WP 5: Building an Open Future: Fostering Open Science across the SEA-EU Community and Beyond

Identification of 'best practices' in Open Science

Deliverable identification

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This document refers to Task 5.1 of the reSEArch-EU project. It builds on the achievements in the SEA-EU Erasmus plus WP6 endeavours related to open science and open access practices in the alliance. The focus of the work is a scoping survey on procedures, methodologies and resources that are currently in place that relate to open data management practices in the SEA-EU partner universities.	

Versions and contributions history

Version	Date	Modified by	Reason
0	July/2021	UM Library team	Data analysed and draft report prepared.
1	Sept2021	UM Library team	Updated version after feedback by partners.
1	19/10/2021	UM Library team	Presentation of the deliverable to the RDIS
1	29/10/2021	UM Library team	Submission of final report to EC
2	10/11/2022	Aldo Drago	Revision of final report

Contents

Introduction

One of the declared specific objectives of the European University of the Seas refers to a common multidisciplinary, interdisciplinary and transdisciplinary agenda for research that valorises innovative knowledge generated in the Alliance, based on sharing human capital, knowledge and infrastructures. Key ingredients and enabling factors in this context embrace 21st century science in its three facets of: Open Science, Open Data and Open Scholarship. The Open Access reform of recent years has seen scholarship expand in volume as well as in its visibility, impact and dissemination. Peer reviewed quality science has gone 'to market' faster, easier and cheaper than ever before. The value of research (and its upfront costs) are better appreciated, and more easily supported and promoted, when its results are widely shared, known and distributed; and when its social and economic beneficiaries are broad and varied.

Under Output 6.9 **Open educational and science resources and repositories** and Outcome 6.9 **Enhanced open accession and repositories** of the SEA-EU ERASMUS Plus Submission, the six universities of the SEA-EU alliance have already affirmed their formal adoption of the principle of **Open Access** through an institutional policy that allows the alliance institutions to become part of the evolving research and academic ecosystem where access to research is immediate and open to the benefit of both researchers and citizens. A dedicated survey pertaining to Task 6.6: Open Educational Resources, Open Science, and Open Access, was conducted in April 2021, aimed at delineating the status quo at all the 6 partner universities in 2 key areas: Open Access Policies and Open Science Infrastructures. The obtained results indicate and confirm that all six SEA-EU partner institutions already have clear procedures for handling and managing Open Access publications in place. These include detailed institutional policies and support facilities. Moreover, the institutions boast adequate technical infrastructures in the form of institutional repositories that are OpenAIRE-compliant, open to indexing by academic search engines and metadata aggregators, and flexible enough to ensure long-term preservation and dissemination of a range of materials, textual and otherwise.

Based on the satisfactory outcome of the survey, it was concluded that the SEA-EU institutions are in an ideal position to build on their respective options and consolidate their practices on an inter-institutional scale by progressing toward a unified research data management policy framework and infrastructure.

The tasks envisaged in research-EU WP5 are intended to plan and embark on further steps to develop an alliance-wide interoperable system where not just the **scientific output**, but also the **raw data** that makes such output possible, is freely shared across the scholarly communities of the six members of the alliance and beyond. We are referring to this as an Open Research Data

(ORD) System serving as a tool to put Open Science in practice, the word 'science' being here meant to represent all areas of knowledge.

As expressed in the Open Research Data Pilot of Horizon 2020, 'research data refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion, or calculation. In a research context, examples of data include statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images. The focus is on research data that is available in digital form'. ORD is intended to 'take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate the data free of charge'.

Open Data is an aspirational goal of the SEA-EU alliance. It is a natural progression from a policy of open access, but needs to (1) broaden beyond the strict definition of published material; (2) provide those solutions to consolidate and practice the sharing of resources and the building of synergies, critical mass and excellence, and (3) reach out from specific institutions and thus connect with others (civil society, public authorities, industry and citizens), including those based in other countries.

The proposed activities in this WP build on the policy recommendations of the EC on the FAIR model implementation in the context of the European Open Science Cloud. Fast and unobstructed access to science is the bedrock of collaborative R&I. The primary ingredients of open scholarship are the sharing of knowledge and data at the earliest stages of research, triggering productive collaboration with both internal and external knowledge actors. The collaborative endeavours in the last two years aimed to understand the novel coronavirus and to solve the Covid-19 pandemic by the production of a safe, usable and effective vaccine is one lucrative example where such an approach has been showcased to work. The Sea-EU Alliance is ready to kick start the process towards an institutional transform to step up the sharing of research data between the sister universities and beyond, across disciplines related to the sea, aiming to create unrestricted datasheds to fertilize intelligence, R&I and excellence.

