



INNOVATIVE BLOCKCHAIN TRACEABILITY TECHNOLOGY AND STAKEHOLDERS' ENGAGEMENT STRATEGY FOR BOOSTING SUSTAINABLE SEAFOOD VISIBILITY, SOCIAL ACCEPTANCE AND CONSUMPTION IN EUROPE

D8.2 DATA MANAGEMENT PLAN Update

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Document information

Settings	Value
Deliverable Title	Data Management Plan
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Deliverable number	8.2
Description	The current version of the Data Management Plan updates where relevant the outlined data management policy, including types and formats of data to be collected, data to be generated by the project, methodology and standards to be applied, data accessibility, exploitation, curation and preservation. A final updated version will be presented in M48.
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Submitted by	Carlos Mazorra

Review History

Version	Date	Reviewer	Short Description of Changes
V 1	12/06/2023	Carlos Mazorra/ Maya Guevska/ Ana Hristova	First version of deliverable D8.1
V2	27/06/2024	Carlos Mazorra/Ana Hristova	Second version of deliverable D8.2. Further definition of data sets and data management protocols.

Document Approval

Name	Role	Action	Date
Carlos Mazorra	Project Coordinator	Approved	28-Jun-24

Nature of the deliverable

R	Document, report (excluding the periodic and final reports)	<input type="checkbox"/>
DEM	Demonstrator, pilot, prototype, plan designs	<input type="checkbox"/>
DEC	Websites, patents filing, press & media actions, videos, etc.	<input type="checkbox"/>
DATA	Data sets, microdata, etc.	<input type="checkbox"/>
DMP	Data management plan	<input checked="" type="checkbox"/>
Ethics	Deliverables related to ethics issues.	<input type="checkbox"/>
SECURITY	Deliverables related to security issues	<input type="checkbox"/>
Other	Software, technical diagram, algorithms, models, etc.	<input type="checkbox"/>

Dissemination level

PU	Public — fully open (automatically posted online on the Project Results platforms)	<input checked="" type="checkbox"/>
SEN	Sensitive — limited under the conditions of the Grant Agreement	<input type="checkbox"/>

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Current seafood traceability tools and services have the potential to take advantage of novel blockchain technologies to obtain a wide range of data making sustainable seafood practices more visible to consumers. Sea2See project will fill in existing seafood traceability gaps through development and demonstration of an innovative end-to-end blockchain traceability model throughout the seafood value chain and professional and consumer applications to increase trust and social acceptance of sustainably fished and farmed seafood.

The project will provide technological solutions to answer the need of a valuable source of data collected throughout the whole seafood value chain, verified, and covering inputs from diverse stakeholders. For that purpose, a specific focus will be put on active commitment of stakeholders and real empowerment of consumers through the implementation of societal and sectoral strategies for co-creation, communication and awareness raising.

The project runs from July 2022 to June 2026. It involves 14 partners from 6 EU countries, and is coordinated by SMARTWATER PLANET SL, Spain.

More information about the project can be found at: <http://www.sea2see.eu/>

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EXECUTIVE SUMMARY

The Data Management Plan describes what data the Sea2See project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved after the end of the project.

It follows the structure of the Horizon Europe DMP template¹ and reports on the datasets used and produced by the project in a dedicated annex. This document also defines the general policy and approach to data management in Sea2See, that handles data management related issues on the administrative and technical level, and assures compliance with FAIR principles (Findable, Accessible, Interoperable and Reusable). This includes for example topics like data and meta-data collection, publication and deposition of open data, the data repository infrastructure and compliance with the Open Access Infrastructure for Research in Europe (OpenAIRE). A Sea2See account on Zenodo has been created. <https://zenodo.org/communities/sea2see>

It also describes ethical concerns that could affect the project and their link with the new General Data Protection Regulation.

Sea2See's DMP is implemented as a "living" document and will be updated once again in M48.

¹ C. Ramjoue and O. Marganne, "TEMPLATE HORIZON 2020 DATA MANAGEMENT PLAN (DMP)," 13 October 2016. Available: https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/reporting/h2020-tpl-oa-data-mgt-plan-annotated_en.pdf

ACRONYMS AND ABBREVIATIONS

ACRONYM / ABBREVIATION	DEFINITION
AIDC	Automatic Identification and Data Capture
EU	European Union
EC	European Commission
DGRM	Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos.
DM	Data Management
DMP	Data Management Plan
DMB	Data Management Board
OR	Open repository
GA	Grant Agreement
CA	Consortium Agreement
PR	Partner repository
SDK	Software Development Kit
SPR	Sea2See Project repository

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1. DATA SUMMARY

EU environmental and food safety policies such as the Green Deal, Bioeconomy, Circular Economy, Nature Based Solutions, Blue Infrastructure, Blue Natural Capital, Blue Growth, Farm 2 Fork Strategy, CFP, Health Strategy seafood value chain in Europe all aim to ensure more sustainable, environmentally friendly, inclusive, safe and healthy seafood production and thus consumption in Europe. However, a number of challenges still continue to block the achievement of full transparency and traceability of seafood products in the EU. European seafood markets can be characterized by a high level of unsustainable fishing and farming practices. Main challenges identified by Sea2See consortium are: i) insufficient information about seafood products: species, origin, fishing gear, feed, welfare issues, production methods and parameters such as water quality, processing and transport methods. Most seafood products have a more complex history than what their legal origin displays (ex: oysters' origin is rarely where they are actually grown). Credible and practical transparency is only possible with digitization; ii) unsustainable practices such as the use of unselective gear with high by-catch and discards, capture of undersized fish and invertebrates, illegal and unregulated fishing, and labelling frauds; iii) lack of digitalization and tailored software tools for seafood products traceability. Seafood traceability require innovative and cost-efficient approaches. The main challenge to ensure a clear link between sustainability and traceability of EU seafood lies in the ability to assess, in real-time, sustainability indicators across actors in the value chain.

Sea2See' main goal is to significantly increase consumer trust and acceptance of sustainably fished or farmed seafood in Europe through the

- 1) development and demonstration of an innovative end-to-end blockchain-based traceability platform throughout the seafood value chain and
- 2) implementation of societal and sectoral strategies for co-creation, communication and awareness raising of the benefits of sustainably fished or farmed nutritious seafood.

The deliverable provides an overview of the data to be produced in the context of these activities, and results from a data audit run internally amongst Consortium members. Special emphasis has been made for data that can be made publicly available in open data repositories when possible, and registered at relevant catalogues. The Data sets are reviewed during the life of the project and any new additions provided in the D8.3 "DMP Final" review.

