



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



INTERNATIONAL NETWORK ON
QUALITY INFRASTRUCTURE



INCLUSIVE AND SUSTAINABLE LABORATORY POLICY





THE ROLE OF LABORATORY INFRASTRUCTURE

Quality Infrastructure is a crucial element in promoting and sustaining economic development. It is also important for environmental and social wellbeing, thereby contributing to the Sustainable Development Goals as part of the 2030 Agenda for Sustainable Development, which sits at the heart of development plans and implementation strategies of many developing countries.

Such a system relies on metrology, standardization, accreditation, conformity assessment, and market surveillance, and **laboratories are a key component**. Laboratories are necessary for proving the compliance of products and services with regulations and conformity with market requirements. The data and information that laboratories provide are essential for transparent and trustworthy decision making, especially those related to inspection and certification activities. Laboratories also ensure products and services meet the triple bottom line of social, environmental and financial considerations.

This demonstrates why developing or strengthening a Laboratory Infrastructure can be so critical. However, a balance needs to be struck between investment costs and expected benefits, which highlights the importance for a needs analysis that considers strategic development and policy objectives in parallel with laboratory capacity requirements.

Indeed, the need for a sustainable Laboratory Infrastructure is implied in the 2030 Agenda:

“Laboratory Infrastructure comprises the laboratories (public and private), together with the scientific principles, practices and supportive laboratory quality control systems, i.e. Proficiency Testing, Certified and other Reference Materials, that are required to quantify, underpin and enhance quality competitiveness, innovation, productivity, safety, health and environmental soundness and sustainability of goods, services and processes.”

It is clear that strategies that consider and leverage the advantages of the Sustainable Development Goals, as well as the Fourth Industrial Revolution, will ultimately accrue greater benefits.



A HOLISTIC LABORATORY POLICY

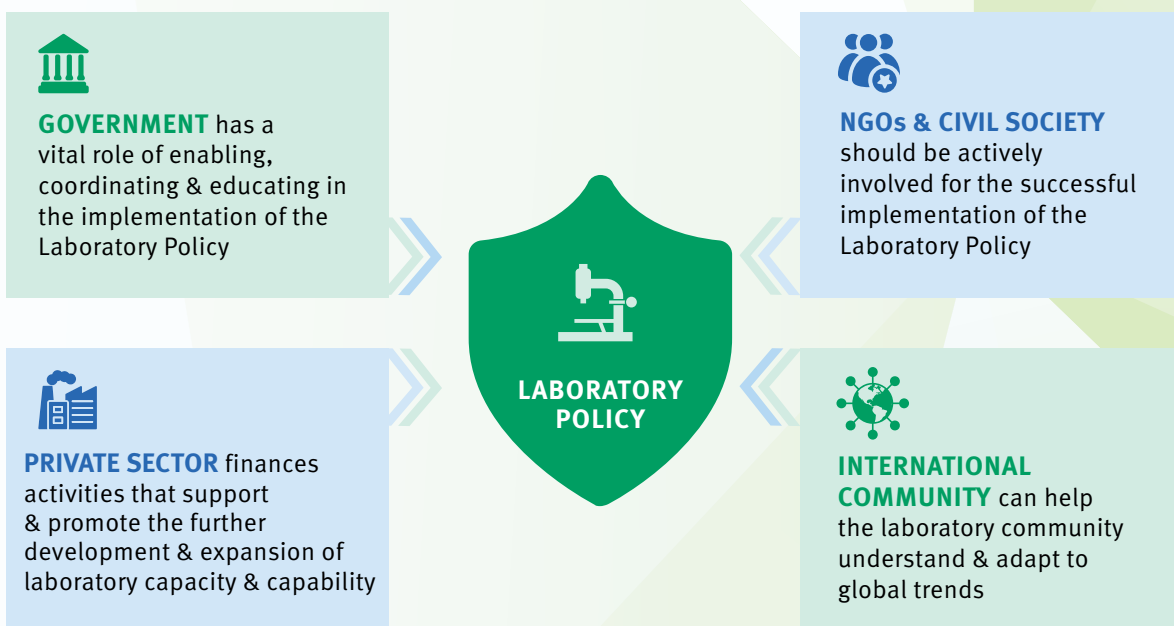
When an economy develops or strengthens its Laboratory Infrastructure, it usually occurs in an environment where there are many other pressing demands on available public resources. This can result in the unintended wastage of scarce resources including the replication of laboratory services (e.g. water and food testing laboratories in several government ministries when demand for these services is limited). Public laboratories competing with each other and with private sector laboratories is also problematic.

