



Global Goals for Sustainable Development

The contribution of quality infrastructure to the implementation of Agenda 2030

On behalf of



On behalf of the Federal Government of Germany, the Physikalisch-Technische Bundesanstalt promotes the improvement of the framework conditions for economic, social and environmentally friendly action and thus supports the development of quality infrastructure.

The contribution of quality infrastructure to the implementation of the 2030 Agenda for Sustainable Development

Sustainable Development Goals

On 25 September 2015, the 2030 Agenda for Sustainable Development was adopted by the Member States of the United Nations at the UN Summit in New York. The Agenda is the successor to the Millennium Development Goals, achievement of which was sought from 2000 to 2015. The Agenda contains 17 Global Goals with 169 targets¹ that focus on sustainability (environment, economics and society) and are to be achieved by 2030. None of the goals may

be achieved to the detriment of another, and the goals apply to all countries.

Thus, all countries are called upon in equal measure to make active contributions to achieving the Goals.

In the years to come, German development cooperation will become oriented around the 2030 Agenda. With this in mind, we illustrate here the way in which quality infrastructure contributes to the achievement of these goals.

GOAL 1



End **poverty** in all its forms everywhere

A recognized and effective quality infrastructure creates the framework conditions for private-sector activity. QI allows manufacturing processes and product quality to be improved in a way that conserves resources, thereby reducing costs and increasing competitiveness. In this way, access is improved to both the domestic market and to regional and international trade. This creates the jobs and income opportunities that are the prerequisites for large-scale growth and poverty reduction.

GOAL 2



End **hunger**, achieve food security and improved nutrition, and promote sustainable agriculture

Enhanced quality assurance in the production, processing and distribution of food improves its quality and accessibility. Locally available analysis laboratories ensure that food is free of contaminations that are detrimental to human health, and that post-harvest losses are reduced. In addition, access to reliable laboratory analysis results promotes sustainable agriculture, as fertilizers and pesticides are used properly and sustainably, value creation is increased and local producers are empowered.

¹ All 169 targets can be found here: <http://www.un.org/sustainabledevelopment/>

GOAL 3



Ensure **healthy lives** and promote well-being for all at all ages

A functional quality infrastructure supports medical laboratories in providing reliable services and ensures that medical devices measure accurately. Only in this way can patients be diagnosed correctly and treated effectively. In addition, the quality of medicines is ensured, thus providing the population with effective protection against inadequate or even harmful medicines. By collaborating with pharmaceutical inspection laboratories, national regulatory authorities and industrial firms, PTB improves the approval, inspection and market surveillance of locally produced medicines. This allows products that are affordable yet safe and of high quality to be available locally.

GOAL 4



Ensure inclusive and equitable quality **education** and promote lifelong learning opportunities for all

An important component of PTB's cooperation projects is basic and advanced training in the field of quality infrastructure: QI stakeholders intensify their knowledge and skills both at a high scientific level within the scope of scientific and technical cooperation or higher education and within the scope of vocational advanced training.

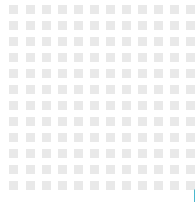
GOAL 5



Achieve **gender equality** and empower all women and girls

A functional quality infrastructure enables economic growth as well as the creation of income and employment for all members of society. In addition, quality infrastructure also contributes to making basic services, such as access to clean drinking water and availability of non-toxic food as well as reliable healthcare services, available to one and all – both men and women equally.

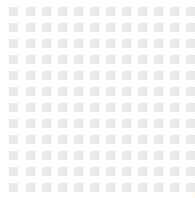
GOAL 6



Ensure availability and sustainable management of **water and sanitation** for all

Quality infrastructure contributes to useable, clean drinking water, as well as to enhanced wastewater management. On the one hand, local access to reliable analysis ensures drinking water quality. On the other hand, enhanced measurement capacities increase the accuracy and reliability of consumption measurements, as well as the effectiveness of existing supply systems.

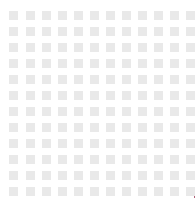
GOAL 7



Ensure access to affordable, reliable, sustainable and modern **energy** for all

Not until a suitable quality infrastructure is in place can renewable energies be used effectively in the long term and energy efficiency increased. Correct measurement and testing services are necessary in order to both correctly install and increase the efficiency and lifespan of solar and wind power facilities. Furthermore, precise transmission and energy-measurement technologies, the development of new standards and the harmonization of various technologies are needed to incorporate electricity from renewable energy sources into existing networks with minimal losses.

GOAL 8



Promote sustained, inclusive and sustainable **economic growth**, full and productive employment and **decent work** for all

A recognized and effective quality infrastructure creates the framework conditions for fruitful private-sector activity. When companies draw on reliable QI services, they are able to fulfil the requirements placed on their products and participate in global competition. In this way, local income and employment opportunities are generated and economic growth is facilitated. In addition, by enforcing international labour standards and worker safety provisions, safe working conditions and decent work are ensured.

GOAL 9



Build resilient **infrastructure**, promote inclusive and sustainable **industrialization** and foster **innovation**

In addition to improvements to the energy and water supply, quality infrastructure also contributes to improvements in the quality of processes and products in value chains. For example, the competitiveness of local businesses is improved, a sustainable process of industrialization is supported and innovations are initiated.

