is also carried out and presented in the second part.

Principles of Good Standardization Practices followed is mentioned in the third part. The fourth part covers the strategic adoptions including vision, mission, objectives and the action plans.

It is expected that the document serves as the foundation for the good standardization practices and helps to develop clear and implementable work programme as required by the WTO TBT agreement.

## 2. ASSESSMENT OF CURRENT STANDARDIZATION PRACTICES

### 2.1 STANDARD DEVELOPMENT PROCEDURE

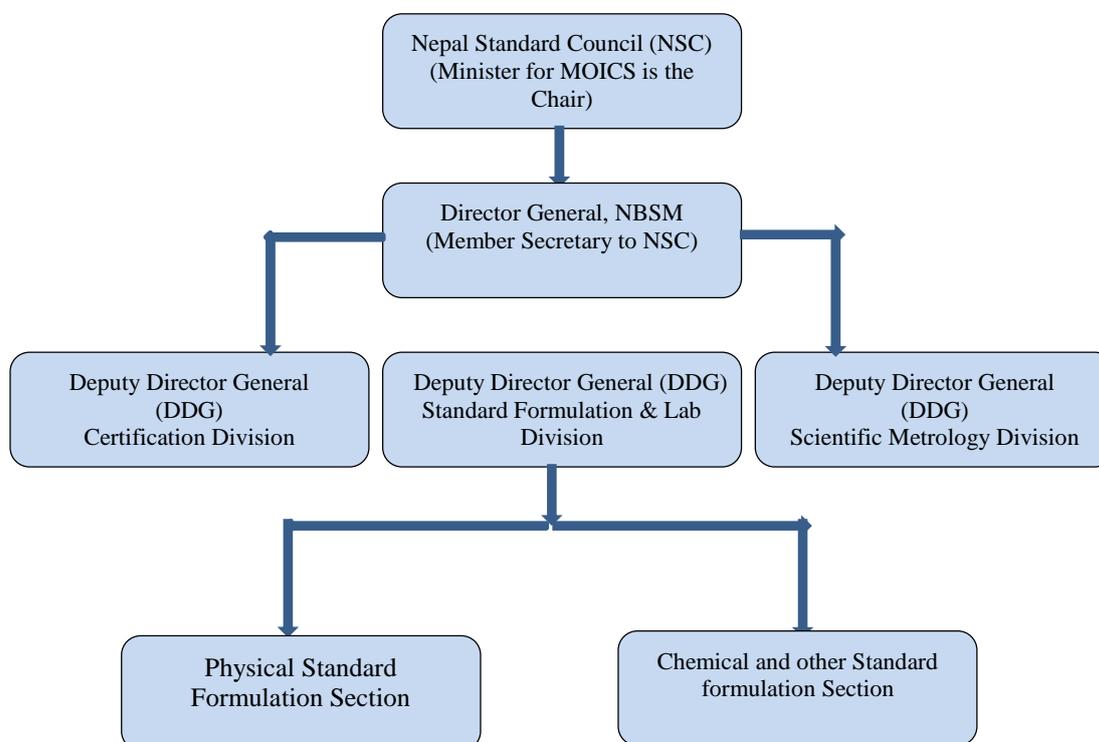
NBSM has a well-defined formal procedure for standard development. It is mentioned below.



Note: In each stage if there is any reasonable comment for the forwarded document, it is, sent back to previous committee for discussion and finalization. E.g.. if any comment is raised by the

## 2.2 ORGANIZATIONAL SET UP FOR STANDARD DEVELOPMENT

NBSM has the following organizational structure to perform the formulation activities:



**Figure 1: Organizational Structure of NBSM for Standard Formulation**

## 2.3 CONSTITUTION OF THE COMMITTEES

The work of standard development is done by multi-stakeholder committees at different level. A Technical Committee (TC) is formed under the Director General of NBSM for finalizing the committee draft of the standard. If the TC feels necessary, it may form sub-committee (SC) for preparation of working draft for the standard. The committee draft is finally discussed and approved by Nepal Council of Standards (NCS) which is also a multi-stakeholder committee under the Chair of Minister for Industry, Commerce and Supplies.