This DMP takes into consideration different datasets compiling:

1. Analytical data of seafood composition and quality
2. Compilation of first sale related data from DOCAPESCA-Portos e Lotas, SA, DGRM Portugal, and other sources (e.g. interviews)

3. Compilation of data from DOCAPESCA, DGRM, and other sources for Mapping and analysis of stakeholders
4. Stakeholder Analysis table of Seafood supply chain
5. Technical specifications of the SDK
6. Source code of Xamarin/Kotlin SDK/libraries made for the communication with Tilkal platform and AIDC devices
7. Results data set of the Collective Intelligence method on identifying barriers to seafood consumption and acceptance
8. Result data set from the hackathon organized to find specific solutions to overcome the main barrier(s) identified through Collective Intelligence
9. Data obtained as outputs of analytics, predictions and other computational processes based on traceability information provided by stakeholders involved in project demonstrators
10. Data associated with the project's website, with regard to Information, promotion, and dissemination of results.
11. CD Deliverables - CD Plan, Synergy Plan; Other documents such as newsletters, press releases, etc.
12. Data associated to YouTube, project's Website, Social Networks, including promotional and dissemination videos produced by the project

1.1. DESCRIPTION OF DATA SETS

This section describes one by one each of the research datasets foreseen to be produced during Sea2See project. For each one, a partner is appointed as Data Manager, being the partner leading its production within Sea2See project. The data sets are described, and their origin and use during the project is described. The prospective use beyond the project is also proposed. The presentation in open access is also described, and in the cases of restriction of access, this is justified. Datasets include personal information and hence might not be disclosed initially. Some of these might present the option of anonymizing and make them open, which will be done as the project develops.

The data are described according to their nature. These datasets can be:

- Fixed: never change after being collected or generated.
- Growing: new data may be added, but the old data is never changed or deleted.
- Revisable: new data may be added, and old data may be changed or deleted.

And at the same time, they are described as:

- Observational: Data captured in real time - often not reproducible i.e., sensor readings, images, telemetries, sample data...
- Experimental: Data from lab equipment, often reproducible, but with high costs - i.e., chromatograms, magnetic fields readings... reproducible i.e., sensor readings, images, telemetries, sample data...
- Simulation: Data generated by computational models where model and metadata are equally important to output data - i.e., climate models, economic models, materials models, ...
- Derived/Compiled: Data coming from analysis or compilation. Reproducible but with high costs - i.e., the results of text and data mining, compiled databases...
- Reference or Canonical (links): Collection or conglomeration of smaller (peer-reviewed) datasets published and curated - i.e., chemical structures, gene sequence databanks, spatial data portals...

Data Manager / Responsible partner: ANFACO

Dataset number	1							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	Open access scientific publication							
Description	Data of seafood composition safety and quality							
What purpose is it for?	To assure the seafood production sustainability at the industry and increase the confidence of consumers							
What is Sea2See's related objective?	LCA studies for assessing the sustainability within the environmental, economic and social dimensions							
About data								
Type of data	Numeric							
Format	pdf and excell							
Dataset is:	revisable							
Discipline	Biosystems and Food							
Is it instrument specific?	No							
Equipment	Computer & Lab analytical equipment							
Format	Numeric							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	YES							
Experimental	YES							
Simulation	YES							
Derived/Compiled								
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No							
To whom it could be useful?	Useful to risk assessors and risk managers							
For what?	To assess relative risks from biomaterials through aquatic environment							
Any metadata provided?	Publication will have its own DOI as typically assigned by publishing body. Referring to an online document by its DOI provides more stable linking							
Repository where data are stored	Own repository							
Protection measures	Samples are entered with a unique and secret identification code for the laboratories that will carry out the analysis. Once these are done, the results are accessed through the LIMS, the laboratory's sample management system, with a private identification. Next, the same person studies and evaluates the data, making the necessary estimates to draw conclusions.							
Any other comment	ANFACO, is an accredited laboratory under the UNE-EN ISO/IEC 17025:2017, with the Accreditation nº: 96/LE230, coming into effect: 05/12/1996.							

Data Manager / Responsible partner: CCMAR

Dataset number	2						
Will it be open (made publicly accessible)?	No						
If your answer has been "No", please explain why you cannot open the data		Personal / sensitive information on fishers, buyers, and other value chain members					
Data repository used for making it open							
Description		Compilation of first sale seafood data from DOCAPESCA, DGRM, and other sources (e.g. interviews)					
What purpose is it for?		Data required for application of Blockchain technology in the octopus case study					
What is SeatoSee's related objective?		Application of data to Blockchain technology for the Algarve Octopus case study					
About data							
Type of data	Numeric						
Format	CSV, EXCEL						
Dataset is:	Growing						
Discipline	Fisheries						
Is it instrument specific?	No						
	Equipment						
	Format						
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>							
Observational	Yes						
Experimental	Yes						
Simulation							
Derived/Compiled	Yes						
Reference or Canonical (links)	Yes						
Long term / FAIR access							
Is there any provision for an specific license model for this dataset?	No						
To whom it could be useful?	Fisheries managers, other stakeholders and technology users						
For what?	For traceability of fisheries products						
Any metadata provided?	No						
Repository where data are stored	Own repository and Sea2See shared repository						
Protection measures	Encryption and access restrictions						
Any other comment							

Dataset number	3							
Will it be open (made publicly accessible)?	No							
If your answer has been "No", please explain why you cannot open the data	Personal / sensitive information on fishers, buyers, and other value chain members							
Data repository used for making it open								
Description	Dataset identifying the stakeholders of the octopus' fishery in the Algarve							
What purpose is it for?	Mapping and analysis of stakeholders							
What is SeatoSee's related objective?	Traceability of fishery products in Portugal							
About data								
Type of data	Numeric							
Format	CSV, EXCEL							
Dataset is:	Growing							
Discipline	Fisheries							
Is it instrument specific?	No							
Equipment								
Format								
About the origin - Define and describe the origin/source of your data. Data can be gathered from different sources								
Observational	Yes							
Experimental	Yes							
Simulation								
Derived/Compiled	Yes							
Reference or Canonical (links)	Yes							
Long term / FAIR access								
Is there any provision for an specific license	No							
To whom it could be useful?	Fisheries managers and other stakeholders and technology users							
For what?	For traceability of fisheries products							
Any metadata provided?	No							
Repository where data are stored	Own repository							
Protection measures	Encryption and access restrictions							
Any other comment								

