ANNEX F – OPEN ACCESS AND FAIR DATA

The Sustainable Blue Economy Partnership supports a sustainable transformation of the blue economy which relies on wide and immediate access to quality data, across a range of marine and maritime disciplines and human activities. Better access to ocean data can support innovation, advance our understanding of marine ecosystems and the (cumulative) impacts of human activities, reduce costs and risks for maritime operators, inform decision-making, enable good governance, and increase Ocean Literacy. These issues are central in the five priority areas of the first call of the Sustainable Blue Economy Partnership, including, for instance, the priority area namely 'Planning and managing sea uses at the regional level', with MSP socio-economic data needs for the management of sea-uses MSP.

To meet this challenge, The Sustainable Blue Economy Partnership strongly supports Open Science principles, including the open sharing of research data to stimulate novel approaches to the collection, reuse, analysis, validation, and management of data and information. In accordance with the FAIR principles for data management (Findable, Accessible, Interoperable, Reusable), data generated by Sustainable Blue Economy Partnership-funded R&I projects, including metadata and raw data (for data analysis across different datasets), should thus be made publicly available, possibly after a short period of exclusivity. This principle prevails as long as there are no legitimate reasons to constrain access, such as risks to the privacy of individuals that may arise from personally identifiable data or the need to protect commercial potential. The sharing of research data is made with a balanced approach towards openness, according to the principle "as open as possible, as closed as necessary". In order to support the funded projects in this process, a Data Management Plan will be requested from all projects in the development phase (proposal phase) and throughout the lifecycle of the research project (see below). Please note that the respective Funding Organisation may also have specific requirements in terms of open access to data. Applicants are thus encouraged to plan resources to ensure data open access and comply with the requirements of their Funding Organisations (if any).

Projects funded under the Sustainable Blue Economy Partnership calls also have to comply with full and immediate Open Access principles for scientific publications. This includes publishing in full and immediate Open Access journals or publishing platforms, or full and immediate open access via a trusted Open Access Repository. The open-access publishing platform Open Research Europe, which makes it easy for Horizon Europe beneficiaries to comply with the open-access terms, can especially be used. When using the repository option, partners should ensure that electronic copies of published articles are machine-readable and openly licensed, including bibliographic metadata. Information should be provided about all the other scholarly objects, tools and instruments that are needed to validate the conclusions of the publication.

Data Management Plans (DMPs)

The following guide presents the core requirements for the establishment of their own DMP throughout the lifecycle of the project (pre-proposal, full-proposal, awarded project – see the planning process further below). Its content has been developed to support researchers in ensuring that data are FAIR, where appropriate, *i.e.* Findable, Accessible, Interoperable, and Reusable.

A training session will be organised at the beginning of the funded projects (back-to-back with the Sustainable Blue Economy Partnership kick-off meeting of the funded projects) to exchange best practices related to data management, present hands-on advice, and work with the funded projects on how they can improve their data management plans (DMPs) and practices related to FAIR data.

Also, for assistance in developing DMPs, project leaders are encouraged to first consult with relevant domain repositories, librarians, and information specialists at their respective institutions. When appropriate repositories have been identified for depositing and sharing data and digital outputs, staff at these repositories can provide additional guidance on the preparation of data and digital outputs management plans, as well as processes for fulfilling specific requirements for organising and formatting data and metadata.

Research data and digital outputs include, but are not limited to:

- *Data generated by research activities such as experiments, analysis, surveys, measurements, instrumentation and observations, video, audio, and computer simulations.*

- *All metadata describing the data and digital outputs, their acquisition (including model description and related metadata for simulations and workflows), and other details for the use and reuse of the data.*

- *Secondary data resulting from automated or manual data reduction, transformation, analyses, and results, together with the associated code, software, workflows, and provenance information.*

- *Stakeholder-oriented digital outputs such as maps (including GIS layers), decision support tools, tutorials, videos, local language resources, lesson plans, curricula, policy memos, and whitepapers.*

- *Descriptions of (and metadata relating to) physical samples connected with the call - but not the actual physical samples.*

Project-specific DMPs should adhere to relevant standards and community best practices, which may vary by subject and disciplinary area. DMPs should also comply with public access policies and applicable national laws for the respective Funding Organisations supporting this call. Data sharing should follow a balanced approach towards openness, according to the principle "as open as possible, as closed as necessary". Shared data must be discoverable through machine-readable catalogues, information systems and search engines. Sufficient metadata must be provided and made openly accessible to enable data (including models, workflows, software, methods, etc.) to be discoverable, accessible, understandable, interoperable and effectively reused by others, including those outside the discipline of origin and the context of acquisition. Data must be curated, including maintaining integrity, quality and veracity, using internationally or community-agreed standards and protocols. Data must be preserved, protected from loss and remain accessible and usable for future research in sustainable and trustworthy repositories.

Resulting publications must list where or how to locate the underlying supporting data and other research materials, including agreed persistent identifiers, processing details and any workflows, software, and code. Academic journals may also set specific requirements for Data Accessibility Statements to be included within published research results (primary research articles). Researchers should ensure that metadata created to

support research datasets and other digital outputs retained for the long term is sufficient to allow other researchers a reasonable understanding and trust of those materials, thereby minimising unintentional misuse, misinterpretation or confusion.