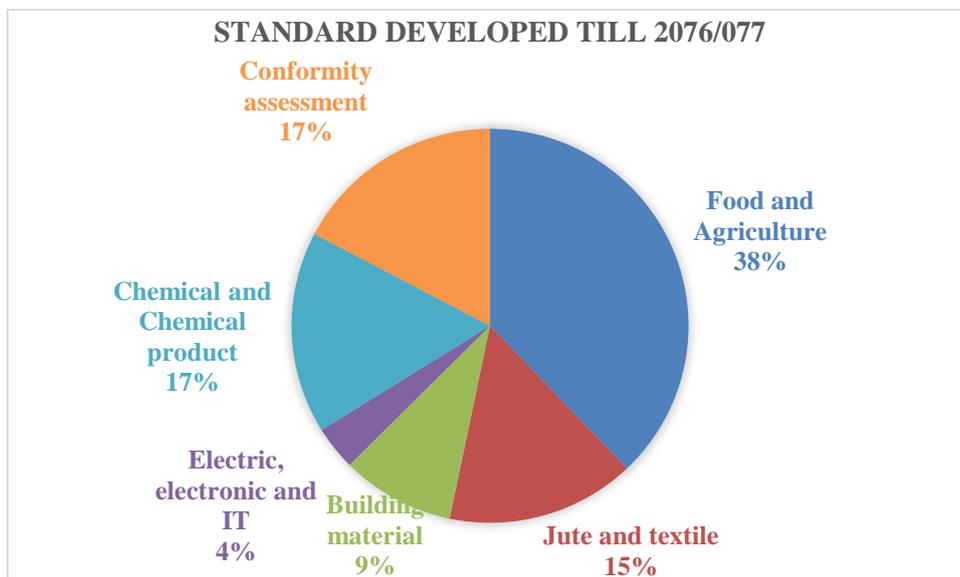
The sub-committee (SC), technical committee (TC) and the council mentioned in the previous sections are multi-stakeholder committees which includes representation from governments and regulators, manufacturers, consumers, academic institutions, experts, industry associations and users.

## 2.4 SECTORAL COVERAGE BY STANDARD FORMULATION

The number of the standards and its sectoral coverage is mentioned in Table 1 and pictorial presentation is presented in Figure 2.

**Table 1**  
**Sectoral Coverage of the Standard Developed by NBSM**

S. No.	Sector	Total No of Standards developed (till 076/077)	% of total
1	Food and Agriculture	377	38%
2	Jute and textile	153	15%
3	Building material	92	9%
4	Electric, electronic and IT	36	4%
5	Chemical and Chemical product	165	17%
6	Conformity assessment	172	17%
	Total	995	100%



**Figure 2: Sectoral Coverage of Standard formulated by NBSM**

## 2.5 STATUS OF CURRENT STANDARDIZATION PRACTICES

As a national standard body, NBSM has tried to address the need for standardization in the country for long time and has been successful in adding value to the domestic firms through the standards developed. The organization develops voluntary standards, through consensus. The process is transparent and involves engagement of stakeholders from different sectors.

However, an in-depth analysis of the developed standards, the delivery process related to the standard development activities and analysis of effect of the standards on the economy reveal that NBSM faces the following challenges which need to be addressed:

- ❖ **Sectoral coverage by standards:** Since its establishment, NBSM has published less than thousand standards, mostly related to manufacturing sector and more specifically to consumer goods. Standards need to cover many other products manufactured in Nepal or products traded in the country. Social and service sector standards have become need as contribution of service and social sector is increasing.
- ❖ **Periodic Revision:** The standard developed needs to be periodically, revised and updated. NBSM needs to establish a defined period for revision. For example, in three to five years, the standards should be revised, amended, reaffirmed or cancelled.
- ❖ **Publication of work plan:** TBT agreement under WTO requires that the **NSB** publishes its work plan in every six months. The organization has not been able to publish the periodic plan of standards to be developed.

