

Capacity Building for Strengthening Quality Infrastructure in Haiti

TERMS OF REFERENCE

CONSULTANCY SERVICES FOR NETWORK INFRASTRUCTURE INSTALLATION AND CONFIGURATION AT THE HAITI BUREAU OF STANDARDS (BHN)

1. BACKGROUND

1.01 Haiti has a long history of political and social crises, persistent fiscal imbalances, and extreme vulnerability to natural disasters. Haiti also faces intersecting crises, including famine, cholera, fuel shortages, and economic collapse.¹

1.02 Demographically, Haiti has a youthful and increasingly urban population, with a median age of 22.7 years. While infant mortality remains high (59 deaths per 1,000 live births), the population has grown steadily at 1.5% annually. More than half of the population is under 25, and a significant portion of youth (19%) are not in employment, education, or training (NEET), with urban areas and women disproportionately affected.

1.03 Poverty remains widespread, particularly in rural areas, with 58.5% of Haitians living in poverty. The Multi-Dimensional Poverty Index reports 41.3% of the population as multi-dimensionally poor, with significant contributors including inadequate living standards, health, and education deprivations. Women and persons with disabilities are especially vulnerable.

1.04 Gender-based inequality remains a major development challenge. Haiti ranks 163rd on the Gender Inequality Index (GII), with low female political representation (2.7% of parliamentary seats) and lower educational attainment among women. Female labor market participation (60.7%) lags behind men (68.9%), and women dominate the informal sector, earning lower wages. Gender disparities exacerbate vulnerabilities, particularly in post-disaster situations, where women and girls face heightened risks of exploitation and violence.

1.05 Over the past five years, Haiti has endured multiple natural disasters, including cyclones and earthquakes. In 2023, severe flooding and a 4.9 magnitude earthquake further compounded economic hardships. These recurring disasters strain fiscal resources, limiting the government's ability to balance social programs with critical development needs.

1.06 Over the past five years Haiti was impacted by tropical cyclone Irma in 2017, tropical cyclone Laura in 2021 and a devastating magnitude 7.2 earthquake in August 2021. Thus far for 2023, on June 2– 3, heavy rains caused destructive flooding across the country, and this was followed by a 4.9 magnitude earthquake just days after on June 6. These natural disasters continue to compound the adverse effects to human life and livelihood and thrust the economy into deeper economic hardships. These events make it difficult to create the fiscal space necessary to balance social intervention programmes while catering to critical developmental needs to improve economic infrastructure.

Quality Infrastructure in Haiti

One of the major thrusts to improve the business facilitation environment and to improve the National Quality Infrastructure (NQI) of Haiti was the establishment of the Bureau Haitien de Normalisation (BHN) (i.e. the Haiti Bureau of Standards), in December 2012. Quality infrastructure (QI) refers to the standards and conformance infrastructure necessary to facilitate, *inter alia* trade and business development particularly for the protection and reassurance of the consuming public.

1.07 The BHN is a public entity and is a technical department of the Ministry of Commerce and

¹ The Guardian (Accessed November 2023) - Haiti crisis: how did it get so bad, what is the role of gangs, and is there a way out? <https://www.theguardian.com/world/2023>

Industry under the supervision of the Minister. The BHN is financed from the budget of the Ministry of Commerce and Industry. BHN's mandate is to provide assistance on the standardisation of quality goods and services, and the promotion of quality and conformity assessment services to the Government, the private sector and civil society. At the launch of BHN, a metrology² laboratory was also established for the verification, calibration and/or adjustment of measuring instruments used in trade and industry. To this end the organisation is headed by a Director who is supported by 17 staff members in the technical areas of standardisation, industrial metrology, certification and information.

1.08 BHN's responsibilities include:

- (a) producing, publishing and disseminating standards and reference standards;
- (b) providing training on standards and their technical implementation;
- (c) certifying conformity to standards and reference standards;
- (d) creating and managing quality signs (such as trademarks and labels);
- (e) representing Haiti in national, regional and international bodies of standardisation; and
- (f) organising/coordinating certification and metrology activities.

