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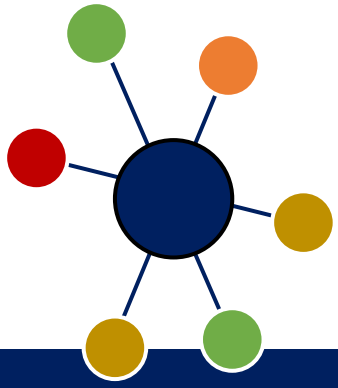

OUTCOME DOCUMENT

STANDARDS & TESTING IN THE FIGHT AGAINST COVID-19

VIRTUAL PANEL | 17 APRIL 2020

Table of Contents

Context 1

Importance of Quality Infrastructure (QI) against Covid-19 1

The Role of International Cooperation 2

Key Takeaways 3

In-Depth: Question One 4

In-Depth: Question Two 6

Questions from the Audience 7

Series 8

This document has been published without formal United Nations editing. The document focuses on implications, challenges and potential responses related to the application of quality and standards, thereby not claiming to be exhaustive. For more detailed information on the overall UNIDO response to COVID-19, please refer to the UNIDO website: https://www.unido.org/unidos-comprehensive-response-covid-19

Context

Unforeseen and unheralded, the Covid-19 pandemic has wrought a trail of unintended consequences globally, spanning the economic, environmental and social dimensions of development. The most obvious effect of the outbreak is the danger to public health and safety: at the time of writing, the World Health Organization have confirmed nearly 2.3 million cases of the novel virus, with over 155,000 deaths and surely more to come. This has led to considerable pressure and strains on health services internationally, with concomitant shortages of qualified staff, personal protective equipment (PPE) and testing kits, laboratory capacity to deal with a huge increase in diagnoses.

Moreover, the risk of endangerment to public health has resulted in widespread social distancing, quarantining and cocooning in most countries, leading to widespread cancellations and postponements of public gatherings across the arts, sporting competitions, religious worship, hospitality and entertainment sectors *inter alia*.

The Covid-19 pandemic has also wreaked havoc across the worldwide economy, prompting economic disruption unheard of in recent memory. The International Labour Organization estimates that 25 million people worldwide may become unemployed as a result of the outbreak, causing an associated loss in workers' incomes of up to 3. 4 trillion US dollars. Trade and investment flows have also been hit hard by the novel virus, with the United Nations Conference on Trade and Development estimating that between 30 and 40 per cent of global FDI will be lost in 2020-21 as a result.

The environmental dimension has been one the few to see some positive impacts, as a reduction in global economic activity has given rise to a reduction in harmful emissions, removing smog and particulates in some affected areas. However, nobody is sure whether this trend will be sustained in the longer-term. Furthermore, the sudden and sharp overburdening of health services may also give rise to unforeseen issues such as increased medical waste leading to a surge in harmful emissions from hospitals and other health facilities.

Given the immense challenges posed by the Covid-19 pandemic and its international character, it is incumbent upon international organizations to cooperate in order to maximize synergies, resources and expertise in coordination against the virus.

Importance of Quality Infrastructure (QI) against Covid-19

The UNIDO Department of Trade, Investment and Innovation (TII) is concerned with increasing economic competitiveness and investment through a range of services promoting quality infrastructure (QI), notably standards, metrology, accreditation and certification. There are a wide range of potential applications of QI which could make a significant contribution to the international response to the Covid-19 pandemic.

For instance, quality controls can assure us that medical equipment is effective, while adequate testing standards in laboratories can ensure that we avoid faulty test results. Agreed international standards can also help us to be certain that technologies used in the mitigation of the pandemic are safe, while metrology and certified assessments can help with the development of vaccines in laboratories.

QI also plays a major role in addressing the economic drivers of the crisis, particularly on trade and investment. Harmonization of standards ensures the continuance of global trade, an important consideration in vital sectors such as food and agriculture. These can ensure that the food we consume is safe for human health, through agreed hygiene practices and safety standards.