❖ **Need analysis of the standard to be developed:** The standards can be relevant and effective if the need of the standards has been identified proactively and the standards focuses on the needs and should be provided in timely manner. Standard development activity is initiated on request by the concerned stakeholder. Quite often, NBSM itself starts development of standard for a particular product based on the need analyzed internally. More proactive approach and effective communication is required to address the need of the different stakeholders.

❖ **Effectiveness of the stakeholder engagement:** Though relevant stakeholders from different sectors, like industry, consumers, government, user groups and academia are involved during standard development, it is observed that limited groups provide effective inputs to the process. It may be due to lack of awareness and appropriate information on the subject matter to the stakeholders.

Challenges for NBSM
<ul style="list-style-type: none"> <li>▪ More standards have to be developed covering different sectors of the economy</li> <li>▪ Bi-annual work plan need to be published</li> <li>▪ Periodic revision is necessary</li> <li>▪ More proactive approach is required for need evaluation and proper communication with the stakeholders</li> <li>▪ Stakeholder engagement needs to be more effective</li> <li>▪ Proper timeframe for standard development needs to be set</li> <li>▪ Training, awareness and promotion works need to be increased</li> <li>▪ Participation in international standardization activity will increase national capability as well as promote national interest.</li> <li>▪ Faced with resource constraints like insufficient manpower and limited budget</li> <li>▪ Mechanism for mapping of the performance the standards is required.</li> </ul>

For effective stakeholder participation, an appropriate representation of all the relevant stakeholders is necessary. At the same time, they need to be educated and made aware of the entire value chain of the standard development activity and its importance.

❖ **Time frame for the developing standards:** Standard development requires time to develop the working draft of the standard as well as to get comments from the stakeholders. However,

it is extremely important to deliver the job in time so that the industry can utilize the standard before the world adopts another technology or market requirement changes. NBSM has no defined or estimated timeframe for standard development.

- ❖ **Mechanism for monitoring effectiveness of the activities:** Though the standardization activity incorporates feedback from the stakeholders, it is not effective and lacks key performance indicators. Scientific and planned mapping of the value addition and performance evaluation is lacking. It is also important to carry out the periodic study of use of the standards.
- ❖ **Awareness and Promotion works:** For demand evaluation, standard drafting and utilization of the developed standards, awareness of the stakeholders on the entire value chain of the standardization activity is important. A conscious effort is lacking at NBSM to raise awareness level and to promote the importance of standards and quality infrastructure as tools to improve market access, to transfer technology and to good business practices and sustainable development.
- ❖ **Training:** For effectiveness of the process and effectiveness of standardization, actively conducting appropriate training activities in standardization for its own staff as well as for stakeholders is important which is quite limited.
- ❖ **Resource availability:** Limited resources like manpower and budget is available for the work.
- ❖ **Participation in international activities:** Participation in international standardization activity will increase national capability as well as promote national interest in the field. These activities are limited and need to be enhanced. Nepal has to take more benefit from the ISO and upgrade its membership status in IEC.

### 3. PRINCIPLES

It is well established in the community of nations that standards should meet societal and market needs and should not be developed to act as barriers to trade. In approving the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement, WTO members recognized that goal and established globally accepted principles as a framework to promote cooperation and discourage the use of standards as trade barriers. NBSM standardization system is based on the following set of globally accepted principles:

#### a) **Transparency**

This means that in the standardization world, officials, managers and technical committee members act in a manner that is visible and comprehensible, and report on their activities so that people outside the system are able to hold those inside to account for the outcome. This increases the trust in the standards body and the people on which standardization depends.

