
WORLD ACCREDITATION DAY

ACCREDITATION

Sustainability in Economic Growth
and the Environment



#WAD2022

The world economy relies heavily on natural resources provided by healthy ecosystems, and yet we continue to put these ecosystems through enormous stress and to consume resources at an alarming rate. The United Nations (UN) Environment's Global Resources Outlook 2019 found that resource extraction and processing was the cause of 90% of biodiversity loss and water stress and contributed to approximately 50% of total greenhouse gas (GHG) emissions. A considerable shift to more sustainable forms of production that are less resource-intensive and more focused on climate mitigation and carbon removal alongside biodiversity protection policies are essential for long-term economic growth.

“Economic growth which comes at the expense of our planet is simply not sustainable. Our challenge is to meet the needs of all people within the means of our planet. Realizing this ambitious but critical vision calls on governments, business, civil society and people to reshape what we understand by progress and innovate to change people's choices, lifestyles and behaviours.”

— Joyce Msuya, Acting Executive Director, United Nations Environment Programme.

Accreditation, alongside other quality infrastructure tools including metrology, standardization, conformity assessment and market surveillance, can support this shift. Third-party conformity assessment services (testing, inspection, certification, validation and verification) ensure compliance of products, services and systems with the requirements specified or claimed. Accreditation of a conformity assessment body (CAB) provides assurance that its results are trustworthy and reliable. By verifying compliance with standards, accreditation protects consumers and removes technical and economic barriers to trade, providing opportunities for products and services to go global.

Signatories to the IAF Multilateral Recognition Arrangement (MLA) and ILAC Mutual Recognition Arrangement (MRA) recognize each other's accreditations as equivalent, with the aim of

“Accredited once, accepted everywhere”. Under the umbrella of the ILAC MRA and IAF MLA, accreditation and accredited conformity assessment services provide an essential contribution to the implementation of policies and actions aiming to protect the planet.

Accredited conformity assessment can support environmental protection by confirming that CO₂ levels comply with specified limits; that emissions from industries are within an acceptable range; and that the traceability of organic food is clear. Laboratories accredited by the Polish Centre for Accreditation (PCA) test soil and ground samples for pollutants, helping inform decisions on land use, soil regeneration and remediation, and the Beijing Organizing Committee for the 2022 Winter Olympic Games, which strove for carbon neutrality, used a sustainability management system certified by a certification body accredited by the China National Accreditation Service (CNAS).



ACCREDITATION: A ROUTE TO PROTECT THE ENVIRONMENT BY ENSURING COMPLIANCE WITH STANDARDS

One of the major threats facing the planet today is loss of biodiversity, with most scientists agreeing that species are disappearing many times faster than the natural rate of extinction. The United Nations Environment Programme lists four main causes for biodiversity loss: pollution, habitat loss, climate change and over-exploitation of resources.

Use of standards can help organizations adopt more eco-friendly practices, with accredited conformity assessment providing assurance that organizations are meeting requirements and fulfilling claims. Globally, scheme owners have developed various conformity assessment schemes against which accreditation bodies grant accreditation to ensure compliance to environment-related parameters. Regulators within an economy also develop similar schemes. Accreditation bodies, regulators, other scheme owners and conformity assessment bodies together contribute to this ecosystem of sustainability.

Air, water and soil pollution have significant negative impacts both on the environment and on human health. Pollution can have a wide range of environmental effects, including acidification of water and soil, crop damage, climate change, reduced photosynthesis, toxicity build-up in the food chain, harmful algal blooms, feminization of fish, loss of species and many others. ISO 14001 *Environmental management systems — Requirements with guidance for use* requires that an organization consider

all environmental issues relevant to operations, including pollution, climate change mitigation and adaptation, and resource use and efficiency. Use of an environmental management system can help organizations improve their environmental performance, achieve compliance with regulations, and reduce costs through results such as reduced water and energy usage.