Dataset number	19							
Will it be open (made publicly accessible)?	Not in its present form							
If your answer has been "No", please explain why you cannot open the data	The database contains personal data							
Data repository used for making it open								
Description	Database containing information regarding first sale auction for the portuguese fisheries case study (octopus).							
What purpose is it for?	To store information regarding the first part of the value chain from the octopus from Fuzeta.							
What is Sea2See's related objective?	Map and involve the value chain actors from the valuechain from the octopus from Fuzeta and implement the proposed blockchain based traceability approach to the octopus fishery in the Algarve, Southern Portugal							
About data								
Type of data	Numeric							
Format	xlsx							
Dataset is:	Growing							
Discipline	Fisheries Data							
Is it instrument specific?	No	<i>If yes, please answer the sub-questions below</i>						
	Equipment							
	Format							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	Data collected during auction on the auction site. Not reproducible.							
Experimental								
Simulation								
Derived/Compiled								
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No.							
To whom it could be useful?	For the actors of the valuechain of the octopus from the Algarve and stakeholders of the Sea2See project.							
For what?	To analyse the first part of the value chain, to have data regarding boats, selling price, amount sold, etc.							
Any metadata provided?	No.							
Repository where data are stored	Own repository							
Protection measures	Encryption and access restrictions							
Any other comment	Data shared under signed Agreement with DOCAPESCA							

Data Manager / Responsible partner: NAYS

Dataset number	4	1, 2, 3... Correlative number in case you will be producing several datasets						
Will it be open (made publicly accessible)?	No	Yes/No						
If your answer has been "No", please explain why you cannot open the data		Data protection laws sensitive						
Data repository used for making it open								
Description	Stakeholder Analysis table in SeaFood supply chain							
What purpose is it for?	Stakeholders engagement Strategy							
What is Sea2See's related objective?	Develop a co-creation approach to sustainable seafood transparency and traceability							
About data								
Type of data	Text							
Format	txt							
Dataset is:	Growing							
Discipline	Project Management							
Is it instrument specific?	No							
Equipment	-							
Format	-							
About the origin - Define and describe the origin/source of your data. Data can be gathered from different sources								
Observational								
Experimental								
Simulation	-							
Derived/Compiled	Yes							
Reference or Canonical (links)	Yes							
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No							
To whom it could be useful?	Researchers, Regulatory Bodies, Public bodies, Private Bodies, Other Partners from the Consortium							
For what?	Building the Stakeholder engagement strategy. Identifying user needs for S2S Platform							
Any metadata provided?								
Any other comment								

Dataset number	5	1, 2, 3... Correlative number in case you will be producing several datasets					
Will it be open (made publicly accessible)?	Yes	Yes/No					
If your answer has been "No", please explain why you cannot open the data							
Data repository used for making it open	ZENODO						
Description	This is a report generated and developed throughout the activities of Sea2See project and describes the proposed Sea2See Stakeholders' Engagement						
What purpose is it for?	It is a tool providing usefull insights for the engagement of stakeholders in the seafood value chain						
What is Sea2See's related objective?	SO1						
About data							
Type of data	Text						
Format	pdf						
Dataset is:	Revisable						
Discipline	Stakeholder Engagement						
Is it instrument specific?	No						
Equipment	-						
Format	-						
About the origin - Define and describe the origin/source of your data. Data can be gathered from different sources							
Observational							
Experimental							
Simulation	-						
Derived/Compiled	Yes						
Reference or Canonical (links)							
Long term / FAIR access							
Is there any provision for an specific license model for this dataset?	No						
To whom it could be useful?	Researchers, Regulatory Bodies, Public bodies						
For what?	The framework can be further exploited and enhanced to reach stakeholders identified in the seafood value chain and engage them. It will be a						
Any metadata provided?	The DOI on the ZENODO will include metadata in order the abovementioned to be easily findable.						
Any other comment	The document will be on the ZENODO at the end of Sea2See project. The report will be initially be published during the lifetime of the project in the project website						

Dataset number	6	1, 2, 3... Correlative number in case you will be producing several datasets						
Will it be open (made publicly accessible)?	Yes	Yes/No						
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	ZENODO							
Description	This is a report generated and developed throughout the activities of Sea2See project and describes the lessons learned from the Sea2see case							
What purpose is it for?	Good practices in project management applies the compilation of a "logbook" of lessons learned. This toolkit is always usefull for future simlar							
What is Sea2See's related objective?	SO4							
About data								
Type of data	Text							
Format	pdf							
Dataset is:	Fixed							
Discipline	Project Management							
Is it instrument specific?	No	Equipment	-					
		Format	-					
About the origin - Define and describe the origin/source of your data. Data can be gathered from different sources								
Observational								
Experimental								
Simulation	-							
Derived/Compiled	Yes							
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No							
To whom it could be useful?	Researchers, Regulatory Bodies, Public bodies, Private Bodies							
For what?	The toolkit/logbook shall be further exploited in future simlar attempts solutions since it provides insights of issues, solutions, mitigation plans and							
Any metadata provided?	The DOI on the ZENODO will include metadata in order the abovementioned to be easily findable.							
Any other comment	The document will be on the ZENODO at the end of Sea2See project. The report will be initially published during the lifetime of the project in the project website							

Dataset number	18							
Will it be open (made publicly accessible)?	No							
If your answer has been "No", please explain why you cannot open the data	Raw data collected for the LCA analysis are not publicly available. Aggregated results from the analysis can be open							
Data repository used for making it open								
Description	Aquaculture production, packaging and distribution related data							
What purpose is it for?	For the elaboration of LCA analysis in the aquaculture case studies							
What is Sea2See's related objective and Task no?	Based on Sea2See DoA is the SO5							
About data								
Type of data	Numeric							
Format	xls							
Dataset is:	Fixed							
Discipline								
Is it instrument specific?	No <i>If yes, please answer the sub-questions below</i>							
Equipment								
Format								
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	Yes							
Experimental								
Simulation								
Derived/Compiled								
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	Provision of Consent form for data gathering							
To whom it could be useful?	The collected data are useful for the sustainability of aquaculture industry. They will be used for the elaboration of the LCA analysis which will identify and quantify the major sources of environmental impact on seafood industry. This will be used in the aquaculture management and increase consumers awareness and trust on seafood products.							
For what?	Ameliorate environmental management and footprint of aquaculture industry.							
Any metadata provided?								
Repository where data are stored	The data will be utilised by the SimaPro LCA software analysis and stored safely in a designated folder on the NAYS server and in the project's consortium sharepoint.							
Data Protection measures	All safety measures by the project sharepoint							
List of "Evidence of ethics compliance"	Consent form template							
Any other comment	-							

