REFORMS FOR THE NATIONAL QUALITY INFRASTRUCTURE

By

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OVERVIEW

- Introduction – Understanding NQI
- Features of the NQI Institutions
- Role of the NQI in National Economic Development
- Organization of the NQI in Uganda against the Required Best International Practices
- Challenges presented by the current organization of NQI in Uganda
- Reforms required for the NQI in Uganda
- Actions needed to streamline the NQI in Uganda
- Required Legislation to Streamline the NQI in Uganda
- What is being done by MTIC
- Conclusion
INTRODUCTION

- A country relies on standards related facilities to promote trade and exports, improve production, upgrade industry, enhance safety of consumers and environment.
- A Quality Infrastructure is needed to formulate, issue and implement standards;
  - to improve the suitability of products, processes and services for their intended purposes.
- The NQI comprises of SMCA institutions.
Standards

- These are formal documents with requirements that a product, process or service have to comply with.
  - They define mode of interaction between products, processes, people and environment.
  - Although largely voluntary, they can have a “quasi” legal effect when incorporated in contracts.
  - They are the primary ingredient of the National Quality Infrastructure, all pillars are based on standards.
Standardization

- Derived from standards
- Process of developing and implementing technical standards (including use of standards in commercial transactions, technical regulations and enforcement of compulsory standards)
- Standards are developed and implemented voluntarily
- But can also be adopted as reference in technical regulations
Metrology

- Science of measurement
- Metrology Fields: Science, Legal and Industrial
  - a) **Science metrology**: develop and organize measurement systems to achieve the highest level of standard; maintain measurement standards traceable to international standards and addressing the measurement needs of industry.
  - b) **Legal metrology**: ensure high level of transparency in trade transactions, law enforcement, health and safety.
  - c) **Industrial metrology**: Maintain the satisfactory functioning of measurement instruments used in all sectors
Conformity Assessment

- Comprises of testing, inspection and certification of products or services to determine compliance with the standards

- **Testing**: determination of a product’s characteristics against requirements of the standard

- **Inspection**: examination of a product design and the product itself, or process; and the determination of its conformity with the requirements.

- **Certification**: formal substantiation; after an evaluation, testing, inspection or assessment that a product or service, organization or individual meets the requirements of a standard.
Accreditation

- Formal recognition by an authoritative body that an organization is competent to conduct specific conformity assessment services (i.e. testing, inspection or certification)

- Accreditation is done after an evaluation of the personnel and supporting management system of the candidate for accreditation and where necessary for laboratories practical tests may be requested.

- Accreditation is done for conformity assessment bodies, but can expand to other areas such as training (both for organizations and individuals)
National Quality Infrastructure

- National Standards Body
  - Accreditation body standards
  - Certification body standards
  - Inspection body standards
  - Testing Laboratories
  - Calibration Laboratories

- National Metrology Institute
  - Definition of units
  - As required in standards
  - Standards required for laboratory

- National Accreditation Body Accreditations
  - Certification Bodies
  - Inspection Bodies
  - Testing Laboratories
  - Calibration Laboratories

- Enterprises
  - Certification
  - Inspection Certificate
  - Test report

- Benefits
  - Enhanced product quality and compatibility
  - Enhanced safety and health

- Governments, Consumers, and the General Public
Features of the NQI Institutions

• NQI organizations can:
  ➢ Individually or correctively provide the outputs of SMCA.
  ➢ Be public or private
  ➢ Take different forms; as there is no official internationally recommended format

BUT

➢ Must deliver services with no situations of conflict of interest

• Many functional NQI models exist;
  ➢ Traditional model
  ➢ Popular model
  ➢ Hybrid models

• Traditional model fits the current NQI in Uganda
<table>
<thead>
<tr>
<th>Features of the NQI models</th>
</tr>
</thead>
</table>
| **1. Traditional Model**   | ➢ Fits the current NQI in Uganda  
|                            | ➢ Common within developing countries  
|                            | ➢ Associated with conflict of interests and confusion  
|                            | ➢ Is highly ineffective and inefficient |
| **2. Popular Model**       | ➢ Being encouraged around the world and typical of developed world  
|                            | ➢ Requires extra resources to operate |
| **3. Hybrid Model**        | ➢ Due to extra resources to operate the popular model, several countries adopt hybrid model |
How NQI impacts economic growth