In the Netherlands, to moderate the impact of Dutch agriculture on the environment, SMK (Stichting Milieukeur) launched a voluntary quality labelling certification scheme called On the way to PlanetProof in 2018. The scheme is designed for food products and floriculture for both domestic and international trade. Products with the label need to meet more than 100 requirements in the areas of energy and climate, crop production, soil, fertilization, animal welfare and health, landscape and biodiversity, waste and material use, and water. This fast-growing sustainability label saw an increase from approximately 300 farmers, horticulturalists and other businesses being certified



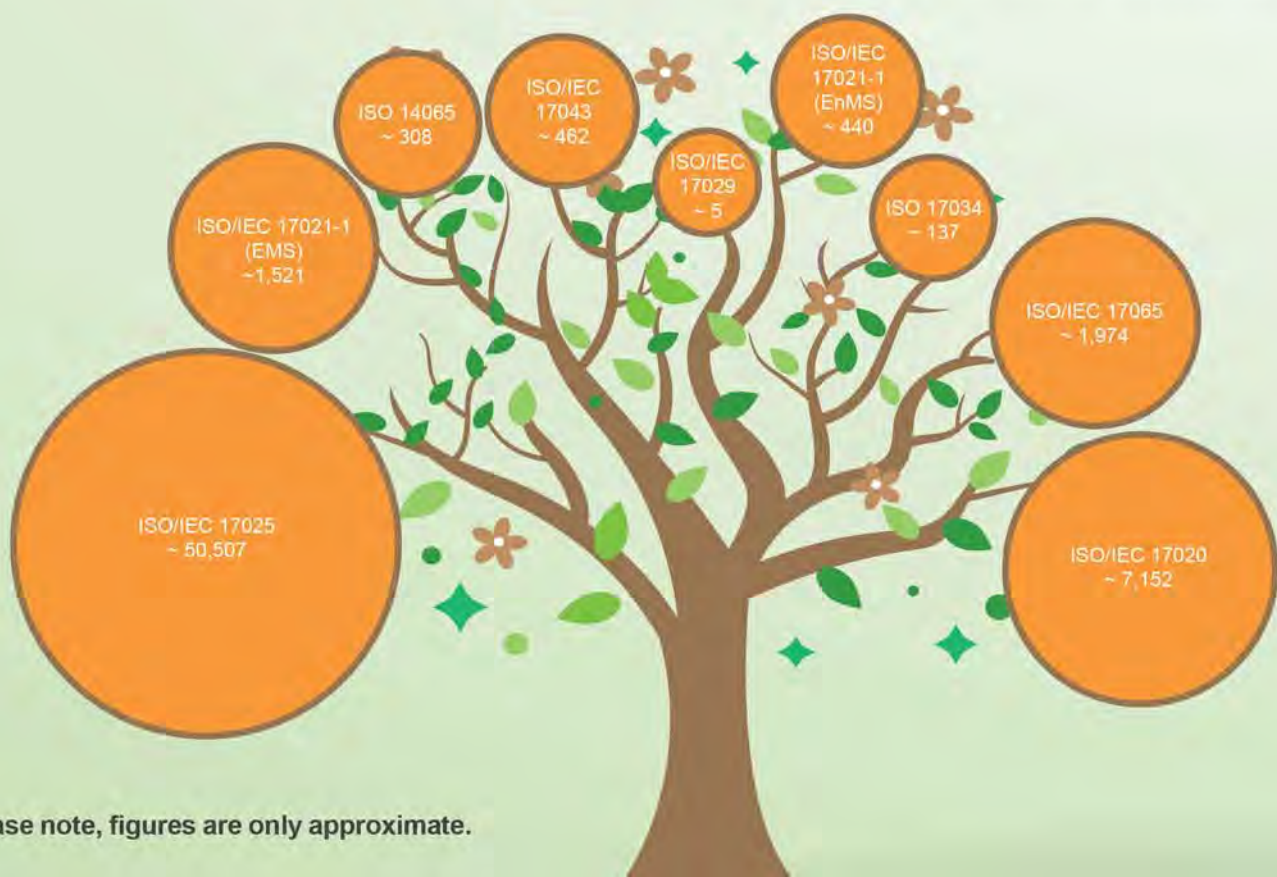
in 2017 to more than 2,800 businesses participating in the programme in 2021. With consumers becoming increasingly aware of environmental issues, the sustainability of a product can be an important differentiating factor, with more sustainable products gaining a competitive advantage. On the way to PlanetProof assures suppliers and customers that the farmer, horticulturist or business is working sustainably, benefiting businesses and the national economy.