Data Manager / Responsible partner: PageUp

Dataset number	7							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	We will publish it on the Sea2See onedrive. This should be delivered with our SDK, to be defined.							
Description	Technical specifications of the SDK we will produce (Tilkal authentication and RFID implementation)							
What purpose is it for?	To provide technical information in order to give other editors involved in the project the possibility to implement these technonlogies into their apps							
What is Sea2See's related objective?	Develop the Sea2See Traceability Platform and Apps							
About data								
Type of data	Text							
Format	pdf							
Dataset is:	Revisable							
Discipline	IT							
Is it instrument specific?	No							
	Equipment							
	Format							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational								
Experimental								
Simulation								
Derived/Compiled	Yes							
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No							
To whom it could be useful?	To IT partner with mobile apps involved in the project							
For what?	To let them interact with Tilkal platform and AIDC devices							
Any metadata provided?	To be defined							

Dataset number	8						
Will it be open (made publicly accessible)?	Yes						
If your answer has been "No", please explain why you cannot open the data							
Data repository used for making it open	To be defined, we could publish it on a repository (Github, Bitbucket...)						
Description	Source code of Xamarin/Kotlin SDK/libraries made for the communication with Tilkal platform and AIDC devices (to be defined)						
What purpose is it for?	To provide source code in order to give other editors involved in the project the possibility to implement these technologies into their apps						
What is Sea2See's related objective?	Develop the Sea2See Traceability Platform and Apps						
About data							
Type of data	Software code						
Format	to be defined						
Dataset is:	Revisable						
Discipline	IT						
Is it instrument specific?	No						
	Equipment						
	Format						
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>							
Observational							
Experimental							
Simulation							
Derived/Compiled	Yes						
Reference or Canonical (links)							
Long term / FAIR access							
Is there any provision for a specific license	No						
To whom it could be useful?	To IT partner with mobile apps involved in the project						
For what?	To let them interact with Tilkal platform and AIDC devices						
Any metadata provided?	To be defined						

Page Up Data management

The Sea2See demo application for the data collection is secured with AWS Cognito. Because it is an application with a demonstration purpose, the technical credentials are stored inside the application and this authentication is performed in the background right after the user entered his authentication tokens. The login page is only used to demonstrate the final workflow and a static authentication token is shared with people demonstrating the solution.

AWS Cognito allows the app to retrieve a unique security token that will be used as a parameter for further requests to the server. User credentials are then only transmitted once to retrieve this token.

The demo application is using Isar as DBMS (Database Management System) which is a NoSQL database designed for Flutter. This DBMS allows rapid query and data retrieval.

The database is not encrypted but Android and iOS both implement filesystem-level encryption (all files are encrypted by the operating system).

In addition to the encryption there is no personal data stored in the database.

Because the application is a demo application, our referential data is fake except for the Boat names and Fishing zones which are non critical data. It means that buyers' names are mocked up.

All the non referential data (data created within the app) are purged when the synchronization with the Sea2See Demo Platform is done. The only remaining data in the app is referential data.

In addition, the application code is obfuscated when built for public stores (Play Store & App Store) in order to protect the source code and to secure the technical credentials of the Sea2See Demo Platform.

Data Manager / Responsible partner: Seaentia

Dataset number	9							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	Open access scientific publication							
Description	Data obtained from the demonstration							
What purpose is it for?	Demonstrate feasibility and functioning of the platform in a real case scenario							
What is Sea2See's related objective?	WP 5 Demonstartions							
About data								
Type of data	Numeric							
Format	XLS							
Dataset is:	Growing							
Discipline	Animal Production							
Is it instrrument specific?	No							
Equipment	<i>Environmental sensors; zootechnical measurements</i>							
Format	<i>numeric</i>							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	Yes							
Experimental	Yes							
Simulation								
Derived/Compiled								
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license model for this dataset?	No							
To whom it could be useful?	Users of the platform							
For what?	Verifying the functioning of the platform							
Any metadata provided?	Publication will have its own DOI as typically assigned by publishing body. Referring to an online document by its DOI provides more stable linking							

Data Manager / Responsible partner: SUBMON

Dataset number	10							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	Findings of the participatory workshop and surveys distributed to identify consumers' barriers to seafood acceptance							
Description	Results of the Collective Intelligence method on identifying barriers to seafood consumption and acceptance. A matrix with the main barriers to							
What purpose is it for?	Summarize the findings of the CI method and listing barriers that need to be overcome							
What is Sea2See's related objective?	Enhancement of stakeholders engagement / overcome the barriers detected for consumers' acceptance and involvement.							
About data								
Type of data	Text							
Format	pdf							
Dataset is:	Revisable							
Discipline								
Is it instrument specific?	No							
Equipment								
Format								
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	Yes							
Experimental	Yes							
Simulation								
Derived/Compiled								
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for a specific license	No							
To whom it could be useful?	Useful to entities related to consumers engagement							
For what?	Develop engagement strategies or awareness campaigns on seafood consumption							
Any metadata provided?	no							

Dataset number	11						
Will it be open (made publicly accessible)?	Yes						
If your answer has been "No", please explain why you cannot open the data							
Data repository used for making it open	Hackathon events						
Description	Results and projects from the hackathon organized to find specific solutions to overcome						
What purpose is it for?	Summarize the ideas and projects submitted by hackathon participants and develop communication or engagement solutions to						
What is Sea2See's related objective?	Enhancement of stakeholders engagement / Overcome barriers to consumers' seafood consumption						
About data							
Type of data	Text						
Format	pdf						
Dataset is:	Fixed						
Discipline							
Is it instrument specific?	No						
	Equipment						
	Format						
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>							
Observational	Yes						
Experimental	Yes						
Simulation							
Derived/Compiled							
Reference or Canonical (links)							
Long term / FAIR access							
Is there any provision for a specific license	No						
To whom it could be useful?	Useful to entities related to consumers engagement						
For what?	Develop engagement strategies or awareness campaigns on seafood consumption						
Any metadata provided?							