- Net of impact: 1) Increased productivity (<27%)
- 2) Contribution to GDP growth (<30%)
- For Uganda, this translates to GDP increase of: 2.52-7.574 USD Billion
- SMCA affects 80% of total global trade
- Uganda’s trade output largely impacted by NQI
- There are opportunities to expand GDP and achieve middle or upper class level through investment in NQI
Table 3: Contribution of standardization on the economies some of the developed countries of the world

<table>
<thead>
<tr>
<th>Organization</th>
<th>DIN</th>
<th>DTI</th>
<th>Canadian Council of Standards</th>
<th>Standards Australia</th>
<th>AFNOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country analyzed</td>
<td>Germany</td>
<td>UK</td>
<td>Canada</td>
<td>Australia</td>
<td>France</td>
</tr>
<tr>
<td>Impact in % points of standards on GDP growth</td>
<td>0,9</td>
<td>0,3</td>
<td>0,2</td>
<td>0,8</td>
<td>0,8</td>
</tr>
<tr>
<td>Contribution of standards to growth of GDP (%)</td>
<td>27,3</td>
<td>11,0</td>
<td>9,0</td>
<td>21,8</td>
<td>23,8</td>
</tr>
<tr>
<td>Contribution to the productivity of work (%)</td>
<td>30,1</td>
<td>13,0</td>
<td>17,0</td>
<td>Not estimated</td>
<td>27,1</td>
</tr>
<tr>
<td>QI</td>
<td>Activity</td>
<td>Functions</td>
<td>Beneficiaries</td>
<td>Main impacts</td>
<td></td>
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<td>------------------</td>
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</tbody>
</table>
| Standardization  | Formulation and use of standards and technical regulations             | • Knowledge exchange  
• Coordination  
• Harmonization of products and procedures | • Firms  
• Consumers | • Economies of scale and learning  
• Diffusion of technology  
• Lower market prices  
• Consumer and env’t protection |
|                  |                                                                        |                                                                          |                       |                                                                                |
| Metrology        | Establish measurement procedures, calibration of measurement instruments | • Traceability  
• Comparability  
• Uncertainty reduction | • Firms  
• Industry  
• Govt  
• Consumers | • Efficient Research and Development  
• Access to foreign markets  
• Integration in global value chains  
• Consumer protection against fraud |
|                  |                                                                        |                                                                          |                       |                                                                                |
| Conformity       | Ensure that procedures, products or services conform with standards     | • Conformity  
• Confidence  
• Reliability | • Firms  
• Consumers | • Reduced information asymmetry  
• Innovation premium |
| Assessment       |                                                                        |                                                                          |                       |                                                                                |
| Accreditation    | Formal recognition of the competence of an organization                | • Competence  
• Traceability  
• Political independence | • QI as a whole | • Economic integration in international markets  
• Information on better practices |
Benefits of NQI to industry

- **Reasonable!** Cost of implementing standards 2-10% of company costs (IDEM, 1996)
- Standards increase productivity (13-30%)
- **Unharmonised** standards increase cost of doing business and negatively impacts production and trade (SAANA/TMEA 2014)
• Bitter Pill Tested by Uganda: when the NQI could not meet the requirements for the market
EU Fish Export Ban 1997 - 2000
<table>
<thead>
<tr>
<th>Losses</th>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export earnings</td>
<td>$36,900,000</td>
</tr>
<tr>
<td>Income of fishing community($850,000 per month) due to reduced prices and fishing activities</td>
<td>$4,250,000</td>
</tr>
<tr>
<td>Factories that closed down</td>
<td>3 out of 11</td>
</tr>
<tr>
<td>Factories that reduced their labor force by 2/3</td>
<td>8 out 11</td>
</tr>
<tr>
<td>Jobs lost in fish factories (1/3)</td>
<td>2,000</td>
</tr>
<tr>
<td>Jobs lost in fishing activities (1/3)</td>
<td>32,000</td>
</tr>
<tr>
<td>People who lost 2/3 of their income</td>
<td>68,000</td>
</tr>
<tr>
<td>Affected family members and relatives living on the same income</td>
<td>300,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Income in $</th>
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<tbody>
<tr>
<td>1992</td>
<td>12,000,000</td>
</tr>
<tr>
<td>1996</td>
<td>60,000,000</td>
</tr>
<tr>
<td>January to March 1999</td>
<td>17,000,000</td>
</tr>
<tr>
<td>After the EU ban</td>
<td></td>
</tr>
<tr>
<td>April to July 1999</td>
<td>2,500,000</td>
</tr>
<tr>
<td>Project costs</td>
<td></td>
</tr>
<tr>
<td>Three year total</td>
<td>4,600,000</td>
</tr>
<tr>
<td>After the EU ban was lifted</td>
<td></td>
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</tbody>
</table>
Impact of NQI (SMCA) to National economic growth

