

**A COUNTRY PAPER**  
**ON**  
**QUALITY MANAGEMENT: LINKING TPOS AND NSBs FOR EXPORT SUCCESS**

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## **I. INTRODUCTION**

Nepal Bureau of Standards & Metrology (NBSM) is the National Standard Body in Nepal. It is a Government organization under the Ministry of Industry (MoI). It is also the national enquiry point/nodal point for WTO (TBTs & NTMs) and focal point for National Authority on Disarmament Affairs (NADA).

Nepal Institute of Standards (NIS), the first organization in the country for the development of national standards, was established in 1976. It was restructured in 1981 and renamed as Nepal Bureau of Standards (NBS). 1988 government of Nepal again restructured it by merging Department of Weights and Measurement and renamed Bureau of Standard & Metrology (NBSM).

The bureau has the vision to provide efficient and timely services, to satisfy the customer's need for quality goods and services and to raise awareness in the field of standardization and metrology.

To fulfill its vision, the Bureau has set its objectives for harmonious development of standardization, marking and quality certification, harmonious development of scientific and legal metrology and to facilitate development of production and exports.

Nepal Council for Standardization (NCS) is the highest authority in the country for approval, cancellation and amendment of national standards and also for approval of accreditation of laboratories. In addition to this, it formulates national policies and guidelines on matters related to standards, certification and conformity assessment.

## **II. THE ROLE, STRUCTURE AND SCOPE OF NBSM**

The functions of NBSM are guided by mainly two Acts, namely Nepal Standard Act 2037 BS (1980 AD) and Standard Weights and Measures Act 2025 BS (1968 AD). Under these Acts, the Bureau has four main functions such as standardization, metrology, trade facilitation and provision of laboratory services.

The main tasks under Standardization are :

- formulation of national standards,
- product certification,
- lot certification,

- pre-shipment inspection and post delivery inspection,
- management system certification,
- granting license to use NS Mark,
- NS quality award,
- training services,
- coordination with the other standard bodies and
- providing information as well as support services to industries to uplift their quality of product and management as well as technical capabilities..

The Bureau undertakes the compliant handling and regular monitoring if the NS Mark is not maintained by license holder.

Metrology is one of the important sectors for the Bureau where it provides calibration services and legal metrology services for ensuring the establishment and proper functioning of a credible measuring system.

For the trade support system, the major laboratories are chemical lab, textile testing lab, building material testing lab, food testing lab, pipe testing lab, electrical material testing lab, mechanical testing lab, leather testing lab, paper testing lab and petroleum product testing lab.

The government of Nepal has assigned the Bureau to undertake the functions of the national enquiry point under the WTO/TBT Agreement and to assist in implementation of WTO related policies and procedures. The following are the Bureau's functions:

- Answer enquiries about specific product/group of products of the country
- Answer enquiries concerning membership and participation in regional and meetings
- Provide information on technical regulation in the country, conformity assessment procedure relating to product certification, management system certification, lab testing, standards developed by NBSM, and other agencies.

NBSM has laboratories which can provide testing facilities of various commodities. These laboratories are useful for:

- Testing and data generating regarding product quality, certification marking and national standards formulation, and
- Acting as third party public testing laboratories

## **Formulation of national standards**

Nepal Bureau of Standards and Metrology has developed around 800 national standards focussing on national priorities such as industrial development, community welfare, safety and health of its citizens. Out of these standards, six standards are relate to safety and export trade have been made mandatory (cement, iron rods, code of conduct for gas cylinder, dry cell battery, GI wire, CGI sheet (for roofing) and the rest are voluntary. These standards are published in the national gazette for notification. The bureau follows

the Code of Good Practice for the Preparation, Adoption and Application of Standards contained in Annex 3 of the WTO/TBT Agreement. Realizing the importance of standardization in the global economy and trade, the Bureau has given emphasis in harmonizing national standards with international standards published by ISO/IEC, Codex, WHO and other similar organizations.. Since the major trading partners of Nepal are India and EU countries, special priorities are given in harmonizing national standards with ISO and other standards used by these countries. The Bureau normally follows ISO/IEC procedures for developing national standards and classifies them according to international classification of standards (ICS).