In the medical sector, the development of standards is essential to addressing shortages of PPE, ensuring that medical professionals and patients stay safe from infection. Mutual

recognition of accredited test results facilitate trade in essential goods for crisis-hit industrial sectors.

QI can thus play a major role in our common response to the Covid-19 pandemic.

The Role of International Cooperation

UNIDO works with a variety of international partners in the fields QI, including standards, metrology, accreditation, conformity assessment etc. in order to promote investment, trade and innovation in a variety of industrial sectors. These include international organizations such as the International Organization for Standardization (ISO); the International Bureau of Weights and Measures (BIPM); Organization for International Legal Metrology (OIML); International Accreditation Forum (IAF); International Network on Quality Infrastructure (INetQI) as well as relevant national level bodies, the private sector and other partners.

To this end, UNIDO decided to convene a series of virtual webinars with international experts from counterpart organizations, in order to discuss the challenges brought about by the Covid-19 pandemic for QI, how QI institutions can evolve to meet these challenges and what measures will need to be taken in future in order for QI to meet new challenges.

UNIDO convened a webinar series focusing on QI issues, including an panel elaborating on "Quality, Standards and Testing in the Fight against Covid-19" including the following high-level representatives:

- Mr. Bernardo Calzadilla-Sarmiento**,** Director, Department of Trade, Investment and Innovation, UNIDO
- Mr. Sean MacCurtain**,** Director of Conformity Assessment and Consumer Affairs, ISO
- Ms. Merih Malmqvist Nilsson, Chair, INetQI
- Mr. Andy Henson, Director, International Liaison and Communication Department, BIPM
- Mr. Jianhua Xiao, Chief Executive, IAF

The panel was moderated by Dr. Elsie Meintjies, Chief Technical Advisor, GQSP South Africa, UNIDO.

Key Takeaways

1. So I have four key messages: **embrace new technology to achieve sustainable and value adding services**; **work to a triple bottom line – functionality, safety, sustainability** – with every step you take; ask yourself, how does this contribute to achieving the promise of Agenda 2030; **let the SDGs lead you, let values lead you**. You will still earn money so that won't be a problem and **have contingency plans for risks with disruptive effects** - *Ms. Merih Malmqvist Nilsson, Chair, INetQI*

2. In connection with looking at all the quality infrastructure institutions, I think we've really got to recognize what the **new reality** is and that's vital if we're going to move forward. The new reality is that we are looking at virtual health, we're looking at telemedicine, we're looking at a wider use of e commerce, wider use of e- learning, we're looking at how do we mobilize the workforce or re-mobilize the workforce into different areas and the impact of automation on jobs. **As institutions**, we've **got to reflect on these and understand that that we have to go forward and be able to provide to governments to industry to professions like the health, the health care profession to science and technology a really effective basis upon which they can take advantage** and move forward in terms of **how they handle pandemics**. - *Mr. Sean MacCurtain, Director of Conformity Assessment and Consumer Affairs, ISO*

3. **From a quality infrastructure institution side** I think that we've got to be able to **cooperate together, synchronize what we do and identify where we can cooperate**. In terms of customs and trade, we've got to look at how can standards and how can we as institutions, ensure that trade can flow through borders, that customs officials can allow the flow of goods - *Mr. Sean MacCurtain, Director of Conformity Assessment and Consumer Affairs, ISO*

4. What is clear to me is that we are facing many, many challenges, but at the same time we are also **facing some very good opportunities** in our new world of work. It is also a unique opportunity for us. I believe as **quality infrastructure institutions** to really position ourselves uniquely in the world as to the **service that we provide for the protection of the health and safety of our consumers, and citizens, the fauna and flora of our countries**. And as somebody said **we need to do more advocacy on the role of quality infrastructure that would be absolutely critical going forward**. - *Dr. Elsie Meintjies, Chief Technical Advisor, GQSP South Africa, UNIDO*

5. We have to think how we can support more this population that is really unprotected because one thing – this crisis has shown is that **we have a societal divide** and that is a segment of society that is completely unprotected, and **we need to think also, from our perspective, much more for these groups of people** for these groups of countries - *Mr. Bernardo Calzadilla-Sarmiento, Director, Department of Trade, Investment and Innovation, UNIDO*