• The effective and efficient operations of NQI/SMCA institutions impact the economy in three ways,
  1. Facilitating trade and exports
  2. Promoting quality in society and technology upgrading.
  3. Ensuring human safety, health and protection of environment
1. How the NQI Impacts trade and exports

- Before initiation of a trade transaction, suppliers and purchasers agree on the compliance of a product or service (standardization)
- Chain of evidence for this exchange starts with standards and completed by evidence of compliance (conformity assessment)
- Evidence of compliance only trusted if the technical capability of service providers is above reproach.
- The system of measurement should be reliable and comparable with other measurement systems use to measure same products or service (Metrology)
- Therefore standards related institutions (SMCA) play a pivotal role in the economy
- They ensure that firms and industries improve and meet customer expectations.
• SMCA institutions enhance expansion to new markets including export markets
• Standards are no longer specific to companies or countries
• But they shared between supply chains or countries and economic sectors.
• Producers facing pressure to meet quality requirements require coordination through an effective SMCA structure
• A comprehensive system of interrelated actors to facilitate diffusion of standards is always crucial and achieved through the role of NQI.
Effect of Ineffective NQI on trade and exports in Uganda: Case of Meat and F&V

- NQI’s negative effect on trade in Uganda is mirrored in Meat and Fruits & Vegetables sectors

1. Meat Sector:
   - Uganda has a large population of beef animals but cannot exploit prime markets in Europe

2. Fruits and vegetables (F&V) sector:
   - Due to failure to observe safety and quality requirements
   - Farms are losing out on the urban markets and chain stores such as Nakumatt, Tuskys, capital shoppers)
   - The F&V exports sector is stressed by several food safety, quality and phytosanitary requirements of the EU market – several detention of consignments at EU borders
2. Impact of NQI on quality and Technology upgrading

- Firms can improve products quality through exchange codified (organized in better manner) technological information
- Codification facilitates knowledge absorption, technological change and advancement.

3. Impact of NQI on enhancement of safety, health and environmental protection

- Standards facilitate formulation of minimum quality and safety standards for consumers.
- Regulators exclude unsafe products (which do not meet standards) from the markets.
ORGANISATION OF THE NQI IN UGANDA AGAINST THE REQUIRED BEST INTERNATIONAL PRACTICES

Figure 3: Uganda’s Current Quality (Technical) Infrastructure

- Voluntary Sector
  - Customer/market requirements

- Regulated Sector
  - Government
    - Set policy, laws & technical regulations

- Conformity Assessment
  - Prove technical requirements are met testing, inspection and certification (UNBS, CHEMIPHAR, and other few private operators)

- Suppliers
  - Unbs Metrology Measurement
    - Underpins testing & calibration through national measurement standards

- Customer
  - Accreditation?
    - A few source from (SANAS)!
1. Standardization

- Standards are developed, published and implemented by NSB in accordance with WTO/TBT agreement guide
- UNBS, is the NSB in Uganda; government body.
- Funds to run a NSB are government funds, UNBS also utilizes development funds
- Internationally NBSs are funded by (government funding 83%) and Private/other sources (30%)
- The funding for an effective NSB has to be long term commitment from government (Case in Uganda).