Data Manager / Responsible partner: TILKAL

Dataset number	12							
Will it be open (made publicly accessible)?	No							
If your answer has been "No", please explain why you cannot open the data		This dataset is owned by the partners having providing it (see data used tab)						
Data repository used for making it open								
Description	Data obtained as outputs of analytics, predictions and other computational processes based on traceability information provided by stakeholders							
What purpose is it for?	Produce information based on traceability data shared by project partners							
What is Sea2See's related objective?	Development of Sea2See Traceability Platform							
About data								
Type of data	Traceability data and events							
Format	json							
Dataset is:	Growing							
Discipline								
Is it instrument specific?	No							
Equipment								
Format								
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational								
Experimental								
Simulation	Yes							
Derived/Compiled	Yes							
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for a specific license model for this dataset?	No							
To whom it could be useful?	All partners involved in the project demonstrators							
For what?	Implement a traceability project of the goods they produce							
Any metadata provided?								

Dataset number	13							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open								
Description	Public data to be shared with consumers, selected from dataset 1							
What purpose is it for?	Present products lifecycle publicly							
What is Sea2See's related objective?	Development of Sea2See Traceability Platform							
About data								
Type of data	Traceability data and events							
Format	json							
Dataset is:	Growing							
Discipline								
Is it instrument specific?	No							
Equipment								
Format								
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational	Yes							
Experimental	Yes							
Simulation								
Derived/Compiled	Yes							
Reference or Canonical (links)								
Long term / FAIR access								
Is there any provision for an specific license	No							
To whom it could be useful?	Fish products consumer							
For what?	Make a buying decision based on traceability data shared by supply chain actors							
Any metadata provided?								

Tilkal Data management

Tilkal leverages two leading hosting services to operate its platform: OVHCloud and AWS. Tilkal has taken the decision to migrate a maximum of its services to French hosting services OVHCloud, keeping only services not provided by OVH, or with known limitations, in AWS. In any case all data is stored and handled in EU regions (France and Germany for OVHCloud, Germany for AWS). Tilkal is now part of the Open Trusted Cloud initiative, lead by OVHCloud, promoting a data-friendly, open and reversible European cloud.

Tilkal's service ensures the protection of customers data in a number of ways:

- Customer's account and applications are compartmentalized and only available to authorized users within their organization;
- Data transmitted on the public network is encrypted using Transport Layer Security;
- Data at rest is encrypted, using state of the art technology;
- User passwords are not stored (in compliance of the SRP protocol);
- The connection/login process is designed to withstand brute force attacks;
- User passwords have a minimum of 8 characters;

Data Manager / Responsible partner: SmartWater

Dataset number	14						
Will it be open (made publicly accessible)?	No						
If your answer has been "No", please explain why you cannot open the data	<i>Data belong to producers</i>						
Data repository used for making it open							
Description	Data from aquaculture producers demostartors daily operations						
What purpose is it for?	To provide selected inputs for S2S Platform demonstration						
What is Sea2See's related objective?	Development of the Sea2See Traceability Platform						
About data							
Type of data	Numeric						
Format	CSV & JSON						
Dataset is:	Fixed						
Discipline	Primary production						
Is it instrument specific?	Yes						
Equipment	<i>Multiparametric probes</i>						
Format	-						
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>							
Observational	Yes						
Experimental							
Simulation	Yes						
Derived/Compiled							
Reference or Canonical (links)							
Long term / FAIR access							
Is there any provision for a specific license model for this dataset?	Yes						
To whom it could be useful?	Researchers, Regulatory Bodies, Public bodies, Producers						
For what?	Traceability, Benchmarking, Production management						
Any metadata provided?	AI						

Smartwater Data management:

With respect to the integrity and access to information and data, SMARTWATER PLANET relies on the service and security standards provided by Microsoft, our cloud service provider. SMARTWATER PLANET reinforces these services with periodic back-ups of information. All data provided to SMARTWATER PLANET are property of the user. The platform of SMARTWATER CLOUD uses separated databases and/or schemas for every SMARTWATER Account to enforce data isolation between accounts. Data are hosted in Microsoft Azure's servers

Data Manager / Responsible partner: EUROPROJECT

Dataset number	15							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	CORDIS, World Wide Web							
Description	Project's website							
What purpose is it for?	Informational, promotional, dissemination of results.							
What is Sea2See's related objective?	To increase project's visibility, raise awareness about sustainable seafood consumption, engage stakeholders in co-creation activities							
About data								
Type of data	Text							
Format	pdf, html							
Dataset is:	Revisable							
Discipline								
Is it instrument specific?	No							
	Equipment							
	Format							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational								
Experimental								
Simulation								
Derived/Compiled	Compiled from input from partners and their associated activities							
Reference or Canonical (links)	www.sea2see.eu							
Long term / FAIR access								
Is there any provision for a specific license model for this dataset?	CC0 Or CC BY							
To whom it could be useful?	partners and stakeholders across seafood value chain							
For what?	increase knowledge, participate in co-creation activities for SEA2SEE digital solutions, drive change in the policymaking regarding seafood industry							
Any metadata provided?	N/A							

Dataset number	16						
Will it be open (made publicly accessible)?	Yes						
If your answer has been "No", please explain why you cannot open the data							
Data repository used for making it open	CORDIS						
Description	CD Deliverables - CD Plan, Synergy Plan; Other documents such as newsletters, press releases, etc.						
What purpose is it for?	Streamlines and sets a baseline for the communication and dissemination process for kindred projects, contains database of journals, dissemination						
What is Sea2See's related objective?	Capacity building, knowledge transfer						
About data							
Type of data	Text						
Format	pdf, html, xsl						
Dataset is:	Revisable						
Discipline	Social Sciences						
Is it instrument specific?	No						
Equipment							
Format							
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>							
Observational							
Experimental							
Simulation							
Derived/Compiled	Compiled based on input from partners and research of open sources						
Reference or Canonical (links)							
Long term / FAIR access							
Is there any provision for an specific license	CC0						
To whom it could be useful?	partners, stakeholders across seafood value chain, other Eu funded projects						
For what?	shared knowledge, capacity building, networking, communication and dissemination of project's results						
Any metadata provided?	N/A						

Dataset number	17							
Will it be open (made publicly accessible)?	Yes							
If your answer has been "No", please explain why you cannot open the data								
Data repository used for making it open	YouTube, project's Website, Social Networks							
Description	Videos produced by the project							
What purpose is it for?	Informational, promotional, dissemination of results.							
What is Sea2See's related objective?	To increase project's visibility, raise awareness about sustainable seafood consumption, engage stakeholders in co-creation activities							
About data								
Type of data	Audiovisual							
Format	MP4							
Dataset is:	Growing							
Discipline	Communication and							
Is it instrument specific?	Yes							
Equipment	Video camera, smart phone camera							
Format								
About the origin - <i>Define and describe the origin/source of your data. Data can be gathered from different sources</i>								
Observational								
Experimental								
Simulation								
Derived/Compiled	Compiled from input from partners and their associated activities							
Reference or Canonical (links)	www.sea2see.eu							
Long term / FAIR access								
Is there any provision for an specific license	CC0 Or CC BY							
To whom it could be useful?	partners and stakeholders across seafood value chain							
For what?	potential results exploitation, upscaling of digital solutions, business partnerships, building new consortiums							
Any metadata provided?	N/A							

The project will re-use existing data produced earlier during the partners' technology development processes. Non-sensitive data will be made available in reports, publications, presentations, deliverables, etc. Non-sensitive data will be deposited in an open-access repositories and made available to third parties. Sensitive data will be handled accordingly and saved in partners' or project's private repositories. Background knowledge and data, know-how or information that is needed to implement the action or exploit the results has been given in Attachment 1 of the Sea2See Consortium Agreement.