6. We need to **embrace this digital revolution**, just on **what we can do in relation to quality and standards** it was elaborated by their respective institutions, but at the policy level I think that it shows that **quality policy helps to be prepared**. - *Mr. Bernardo Calzadilla-Sarmiento, Director, Department of Trade, Investment and Innovation, UNIDO*

7. The **need for the quality infrastructure organizations to change is very clear**. The writing's on the wall. We have to start being nimble, we have to be proactive. - *Dr. Elsie Meintjies, Chief Technical Advisor, GQSP South Africa, UNIDO*

8. Within the framework of the SDGs and against the backdrop of promoting inclusive and sustainable industrial development, **the global the continental and the country level quality infrastructure has and will continue to play a very significant role in the fight against the global pandemic** that we are facing at the moment. - *Dr. Elsie Meintjies, Chief Technical Advisor, GQSP South Africa, UNIDO*

In-Depth: Question One

Dr. Meintjies opened proceedings by introducing the panelists and remarking on the wide geographical spread of listeners that had been attracted to the panel session. She then asked the panel to describe how their respective institution had reacted to mitigate the spread of Covid-19.

Mr. Bernardo Calzadilla-Sarmiento, UNIDO began by saying that UNIDO had reacted immediately to ensure that its Business Continuity Plan could remain operational. He said that for UNIDO, QI efforts must be viewed through a sustainability lens, particularly within the framework of the 3 pillars of the Sustainable Development Goals – Prosperity, People and Planet. He noted a crisis in trade, particularly in disruption of supply chains, which is causing investment and possibly divestment problems.

Mr. Calzadilla-Sarmiento noted the implications of good standards for SDG 2, concerning food security, and SDG 3, regarding human health. "The name of the game is reliable results, we need testing, we need to know how competence is accredited, how trust it built, how confidence is built," he said. "And from our business, we are quality experts: quality control is at the core of what we do, but it's even more important when we're talking about medical equipment that needs to be fit for purpose, needs to be used by the overall population, but in particular by the health sector.

"And sure we at UNIDO work with laboratories in accreditation, but we [also] work with laboratories dealing with this sector, with new medical vaccines, but also with new medical laboratories," stated Mr. Calzadilla-Sarmiento.

He further noted temporary upsides of the pandemic with respect to the environment, but also that the increased strain on medical facilities may give rise to increased emissions due to rising medical waste. Mr. Calzadilla-Sarmiento noted that QI is crucial for achieving SDG 9, promoting inclusive and sustainable industrialization, and that the post-crisis recovery phase would probably see new innovations and a need for new standards to address them.

"So I think in this scenario, we need to further think about how we can continue advocating the importance of standardization, quality infrastructure and metrology to cope with the crisis, and also to cope with the post-Corona crisis and its re-emergence, because the process will bring us to a new era", he said. "I think that this is a disruptive moment where we will also have a lot of opportunities in which we can see that we will change, and we will do [so] for the better", concluded Mr. Calzadilla-Sarmiento.

Mr. Seán MacCurtain, ISO, said that standards comprise the highest levels of consensus by experts on a given topic, and thus it is vital to relay this information to the general public during the pandemic. He said that in coordination with the International Electrotechnical Commission (IEC), ISO had made a number of standards freely available through their website and those of national member bodies, and that the national bodies had employed national standards in some cases addressing the Covid-19 outbreak.

Mr. MacCurtain identified two types of standards important in the present crisis, namely management standards, such as ISO 22301 on Business Continuity, and technical standards, which are coming to the fore for products such as medical devices, spanning everything from ventilators to gloves, masks etc.

"I think that these standards are vital and we've seen that they're even more vital when organizations want to be able to switch from manufacturing dresses or clothing to manufacturing masks. So the availability of these can actually look at helping the supply chain. And that goes, also from manufacturing vacuum cleaners to ventilators, so the availability of these type of standards is crucial," said Mr. MacCurtain.

