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Quality Infrastructure enables the Sustainable Development Goals to be achieved

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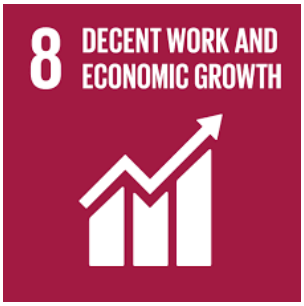
In 2015 the United Nations adopted the 2030 Agenda for Sustainable Development, which provides a framework for peace and prosperity for the planet and its people. 17 Sustainable Development Goals (SDGs) form the core of the 2030 Agenda. The SDGs demand concerted action in a global partnership to end poverty and other suffering, improve human health and education, reduce inequality, foster economic growth, combat climate change and preserve oceans and forests.

Quality Infrastructure (QI) can best position economies to attain the SDGs. QI contributes mainly towards improving three dimensions addressed by the SDGs: People, Planet and Prosperity – and an additional two, namely Peace and Partnerships, must be included as well. These five Ps emphasise how the SDGs shape an interconnected framework instead of just being a group of isolated goals.

We understand Quality Infrastructure to mean the international system of metrology, standardisation, accreditation and quality-related services (testing, calibration, inspection, verification, validation, training and awareness building) which creates confidence in international trade and contributes to the protection of consumers and the environment.

International trade is considered an engine for ***prosperity*** and poverty reduction. QI makes domestic markets more effective and facilitates their access to foreign markets. This is achieved through quality assurance, compliance with standards and meeting consumer requirements at home and abroad. QI helps to meet market requirements and can address social and environmental aspects while trying to avoid unnecessary barriers to trade.



Like trade, industrial development contributes to prosperity. QI supports industrial development and innovation through standards development that is in line with SGDs 8 and 9.

Standards can improve the environmental performance of materials and products, enhance energy efficiency, advance the development of sustainable infrastructure and promote decent work. Additionally, ISO standard 45001, "Occupational health and safety management systems", is designed to help companies and organisations worldwide to protect the health and safety of their employees.[1]

[1] https://www.iso.org/sdg/SDG08.html

Industry 4.0 is creating new challenges for measurement, testing and certification. QI therefore needs to further develop in parallel with Industry 4.0.[2] In this context, the "Metrology 4.0" concept defines new metrology trends in terms of meeting new production requirements to enhance efficiency by using advanced and smart manufacturing and measuring processes. Here it is essential to apply smart sensors that monitor production units, optimise manufacturing processes, shorten production cycles, reduce other costs and continue to ensure product quality.

Concerning the dimension ***people***, QI enables a variety of SDGs which address food security, good health and wellbeing (SDG3), gender equality (SDG5), clean energy (SDG7), clean water and sanitation (SDG6). QI ensures that food is safe and fit for consumption, thus supporting people's health and wellbeing. QI also supports agricultural cross-border trade, and plays a crucial role in the health sector through measurement, testing and standards. QI makes sure that standards are written in a gender-sensitive way. Besides enhancing energy efficiency in two areas, energy consumption and energy transmission, QI also supports the transition to clean energy by adapting standards and technical regulations for renewable energy solutions in line with good international practices and upgrading testing, certification and metrology capacities to ensure high-quality components and systems. Finally, QI can ensure that water reaches people and is safe for human consumption. It helps to control water pollution and efficiency of delivery, for example through the calibration of water meters or the international metrics of water scarcity and stress, and thus leads to optimum water reserves.

QI helps to conserve and protect the ***planet***. Measurement and verification of compliance contribute to sustainable use of marine resources (life below water / SDG14) and the protection of eco-systems (Life on land/SDG15). QI provides accurate information on materials, energy, water and land used for production and consumption, which is needed for reducing energy, material intensity and related emissions and waste, and thus supports the transition to eco-friendly policies and behaviour. To this end, it enables us to consume and

[2] https://metrology.news/metrology-is-making-industry-4-0-a-reality/

produce in a more responsible way (SDG12) and responds to the challenges of a circular economy.

Working towards SDG12, the Sustainable Procurement Standard (ISO 20400) helps organisations to build the sustainability principle into their procurement processes. Besides, the International Standards Organisation (ISO) has developed standards for environmental labelling within the ISO 14020 series that provide guiding principles for environmental labels and self-declarations. These standards also prepare for third-party certification, and by helping to validate ecological claims, consumers are encouraged to make better choices.

Moreover, work is under way on a new standard for sustainable development and social responsibility in the agri-food sector. Sustainability is also highly relevant when it comes to construction. ISO 15392 standard "Sustainability in building construction" identifies and establishes general principles for sustainability in buildings and other construction works throughout their whole life cycle. Also supporting sustainable lifestyle choices, ISO 20245 standard "Cross-border trade of second-hand goods" defines minimum screening criteria for goods traded between countries, facilitating this alternative supply chain with the ultimate objective of reducing waste and curbing environmental impact."[3]

With regard to the current global Corona pandemic, quality and standards can play a vital role in putting various SDGs back on track and mitigating the adverse effects of the COVID-19 crisis. This includes SDG3 "Good health and wellbeing". Here QI ensures that testing results are reliable and that medical equipment is fit for purpose. Concerning "Decent work and economic growth" (SDG8), QI enables cross-border trade of medical products and personal protective equipment (PPE) through mutual recognition of accredited quality test results. QI can also ensure the continuity of trade along global food value chains with respect to hygiene and food safety standards in production, thus strengthening SDG2 "Zero Hunger". With regard to "sustainable consumption and production" (SDG12), QI can ensure the uninterrupted production and delivery of essential goods through standards in the fields of business continuity, risk and emergency management and occupational safety and health. Other relevant standards ensure that PPE is produced to reliable quality standard. During times of crisis, certain technologies are used more, and new technologies are introduced. QI can ensure that these technologies are safe (Industry, Innovation and Infrastructure/SDG9). The crisis generates a large amount of additional medical and hazardous waste. Standards help to address this problem, while reliable environmental test results reveal levels of pollution (Life on Land/SDG 15). Finally, a global partnership is required to fight the pandemic, which is in line with SDG 17, "Partnerships for the Goals".

[3] https://www.iso.org/sdg/SDG12.html.

Mesopartner has been supporting the upgrading and strengthening of QI in developing and transforming countries for more than 15 years. Since 2015, these efforts have been mainly targeting the achievement of various SDGs. Several Calidena[4] exercises in food value chains in Asia, Africa and Latin America have enhanced food security and safety and innovation in the food industry, and have also facilitated domestic and international trade of food items and other products. Matching industry demand for QI services with the supply of QI institutions has generated new and better services in different areas of conformity assessment. Mesopartner also contributes to solutions for measuring the availability and sustainability of QI. The Global Quality Infrastructure Index (GQII)[5] developed by Mesopartner and Analyticar since 2010 is a database and ranking that allows comparison of the QI of different countries worldwide. This analytical work has attracted the attention of the United Nations, the guardian organisation of the SDGs. The United Nations Industrial Development Organization (UNIDO) is currently working on the development of a Quality Infrastructure Scorecard for Sustainable Development (QI4SD), which will make the interconnection between SDGs and Quality Infrastructure even more transparent and measurable.

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[4] Calidena is a participatory methodology to ensure quality in value chains developed by the German Metrology Institute and Mesopartner.

[5] https://gqii.org