More than 1.6 billion people depend on forests for their livelihood, yet from 2015-2020, 10 million hectares of forest worldwide were converted to other land uses each year. Malaysia is combating deforestation in the palm oil industry with the Malaysian Sustainable Palm Oil (MSPO) Certification Scheme, owned by the Malaysian Palm Oil Certification Council. The MSPO scheme is a national Malaysian scheme based on domestic legislation and ratified international conventions. To ensure effective implementation of sustainability efforts at the national level, the MSPO scheme was made mandatory beginning in 2020 and operates under the Department of Standards Malaysia accreditation programme. Along with addressing deforestation, the MSPO scheme aids the Malaysian economy by helping to provide assurance to consumers that the palm oil was produced in an environmentally and socially responsible manner.

The climate crisis is one of the most pressing issues confronting humanity today. In Japan, the measurement of exhaust gas from garbage incinerators, including carbon monoxide and oxygen concentrations, are strictly monitored by gas analyzers. Under the Measurement Act and the manual of the Ministry of the Environment, gas analyzers need periodic calibration using certified standard gases to ensure metrological traceability. The standard gases are provided by accredited reference material producers under the “Japan Calibration Service System”, (JCSS). Since these gases are traceable to the national measurement standard, highly reliable measurement results can be obtained. JCSS standard gases, supplied to accredited laboratories, contribute to reliable measurement results and helping to manage the atmosphere for climate change (SDG13).

The challenges facing the environment, and subsequently the world economy, are numerous. However, standards and accredited conformity assessment can help reduce the human impact on the environment as we strive towards achieving the Sustainable Development Goals.

In a survey of IAF MLA and ILAC MRA signatories, respondents indicated that they had accredited the below number of CABs* working in or providing services to the environmental/sustainability sectors in 2021, under the relevant IAF MLA and ILAC MRA scopes.



* Please note, figures are only approximate.

ACCREDITATION AND ENVIRONMENTAL SUSTAINABILITY

A variety of standards and schemes can help guide businesses, industry and regulators in implementing eco-friendly policies. Accredited conformity assessment to these standards provides assurance that they're being competently and consistently applied.

Accredited laboratories using ISO 17025 involved in testing and calibration activities help measure pollution by analyzing water, air and soil quality, noise levels and waste, and aid in reducing emissions by analyzing energy efficiency.

TESTING AND CALIBRATION

Accreditation under ISO/IEC 17029 supports standards such as ISO 14064-1 and 14064-2 (GHG), ISO 14067 (carbon footprint of products), ISO 14046 (water footprint) and private schemes such as VERRA and CORSIA.

VALIDATION AND VERIFICATION

Accredited certification activities play a vital role in supporting sustainable practices and the environment. These include:

- Management system certification under ISO/IEC 17021-1, such as: ISO 14001 (EMS), ISO 50001 (EnMS), ISO 46001 (WEMS), PEFC Forest Management.
- Product certification under ISO/IEC 17065 schemes such as: GOTS, Textile Exchange, organic schemes, GLOBALG.A.P., Friend of the Sea, PEFC Chain of Custody, Carbon Trust Standard, ecolabelling and green building standards.
- Certification of persons using ISO/IEC 17024 such as: environmental professionals, individuals involved in ecolabeling and energy auditors.

CERTIFICATION

Accreditation under ISO/IEC 17043 assures the competence of proficiency testing (PT) providers involved in establishing and conducting PT programmes in environment related disciplines such as water and soil.

PROFICIENCY TESTING PROVIDERS

Accreditation under ISO 17034 confirms the competence of reference material (RM) producers involved in producing RM used in testing and inspections for monitoring parameters related to the environment.

REFERENCE MATERIAL PRODUCERS

Accreditation assures confidence in biobanking facilities maintaining biological samples such as human, animal, microorganisms, plants and fungus through the implementation of ISO 20387.