In the development of data infrastructures, it is important to leverage existing resources, platforms, standards, and recognised practices together with a clear sustainability plan. Projects that propose to develop data infrastructures are asked to work closely with and support relevant international networks, infrastructures, and standards organisations. They should make as much use as possible of existing certified domains, and national or international data repositories (for further information, possible resources include, but are not limited to re3data.org, Core Trust Seal, Group on Earth Observations (GEO) FAIRsharing.org, etc). Projects should also coordinate with, and make use of, the products and practices developed by recognised research and operational data policy and sharing organisations such as the Committee on Data for Science and Technology (CODATA), the Research Data Alliance (RDA), the ICSU-World Data System (WDS), and the European marine data networks and services: European Marine Observation and Data Network (EMODnet), Pan-European Infrastructure for Ocean & Marine Data Management (SeaDataNet) and Copernicus Marine Environment Monitoring Service (CMEMS). More information on these important components of Marine data management, along with other initiatives, are described in the European Open Science platform Blue-Cloud (a component of the European Open Science Cloud for the marine domain).

Data Management Planning Process

This section presents the expectations for DMPs at the stages of pre-proposals, full proposals, and Awarded Projects. Complementary to the set of questions provided below, it is recommended to consult the document Practical Guide to the International Alignment of Research Data Management - Extended Edition from Science Europe. It includes additional guidance and explanations to respond to the questions.

Pre-proposals - Preliminary Data Management Information

In the data management section of pre-proposals, please address the following questions:

- *Who on your team will be responsible for developing, implementing, overseeing and updating the data management plan?*
- *What data sets of long-term value do you expect that the project will produce? "Long-term" means those data sets that, over time, will or may be of value to others within your research community and/or the wider research and innovation community. Data of long-term value should meet the FAIR principles; i.e. they should be findable, accessible, interoperable and reusable.*
- *How have you accounted for the costs required to manage the data and other materials to ensure long-term availability?*

Full proposals - Proposed Data Management Plan Approach

In the data management section (to be included in your single pdf to be uploaded on the EPSS), please address the following questions (those that are repeated from the earlier stage should be elaborated on as appropriate):

What types of datasets of long-term value do you expect the project will produce or reuse?

1. "Long-term" means those data that will or may be of value to others within your research community and/or the wider research, innovation and stakeholder communities.

2. How do you intend to ensure that the data from your project complies with the FAIR principles (for instance, in terms of financial and time resources)?

3. Who will be responsible for developing, implementing, overseeing, and updating the DMP (role, position, and institution)? For collaborative projects, explain the coordination of data management responsibilities across partners.

4. How do you intend to manage the data during the project and to ensure their long-term protection?

   o *For example, where will the data be held during the project, who will have access, and will a specialised data manager be part of the project team?*

5. How and by whom will the data be managed after the project ends to ensure their long-term accessibility?

> o *For example, will the outputs be published with a Persistent Unique and Resolvable Identifier (such as a Digital Object Identifier (DOI), Accession Number, Handle, etc.), and/or be placed in a recognised, trustworthy long-term domain or other repository or data centre. When will this occur? (Further information about repositories include, but is not limited to, the Re3data.org registry of research data repositories, CoreTrustSeal list of certified data repositories, etc.)*

6. What restrictions, if any, do you anticipate could be placed on how the data can be accessed, mined or reused? Are there possible restrictions to data sharing, and embargo retention?

> o *Please explain the reason in case of restrictions (ex. intellectual property protection).*

7. What supporting documentation and other information (*e.g.* metadata) do you plan to make publicly accessible to support the longer-term re-use of the data and digital outputs?

8. How have you accounted for the costs required to manage the data and digital outputs to ensure long-term accessibility?

Awarded Projects - Full Data Management Plan

Awarded projects will be requested to provide a DMP at the beginning of their project. They'll also have to report on updates made in their DMP in their mid-term and final reports.

A full DMP for an awarded project is a living, actively updated document that describes the data management life cycle for the data and other digital outputs to be collected, reused, processed and/or generated. As part of making research data findable, accessible, interoperable and reusable (FAIR), the DMP for a funded project should elaborate on the information provided at the **Full proposal stage**, and include the following additional information:

1. Agreed standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies);

2. Policies for broad access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;

3. Policies and provisions for mining, reuse, re-distribution, and the production of derivatives;

4. Contact information for the person(s) responsible for updating the DMP as needed to comply with these guidelines;

5. A list of anticipated trustworthy, long-term repositories or data centres that will be used to ensure the preservation of access to data and digital outputs following the completion of the project.

Applicants are advised to include the full costs of implementing the data management plan in their proposed project budget.

Links for further information and documentation:

- Open Research Europe platform

https://open-research-europe.ec.europa.eu/

- Practical Guide to the International Alignment of Research Data Management - Extended Edition from Science Europe

https://scienceeurope.org/our-resources/practical-guide-to-the-international-alignment-of-research-data-management/

- Research Data Alliance (RDA)

https://www.rd-alliance.org/

- Blue Cloud platform

https://blue-cloud.org/

- European Marine Observation and Data Network

https://emodnet.ec.europa.eu/en

- SeaDataNet

https://www.seadatanet.org/

- Copernicus Marine Service

https://marine.copernicus.eu/