The project will generate/ regenerate data in the following formats:

- .json; .xlsx, .docx, .csv, .txt, .pdf, HTML
- For audio-visuals: MP4.

The generated data will be useful for a broad audience and stakeholders identified at the starting phase of the project (D1.1. Sea2See Stakeholders' Engagement Strategy).

Data used by partners will be gathered by:

- Research of publicly available data from the European Commission's public repository CORDIS in relation to the involvement of other projects, initiatives, and stakeholders and from other publicly available sources
- Data from stock image banks.
- Scientific publications, Journals, books.
- Collation of strategies and win-win solutions to familiarize with consumers' engagement in the seafood industry.
- Partners traceability information (master data, events, transactions)
- EU standards and regulations.
- Development guides for Implementation of Cognito SDK

2. FAIR DATA

2.1. MAKING DATA FINDABLE, INCLUDING PROVISIONS FOR METADATA

FAIR stands for data that is Findable, Accessible, Interoperable and Reusable. The data produced and/or used in the project will be discoverable with metadata, and communication with CORDIS data service, and open access repositories will be in place. Naming conventions for metadata have not yet been defined but will be in place once public reports and dynamic web applications are presented to the public and their reuse and visibility promoted.

End data products to be produced by Sea2See, such as reports, computer models, datasets, etc. will have version numbers; although we anticipate several of the more basic datasets (numeric data, for instance) to be dynamic in nature.

The data will be stored in file formats with a high chance of remaining findable and usable for the long term.

Types of persistent and unique identifiers: Datasets published will be uniquely identified with an ID inside each repository.

- Databases: Data inside databases are labelled with primary keys which identifies each data sample unequally inside the database
- Files/Archives; Files are labelled with an unique identifier inside each repository. If necessary, revision/version of the file will be stored as well.

2.2. MAKING DATA OPENLY ACCESSIBLE

The Sea2See project covers three types of data subject to FAIR principles:

- The research data produced and analysed by the consortium;
- The insights, training materials and dissemination materials generated by the consortium (in form of reports, peer reviewed papers, images, videos, audios, and promotional materials);
- Public deliverables

The following open access options are planned:

Open repository (OR),

The project will use an Open Access repository to comply with the requirement of long-term open access to the public results of the project. Considering the different types of data, associated metadata, documentation, and code that will be made public to be deposited in certified repositories, such as those integrated through OpenAire, Zenodo appears to be the best choice for this.

The project coordinator has created a Community in Zenodo to house the open access publications related to the project <https://zenodo.org/communities/sea2see>

Website of the project - <https://sea2see.eu/>

The website of the project is a key communication vector to ensure maximum project's visibility and dissemination of results. It is designed to be functional and navigationally user friendly so information is found quickly, in a least number of clicks. The project website will remain online for at least 2 years after the project end.

European commission repository - CORDIS

Public deliverables and results are made available on CORDIS.

Sensitive project data will be kept by the Consortium members and the Coordinator, complying with GDPR regulation.

Only the Consortium partners can access the data before its full disclosure to the public.

2.2.1. OPEN ACCESS TO SCIENTIFIC PUBLICATIONS

According to the European Commission, “under Horizon Europe, each beneficiary must ensure open access to all peer-reviewed scientific publications relating to its results” The Sea2See Consortium adheres to the EU open access to publications policy, and in each case the most appropriate route towards open access will be chosen (“Green Open Access” or “Gold Open Access”), depending on publication and embargo periods.

The dissemination of Sea2See results will occur by means of activities identified in the initial Communication and Dissemination Plan (D7.2), such as the creation of the web page for the project, public workshops, press releases, participation in international events, etc. In compliance with the Grant Agreement, free-online access will be privileged for scientific publication, following the above-mentioned rules of open access. All relevant information and the platform textual material (papers, leaflets, public deliverables, etc.) will be also freely available on the project website. In order to guarantee information protection, this textual material will be available in protected PDF files. In specific cases and according to the rules of open access, the dissemination of research results will be managed by adopting precautionary IPR protection protocols, not to obstacle the possibility of protecting the achieved foreground with preventive disclosures, as provisioned in the CA.

Following the ‘as open as possible, as closed as necessary’ principle, all beneficiaries will make their results available through full open access venues for peer-reviewed scientific publications (after ensuring IP protection of exploitable results) except when this goes against their legitimate interests, as foreseen in the Grant Agreement. Partners will ensure the provision of open access to publications (Green or Gold open access) via:

- national RCAAP repository,
- Open Research Europe will be explored
- a Sea2See account on Zenodo has been created. Zenodo assigns all publicly available data a Digital Object Identifier, the uploaded data is easily citable, it accepts any file format for easy storage of data produced. <https://zenodo.org/communities/sea2see>

Towards the end of the project, data sets will be uploaded to OpenAire. Sea2See will deposit and enable immediate open access to relevant research results of the project in specialized open access journals/platforms. Digital or physical access to the results needed to validate the conclusions of scientific publications will also be guaranteed. Additionally, metadata will be open under CC, in line with the FAIR principles and will provide information about the licensing terms and persistent identifiers.

2.2.2. OPEN ACCESS TO RESEARCH DATA

According to the European Commission, “research data is information (particularly facts or numbers) collected to be examined and considered, and to serve as basis for reasoning, discussion, calculation”. Open access to research data is the right to access and reuse digital research data under the terms and conditions set out in the Grant Agreement.

Regarding the digital research data generated in the action the Sea2See Consortium will:

- Deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate – free of charge for any user – the following:
 - The data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible;
 - Other data, including associated metadata, as specified and within the deadlines laid down in this data management plan;
 - Provide information – via the repository- about tools and instruments at the disposal of the beneficiaries and necessary for validating the results.