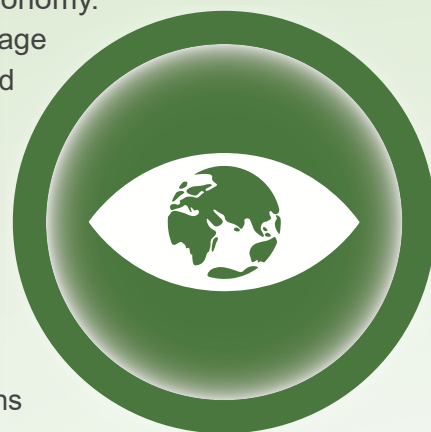
BIOBANKING

Inspection bodies are accredited using ISO/IEC 17020 for activities such as ambient air quality and vehicle emission inspections to monitor safety and support the environment.

INSPECTION

ACCREDITATION CONTRIBUTING TO THE FIGHT AGAINST CLIMATE CHANGE

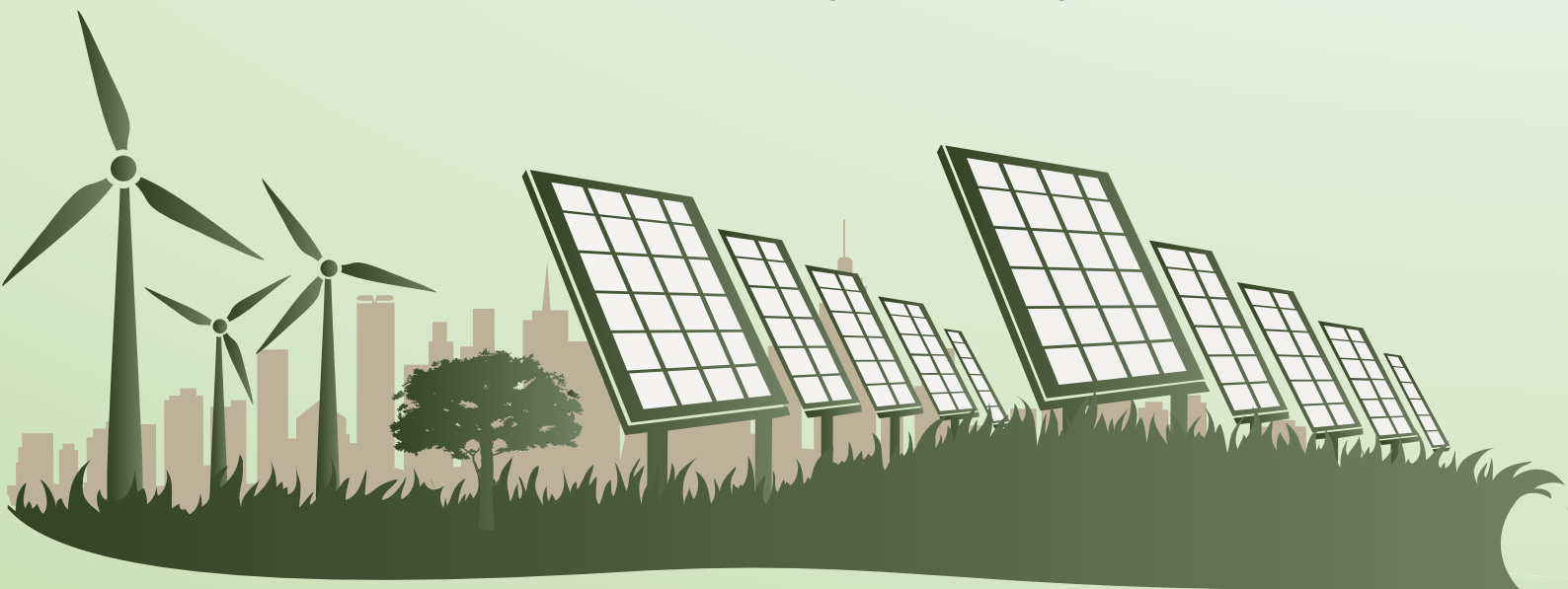
Climate change poses a threat both to the environment and the world economy. Warmer temperatures, sea level rise and extreme weather events can damage infrastructure, impact human health, and negatively affect the agriculture and fishing industries. Long-term economic prosperity requires climate change mitigation and adaptation, which depend on the transformation of economic activities to become “climate friendly”, or “carbon neutral”. Using accredited tests, measurements and verification and validation services strengthens the global response to the threat of climate change by playing a central role in energy efficiency programmes, energy generation from renewable sources and public policies such as carbon pricing, financing for low carbon development projects, and by incentivizing the promotion of low-carbon solutions and carbon emission reduction schemes like ICAO CORSIA.