He noted that convening traditional meetings is impossible at present and that ISO was well-placed to hold virtual meetings, as it had long been the practice there. However, he also noted that standards need to be developed to regulate online meetings, and that timing and

other considerations are a challenge for international organizations in this regard.

"From the capacity-building perspective and helping developing countries, I think we've got to recognize that they are behind the rest of the world in terms of impact. So one of the things that we have done within ISO, is we've set up a platform where members who have gone through the pandemic…can put their best practice and share it with out other members. We are adapting the Developing Countries Action Plan," concluded Mr. MacCurtain.

Mr. Andy Henson, BIPM, noted that keeping laboratories open is proving to be a real challenge, though this is offset by keeping some major databases, such as the KCDB and the JCTLM, which allow for remote working for laboratory staff. He noted the recent pronouncement by the British Secretary for Health to the effect that "it is better not to test at all, than to test and get it wrong".

"You're trying to understand how this epidemic is hitting your population, and for that you need test results," he said. "And if you're getting them wrong, which is quite easy to do in the tests for antibodies, for example, it can easily detect the wrong thing. The coronavirus is a broad church of different viruses. So you've got to make sure you're testing the right thing; getting the measurements right has never been important than it is today," stressed Mr. Henson.

He said that research and capacity-building programmes had been affected due to the Covid-19 outbreak, which may drive greater use of e-learning, for example. He concluded by stressing the centrality of metrology for quality infrastructure.

"The standards are important and the testing is important, but behind them is the metrology. If you're not getting the right answers in this kind of a crisis, you have an absolute disaster beyond the immediate disaster," underlined Mr. Henson.

Ms. Merih Malmqvist Nilsson, INetQI, said that the crisis demonstrates the crucial nature of laboratory testing for healthcare provision. "To the best of my knowledge laboratories are still providing services to their communities, unless there's a total shutdown," she said. "And even where there is a total shutdown our governments and regulators realize the importance of laboratory testing and those facilities are being treated like essential services by many communities. And that's the status they should have in the long run," urged Ms. Malmqvist Nilsson.

She noted that laboratories and the private sector had been working closely together to trail new products to battle Covid-19, adding that conformity assessment should be treated as a public service once the crisis is over. Ms. Malmqvist Nilsson also stressed the importance of global trust throughout the value chain.

"At a time like this…it's easy to revert to nationalism and protectionism and it's very sad if we today cannot rely on testing to have been done properly, when it's delivered from another part of the world. It is a huge failure for all the work we have done," she said.

She concluded by noting that laboratories had accelerated their operations, but this had been offset by a reluctance by regulators to change, and that conformity assessment and accreditation bodies should adopt contingency plans so that they would be just as, if not more efficient in crisis periods.

Mr. Jianhua Xiao, IAF, began by stating that the Forum's website had posted statements and frequently asked questions indicating how national accreditation and certification bodies should respond to the Covid-19 pandemic, while noting that IAF MD 4 outlines how those bodies should use information and communication technologies (ICTs) during a crisis.

Mr. Xiao outlined the main issues for IAF during the outbreak, saying, "The IAF's main priority during this challenging time is supporting IAF member accreditation bodies, their certification bodies and certified organizations to maintain robust creditor education and ensure certified organizations are served in the best way possible, so that greater certifications continue. It's a rule to facilitate trade, support regulators and protect consumers and the environment in this period of time in a fight against Covid-19 and support to the resumption of industry," he said.

He added that the mandatory documents, such as IAF ID3 and MD4 were helping member accreditation bodies and certification bodies to continue their work during the present disruption.

The moderator, Dr. Elsie Meintjies, noted the rapid reaction of the various institutions and also the need to adapt. “What is also clear from what has been discussed so far is that the need for quality infrastructure organizations to change is very clear: the writing’s on the wall,” she said. “We have to start being nimble, we have to be proactive. This has been mentioned several times by virtually all of the speakers,” noted Dr. Meintjies.

In-Depth: Question Two

Dr. Meintjies then asked the panel how QI institutions could adapt in the medium term, and how they could address the social and economic considerations thrown up by the pandemic.