In Task 5.1 of this WP a questionnaire (presented in the appendix) was designed to collect some important preliminary information from the six SEA-EU universities to serve as a first step scoping survey to identify some key basic elements composing the current state of play of open research data practices at each SEA-EU university. As a general outcome the target was to seek information about existing tools, instruments and practices that are currently used in the SEA-EU universities for supporting ORD. It is furthermore intended to explore existing and recommended additional solutions and practices in each partner university that would lead to the long-term goal of a consolidated and practical system favouring the sharing of research data, in the spirit of

Open Science. This is expected to trigger a process to step up the sharing of research data between the six SEA-EU member universities in the short-term and beyond the alliance in the long-term.

Scoping Survey - Analysis

The aim of the scoping survey was related to Task 5.1 of the reSEArch-EU project, whereby the partner universities had to complete a set of questions with the aim of identifying best practices in Open Science. In order to achieve this, the survey sought to collect detailed information about practices related to Open Research Data Management. Subsequently, the survey was divided into 4 themes as follows:

- Open Research Data Management Policies
- Open Research Data Management Infrastructures
- Open Research Data Management Evaluation
- Open Research Data Management Support & Training

The scoping survey was circulated among all six Universities that form the European University of the Seas, SEA-EU. These include:

- University of Cádiz (UCA) – Spain
- Université de Bretagne Occidentale in Brest (UBO) – France
- University of Kiel (CAU) – Germany
- University of Gdańsk (UG) – Poland
- University of Split (UNIST) – Croatia
- University of Malta (UM) – Malta

Open Research Data Management (ORDM) Policies

Out of the six Universities that took part in the survey, none have an Open Research Data Management (ORDM) policy[1] in place. However, it was recorded that three out of the six Universities partaking in the survey are in the process of developing a policy. These are:

- UCA which is planning to implement their policy by December 2021
- UBO which is projecting to implement their policy by 2022
- UM which has not established any timelines yet

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[1] Open Research Data Management (ORDM) policy refers to an Institutional ORDM Policy which is not necessarily legally binding.

All three partner Universities that are planning to develop an ORDM policy stated that they intend to implement a monolithic policy. The main reason for such a decision is that all three Universities are multi-disciplinary, hence the policy should cater for all disciplines.

The reasons why the other three universities (CAU, UG, UNIST) are not planning to have an ORDM policy include:

- the existence of national guidelines that govern data management (UG)
- plan of including the ORDM policy as part of the Open Access (OA) policy (UNIST)
- national restrictions against legally binding policies (CAU)

No partner University requires its researchers to submit a Data Management Plan (DMP) when applying for institutional research funds. Having said that, all Universities except CAU foresee the importance of recommending DMP tools for the reasons outlined below:

- are essential in disseminating data
- improve management of research data
- help researchers plan data lifecycle

Nevertheless, CAU is currently working with text templates, which are proving sufficient for the time being, since only a small number of researchers are currently submitting a DMP. An increase in demand and complexity of data may lead CAU to reconsider their position in this regard.

Poland is the only country that has a national policy which governs ORDM. The implications on UG of having a national policy include that funding is only granted for open access publications and a DMP is required during grant application phase.

Open Research Data Management (ORDM) Infrastructures

Both UM and UNIST are currently catering for the curation of research data by using open source platforms. The former uses DSpace and Zenodo (whilst also considering a separate software more targeted towards Open Research Data Management) and the latter uses Islandora 7.

For the UM, the reasons behind the choice of software for data curation rely on the fact that DSpace was implemented in 2014 as an institutional repository for the uploading of research publications. Nevertheless, over the years, despite its limitations, its use was extended to support the uploading of basic datasets. Subsequently, a specialised platform is being considered to better cater for research data. The UM is also currently recommending Zenodo in instances where datasets are more elaborate. For UNIST, Islandora 7 is part of the national infrastructure; management and storage of data during the research can be done through Puh platform (https://www.srce.unizg.hr/phu/), which is based on the open source software Nextcloud.

CAU, UBO, UCA and UG stated that currently they do not have an infrastructure that caters for research data. However, UBO, CAU and UG recommend the use free-of-charge external services. Whilst Zenodo, Repod and Bridge Data solutions were mentioned as free external services, all three Universities have mentioned the use of subject-specific repositories such as MX-RDR and PANGAEA. CAU stated that in Germany a National Research Data Infrastructure is currently being implemented. This infrastructure will bring together existent services whilst filling subject-specific gaps. CAU is also in the process of setting up an institutional repository for data. UCA is not recommending a free-of-charge external service, but they are planning to implement their own infrastructure, which is to be in place by December 2021.

Open Research Data Management (ORDM) Evaluation

UG and UNIST stated that they incentivise researchers who implement Open Research Data Management practices. Nevertheless, reasons specified on how researchers are being incentivised were out of context. Subsequently, it can be concluded that none of the partner Universities incentivise researchers implementing ORDM practices.