Sea2See partners will manage the digital research data generated within the project in line with the FAIR principles and as soon as possible will deposit the data in trusted repositories (e.g. OpenAIRE; GitHub or other ones using git protocol) and will ensure open access under the Creative Commons licenses (CC BY, CC 0 etc.) or equivalent ones. In case re-usage or validation of any research output/tool/instrument is needed, partners will provide information via the repository.

It is important to note that because of the low maturity of this document and some existing uncertainties about the data collected in the project, additional details will be defined as the

project progresses. Some of the Datasets include personal information and hence are not shared in Open Data yet. There is the option of anonymizing some datasets and make them open like that, and that will be done as the project develops.

2.3. MAKING DATA INTEROPERABLE

To allow data exchange among researchers, institutions, organisations, stakeholders, countries, etc., the project will assure the application of interoperable format for each type of research output (e.g. csv format / scientific publication format for Files or zip files for a bunch of archives; RFC feeds for Posts / news; API access for real time database queries). Sea2See partners will aim to make research work, methodologies, outputs and findings available as soon as possible in the research process through early and open sharing of research and thus, will support reproducibility of Sea2See research outputs. Public deliverables will be available on the project webpage, along with relevant Copyright and Reprint Permissions, and definitions of conditions for use. The methodologies used, outputs, and findings of the demonstrators in real working conditions will also be shared through open-access publications. Most publications will result from project deliverables/reports. Therefore, early and open sharing can be via deliverables that can be made accessible to third parties on the project webpage and OR on a case-by-case basis as some results may have privileged access. The Consortium will have a focus on the interoperability of the data produced and will allow for data exchange and re-use between researchers, institutions, organisations, countries and others.

Interoperability in the OpenAIRE-compliant repositories, which Sea2See considers initially a preference, is a key focus, and in constant evolution, as it poses a big challenge not only for datasets to be able to “communicate” with repositories, but also for repositories to communicate among themselves.

2.4. INCREASE DATA USE

Our intention is to make as much data as possible re-useable for third parties. Restriction will only apply when privacy, IPR, or other exploitation grounds are in play. Data re-use will increase the impact and visibility of the project.

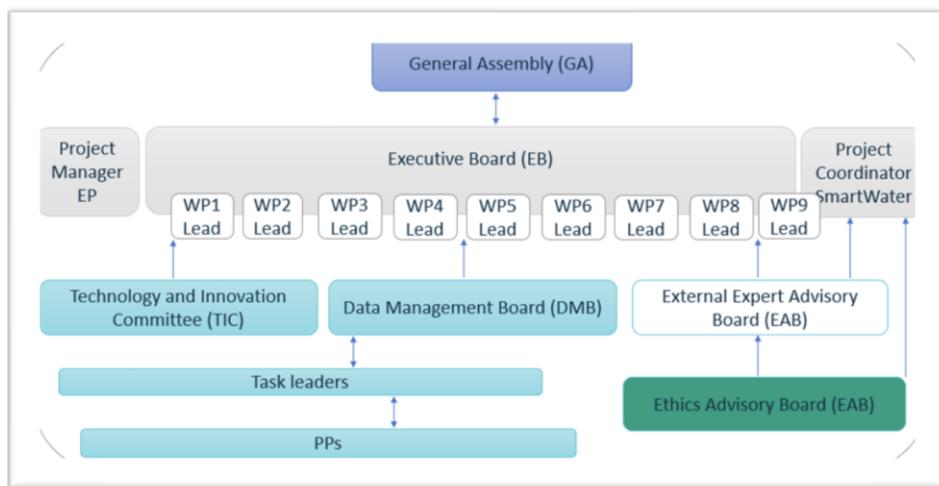
All shared objects inside of the project will be watermarked with the license logo applied to that object (Licenses for data sharing and re-use). For Creative Commons license, CC watermark representing limitations applied to shared objects must be put inside the object.

Data of the Sea2See will remain re-usable by interested third parties after the end of the project and as soon as possible. In all cases, the consortium will have authorship of re-usable data and

documents. Frameworks and software developed during the project are susceptible to being published so others can re-use it. Codes and frameworks are usually published inside public repositories using the git protocol with a copy of the license and the watermark of it, explaining the limitations the software has. Data persistence will be determined by the platform of publication: Data published inside repositories of the project will remain available inside the repository until it is erased. Generally, removed data will be “logically” removed, i.e. it still exists and is conserved for future queries/revisions.

3. ALLOCATION OF RESOURCES

A Data Management Board (DMB) is set as part of the project management structure to ensure and monitor the data management process. The DMB was established at the beginning of the project and consists of the Project Coordinator and one representative per partner organization. Separate access to a shared folder has been secured for the members of the DMB, so that only members of the DMB have access to sensitive data information under the DMP.



DATA MANAGEMENT BOARD

Coordinator: Carlos Mazorra
 Smartwater – Gonzalo Pérez
 Tilkal – Sébastien Gaïde
 PAGE UP – Arnaud Thevenard
 SUBMON – Juanita Zorrilla
 CCMAR – Karim Erzini
 ANFACO – Gonzalo Ojea
 NAYS – Ioanna Argyrou

SEAentia – Nuno Leite
 LA – Carlos Espinal
 UAVR – Cristina Pita
 VITAGORA – Elodie da Silva
 Ethic Ocean – Elisabeth Vallet
 EP – Ana Hristova
 ANP – Rita Sá

Within its responsibilities is making decisions about dealing with any collected and/or generated data or project's outcome; ensuring that the project's research data is in accordance with the FAIR principles; deciding upon which data will be exploited, opened or held confidential, as well as upon any ethical or legal issues that can have an impact on data sharing. The DMB meets once per year; ad hoc DMB meetings can be organized if there is the need, and on-going communication via email.

DM requires monetary and human resources. Allocation of resources in Sea2see:

- Human resources - one person per project partner responsible for DM.
- Monetary resources – planned in personnel costs, IPR management services, open access via publications and website.

4. DATA SECURITY

Provisions for data security differ depending on the nature of the data.

Information coming from open datasets will not receive any special treatment (e.g., datasets not including personal information shared by experts over email, by organizations and by public authorities). This information will be directly processed as it arrives to the platform and then, indexed. Temporal copies of the original data will be kept in Sea2See information processing nodes, but no extra security measures will be put in place for this kind of information given its public nature.