Transparency will be maintained in the following way:

- Establishment of clear strategy and formal implementable procedure for standard development
- Making the procedure available for the interested parties
- Publication of biannual work programme
- Wide circulation of the draft standard for comment and making it publicly available

#### b) **Openness**

In an open system, participation is expanded to include a wide and relevant audience, as well as developing an inclusive document or strategy that is more likely to be accepted by a wider audience. The following actions will be implemented for openness:

- Be open on a non-discriminatory basis to relevant stakeholders
- Ensuring representation of the relevant stakeholder during the standard development activities

#### c) **Impartiality and consensus**

Impartiality requires that the decisions should be based on objective criteria, rather than bias, prejudice or preferring the benefit to one party over another for improper reasons. Impartiality leads to the consideration of all alternatives in an objective way, i.e. without partiality or undue external influence.

Consensus is defined in ISO/IEC Guide 2 as general agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves taking into account the views of all parties concerned, and to reconcile any

conflicting arguments. An important outcome of this definition is that consensus need not imply unanimity.

Impartiality and consensus will be maintained in the following way:

- Establish technical committees to have all the relevant stakeholders
- Promote the right attitude during the process
- Achieving consensus rather than voting
- Utilize the appeals process

#### **d) Effectiveness and Relevance**

Standards should be relevant and be able to effectively respond to regulatory and market needs, as well as scientific and technological developments. This requires that the needs of the audience are identified effectively and is provided in a timely manner. The following considerations will ensure the effectiveness and relevance of the developed standards:

- Effective mechanism to identify the need of the market shall be established.
- The standard development procedure shall be adopted to provide the standards in timely manner.
- The committees will be guided to express requirements in terms of performance characteristics, rather than design or descriptive characteristics.
- Approach will be followed to focus on user-friendliness, simple language and limit the usage of normative references to those that are essential for meeting the requirements of the standard.
- All standards should be reviewed periodically and revised in a timely manner to ensure their relevance in the context of changing market or regulatory needs, and new scientific and technological developments.

#### **e) Coherence**

Coherence is the quality of being logical and consistent, and the quality of forming a unified approach. The process encourages coherence to avoid overlapping and conflicting standards. The following approach will be followed:

- National standards will be harmonized with international standards as far as possible and is appropriate for the country
- If international standard is being developed, NBSM shall consider whether the international standard may be adopted
- Strong coordination will be done with other regulatory bodies or other standard developing organizations to avoid duplication of work

**f) Development dimension**

The Development dimension at a national level concerns seeking to design the national system in such a way that it does not exclude stakeholder groups from the process of the standardization work. It implies to put in place awareness raising activities, as well as procedures to monitor the participation of different categories of industry and societal stakeholders.

## 4. STRATEGIES AND ACTION PLANS

### 4.1 VISION AND MISSION

#### Vision

*NBSM develops standards for the economic development of the country and wellbeing of the society.*

#### Mission

*NBSM develops standards through good standardization practices and effective interested parties engagement adopting a proactive mechanism to identify the need of the stakeholders.*

### 4.2 OBJECTIVES AND ACTION PLANS

NBSM will have the following objectives and action plans to realize the specified vision and missions and to fulfill the standardization need of the country. The objectives and action plans are not mutually exclusive, rather complementary to each other.

#### **Objective 1: Identify the need of the stakeholders through proactive approach**

Standards should fulfill the need of the interested parties who use them. They should be relevant and be able to satisfy the future market trends. This requires having a proactive mechanism to identify the needs among the different stakeholders.

#### Action Plan

- a) Have regular and periodic interaction with the interested parties including the industry associations, consumers associations, government agencies including the Ministries, other organizations involved in formulating regulatory requirements.
- b) Identify sectors/subsectors of the economy important for standard development and prioritize them based on the resources available and the need.
- c) Create an e-platform for regular interaction and communication with the concerned stakeholders.

#### **Objective 2: Make the standard development process more dynamic and effective**

It is important that the standard developed are relevant, effective for the users. It is equally important that the process of development follows best standardization practices followed globally.

