



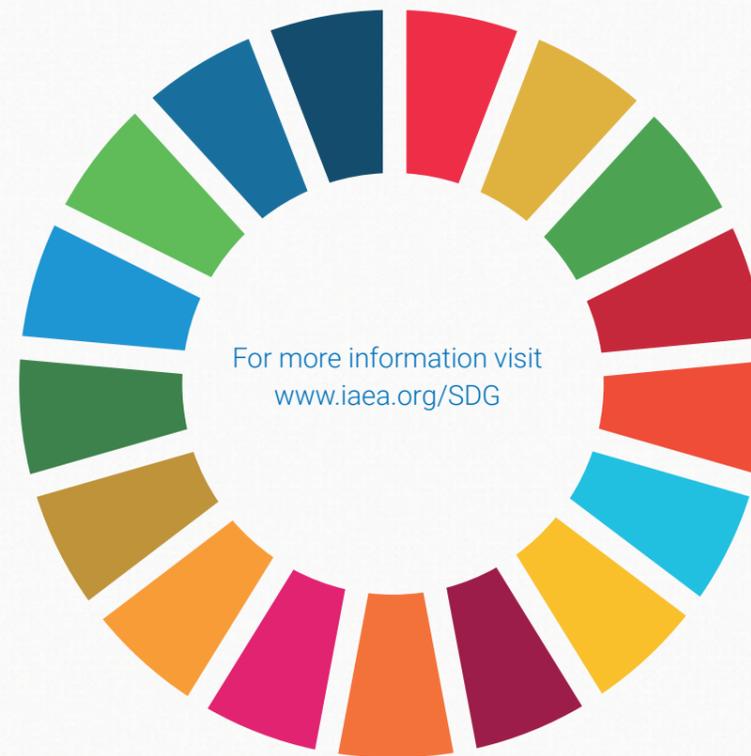
**Oceans** contain vast ecosystems brimming with marine life and are a vital resource for people who rely on the sea for their livelihood, day-to-day nutrition, or both. To sustainably manage and protect oceans and, in turn, support coastal communities, many countries are using nuclear and isotopic techniques, with support from the IAEA, to better understand and monitor ocean health and marine phenomena like ocean acidification, harmful algal blooms and microplastic pollution. The NUclear TEChnology for Controlling Plastic Pollution (NUTEC Plastics) initiative assists Member States in integrating nuclear techniques in their efforts to address plastic pollution in the oceans.



Desertification, **degrading land** and eroding soils can jeopardize lives and livelihoods. Isotopic techniques provide accurate assessments of soil erosion and help to identify erosion hot spots, providing an important tool to reverse land degradation and restore soils. The IAEA's support in this area helps many countries to shape agricultural practices for more sustainable use of land and, ultimately, to increase incomes, while also improving conservation methods and the protection of resources. The IAEA also provides guidance on the safe management of radioactive waste including residues and wastes from the mining and milling of uranium ores, and on the remediation and release of nuclear sites for further use.



**Partnerships** with Member States are at the heart of the IAEA's activities. Close collaboration between the IAEA, United Nations organizations and other organizations helps to maximize the impact of the IAEA's support towards the achievement of Member States' development priorities. To ensure that the IAEA's assistance is tailored to the specific needs and priorities of its beneficiaries, and is sustainable in the long term, programmes are developed through a consultative process. The country programme frameworks help Member States identify areas for technical cooperation with the IAEA in support of their national development objectives.



# The IAEA and the SUSTAINABLE DEVELOPMENT GOALS

**"The promotion of peaceful nuclear technologies is at the heart of the IAEA's mandate. We transfer technology and knowledge to some 145 countries and territories every year, which supports them in the achievement of the Sustainable Development Goals."**

— Rafael Mariano Grossi, IAEA Director General

## The IAEA contributes to the 17 SDGs through...

- 1** NO POVERTY

**helping to reduce poverty** through targeted technical cooperation projects, including working with rural communities to enhance food safety and export competitiveness.
- 2** ZERO HUNGER

**improving food security**, supporting countries in the use of nuclear techniques to increase crop production and yields, control pests, protect the health of livestock and enhance their reproduction.
- 3** GOOD HEALTH AND WELL-BEING

**diagnosing and managing cancer and cardiovascular diseases**, supporting increased access to radiation and nuclear medicine.
- 4** QUALITY EDUCATION

**offering training in diverse areas** related to nuclear technology and its applications, including face-to-face and online courses, fellowship programmes and specialised schools.
- 5** GENDER EQUALITY

**empowering women in nuclear** through targeted education and training, including its Marie Skłodowska-Curie fellowship programme.
- 6** CLEAN WATER AND SANITATION

**increasing access to water**, supporting countries in the use of isotopic techniques that help determine its age and quality, and promoting radiation technology to treat industrial and municipal wastewater.
- 7** AFFORDABLE AND CLEAN ENERGY

**fostering the safe use of nuclear power** to deliver clean, reliable and affordable energy, improve energy security, reduce environmental and health impact and mitigate climate change.
- 8** DECENT WORK AND ECONOMIC GROWTH

**supporting livelihoods**, promoting nuclear techniques that support job creation and economic growth, and setting standards on radiation protection of occupationally exposed workers.
- 9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**supporting innovation** in nuclear energy technologies, helping countries to increase the competence of their industries by using irradiation technology and other nuclear techniques.
- 10** REDUCED INEQUALITIES

**enhancing countries' capacity to use nuclear technology** effectively, safely and securely, including where countries lack the adequate know-how and resources.
- 11** SUSTAINABLE CITIES AND COMMUNITIES