Investments in Laboratory Infrastructure should not only seek to address immediate needs. It is important they are also channeled to areas where they could act as an enabler and multiplier for longer-term added value, signaling the need to approach Laboratory Infrastructure holistically. Each economy needs to consider its business environment, production capabilities and internal market needs. Demography, export and import activities, and the global value chains are also important considerations. Government needs to take responsibility for the efficient and effective use of the available resources and provide overarching guidance for achieving their goals through cooperation with all stakeholders. **This is where the need for a suitable Laboratory Policy arises.**




UNIDO is playing an important role in promoting the need for, and assisting in the development of these policies. Such initiatives advance the future of conformity assessment. They also help conformity assessment bodies (CABs) deliver against their vital mission in this new digital age.



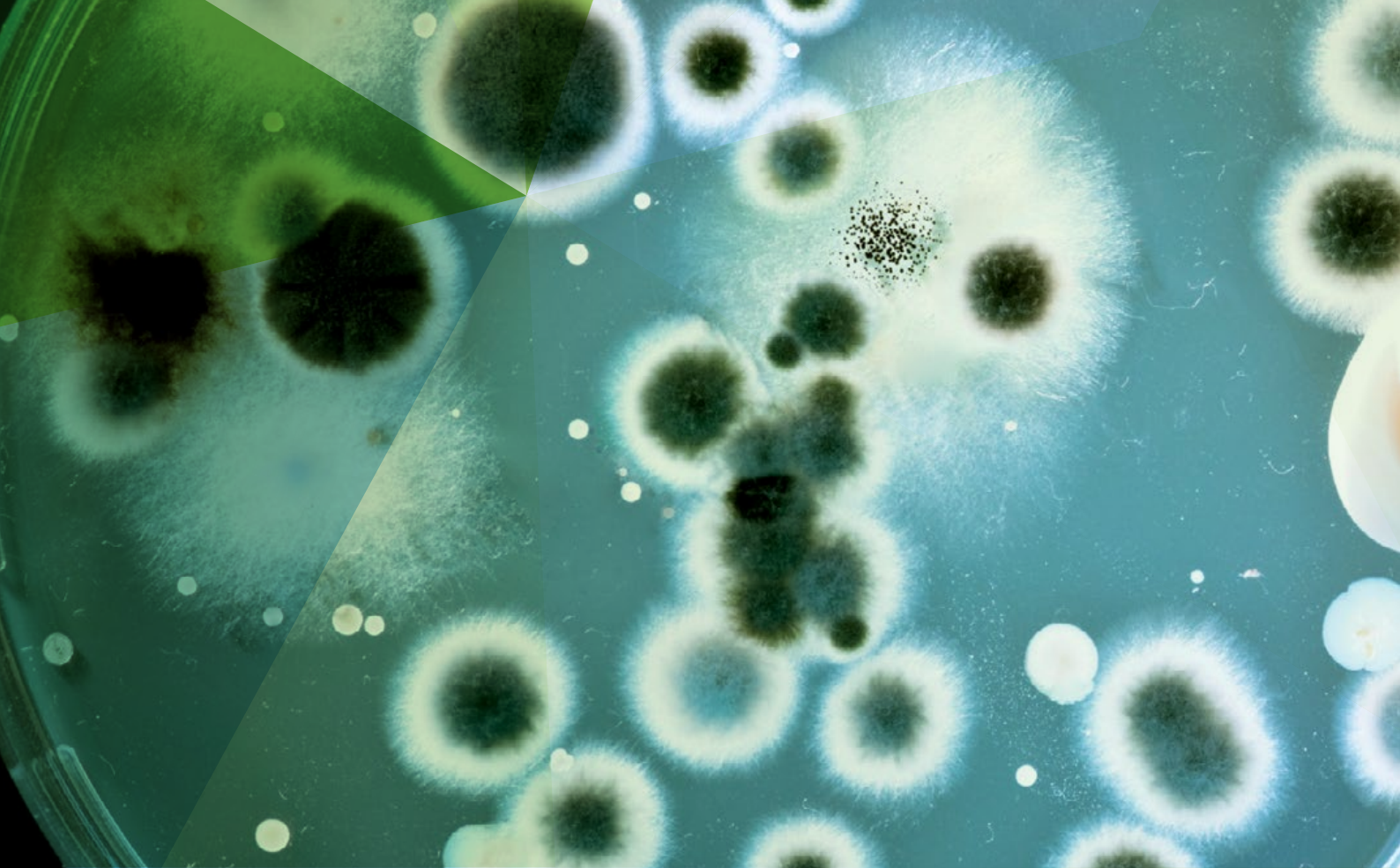
KEY LABORATORY POLICY STAKEHOLDERS



THE 3 LEVELS OF CHALLENGES AND BENEFITS OF IMPLEMENTING A LABORATORY POLICY

Level	Challenges related to:	Benefits of implementing a Laboratory Policy:
 TECHNICAL/ LABORATORY	Physical infrastructure & equipment	Capacity & capability addressed
	Human capital	Availability & capability addressed
	Demonstrating technical capabilities	Demonstrable & independently verified
 MARKETPLACE/ CUSTOMER	Incentives & info to develop market for laboratory services	Incentives provided & info available
	Coverage of laboratory services	Fit-for-purpose & sustainable coverage
	Level of networking	Appropriate & ongoing level
 REGULATORY & INSTITUTIONAL	Regulatory framework applicable to laboratories	Regulatory framework encourages use of public & private sector laboratories under fair competition
	Articulation of issues with regulators	Developed communication channels between regulators & Laboratory Infrastructure actors
	Technical regulation	Testing & measurement requirements in regulations appropriate & coherent





WHAT A LABORATORY POLICY CAN OFFER