#### Action Plan

- a) **Review and revise the existing standard development procedure**

At present, standard development process starts with the preparation of draft standard by the technical committee chaired by the DG of NBSM. If the technical committee deems necessary, sub-committee may be formed for the preliminary draft. The draft

standard is approved by the Nepal Council for Standards (NCS) chaired by Hon'ble Minister for Industry, Commerce and Supplies.

The following changes are proposed:

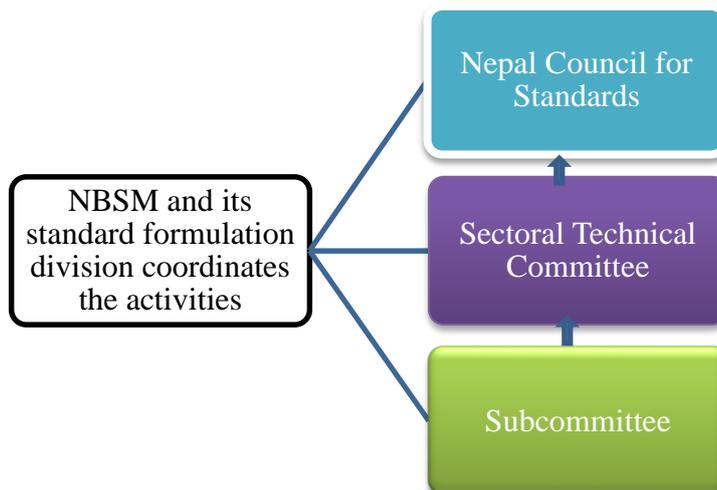
- i. **Formation of sectoral technical committees** which are permanent in nature and can be chaired by the expert of the field

Instead of existing practice of formation of separate technical committee for each type of standard to be developed, permanent sectoral technical committees having appropriate representation of all the relevant stakeholders will be formed for the concerned areas. The following sectoral committees are proposed for the beginning and other committees can be added as the need be. There can be more than one committee in a particular STC so that related products are covered.

**Sectoral Technical Committees**

- Food and agriculture
- Jute, Textile and leather
- Construction and building material
- Electrical, electronics, telecommunication and IT
- Chemical Products
- Conformity Assessment
- General engineering products (not covered above)
- Service sector
- Sustainable development

- ii. The standard development process will have the following hierarchy:



- iii. Details of the committees and the procedures will be mentioned in the procedure for standard development.

**b) Create and promote use of e-platform for the standardization activity and stakeholder communication.**

The standard development process can be effective only if stakeholders can communicate easily and on time. It is, therefore, proposed that an e-portal for stakeholder enquiry, e-meeting, public comments on the document and management of the standard itself will be developed and implemented.

**c) Develop suitable key performance indicators**

In order to determine the effectiveness and the efficiency of the standards development process, it is important to identify specific indicators that would measure whether the process is better or worse than envisaged, i.e. the key performance indicators (KPIs). Such indicators usually measure the input, the output and they have a time element to them. Typical KPIs used by NSBs are:

- **Fulfilling the Standard Work Programme** indicates achievement of the overall objective
- **Time to market** indicates the periodic achievement of set strategic goals
- **Cost per page** defines progress towards becoming more efficient
- **Average time between systematic reviews** helps determine compliance with maintenance criteria of the complete body of standards.

**d) Map the effectiveness periodically**

Study or carry research activity in house by NBSM or through others to map the effectiveness of the standard formulation works.

**Objective 3: Make the stakeholder engagement more effective**

The processes for consensus in decision-making and active stakeholder engagement during the standard development activity increases the credibility of the resulting standard and increases the chances of better utilization of the standard by the concerned stakeholders.

**Action Plan**

- a) The technical committee will have representation from all the interested parties.
- b) Awareness and training programme will be carried for the participants for fruitful contribution.
- c) Stakeholder engagement will be effective if they are motivated to the process. If the standard being developed meets their need, the participants will be motivated to work effectively. Therefore, need identification will be done through proactive interaction with the stakeholders.