### **Product Certification:**

NBSM implements a product certification scheme. This is a voluntary scheme which assures quality of goods from Nepalese industries. Manufacturers whose products are certified under this scheme are awarded licenses to use Nepal Standard Certification Mark (NS) under the provision made by the Nepal Standards Certification Mark Act 1980.. So far 126 industries have been awarded Nepal Standards Certification Mark in the fifty five categories of the products.

### **Consignment Inspection:**

The Bureau also provides consignment inspection and the attestation services to the government agencies as technical support to regulatory work and also to traders /consumers for attesting quality of the products.

### **Quality and Environment System Certification:**

NBSM has been entrusted to develop a suitable national scheme for attesting quality and environment management system certification. The Bureau has developed quality specialists and quality auditors for auditing quality systems. Currently international certifying agencies are actively operating in the country and providing certification services for a range of management systems.

### **Laboratory Accreditation:**

NBSM as a secretariat of the Nepal Council for the Standards has been given responsibilities to develop a Nepal Laboratory Accreditation Scheme (NEPLAS) for accrediting laboratories operating in Nepal. In this connection, the Bureau has developed laboratory accreditation directives and criteria against which the laboratories are accredited in line with international standard / guides, including ISO/IEC 17025, and ISO/IEC Guide 43. This program has been launched and NBSM is aiming at greater participation of private laboratories. The Bureau's laboratory serves as a control and verification center. So far seven laboratories have been accredited under this scheme (NEPLAS) and a few more are in the pipeline. The Bureau is collaborating with various international laboratory accreditation schemes such as NATA, TELRAC, HOKLAS, APLAC, in proficiency testing programs.

On regular basis, it organizes workshops and training programs on ISO standards and other issues on technical regulation as part of the awareness programs for the private sector. NBSM organizes training programs for laboratory personnel from government and private sector on ISO/IEC 17025 and on estimation of measurement uncertainty in routine analysis.

NBSM has helped industries to obtain HACCP, Environment Management System (ISO 14000) and Quality Management System (ISO 9001) certification.

## **Testing Services**

The Bureau has so far established fifteen different fairly equipped laboratories to provide testing services for foodstuffs, chemicals, PVC, HDPE, GI pipes, sanitary fittings, textiles, leather, building materials, petroleum products and paints. It is providing testing services to industry, trade and general public. In order to provide testing services to those small and medium enterprises (SMEs) who cannot afford to establish their own laboratories, the Bureau has established two regional laboratories in industrial zones. These laboratories act as quality control laboratories for those SMEs

## **Metrology Services**

The Bureau has been designated as the national metrology center and is fairly equipped with one primary standard in mass and secondary standards in length, pressure, density and temperature is providing calibration services to the industries and laboratories.

## **Information Services**

Apart from information services on quality control, international standard particularly ISO, conformity assessment, certification and accreditation; the Bureau has collection of complete sets of ISO, IEC, Codex, ASTM, BS and IS standards in its library. It has also collection of some DIN, JIS, Australian and IWTO standards. Besides standards, the library has books, pamphlets, conference proceedings and monographs on many disciplines of science, engineering, agriculture, textiles and quality management. The membership of the library is open to individuals, industry and trade organization and government departments. The private sector frequently uses the services of the library.

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## **Support Services**

The NBSM has prepared standards which are not available as international standards e.g. handmade paper to help the industry for quality products.

The main exports of Nepal are handmade carpets, readymade garments, leather products and some agricultural products such as tea, pulses, spices and herbs. The products dyed with harmful amines are banned in Germany, Netherlands and some Nordic Countries which have created fears in the minds of the Nepalese exporters, how to ascertain whether their products contain red listed chemicals. This issue was brought in notice of NBSM and a laboratory was established in Bureau for testing azo dyes.

## **Challenges**

Nepal still lacks a fully developed Quality infrastructure (QI) in the areas of standards relating to technical regulations, conformity assessment, quality and metrology. On the priority basis, the issue of standards and quality can be observed in two aspects: infrastructure development and awareness creation. In both aspects, Nepal is just in the pre take-off stage. Nepal has, however, been actively participating in the regional standardization through the South Asian Regional Standards Organization since its formation in 1999.