**increasing the safety, resilience and sustainability of cities** through the use of isotopic techniques to measure pollution and its sources, particularly in urban areas.
- 12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**supporting waste management**, including the safe and secure management of radioactive waste, environmental remediation and the management of plastic waste and sustainable production.
- 13** CLIMATE ACTION

**promoting nuclear techniques that help mitigate and adapt to climate change**, and increasing global awareness of the role of nuclear power as a low-carbon energy source.
- 14** LIFE BELOW WATER

**helping countries understand and monitor ocean health** and marine phenomena like ocean acidification, harmful algal blooms and the impact of plastic pollution through nuclear techniques.
- 15** LIFE ON LAND

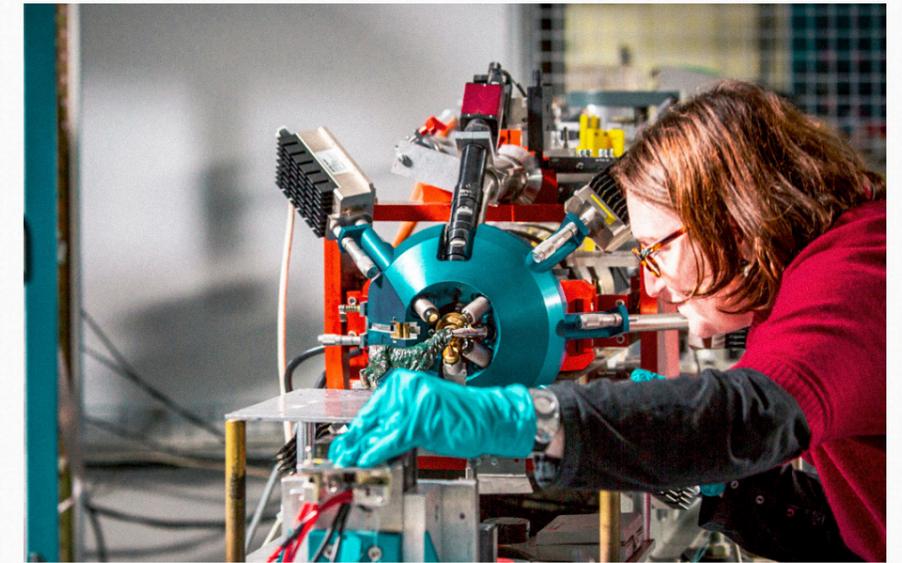
**supporting sustainable use of land through isotopic techniques** to promote agricultural best practices, improve conservation methods and protect resources, ecosystems and biodiversity.
- 16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**helping to deter the spread of nuclear weapons** by providing credible assurance that nuclear material remains in peaceful use through the implementation of nuclear safeguards.
- 17** PARTNERSHIPS FOR THE GOALS

**maximizing the nuclear technology contribution to development objectives** through partnerships with Member States, UN agencies, research organizations, civil society and the private sector.

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## The IAEA's work makes a more direct contribution to these SDGs...



**Hunger** and malnutrition are often rooted in food insecurity and agricultural challenges, causing well-being to suffer and economies to grow strained. Through the IAEA, and its partnership with the Food and Agriculture Organization of the United Nations (FAO), countries around the world are improving food security and agriculture practices by using nuclear techniques to protect plants from insect pests and breed new plant varieties that show improved crop yields, disease resistance and/or drought and salinity tolerance, as well as improve soil and water management. Many use these techniques to protect the health of their livestock and enhance reproduction.



**Water** is essential to life. As populations grow and economies expand, access to clean and safe water globally is imperative. The IAEA works with isotopic techniques to shed light on the age and quality of groundwater and share this knowledge with experts around the world. Some countries use this to implement integrated water resource management policies to sustainably use resources and to protect water and water-related ecosystems, while others use them to address scarcity and improve freshwater supplies.



**Cutting-edge industrial technologies** underpin the success of strong economies, in developed and developing countries alike. Nuclear energy, science and technology can make a major contribution to economic growth and has an important role to play in support of sustainable development. With the IAEA's help, several countries have developed their industries by using these technologies for wastewater treatment, medical isotope production, polymer industry, food and medical supply irradiation and non-destructive testing, and improved product durability.



Sustainable development is not possible if **health** suffers due to debilitating diseases. To help reduce deaths from noncommunicable diseases, the IAEA assists countries in combatting cancer by helping them to devise comprehensive cancer control programmes, strengthening nuclear medicine, radiation oncology and radiology facilities, as well as supporting education and training in this area. Rays of Hope, an IAEA initiative to increase access to cancer care in low- and middle-income countries helps strengthen radiation safety and regulatory infrastructure and provides quality control, guidance, expert technical advice, training and equipment.



**Access to clean, reliable and affordable energy** is a precondition for sustainable economic growth and improved well-being, affecting health, education and job opportunities. The IAEA fosters the sustainable, safe and secure use of low-carbon nuclear power by supporting existing and new nuclear programmes around the world, catalysing innovation and building capacity in energy planning, analysis, and nuclear information and knowledge management. The IAEA helps countries meet growing energy demand for development, while improving energy reliability and security, reducing environmental and health impacts, and mitigating climate change.



Nuclear technologies play a key role in **climate change** mitigation, monitoring and adaptation. Nuclear power plants generate more than one quarter of the world's low carbon electricity and can support a climate resilient energy system and economy. The IAEA works to increase global awareness of the role of nuclear power in reducing greenhouse gas emissions (avoiding 70 billion tonnes of emissions over the past decades) and in the other applications of nuclear energy such as heat and hydrogen production. In addition, nuclear science plays a vital role in assisting countries to adapt to the consequences of climate change, through — among others — the development of crops with increased resilience.