#### **Objective 4: Harmonize the national standards with international / regional standards if applicable**

In order to ensure that businesses remain competitive both in domestic and overseas markets, the goods and services must conform to globally accepted standards, subject to national priorities and requirements.

##### **Action Plan**

- a) National standards can be harmonized with international or regional standards if necessary and applicable in the national context. Formation of sectoral technical committees will be responsible for evaluation of the need and for preparing harmonized draft.

#### **Objective 5: Participate in international and regional standardization works**

In order to enhance national capability of standard development and to take benefit of the standardization activity in the international forum, participation in the international and regional standardization activity is necessary.

##### **Action Plan**

- a) Active and meaningful participation in ISO activities through
  - More participation in TCs of ISO.
  - Effective representation of staffs of NBSM in ISO TCs.
  - Active representation and involvement of NBSM staffs in the management of ISO TCs.
  - Sectoral Technical Committees (STC) can work as national mirror committees as far as possible and new national mirror committees could be formed if required.
- b) Initiate the process of upgrading IEC membership.
- c) Develop the roster of experts of different sectors.
- d) Look for the process of twinning with other developed nation

#### **Objective 6: Develop or adopt sustainability standards and create an ecosystem for its implementation**

Over the last two decades, sustainability drive has gained considerable public interest and sustainable products have huge market demand. As a result, there has been exponential growth and proliferation of voluntary sustainability standards (VSSs). Though they are outside the WTO regime, these standards have influenced international trade significantly. They are driven either by buyer consortiums or institutions working on sustainable development. A supplier of the respective commodity has little choice but to conform to the requirements, even though the cost burden in many cases is significantly high, especially for small operators in developing countries. Even ISO has been involved in development of such standards.

### **Action Plan**

- a) Develop or adopt sustainability standards
- b) Form sectoral committee for sustainable standards
- c) Develop corresponding schemes to enable creation of the necessary eco-system that would facilitate easier compliance.
- d) Create resources in the market which can help upgrade industry for such standards and
- e) Provide the required level of hand-holding/ counseling/training support

### **Objective 7: Development of service sector standards**

Contribution of service sector in the national GDP has increased significantly over the few years and is about 51% (2018). Over the last two decades, world exports of commercial services have more than quadrupled and international trade in services has continued to grow at a faster rate than trade in goods. Some of the major services sectors include Information Technology & Information Technology Enabled Services (IT & ITeS), Transport and Logistics Services, Tourism and Hospitality Services, Accounting and Finance Services, Communication Services, Legal Services, Construction and Related Engineering Services, Environmental Services, Financial Services and Education Services. The following work strategy is proposed.

### **Action Plan**

- a) Identify the gaps and determine the standards required for the sector and supporting infrastructure
- b) Form sectoral technical committee for service sector

### **Objective 8: Increase stakeholder awareness, provide training and promote the standards**

In order to have effective input from the stakeholders in standard setting process, they need to understand and value the benefits that standardization and related activities bring to them. The objective can be realized through awareness and training programmes. The following action plans are proposed

### **Action Plan**

- a) Conduct awareness programmes like workshops, interaction programmes with industry associations, consumer forums, other government organizations, educational institutions
- b) Conduct training for the stakeholders
- c) Create course modules on quality related subjects for educational institutions including schools and universities
- d) Promote use of the published standards.

## 5. DETERMINATION OF PRIORITY AREAS FOR STANDARDIZATION

Use of a standards should enhance trade and economic development of a nation, increase the competitiveness of the firms and provide social benefits to the citizens. However, as the resources and time available for development of standards is limited, organization must prioritize the needs of the market. The following sections provide approach for evaluation of priority areas for the standard development activity for NBSM.

NBSM will prioritize the work plan for standards development in the following manner:

- a) Request for standards to be developed by a concerned government agency
- b) Standards related to safety concerns
- c) Requests by the industry or a firm which is producing the product
- d) Exportable products
- e) Imported products
- f) Deceptive practices (issues related to)
- g) Complementary standards, test methods (to the existing standards)
- h) Replacement of existing standard