1.09 In 2013, the United Nations Industrial Development Organisation (UNIDO) hosted training courses for a number of stakeholders including BHN staff, private sector representatives, companies, consumer organisations and university personnel. Courses such as "Principles and Procedures for Establishing Standards," "Management of Certification Systems – International Organisation for Standardisation (ISO) 17065," and the Quality Management System ISO 9001:2008 standard were among the training provided to stakeholders. The ISO 9001:2008 course in particular, given its importance to enterprises, and the fact that it provides the basis for other certifications such as the ISO 14000 (environmental) and ISO 22000 (food safety management standards), serves as a critical building block towards strengthening the country's quality management system (QMS).

1.10 A QMS is defined as a formalised system that documents processes, procedures and responsibilities for achieving quality policies and objectives. A QMS helps coordinate and direct an organisation's activities to meet customer and regulatory requirements and improve its effectiveness and efficiency on a continuous basis.

1.11 The UNIDO training was conducted at a basic level due to Haiti's limited QI and low level of stakeholder awareness on quality, however, many participants found the training to be largely theoretical and lacking a local context in which to identify the issues being presented. In general, quality management is a complex body of knowledge and developing competence in this area takes time. Both the Director of BHN and UNIDO's consultants have highlighted the need for BHN staff, local consultants and enterprises to obtain more advanced training and practical experience in quality management and attendant systems.

1.12 In 2015 an assessment was conducted in the metrology laboratories of BHN. This activity was executed by the Technical Officer for Metrology at CROSQ. The main recommendations of the report were to procure additional equipment to advance the development of the mass metrology and volume metrology capabilities within the Industrial Metrology laboratory to support the verification activities carried out by the Directorate of Quality Control and Consumer Protection, the Legal Metrology arm

² Metrology is the science of measurement, the study of how to define and compare different physical and chemical quantities. In all documents values must be accurate and traceable and measurements of course influences, drives and underpins industry and trade and everyday life.

within Haiti, and also the Haitian industry. In 2021, the need for this equipment was reconfirmed along with demand driven requests by clientele for support in building capacity in additional areas as temperature and Liquid Petroleum Gas (LPG). To date therefore, the recommendations which were highlighted in the 2015 assessment of the metrology laboratories, at BHN, remain valid along with additional capacity requirements in the areas of verification aforesaid.

1.13 Given the above challenges (and influenced directly by demands from industry), BHN has expressed a need for QMS training, as well as mentoring in market surveillance. This support would enhance the services which BHN has articulated are important to meet the needs of its clientele.

CROSQ and its support to QI

1.14 CROSQ was established in 2002 by Article 67 of the Revised Treaty of Chaguaramas (RTC), to facilitate the development of a harmonised Regional Quality Infrastructure (RQI). CROSQ is a network of the 15 national standards bureaus of CARICOM Member Countries (which includes Haiti). CROSQ is an inter-governmental agency and is the successor to the Caribbean Common Market Standards Council which was created in 1976. The key functions of CROSQ as outlined in the Treaty include:

- (a) Facilitation of standards infrastructure development at the national and regional levels.
- (b) Assisting with metrology infrastructure development at the national level.
- (c) Encouraging the development and mutual recognition of conformity assessment procedures in and between Member States.
- (d) Promotion of a quality-competitive culture in CARICOM via demand pull information and awareness raising publications, events etc. and supply push marketing and communication strategies.

1.15 In an effort to assist Haiti in achieving its objectives under the RTC, CROSQ will provide project management support, technical expertise and facilitation to BHN, will serve as the Grantee, and will also implement this initiative. The BHN as the prime beneficiary is the champion of the project and will provide support to CROSQ ensuring the quality of the project's deliverables as well as monitor the day-to-day activities of the various consultancies. It is anticipated that this support will assist the BHN in bridging the capacity gaps related to management of a project of this nature.

2. OBJECTIVE OF THE CONSULTANCY

2.01 The objective of the consultancy is to install and configure network hardware and software components at the BHN to strengthen its internal local area network, and online communication capabilities, based on the findings and recommendations from a prior ICT Assessment consultancy.