To meet climate change objectives, it is necessary for organizations to have effective and efficient processes. It is also important to have comparable and verifiable data to support claims relating to emissions, and to have those claims independently verified. Accreditation can provide attestation that CABs are impartial, technically competent and in compliance with relevant international standards such as ISO 14065 *General principles and requirements for bodies validating and verifying environmental information*, and ISO/IEC 17029 *Conformity assessment — General principles and requirements for validation and verification bodies*. Another standard, ISO 50001 *Energy management systems — Requirements with guidance for use*, plays a key role in ensuring the prevention of environment degradation, as many organizations are implementing energy management systems to reduce their energy

consumption, increase energy efficiency and optimise their overall energy use. These measures deliver both cost benefits and improved environmental performance.

Making better use of renewable energy resources is also a crucial step in reducing overall emissions and reaching net zero targets. Accredited conformity assessment services can play an important role in green energy, for instance in the certification of plants for regenerative energy generation, the inspection of wind and solar power plants, and the certification of offshore wind farms. Accredited testing laboratories prepare expert opinions on wind yield or on shadow and noise forecasts for sites of new wind turbines. Accredited services thus contribute to bringing green energy to market and making the operation of regenerative power generation plants safer.



CORSIA

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is a globally implemented scheme established by the International Civil Aviation Organization (ICAO).

According to the UN's Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment report, aviation activities contributed 2.76% of the total global carbon emissions in 2019, and this figure is projected to rise dramatically in the future. CORSIA was established in response to two aspirational goals adopted by the ICAO Assembly in 2010: to improve energy efficiency by 2% per year until 2050, and to achieve carbon-neutral growth from 2020 onwards.



The CORSIA scheme aims to address the impact aviation has on climate change by requiring aircraft operators to fulfil two key obligations, which include: implementation of a system for monitoring, reporting and verification (MRV) of annual CO₂ emissions from 2019; and offsetting their CO₂ emissions from 2021. Carbon offsets are to be achieved by purchasing emission units issued by ICAO-approved GHG programs. Operators may also reduce their need to offset emissions by using CORSIA-eligible fuels. The CORSIA program is aligned to the UN's Sustainable Development Agenda, and through the implementation of CORSIA, the aviation industry seeks to support climate action and look towards economic sustainability.

Third-party verification bodies accredited to ISO 14065 are essential for the reliable reporting of CO₂ emissions. For example, the Mexican Accreditation Body, ema, collaborates with the Federal Civil Aviation Agency of the Ministry of Communications and Transportation, the National Chamber of Air Transport (CANAERO), and the International Air Transport Association (IATA), for the development and promotion of CORSIA.

The Kenya Civil Aviation Authority (KCAA) spoke at the 2021 ICAO CORSIA Forum about the challenges and lessons learned during their implementation of the CORSIA scheme, with an emphasis on collaboration. The Kenya Accreditation Service is currently developing a scheme based on ISO/IEC 17029 to aid organizations like KCAA in complying with requirements.

In Spain, the Energy Directorate of the Spanish National Markets and Competition Commission (CNMC) collaborated with the Spanish National Accreditation Body, ENAC, to establish an accreditation scheme for the inspection of energy efficiency conditions of cogeneration plants based on the UNE EN-ISO/IEC 17020 standard. This scheme requires the cogeneration plants to submit a certificate issued by a recognized independent third-party inspection body, which confirms the efficiency achieved by the plant. Once minimum energy efficiency values are achieved, the plant receives remuneration.

The United Kingdom Accreditation Service (UKAS) supported the development of the Microgeneration Certification Scheme (MCS) in 2006. UKAS accredits

the scheme, and testing and inspection bodies that examine solar, wind and wave energy installations. Accreditation of the MCS provides assurance to end users that renewable energy products are fit for purpose and that installers are competent to install them. Similarly, the independent verification and testing of renewable energy systems helps them to fulfil their potential, whilst simultaneously enabling innovative and potentially more effective technologies to reach the market.

It is therefore clear: in the fight against climate change, accreditation and accredited services play important primary and secondary roles – for both the industries and for policy measures to reduce and offset carbon emissions.