Open Research Data Management (ORDM) Support and Training

Out of the six partner Universities, only the UM has a dedicated Open Science Department within Library Services. The other five Universities do not have a dedicated department for Open Science, do not have the intention to establish one, but all Universities support ORDM through their library services.

In addition, no partner University has an Open Research Data toolkit. When asked to outline the components that would include if they had to implement a toolkit, the following concepts were mentioned:

- guidelines on how to handle research data throughout its entire lifecycle
- data compatibility to support re-usability
- provision of a list of suggested tools that will help researchers carry out activities related to data management (e.g. anonymisation tools)
- dos and don'ts in data management
- a list of contact persons that could help with specific data management requirements
- legal aspects (e.g. copyright legislation, licencing)

UBO, UG and UNIST libraries provide training specifically on ORDM. The type of training that is being provided includes:

- sessions in conjunction with external entities or part of larger projects (e.g. UG provide training as part of the Data Bridge project and also training organised by ICM; UNIST are actively involved in RDA Croatia)
- bespoke advice for compiling DMPs
- workshops on open science, open access and RDM for academics and PhD students

Whilst UCA and UM do not presently provide training sessions specifically related to ORDM, they are planning to do so in the future. Conversely, CAU has not expressed interest in providing any training or awareness sessions in this regard.

Concluding Remarks

The questions presented in the scoping survey have attained the objectives set out. The data collected from the partner Universities gives a clear indication of current procedures, practices and initiatives, as well as, future plans related to Open Research Data Management. Although, as yet, none of the partner Universities have an ORDM policy in place, all institutions are to some extent implementing open research data management practices. It can be concluded that some Universities are not able to implement an institutional ORDM policy due to national policies that govern data management. Nevertheless, DMP tools are essential to assist researchers in managing their research data.

Open source software is a popular option for the setting up of the necessary infrastructure to support open research data. It also transpires that subject-specific repositories are preferred due to being more versatile to cater for particular datasets. The development of an Open Research Data toolkit is considered as being an essential aid to support researchers for data management practices.

Raising awareness on the significance of data sharing is an important facet for researchers, together with the provision of training and support. All partner Universities (except for the UM) do not have a dedicated Open Science Department. However, all Universities have Library staff directly responsible for supporting researchers in ORDM practices.

The survey could have been improved by avoiding dichotomous questions in certain instances whereby the partners could add further comments. This was pointed out by UG who claimed that they did not have the possibility to answer certain questions clearly.

This report paves the way for an experts' meeting, to discuss the next steps in developing a general policy framework that can be adopted and adapted to the realities of the six participating institutions.

APPENDIX

First step questionnaire on Open Research Data in SEA-EU
_____
_____

START QUESTIONNAIRE
Enter your answers only on the right hand column

SECTION A	
Identity of the person compiling this questionnaire	
A1. Name and surname	
A2. Institution	
A3. Position/Role within the institution	
A4. Contact email	
A5. Do you consent to be contacted by SEA-EU representatives in case we need more information regarding the feedback you are giving on behalf of your organisation?	YES
	NO

SECTION B	
This section should help identify what kind of technological solution (if any) whic serves to collect/preserve Research Data is currently in place at the your institution	
B1. Does your institution have a dedicated Research Data repository?	If YES, please provide URL below and go to C1
	If NO, go to B2
	If NO, but planning, go to B2

B2. Does your institution have an Institutional Repository (for research publications) which also holds collections dedicated to Research Data/accepts Research Data for inclusion?	If YES, please provide URL below and go to C1
	If NO, go to B3
	If NO, but planning, go to B3
B3. Where do researchers affiliated with your institution deposit their Research Data?	

Other comments:

SECTION C

This section should identify what policies (if any) that govern the Research Data Management are currently in place at a given institution

C1. Does your institution have a Research Data Management policy in place?	If YES, go to C4
	If NO, go to C2
	If NO, but planning, go to C2
C2. Does your institution have a broader policy (such as an Open Access/Open Science policy) which also includes section(s) dedicated to Research Data Management?	If YES, go to C4
	If NO, go to C3
	If NO, but planning, go to C3
C3. Does your institution have any other policies/guidelines that pertain to Research Data Management? (you can consider even documents pertaining to the research data lifecycle in general)	If YES, please describe these documents briefly and go to C4

	If NO, go to D1
	If NO, but planning, go to D1
C4. Is the policy mandatory or is it an encouragement policy?	

SECTION D

This section should help identify all parties responsible for Open Science at a given institution

D1. Please list the main persons responsible for Open Science Initiatives at your institution			
Name and surname	Position/Role	Email Address	Activity (e. g. Open Access, Open Data, etc.)

SECTION E

This section is intended for any additional comments