UN Oceans

Plenary Statement

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Director General

IAEA

International Atomic Energy Agency

Mr Chairperson,

Excellencies, delegates, esteemed colleagues,

The IAEA may be best known as the world's nuclear weapons watchdog, but we have an equally important mandate to expanded access to the peaceful uses of nuclear science and technology. Together with the 175 Member States we serve, we use nuclear techniques and technology to ensure food security, generate reliable low-carbon energy, tackle diseases such as cancer and malaria, and respond to climate change.

I am here with you as a fellow ally of our oceans because nuclear technology and techniques are particularly valuable in addressing some of the ocean's most relevant climate-related challenges, including acidification, circulation, biochemical cycles and changes in biodiversity, as well as in assessing marine pollution.

Everything we do helps us partner with Member States and assists them in boosting their technical capacity to use these illuminating and beneficial nuclear techniques to address the challenges they prioritize. One of these priorities is plastic pollution.

For this reason, the IAEA recently launched NUclear TEChnology for Controlling Plastic Pollution, or NUTEC Plastics. It builds on our considerable experience and assists countries in integrating nuclear techniques in their efforts to address challenges of plastic pollution. NUTEC has two main areas of focus. Firstly, it uses nuclear and isotopic techniques, such as infrared spectroscopy, to monitor and track plastic – particularly microplastics - in the ocean. Assessing their fate in marine

organisms and their transfer through food chains, helps support decisions on how to tackle this growing form of pollution and contaminant. Secondly, NUTEC assists Member States who want to improve recycling rates and make progress towards a circular economy. Here again, nuclear science, in this case gamma and electron beam radiation technologies, is the key enabler.

Key to this work are the IAEA's unique laboratories in Austria and in Monaco. At the labs in Monaco, scientists apply radiotracer techniques to improve our understanding of the processes involved in the dynamics of radionuclides, and contaminants in general, in the marine environment. The extremely high sensitivity of radiotracer detection allows them to measure contaminant biokinetics over time, and to study marine organisms and contaminant transfer that cannot easily be investigated using standard analytical techniques.

To understand the effects of marine environmental stressors on the calcification of coral or shellfish, our scientists use Calcium-45, which enables them to assess the impact of changes in temperature, dissolved oxygen, pH, or any other type of marine stressors - alone or combined - on species crucial to people who rely on the oceans for their food and livelihood.

To understand the future, it helps to know the past. Here too, nuclear science is a highly effective tool. Boron isotopes enable scientists to assess past ocean pH levels using corals and fossilized organisms and to identify past 'acidification events' that may correlate with mass extinctions and changes in ecosystem structure.

Through the IAEA's Marine Environment Laboratories, we serve as a co-focal point for the Community of Ocean Action on Ocean Acidification and support numerous other Decade-endorsed programmes and activities.

Our labs also host the Ocean Acidification International Coordination Centre and contribute to increasing knowledge on Blue Carbon as a nature-based solution to climate change. We do this by quantifying carbon sequestration rates in coastal vegetated ecosystems, such as mangroves, seagrasses and saltmarshes, as well as in seaweed farming.

The benefits of nuclear science and technology are so broad that they contribute to more than half the 17 UN Sustainable Development Goals. To further assist our Member States in addressing SDGs 13 and 14, the IAEA has become a partner of the Decade of Ocean Science for Sustainable Development. This sort of collaboration is core to what we do.

So in closing let me turn to a reality this UN Oceans conference aptly underscores, none of us operate in isolation. Global issues require global coordination. The IAEA collaborates with the Member States it serves, with its sister organizations within the UN system, and with regional and national organizations. This maximises the complementary contribution of nuclear science and technology and integrates it into a holistic solution.

We look forward to expanding and deepening that commitment today and in the years to come.