3. SCOPE OF SERVICES

3.01 The consultant shall undertake the following activities:

- (a) Review the ICT Assessment Report (to be provided), with particular focus on the identified gaps, technical recommendations, and proposed specifications for enhancing BHN's network infrastructure and digital communication capabilities.
- (b) Develop a comprehensive LAN installation plan, taking into account the physical layout of BHN's facilities, existing infrastructure, and strategies to minimize disruption to ongoing operations during installation.

- (c) Prepare a detailed network configuration plan, including IP addressing schemes, subnetting, VLAN design, and necessary security protocols. The design should incorporate scalability, fault tolerance, and redundancy to support future growth and system resilience.
- (d) Configure network devices, including routers, switches, and servers, according to the design specifications.
- (e) Implement robust network security measures, including but not limited to firewalls, access controls, encryption protocols, and intrusion prevention features, in line with industry best practices. This will be subject to an independent network penetration test by BHN.
- (f) Conduct system integration and thorough functional testing of all installed components to ensure optimal network performance, connectivity, and security compliance.
- (g) Create comprehensive documentation of the network architecture, configurations, and procedures.
- (h) Ensure all network components are correctly labelled for easy identification and troubleshooting.
- (i) Provide technical support and assistance for any issues or optimizations required after the network is in production (during the period of the consultancy).

4. DURATION

- 4.01 The duration of the assignment is expected to be for a period of 20 person-days over a period of 2 calendar months.

5. DELIVERABLES AND REPORTING REQUIREMENTS

- 5.01 The consultant will liaise with the Project Officer (PO) who is appointed to lead and monitor the project and will be required to:
 - (a) Deliver an inception report following a meeting with CROSQ and BHN officers, detailing the proposed content, methodology and work plan and timelines for all deliverables within five (5) days of contract commencement.
 - (b) A report documenting the following activities will be due within 40 days of contract commencement.
 - i. Documentation of the physical installation of network components.
 - ii. Log configuration of files for routers, switches, servers, and other network devices.
 - iii. Security measures implemented, such as firewall rules and access controls.
 - iv. Any identified issues and their resolutions.
 - v. Comprehensive documentation of the network architecture, configurations, and procedures.
 - vi. Documentation confirming that all network components are correctly labelled for easy identification and troubleshooting.
 - vii. Test results emanating from use of the network infrastructure and validation of BHN acceptance.
 - (c) Final report summarising the outcomes of the network installation and

configuration process within 50 days of signing the contract.

The official working language for the project shall be English; however, where applicable, French and/or French creole can be utilised. At minimum, all deliverables and reports must be in English.

6. QUALIFICATIONS AND EXPERIENCE

6.01 The appointed consultant must meet the following minimum requirements:

General Qualifications and Experience

- (a) At least an undergraduate degree in computer science, information technology or a related field with a strong computing or IT component .
- (b) Professional certifications and/or training in areas such as CISCO (e.g., CCNA, CCNP), CompTIA Network+, or equivalent.
- (c) At least five years' experience in network administration and troubleshooting.
- (d) Demonstrated experience of installing and configuring network hardware and software components at least one established organisation over a period of three years within the past five years.
- (e) Experience working in similar institutional settings (e.g., national standards bureau, regulatory agencies, or public sector organisations) will be considered an asset.
- (f) Demonstrated knowledge and/or experience in implementing network security best practices, including firewall configuration, access controls, and data protection measures for a minimum of three consecutive years in the past five years.

Skills:

- Strong problem-solving skills.
- Excellent communication skills.
- Proficiency in written and oral French and/or Haitian Creole and English.

7. SUPERVISION OF THE CONSULTANT

7.01 CROSQ will facilitate the work of the consultant and work with the beneficiary countries to make available all studies, reports, and data relevant to the Project. The PO will be assigned to be the liaison between CROSQ, the country and the consultant.

8. LOGISTICS AND RISK CONSIDERATIONS

8.01 Ground Truthing and Travel: On-the-ground assessments or site visits ("ground truthing") are deemed necessary to inform the consultancy. If needed, the Consultant shall be responsible for making their own travel arrangements. Travel to or within Haiti will be undertaken at the Consultant's own risk. Neither CROSQ nor BHN shall be liable for any personal injury, loss, or damage incurred during such travel. The Consultant is therefore advised to consider appropriate insurance coverage.