Mr. Seán MacCurtain stressed the need to adapt to the “new reality” which could include several solutions such as telemedicine, e-commerce, e-learning, how to remobilize the workforce, the possible effects of automation on jobs, and also the crucial nature of testing. He noted that many people want to return to normality as soon as possible following the pandemic, but that the institutions need to stand back and reflect on the lessons learned from the crisis.

Mr. MacCurtain acknowledged that the outbreak had given rise to new possibilities for standards, unthought of just months before, such as proposals for standardization of temporary hospitals. Similarly, he mentioned other unforeseen implications, including sudden human demand on food supply chains, migration, issues for customs and trade and climate change.

“And now we have got pandemics. We now have a blueprint, there is a responsibility on every organization, every company to make sure that we don’t get lazy, that we look at these blueprints, we dust them off every now and then and we make sure that they can respond and continue to respond, covering all of the activities of the institutions,” he said.

Mr. Henson said that the revision of the International System (SI) of units in 2018 had already opened up possibilities, but that the pandemic had accelerated this process further, perhaps leading to a democratization of metrology to smaller laboratories. He said that the availability of low-cost sensors would have implications for traditional traceability practices, with a larger number of sources providing predictions. In terms of testing during the Covid-19 outbreak, Mr. Henson suggested that the necessity of comparable data may accelerate take-up of the SI in biological and chemical measurements.

Ms. Malmqvist Nilsson said that, “quality infrastructure has to reinvent itself, and embrace new technology to remain relevant, and now it seems it has to do that, also, to remain sustainable. SO new technology can be the key to the sustainability of our services.” She further mentioned a number of solutions facilitated by 4IR technology, such as drone for crop pollination; intelligent textiles in healthcare; and 3D printing and blockchain for safeguarding the environment. However, she also believes that the pace of adoption is too slow.

“So we need to quickly embrace new technology and test it out so that when we do have the next crisis…then we have an answer to any problems that come up,” said Ms. Malmqvist Nilsson. “Also, when we talk about quality, we have generally focused on functionality and safety and about using 4IR technologies as a lever to achieve the Sustainable Development Goals and that we need to take a more holistic approach,” she urged.

Ms. Malmqvist Nilsson stressed that QI institutions should work to a triple-bottom line approach, incorporating functionality, sustainability and safety, and that this needs to implemented with respect to each individual product and service. She added that international organizations, especially IAF and ILAC, had a role to play in ensuring that QI institutions employ contingency plans, not just for pandemics.

Referencing the Sustainable Development Goals, Ms. Malmqvist Nilsson cited several as especially important, i.e. the goals addressing anti-poverty, healthcare, zero hunger and gender equality, and lamented that global society could have been in a better position to achieve them had the requisite QI been put in place already.

Mr. Jianhua Xiao stated that he believes that consumer protection, trade regulation and the environment will be enhanced as a result of the Covid-19 pandemic. He said that remote auditing and assessment tools would enable accreditation and certification bodies to address the social and economic aspects of the crisis. He added that IAF would be reviewing the guidance documents currently guiding the response of QI institutions to extraordinary crises, namely IAF ID3 and MD4.

"We don't expect to have a similar process occur in the future. However, we should always be prepared and the relevant IAF documents demonstrate the importance of preparedness. We will continue to enhance our work in this way, and support accreditation bodies to confirm their bodies. And in the end, [confirm] the market," stressed Mr. Xiao.

Mr. Calzadilla-Sarmiento emphasized that the global community was already grappling with the Fourth Industrial Revolution and technological change, but Covid-19 had accelerated the process in a new direction. "While I fully see a strong role for standards and quality, I think we, in the post-recovery, it will be the time for innovation and new technological development and certainly quality infrastructure plays a very important role in relation to that as well. And the big concepts… are readiness, being prepared, being flexible, being reactive," he underlined.

He further stressed cooperation between QI institutions and the need for institutional adaptation, citing the development of a laboratory policy in the Covid-19 world, as well as a need for UN organizations to focus on the business environment, technological foresight and issues for supply chains. Mr. Calzadilla-Sarmiento also urged action on disadvantaged segments of society, saying, "We have to think about how we can support the population that is really unprotected, because one thing this crisis has shown is that we have a societal divide. And there is a segment of society that is completely unprotected, and we need to think…much more about these groups of people and these groups of countries," he urged.

