Annex 3: G7 Future of the Seas and Oceans Initiative (FSOI) Working Group

The G7 Future of the Seas and Oceans Initiative (FSOI) Working Group was formed in 2016 under the Japanese Presidency to take an ambitious collaborative approach to tackling ocean issues through strengthened observation infrastructure and information delivery in 5 main action areas: observing system, assessments and reporting, data sharing infrastructure, regional observing capacity, and enhanced G7 political cooperation.

Under the German presidency in 2022, the G7 Ocean Deal was adopted and the G7 Science Ministers' Communique was issued acknowledging the key role of a healthy ocean to an equitable, resilient and sustainable planet by focusing on the Ocean-climate-biodiversity nexus. The communique affirmed the G7 commitment to the G7 FSOI to address the challenge of strengthening and sustaining ocean observations through coordinated actions and support to the UN Ocean Decade of Ocean Science for Sustainable Development (2021-2030). The G7 FSOI Working Group also acknowledges the G7 Climate, Energy and Environment Ministers' Communiqué released in Sapporo on 16th April 2023 underlining the importance of the Ocean.

The Working Group last met in November 2022, hosted by Germany in Berlin, with experts engaging virtually. The meeting included a 'New Frontiers' workshop to discuss emerging opportunities in ocean observations and the Digital Twins of the Ocean. The Working Group meeting:

Agreed the future scope of Working Group activities in light of the G7 Ocean Deal (2022) and the G7 Ocean Decade Navigation Plan (2021).
Agreed the 2023 work plan including support for intersessional workshops focused on Ocean Carbon, Marine Life and Indicators.
Agreed to appoint co-chairs on a rolling basis for the Working Group appointed from members holding current and next presidencies. Japan and Italy were therefore appointed as co-chairs for 2023.
Highlighted the importance of addressing critical spatial gaps in the observing system such as the deep ocean and polar (Arctic and Antarctic) regions as future priorities.

The G7 FSOI Working Group continues its focus on enhancing G7 commitments for ocean observations, especially Essential Ocean Variables in support of the Global Ocean Observing System (GOOS), the Global Climate Observing System (GCOS), and multilateral agreements including the UN Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), and the UN Sustainable Development Goals (SDGs). The Working Group agreed to expand its

focus in 2023 to include the full OneArgo Array of profiling floats to cover physical, biogeochemical, and biological variables in the global Ocean. Discussions are underway to enhance sustained observations of biogeochemical and biological Essential Ocean Variables, through activities focused on Ocean Carbon and Marine Life.

The G7 FSOI also catalyzes international collaborations on the development of Digital Twins of the Ocean. Following the agreement of the G7 Ocean Decade Navigation Plan, the first International Digital Twin Ocean Summit was hosted by the UK government in London on 4th-5th May 2022, and the Working Group will provide temporary support to establish the UN Ocean Decade Digital Twins of the Ocean (DITTO) Programme. Working with the Indicator Task Team of GOOS, the G7 FSOI initiated an activity to establish a comprehensive set of ocean indicators to characterize physical, biogeochemical, or ecosystem processes and a common framework with agreed methodologies to monitor changes in the Ocean in a transparent and authoritative way. Building on this work, the G7 FSOI is developing plans to co-host an international workshop in 2023 to examine evolving requirements for ocean indicators for ocean sustainable development, including requirements for social and economic data that will be essential for decision-making tools such as Digital Twins of the Ocean. The development of Net Zero Oceanographic Capability and opportunities for international collaboration was explored through an international webinar and online discussion. The G7 FSOI are also exploring approaches to improving research infrastructure sharing which will help to reduce carbon emissions. Furthermore, Arctic Ocean Observation Capability has been approved by the G7 FSOI Working Group as a new emerging issue to work on in 2023, aiming at enhancing in-situ observations and data sharing in the Arctic region.

It is essential to take coordinated and consolidated actions through ocean science as the G7 to address global challenges in response to rapidly changing seas and the Ocean. The main action areas of the Working Group, established under the previous Japanese G7 presidency in 2016, will be reviewed this year to ensure alignment with G7 priorities for better understanding of the functions of the seas and the Ocean] in the context of climate change and other anthropogenic stressors, with a focus on filling data gaps and translating data into knowledge. The Working Group will meet in Tokyo in November 2023 and report to the Science and Technology Sherpa Meeting ahead of the Science Ministers' Meeting under the Italian G7 presidency in 2024.