A Laboratory Policy can be a valuable tool by which a government can unite all stakeholders around a common understanding of the current situation. It can guide all stakeholders in the ‘what’ of a country’s Laboratory Infrastructure. It can recognise and build on the existing laboratory-related infrastructure, and set objectives for how it can be changed, adapted and upgraded. Economies in general, and developing economies in particular, need to take ownership of their own needs and seek appropriate solutions.

Further, an efficient, effective and sustainable Laboratory Infrastructure is the basis for proving the compliance of products and services in local, regional and global markets. It can also promote trade under fair competition and facilitate participation in global value chains. Laboratories and their customers—including those in or supporting value chains—increasingly require a policy that ensures coordinated, needs-driven development and sustainable delivery.

Based on UNIDO’s expertise in laboratory capacity building, its **Laboratory Policy Guide** is a useful resource to help countries develop and implement their own Laboratory Policy.



LABORATORY POLICY GUIDE

• FIVE KEY QUESTIONS & ANSWERS

WHY? The guide helps countries develop and implement their own Laboratory Policy so they can establish a fit-for-purpose, efficient and effective laboratory capability based on UNIDO's track record of laboratory capacity building.

WHAT? It provides laboratory-specific information which builds on an existing suite of three documents on Quality Infrastructure already published by UNIDO:

- » Quality Policy – Guiding Principles
- » Quality Policy – Technical Guide
- » Quality Policy – A Practical Tool

It covers three areas that need addressing to develop and implement a Laboratory Policy successfully, namely at the:

- » Macro-level (policy level): the guide identifies the guiding principles for the formulation of a Laboratory Policy
- » Meso-level (institutional level): it looks at the elements needed to enhance trust in the test and measurement data laboratories provide, including the need for appropriate accreditation of its activities
- » Micro-level (operational level): the guide identifies and considers common issues that have surfaced during support for the development and strengthening of laboratories in the past

WHERE? The guide highlights the need for a Laboratory Policy that meets the specific situation of each country, taking regional and international economic partners into consideration.