Questions from the Audience

Online viewers submitted over 130 questions to the panel, making it impossible to answer them all. However, by clustering them into groups of similar questions, it was possible to address many of them.

Dr. Meintjies addressed the first one to Mr. Calzadilla-Sarmiento, concerning the necessary changes to future QI policy as a result of Covid-19. He cited readiness, standards and laboratory policy as three major areas in this regard.

The second question asked how to get developing countries with weak governance mechanisms to engage with quality infrastructure policy. Ms. Malmqvist Nilsson emphasized that QI is not just a consideration for trade and business, but also for the safety of citizens too. The structural integrity of critical infrastructure such as roads, bridges, water pipes etc. all depend on QI, and this needs to be stressed to policymakers, she said.

"Because it helps you do the things you want to do. You can do them in the rights way, if you use all the institutions of the quality infrastructure and you protect your citizens. If they're protected, they feel safe and will vote for you," opined Ms. Malmqvist Nilsson.

Mr. Xiao fielded the following question, which addressed how to manage risk in food supply chains. He cited accreditation, certification, testing and inspection as the essential elements in this regard. He said that IAF provides the tools for national accreditation and certification bodies to utilize new technologies, and also that the IAF Food Working Group was addressing how remote auditing activities could be used for food safety accreditation. Mr. MacCurtain added that flexible standards are missing from the conformity assessment process, leading to a knock-on lack of confidence by consumers. This

was echoed by Mr. Henson, who said that we need to trust the fantastic QI foundations that have been built and to allow some greater flexibility. Ms. Malmqvist Nilsson added that the variety of standards for organic foods internationally had influenced lobbying for designating imports as "organic" in many countries, creating competitive pressures. She said that bodies such as ISO should harmonize standards globally in order to avoid situations such as these.

Regarding harmonization of standards for PPE, Mr. MacCurtain said that he was unaware of any ongoing work regarding that broad category of products. However, he added that: "We have got global standards related to different aspects of PPE, so if you look at medical devices, if you look at ventilators, if you look at gloves and you look at masks, there are international standards [already]."

A supplementary question asked what ISO could do to create new standards in areas where they do not yet exist. Mr. MacCurtain responded that ISO Technical Standards Committees have a choice of timelines ranging from 24 to 48 months, and in cases of urgent need they could be encouraged to choose an accelerated timeline.

The final question of the session asked, "should quality infrastructure institutions be flexible in meeting standards and conformity assessment in times of Covid-19?" Mr. Xiao reiterated that few national accreditation or certification bodies had implemented remote auditing assessments prior to the Covid-19 pandemic, but that the IAF Mandatory Documents allowed these bodies to suspend their normal working practices during extraordinary events. Flexibility needed to be considered, as well as confidence in the accreditation bodies, stressed Mr. Xiao.

Dr. Elsie Meintjies summed up the main conclusions of the panel, adding: "What is clear to me is that we are facing many, many challenges, but at the same time we are facing some very good opportunities in our new world of work. It is also a unique opportunity for us…as quality infrastructure institutions to really position ourselves uniquely in the world as to the service that we provide for the protection of the health and safety of consumers, citizens, flora and fauna of our countries. And as somebody said, we need to do more advocacy on the role of quality infrastructure; that would be absolutely critical going forward."

Series

This panel discussion was just one of a special webinar series organized by UNIDO addressing the role of QI in pandemic and post-pandemic institutional response. This series includes the following webinars:

17 APRIL

Standards and Testing in the Fight against Covid-19

23 APRIL

Organizational Resilience in Times of Covid-19

29 APRIL

The Role of Conformity Assessment during Times of Covid-19 (including ISO/IEC 17025)

04 MAY

Auditing and Management System Certification in a Covid-19 World

07 MAY

Harnessing Innovation and Standards for a Better World after Covid-19

For further information on this series, please see https://tii.unido.org/

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