An internal project document for use of the partners gathers the Sea2See Data Management Protocol. The document describes the Data Management procedures for Sea2See partners within the project repository.

4.1 DATA ACCESS OPTIONS

The following access options and policies are implemented for data access within the project:

SPR – Sea2See Project repository

The project uses a password-protected repository - shared workspace, with security and backup services with access to the folder for the project partners only. Specific rules and structure are established in the Sea2See Quality Management Plan (sensitive project document).

The Project General data are stored in this Sharepoint managed by Smartwater Planet. Sensitive data related to GDPR are stored in a separate folder of the Sharepoint tagged "DATA

MANAGEMENT BOARD”, with restricted access to members of the Consortium belonging to the Data Management Board.

PR - Partner repository

Partners use cloud and offline data storage solutions complying with cybersecurity rules of the company/institution/organization. The access is limited to the company/institution/organization employees/contracted staff. Each partner is responsible for its data and internal security measurements and rules. However, the coordinator is responsible for centralization and providing access to relevant repositories. In this context, the Shared Repository is used for storage of any data set that the partners need to safeguard (survey results, consent forms, etc).

Regarding personal information, the Consortium acts in accordance with the GDPR and comply with the applicable measures for controlling personal data. The procedures of the local Data Protection Agency (AGPD2) are also observed. In that case, a Data Protection Delegate from Smartwater personnel has been assigned and coordinates the data processing activities and is in charge of the risk analysis over the personal data.

4.2 DATA ACCESS PROTOCOL

Access to data is restricted to authorized users. A role-based access control system is used to define permissions for each user. Data access (access logs) are monitored for suspicious activity.

To request access to the data repository, the requester must:

- Be a member of the Sea2See project team.
- Have a justified need to access the data.
- Have read and understood this data management protocol.

To request access to the data repository, the requester must:

1. Send an e-mail to the Project Coordinator at the following address:
carlos.mazorra@smartwaterplanet.com.

2. The email should include the following information:

- Full name of applicant data.
- Applicant's position
- Applicant's company/organization
- Applicant's e-mail address
- Reason for requesting access to data
- Specific data to be accessed

3. The Project Coordinator will evaluate the request and, if approved, grant access to the applicant.

4.3 DATA PROTECTION

Regarding data and cybersecurity, the following standard measures are in place in order to reduce the risk:

- End-to-end encryption of data in transition.
- Encryption of sensitive data at rest in order to minimize the exposure to a non-authorized access event.
- Standardized enforced data deletion policy of sensitive data when required by a user.
- Advanced user-level data security measures with fine-grained access control.

According to the GDPR and AGPD regulations, the team will communicate immediately any breach of the security controls over the personal data.

4.4 RIGHT OF ACCESS, RECTIFICATION, ERASURE, RESTRICTION OF PROCESSING, OBJECTION TO PROCESSING AND DATA PORTABILITY

Interested parties have the right to:

- Access to your personal data.
- Request the rectification of your personal data.
- Request the deletion of your personal data.
- Request the limitation of the processing of your personal data.
- Oppose the processing of your personal data.
- Request the portability of your personal data.

Interested parties may exercise their rights by sending a written request to the Project Coordinator at the following address: carlos.mazorra@smartwaterplanet.com.

5. ETHICAL ASPECTS

The ethical standards and guidelines of Horizon Europe will be rigorously applied, regardless of the country in which the action is carried out. All participants are required to comply with the HE Framework Programme Regulation 2021/695, the Charter of Fundamental Rights of the European

Union and the European Convention on Human Rights. In addition, partners and EAB will refer to EC's guidance on Ethics in Social Science and Humanities, Ethics and data protection, identifying serious and complex ethics issues in EU-funded research (all issued on 05 July 2021) and any relevant Horizon Europe guiding documents.

All research activities must respect:

- the principle of proportionality
- the right to privacy
- the right to the protection of personal data
- the right to physical and mental integrity of all persons
- the right to equality and non-discrimination
- high levels of protection of the environment and human health.

For projects with a significant ethics dimension - an ethics advisor/advisory board should be appointed. From the beginning of the project, an ethics advisor can help partners deal with ethical issues and put in place the procedures to handle them appropriately.

The Sea2See project raises a diversity of ethics issues, thus demanding appropriate safeguards to ensure compliance with regulations. In this context, operation of an Independent Ethics Advisory Board will ensure appropriate supervision of the situation regarding ethics. The proposal initially planned of constituting an "Ethics External Committee of Advisors" as part of the External Advisory Board. Only one independent body is created for the project lifetime - an external and independent Ethics Advisory Board has been established and will be consulted on ethics issues concerning research, involving:

- Humans
- Personal Data,
- Non-EU countries,
- Artificial Intelligence.

The project consortium and EAB will make sure Sea2See is compliant with ethic requirements related to:

1. Ethics Requirement 1 on humans
2. Ethics Requirement 2 on the protection of personal data and compliance with GDPR
3. Ethics Requirement 3 on third countries

4. Ethics Requirement 4 - considering the unexpected and unpredictable ongoing COVID-19 crisis and due to the multi-stakeholder engagement (WP1, WP2) and demonstration activities (WP5) planned in the project which rely on co-design and co-creation workshops, interviews, surveys, and active involvement of citizens. Involved partners in the foreseen interventions will explore all norms and measures related to COVID-19/other.

2 external experts confirmed participation in the Sea2See Ethics Advisory Board. The experts will be actively involved in online and physical meetings with project partners until the end of the project. They will regularly assess Sea2See activities to assure they are ethically compliant with relevant national, EU and international legislation, including the Charter of Fundamental Rights of the EU, the provisions set out in the GA and in alignment to RRI principles. They will sign NDAs for non-disclosure of any confidential data.

Ethics Protocols will be produced and serve as ethics framework to be followed throughout the project lifespan by the Sea2See Consortium and Ethics Advisors. They will cover Humans, Personal Data, Non-EU countries and Artificial Intelligence aspects identified in Sea2See Ethics Summary Report. They will capture information on procedures and documents related to the ethical issues especially for engagement and demonstration activities, collection of data, involvement of third non-EU countries. The protocols will outline the procedures and criteria that will be used to identify/recruit participants. Moreover, informed consent procedures and forms that will be implemented for the participation of humans and in regard to data processing will be presented.

Regarding Sea2See focus groups, workshop, interviews, surveys – only adults will participate, voluntarily. Personal data will be kept in private servers in the EU and not shared to third parties for any reason.

Additional ethics issues may emerge during the project implementation and will be analyzed and addressed by the project partners and EAB.