2. Metrology

- The NSB (UNBS) carries out the metrology mandates, as Uganda has no independent metrology organization.
- National Metrology is expected to obtain its funding from government (Case in Uganda)
3. Testing

- Gov’t labs were responsible for providing testing services though this has changed.
- A reduction in gov’t involvement in provision of services that can be effectively provided by private sector is necessary.
- Establishing and maintaining labs is expensive business due to rapid changing technology – government should maintain footprint especially for non commercial service.

4. Inspection and Certification

- Certification bodies provide independent attestation of compliance of a product or service.
- Internationally, has been commercialized (private and public) - lucrative.
- In Uganda, public organizations still dominate.
- But gov’t should gradually cede this role to private organizations.
- Need to support indigenous certifying companies to certify MSMEs who can’t be assisted by multi-nationals.
5. Accreditation

- Uganda lacks a functional Accreditation Body (AB).
- It is cost effective for Uganda to establish its AB other than relying on foreign or regional ABs.
- A local AB promotes local CABs who can extend their services to SMEs.
- The AB has to be a gov’t organization to ensure an appropriate status to be used by both public and private domains.
- The gov’t has to initially provide the bulk of the funds used by the AB.
- NABs are strategic institutions which cannot be shared (to avoid potential for long term economic sabotage).
6. Technical Regulations (TRs)

- Like standards, TRs determine compliance requirements of products and services.
- **The Difference between standard and TRs;**
  - TRs developed, implemented by authorities, enforced by law,
  - Standards are voluntary, only enforceable if included in a contract or referred in law.
- The framework for development, implementation and maintenance of TRs in Uganda is weak;
  - Regulatory institutions pursue policies and practices that are deemed best to their interests
  - They do so under impression of loss of control if other agencies are involved
  - Result is a very fragmented and inefficient NQI that could be a barrier of trade
- There is need for cooperation towards achievement of National Priorities including sharing of NQI products
7. Coordination of the NQI

- There ought to be a coordination mechanism between regulators and other NQI components;
  - For exchange of information
  - Harmonization and advisory of NQI membership
- Such a system is in formative stage in Uganda.
- But legal backing for this mechanism is needed:
  - To improve cooperation, coordination and collaboration of institutions (public & private)
  - To leverage from synergies and form complementarities towards quality improvement.
Figure 4: One Approach to Coordinating the NQI
CHALLENGES PRESENTED BY THE CURRENT ORGANISATION OF NQI IN UGANDA

- The gov’t through MTIC, is a major shareholder of Quality system

- The gov’t is obliged to ensure:
  - Unhindered trade through harmonization of local standards with international ones
  - Diffusion of international standards to exporting companies and the whole industry
  - Dissemination of standards that are key to trade, safety, health and environment.
  - Facilitation and maintenance of high level of interest and monitoring the operation of the NQI

- Thus, operation of the entire QI system falls on the shoulders of government
Uganda’s current NQI structure contains only Standardization, Metrology and Conformity assessment;

**Lacks** Accreditation

It is not well coordinated and harmonized

Is characterized by overlap of responsibilities among mandated institutions which lead to confusion and conflict
Challenges the structure above presents, include:

- Dev’t and implementation of standards undertaken by NSB (UNBS)
- The NSB (UNBS) hosts:
  - The National Metrology Institute
  - Legal Metrology
  - Formal Conformity Assessment
  - Regulatory activities
- It also operates and manages its laboratories.
- It is responsible for administration or implementation of compulsory standards.
- Private sector and SMCA agencies manage their own laboratories independent of the NSB.
• Advantage of this model; Administrative and management over-heads and facilities can be shared,

Disadvantages and weaknesses in the current NQI system

a) Conflict of interest embedded in its functions
b) Long term funding arrangements influenced by unreliable government funding which can affect industry, especially conformity assessment
c) Domination of one activity over others is common depending on favour of top management
d) Due to the NSB regulatory role, Industry not free to have an appropriate say in the strategies and business planning
e) Government influence on strategy and business planning of the NSB can have dire effect on industry.

f) Customer care and prompt services in the core functions such as standards development and promotion normally suffers low priority in organizations responsible for compulsory standards.

g) The NSB personnel responsible are perceived as non-welcome policemen instead of a support team to facilitate growth of industry.