ACCREDITATION SUPPORTING THE CIRCULAR ECONOMY

To reduce the impact of economic activities on the environment and support long-term economic growth, countries worldwide are shifting from a linear to a circular economy. The circular economy is an economic model where production and consumption do not compromise the environment, as it focuses on repair, reuse, remanufacturing and recycling, thus reducing the production of waste and the use of resources.

Advantages of the circular economy:

- Takes into consideration environmental, economic and social aspects in a sustainable lifecycle for products.
- Encourages new business models and business services.
- Reduces emissions, minimizes the consumption of natural resources and the generation of waste.
- Reduces production costs, since waste can be returned back to its own production process and/or be used to generate income from its sale as raw material for other production processes.
- Provides social benefits as it allows for more awareness of climate change and consumption habits, balancing the economy with the environment.
- The reuse of local resources can generate less dependency on imported raw materials.
- Improves the organizational brand since environmentally responsible actions are employed for the management of waste.

Accredited conformity assessment can help ensure that circular economy principles are followed and implemented.

A European Union ship recycling regulation states that independent verifiers should be accredited as inspection bodies to ISO/IEC 17020 *Conformity assessment — Requirements for the operation of various types of bodies performing inspection*, in order to reduce the negative impacts linked to the recycling of ships flying the flag of Member States of the Union. Verification carried out by competent organizations provides confidence to the regulator that the work is being conducted effectively.

Sustainability, economics and accreditation all play important roles in the work of the U.S. Environmental Protection Agency (EPA). The EPA, established in July 1970, aims to protect human and environmental health through the creation of standards and laws, as well as programs that support energy efficiency, environmental stewardship, sustainable growth, air and

water quality, and pollution prevention. Two examples of EPA programs that support sustainability are:

- WaterSense®, an initiative to conserve water, and
- EnergyStar®, an initiative to conserve energy.

Both programs require accreditation to verify the competence of organizations that test and certify products qualified for WaterSense and EnergyStar.

IBM, which holds accredited certification to ISO 14001, collected and processed more than 2 billion pounds of end-of-life IT products worldwide between 1995 and 2014. Nearly 97% of the quantity processed during 2014 was reused, resold or recycled.

The Quality Infrastructure Project for the Circular Economy - QI4CE project being implemented by the Quality Infrastructure of the Americas, the Organization of American States and the National Metrology Institute of Germany from 2020-2023 is aimed at strengthening the competencies of quality infrastructure in Latin America and the Caribbean in support of the circular economy. Quality infrastructure services are essential in supporting research for new materials, products and technologies and determining the environmental impacts of production and consumption patterns. The project will promote and supervise cooperation and the creation of networks between the actors of the quality infrastructure and the circular economy.

As interest in the principles of the circular economy grows, and an increasing number of consumers seek out environmentally sound, ethically sourced products and services, proving sustainability becomes increasingly valuable to

organizations. Accredited validation and verification of an ethical claim can provide assurance that the claim can be trusted. In Italy, UNI and ACCREDIA have published the “Prassi di Riferimento” UNI/PdR 102:2021

Ethical claims of responsibility for sustainable development – Application guidelines to UNI ISO/TS 17033:2020, which identifies the elements that an organization must consider when declaring an ethical assertion of responsibility for sustainable development.

There is a huge opportunity to invest in companies that are adopting these practices and innovating with the aim of reducing environmental impacts, otherwise known as socially responsible investments (SRI). In France, public authorities encourage companies to integrate environmental, social and governance (ESG) criteria into their policies, and individuals to invest their savings in more ethical, socially responsible and environmentally friendly investments. Cofrac-accredited conformity assessment helps support this practice by assessing and verifying the claims made by these companies. Companies are then issued with a label, providing consumers with confidence in their ESG claims.

Economies around the globe have united on goals to protect the environment. The United Nations, regulators, professional associations and industries have developed plans to achieve these goals. Now, it is imperative to responsibly manage activities that will preserve the environment, grow the economy and advance human wellbeing. Accreditation of third-party conformity assessment services can help ensure the compliance of products, services and systems necessary to create a sustainable system that will provide for billions of people worldwide while supporting a sustainable, healthy environment.





ACCREDITATION: SUSTAINABILITY IN ECONOMIC GROWTH AND THE ENVIRONMENT



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