WHO? Ultimately, the success of a Laboratory Policy and Laboratory Infrastructure will depend on the strength of the dialogue and cooperation between everyone concerned, including policymakers, stakeholders and organizations within the Laboratory Infrastructure.

HOW? This guide intends to help decision-makers understand the need for a Laboratory Policy and guide them using known practices. It also provides suggestions on how to develop a conducive environment for the Laboratory Infrastructure, and one that addresses the different development aims of countries.

LABORATORY POLICY GUIDING PRINCIPLES

The members of the International Network on Quality Infrastructure (INetQI) have identified a set of guiding principles for the development of a Quality Policy. As a subcomponent of a Quality Policy, **the Laboratory Policy Guiding Principles** are designed to align with Quality Policy Guiding Principles and have been adapted and expanded to focus on Laboratory Infrastructure issues specifically. They provide a standardized approach that promotes the development of a Laboratory Policy that best aligns with the particular stage in a country's development trajectory while encouraging appropriate benchmarking with others.



FIVE GUIDING PRINCIPLES FOR LABORATORY POLICY DEVELOPMENT

1. Coherence • The need for a consistent approach to the development, strengthening and maintenance of a fit-for-purpose Laboratory Infrastructure requires understanding and agreement on shared goals for both current and future Laboratory Infrastructure capabilities.

2. Integrity • The Laboratory Policy should underpin appropriate political and economic objectives and guide the strengthening and further development and maintenance of laboratory capability and capacity. Sustainability also considers the ongoing levels of technical competence needed to continuously achieve the necessary impact.

3. Inclusiveness • In developing and implementing a Laboratory Policy, interventions should be focused on specific priorities, including market-driven demands, as identified through a needs analysis. The unnecessary duplication of laboratory resources should be avoided.

4. Optimization • The way a Laboratory Policy is directed, overseen and implemented—at the national or regional level—is essential. It is crucial to create an environment where a laboratory can operate impartially and build trust and confidence in the results it produces.

5. Sustainability • All relevant stakeholders need to be involved in the process of drafting and implementing a Laboratory Policy and developing or strengthening the Laboratory Infrastructure.

Each of these principles must be appropriately addressed during the creation of a national or regional Laboratory Policy.



STEPS TO DEVELOP AND IMPLEMENT A LABORATORY POLICY

1 DO THE GROUNDWORK

- 1.1 Establish clear leadership and buy-in
- 1.2 Form a Steering Committee (SC) and the Working Group (WG)

2 STRATEGIC PLANNING

- 2.1 Analyse the national context and identify laboratory-related issues
- 2.2 Identify key stakeholders
- 2.3 Conduct preliminary stakeholder consultation
- 2.4 Analyse and differentiate options considering existing infrastructure, feasibility and sustainability

3 PREPARE THE DRAFT LABORATORY POLICY AND BUILD CONSENSUS

- 3.1 WG technical sub-committees used as needed
- 3.2 Prepare the first draft of the Laboratory Policy
- 3.3 Initial consultations with stakeholders
- 3.4 Incorporate feedback
- 3.5 Circulate for public consultation
- 3.6 Incorporate comments and prepare 'final' version of the Laboratory Policy

4 OBTAIN APPROVAL

- 4.1 Final review and validation
- 4.2 Obtain formal government approval

5 DISPLAY THE LABORATORY POLICY

- 5.1 Publish the Laboratory Policy
- 5.2 Prepare implementation strategy, communicate and promote the Laboratory Policy
- 5.3 Monitor, review and improve the Laboratory Policy



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

**Department of Digitalization, Technology
and Innovation (DTI)**
Vienna International Centre,
P.O. Box 300, 1400 Vienna, Austria
Email: dti@unido.org
www.unido.org