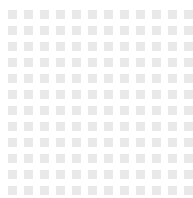
GOAL 10



Reduce **inequality** within and among countries

A recognized quality infrastructure creates the prerequisites for private-sector activity and facilitates participation in global trade. In this way, local employment and income opportunities are generated and inequalities within and between countries are reduced.

GOAL 11



Make **cities and settlements** inclusive, safe, resilient and sustainable

Quality infrastructure allows safe buildings to be built by ensuring the quality of building material (to name one example). Reliable measurements such as air quality are also necessary in order to ascertain environmental conditions in cities and settlements and to comply with corresponding regulations and directives.

GOAL 12



Ensure sustainable **consumption and production patterns**

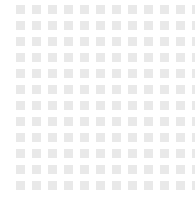
A functional quality infrastructure provides an institutional framework to develop environmental and social standards (or to incorporate them into national regulations) and to monitor their observance. Furthermore, competent, locally available laboratory analysis can demonstrate environmental contaminations in the water, air and soil. In this way, causes are identified at an early stage and can be prevented in future. Early detection of contaminants in food and textiles also contributes to more sustainable consumption and production patterns.

GOAL 13



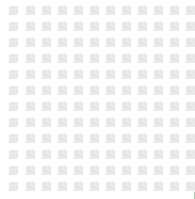
Take urgent action to combat **climate change** and its impacts

GOAL 14



Conserve and sustainably use the **oceans, seas and marine resources** for sustainable development

GOAL 15



Protect, restore and promote sustainable use of **terrestrial ecosystems**, sustainably manage **forests**, combat **desertification**, halt and reverse **land degradation** and halt **biodiversity loss**

A functional quality infrastructure supports the implementation of climate and environmental protection, as it can be used to identify, regulate and monitor risks. Substances are checked for contamination and soil, water and air quality is measured and analysed. In this way, compliance with environmental directives is checked and processes and conduct guidelines that are relevant to the climate and to the environment can be implemented. In addition, using quality management systems as well as calibrated and verified measuring and testing equipment promotes the economical use and management of energy and raw materials.

GOAL 16



Promote **peaceful and inclusive societies** for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

QI measures contribute to legislation reform and support reform processes such as those in the fields of regionalization, privatization and participation. A functional quality infrastructure entails that the state protect its citizens by having goods and services that are traded fulfil respective safety requirements. Legal framework conditions (and the support and surveillance systems that are associated with these conditions) make government action transparent and predictable. This ensures the establishment of national administration structures for the implementation of internationally mandated surveillance mechanisms.

GOAL 17



Strengthen the means of implementation and revitalize the **Global Partnership** for Sustainable Development

Technology

PTB's cooperation projects support its partners during establishment and development of their scientific, technological and innovative knowledge and skills in the field of quality infrastructure. Knowledge is also exchanged within the scope of south-south and trilateral cooperation projects.

Trade

Quality infrastructure fulfils the prerequisites for the integration of partner countries into the global system of trade, thereby strengthening their trade capacities and increasing their exports. Preconditions for taking part in global trade include proving that products are in conformity with required standards or regulations. Furthermore, assurance is provided that technical regulations, standards, tests and certification procedures do not create unnecessary barriers to trade. In the same way, sanitary and phytosanitary measures can be adhered to in order to control risks for humans, animals and plants.

The Global Goals for Sustainable Development of the 2030 Agenda

- Goal 1: End **poverty** in all its forms everywhere
- Goal 2: End **hunger**, achieve food security and improved nutrition, and promote sustainable agriculture
- Goal 3: Ensure **healthy lives** and promote well-being for all at all ages
- Goal 4: Ensure inclusive and equitable quality **education** and promote lifelong learning opportunities for all
- Goal 5: Achieve **gender equality** and empower all women and girls
- Goal 6: Ensure availability and sustainable management of **water and sanitation** for all
- Goal 7: Ensure access to affordable, reliable sustainable and modern **energy** for all
- Goal 8: Promote sustained, inclusive and sustainable **economic growth**, full and productive employment and **decent work** for all
- Goal 9: Build resilient **infrastructure**, promote inclusive and sustainable industrialization and foster **innovation**
- Goal 10: Reduce **inequality** within and among countries
- Goal 11: Make **cities and settlements** inclusive, safe, resilient and sustainable
- Goal 12: Ensure sustainable **consumption and production patterns**
- Goal 13: Take urgent action to combat **climate change** and its impacts
- Goal 14: Conserve and sustainably use the **oceans, seas and marine resources** for sustainable development
- Goal 15: Protect, restore and promote sustainable use of **terrestrial ecosystems**, sustainably manage **forests**, combat **desertification**, halt and reverse **land** degradation and halt **biodiversity** loss
- Goal 16: Promote **peaceful and inclusive societies** for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17: Strengthen the means of implementation and revitalize the **Global Partnership** for Sustainable Development



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Physikalisch-Technische Bundesanstalt

Bundesallee 100

38116 Braunschweig

Germany

Responsible

Susanne Wendt

+49 531 592-9030

susanne.wendt@ptb.de

www.ptb.de/9.3/en

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Contact

Physikalisch-Technische Bundesanstalt

International Cooperation

Susanne Wendt

Phone +49 531 592-9030

Fax +49 531 592-8225

susanne.wendt@ptb.de

www.ptb.de/9.3/en