The culture of standards is in very early stage in Nepal despite the fact that the world is leaping forward with quality, which is thought off as the legislative requirement of consumer protection. However it does not mean that Nepalese industries and traders are not putting efforts to adapt with the world of standards, which is becoming complex. Moreover, consumers have also started to show their concern regarding the quality of buying goods and services, at least in urban areas.

Nepal became 147th member of WTO in April 2004 and signed two regional trade agreement namely South Asia Free Trade Area (SAFTA) and Bay of Bengal Initiative For Multi-Sectoral Technical And Economical Cooperation (BIMSTEC).

## **Strategic Vision**

The NBSM strategy is to get accreditation of its laboratories to enable international recognition in three years time. The NBSM laboratories provide test measurement result for many purposes such as calibration determining product quality control of manufacturing compliance with laws and regulations etc. The absence of recognition of local product testing and calibration methods seriously comprises the trade potential and results in a lower price for products. The biggest challenge faced by the Nepalese exporters is inadequate information about standards/technical regulations of the export target countries and their inability to demonstrate that their products conform to the customer's satisfactions. This requires an efficient system to enable access to standards related information by the exporters and access to credible testing facilities whose test results are accepted by foreign buyers. Hence the reliability of those test and measurements is essential. Accreditation provides a mechanism to provide confidence in the competence of the laboratories through participation in inter laboratory comparison.

Generally confidence is achieved by proving that all aspects of conformity assessment process in the exporting countries are professional and sound.

Accreditation of various types of conformity assessment bodies such as laboratories certification bodies and inspection bodies together with training institutions can be provided through services of Accreditation Board. Strengthening of Accreditation and Conformity Assessment infrastructure is becoming a mandatory requirement for trade. To overcome this barrier, a joint EU-Nepal-WTO program was launched on 3<sup>rd</sup> April 2008. The main objects of the program are as follows:

- Strengthening NBSM to become an effective standards body.
- NBSM metrology capacity & traceability improved and accredited
- Operation of TBT/SPS enquiry point.

The above activities of final beneficiaries will be the general public through increased income, earning capacity and economic growth as a result of Nepal's enhanced capability to beneficially engage in international trade, more specifically through compliance of the private sector with international standard and compliance of the public with WTO requirements.

### **Identification of priority areas where assistance is needed**

The priority area is in strengthening quality infrastructure in the country where conformity assessment procedures becomes an integral part of it. A national certification scheme for ISO 9000 and 14000 is under preparation, which should be well recognized by the international community. In this respect, capacity-building is required.

The present objective of NBSM is to harmonize its standardization for marking and quality certification. Harmonious development of scientific and legal metrology on the other hand is needed for facilitation of export from Nepal. This requires upgrading of the laboratories to meet international standards. The EU/WTO project is helping in setting four laboratories for accreditation at international level. They are chemical/food, microbiological, metrological and textile laboratories. Once these laboratories are accredited, they can be act as a third party guarantee between the exporter and importer.

### **Priority areas of work**

NBSM has selected three sectors of exporting industry in its annual program; ornaments, pashmina (cashmera) and handmade paper.

The determination of cadmium in silver and gold ornaments for its purity has been requested by EU from Nepalese exporters. The silver and gold articles will be completely banned if cadmium level in silver and gold ornaments are found exceeding

the level as stated in RoHS.<sup>1</sup> The NBSM along with the Handicraft Association of Nepal is trying to develop a process to certify the silver good exported to EU, free of Cadmium and other hazardous metals. The role of NBSM will be the third party guarantee.

The pashmina articles exported to overseas are not certified with percentage of pashmina. NBSM with the pashmina exporting association is working on this to make necessary arrangements.

NBSM is revising the existing handmade paper standard for producing quality papers for export promotion.

## **Constraints**

As a member of WTO, to uplift the life of the people of Nepal it is essential for the country to develop its export potential in traded goods and services, by following international rules and it should formulate its standards according to international rules. Apart from this, there is a need for quality goods which can compete in the international market and should meet the standards demanded by the importing countries. So there is need of testing and certification which is accepted by purchasers. At present there is no accredited laboratory in Nepal whose certificates are recognized in the international trade. Exporters have to depend on overseas certification for exporting their goods, which is very costly.