h) Compulsory standards activities normally take preference over other essential activities.

i) It is difficult to include accreditation in this model since all technical services have been concentrated under one body.
Figure 6; A classical 7-stage process followed to reform the NQI in Uganda
Figure 7: Representation of an appropriate NQI for Uganda
• MTIC; responsible for NQI setting up and funding SMCA functions.
• Developed with stakeholder a Standards and Quality Policy that envisions a NQI aligned with the international best practices (2012).
• National Standard and Quality Policy Implementation Plan (2013)
• Accreditation Policy
• National Quality Forum is represented by relevant public and private domains.
  ➢ It acts as a forum where strategies and policies can be debated and consensus reached. But needs legal mandate
  ➢ Not a board or council for the institutions;
  ➢ But has a strategic plan that looks at policy, strategy and operational issues to improve NQI
  ➢ Its decisions can advise cabinet to improve the NQI.
This model results into:

- Distinction between:
  - State supported activities (standards, metrology and accreditation)
  - And those that can be offered commercially (testing, inspection and certification)

- A Choice of CABs by suppliers
- No conflict of interests
- Specialization of work by SMCA organizations
- Involvement of private sector and society in strategies and policy development.
- Alignment of SMCA activities with international best practices
ACTIONS NEEDED TO STREAMLINE THE NQI IN UGANDA

1. Establish a NSB that concentrates on developing and promotion of use of standards

- NSB should focus on;
  - Promoting adoption and diffusion of standards to the local industry.
  - Undertaking certification for quality marks and sensitizing public on use of standards.
  - Full membership to international standards bodies and keep representation and international liaison.

- The NSB can retain certification and testing services but must be accredited of their technical competence
2. MTIC to establish a National Metrology Institute
3. Establish a technocratic office to serve the function of Technical Regulations Coordination Office.
4. Establish a National Quality Regulatory Agency with the mandate to implement compulsory standards
5. Establish a National Accreditation Body (NAB) to maintain the technical competence of CABs
6. Establish a National Quality Forum with legal mandate to offer a forum for debate to generate consensus among QI service providers and advice government and partners on sustained improvement of quality
REQUIRED LEGISLATION TO STREAMLINE THE NQI IN UGANDA

1. **Repeal** of UNBS and develop a new law to operationalize a newly structured NSB

2. **Enact** a National Technical Regulatory framework law to harmonize the role of regulators in development implementation of technical regulations including conformity assessment procedures aligned to WTO TBT agreement guide (recognize the quality forum an Technical Regulations Coordination Office)

3. **Enact** laws to streamline science, industrial and legal metrology and establish the National Metrology Institute

4. **Enact** law to establish a National Accreditation body

5. **Enact** a law to provide for import inspection, market surveillance and standards related consumer protection issues; law to establish a National Technical Quality Regulator (Agency)
What has been achieved under QUISP

- Technical paper laying the road map of the NQI reforms required (Discussed at MTIC Senior Management and UNBS Council) – currently undergoing review to incorporate new and recent developments
- Draft Technical paper on the repeal of UNBS and structuring of the new NSB (Developed by TA - Not yet internally discussed)
- Draft Technical Paper and Principles for the Technical Regulatory Framework Bill
- Draft of the Scientific and Industrial Metrology Bill
- Draft of the Legal Metrology Bill (Weights and Measures)
- Draft of National Accreditation Bill
Way Forward

- There are two ways forward
  1. Mobilize the resources to initiate institutional reforms
  2. Mobilize necessary support required to enact all the laws required
CONCLUSION

- NQI is vital to promote trade, technology, health, safety and environment.
- It leads to increase in productivity at firm level and national GDP growth.
- The current NQI in Uganda is not harmonized with International best practices as it;
  - Leads to overlap of mandates of different quality related service providers
  - Concentrates quality related roles in one gov’t body,
  - Hence leading to confusion and conflict of interests.
  - Lacks major component - accreditation
  - Lacks coordination mechanisms for SMCA service providers.
- Effect of such system is the low utilization of SMCA facilities.
- Gov’t should organize the NQI to better serve Uganda’s interests
I THANKYOU FOR LISTENING TO ME!!!

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