## **THE EXISTING RELATION BETWEEN NSBs and TPCs**

The trade promotion organization in Nepal, known as the Trade and Export Promotion Centre (TEPC), was reconstituted by merging trade promotion centre, wool and carpet development board and export promotion board in November 2006. There are common elements in the TPO's objectives as in NBSM's objectives for the development of export trade.

At present, due to lack of all types of testing facilities in NBSM, cannot help the TPO in the trade promotion effectively. When the TPO was operating as a trade promotion centre, NBSM helped in eco labeling to promote carpet export to overseas.

NBSM has a linkage with the stakeholder such as the Federation of Nepal Chamber of Commerce (FNCCI) and Nepal Chamber of Commerce (NCC). The members from these stakeholders are engaged in developing National Standards (Nepal Standards). These stakeholders are also members in the selection committee of Quality Awards and Quality certificates awarded to industry every year to those who have adopted the NS Standard and excel in a competition. The award and certification is distributed on International Standard Day 14 October.

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<sup>1</sup> RoHS - EU Directive on Restriction of Hazardous Substances

The trade promotion centre (TEPC) and the National standard body NBSM were under the same ministry the Ministry of Industry, Commerce and supplies. At present the above ministry has been divided into two Ministries as Ministry of Industry and Ministry of Commerce and Supplies. The TEPC is now under the Ministry of Commerce and Supplies and the NBSM is under Ministry of Industry, these two organizations work independently according to their mandate.

### **The Potential future relation between NSBs and TPOs**

There is need of NBSM laboratories internationally accredited as per requirement of ISO/IEC 17025. Until then, if testing and certification required by the TPO, it has to be done in overseas accredited laboratories. There is thus a need of accreditation of NBSM labs in order that NBSM laboratories can provide the required accredited testing service to TEPC..

There is a need for a policy for adaptation of International standards like ISO/ CODEX coordination between NBSM and the TEPC for formulation of Nepal Standards for different products. This linkage between the two can be of at two tiers i.e. at the policy level and at the executing level. The cooperation between two organizations is very important.

### **The potential area of cooperation between NBSM and TEPC**

1. Public private partnership (PPP) for need assessment of overcoming non tariff trade barriers.
2. Assessment of the priorities for standards development sharing of physical facilities, product development testing services and certification of goods for export.

There is need of coordination between these two bodies for establishing common programmes and there is need of funding There is need for a coordination committee for linkage between these at the ministerial level between the two bodies for promoting exports. Financial and support for coordination should be arranged at the ministry level..

### **Conclusion**

The adoption and implementation of applicable international standards is only part of the solution of addressing the complex issue of technical barriers. Harmonization of standards and technical regulations is not the end of the story but one step forward. Quality certification is required and it is always followed by the verification and assurance of conformance. It is extremely important to prove that the test results and the quality certificates are genuine. The exporting country must be in position to demonstrate its capabilities and system at the national level to assure that the required and acceptable measures are taken to verify or to confirm test results. It is also necessary to show that its



exports achieve the same level of protection as the importing country's standards and conformity assessment procedures. To address these issues a member nation should have the infrastructure for standardization inspection sampling, testing certification, accreditation and calibration that is internationally accepted. In the absence of this, the importing country could will not be assured of the predicted quality of the product or service which is being imported. Eventually this will result to the interruption in the smooth trade flows between two nations.

It is not enough to involve only government organizations to take care of whole issues related to TBT , coordination and cooperation of private sector is also needed. Public Private Partnership must be sought and enhanced. Hence, it is equally important that private sector should also develop and strengthen its capacity and capabilities in the areas of sampling, testing, calibration and certification

NBSM is the only organization for developing standards in Nepal There is need that NBSM's services be accredited at international level. There is also need of an autonomous accreditation body in Nepal with international recognition. In order to form an accreditation body NBSM has drafted "Nepal Accreditation act" which is in process of ratification from Parliament. Nepal has to work for the theme that "Once tested and certified should be applicable everywhere" then only there will success in international exports.