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D 1.3

Title: Report on transfer of data to international data collections

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Dissemination level						
PU	Public	Х				
CO	Confidential, only for members of the consortium (incl the Commission Services)					

Deliverable number:	D1.3
Deliverable title:	Report on transfer of data to international
	data collections WP1
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Lead participant:	Vaishav Soni

Authors							
Name	Organisation	E-mail					
Vaishav Soni	ICES	vaishav.soni@ices.dk					
Lise Cronne-Grigorov	ICES	lise.cronne@ices.dk					
Neil Holdsworth	ICES	neil.holdsworth@ices.dk					

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1 Introduction and Aim

Work package 1: Data Management and Dissemination, our objective is to develop a robust system for managing and sharing the data collected during, and beyond the project lifetime. This document represents a specific component of the initial Data Management Plan (DMP) for the MEESO project (deliverable D8.5).

The long-term aim of the project is to ensure that the collected data are hosted in existing wellmanaged international data systems, guaranteeing access even after the project cycle concludes. In line with the FAIR principles (Findable, Accessible, Interoperable, and Reusable), Work package 1 ensures that data collected under the MEESO project are made available to stakeholders and the wider scientific community. Open Access and Open Science principles are fundamental to knowledge creation and sharing. They support researchers in achieving greater impact and facilitate the optimal dissemination of research findings. Additionally, these principles enable engagement with citizen scientists and society at large to address societal challenges effectively.

The Open Research Data Pilot, as part of Horizon 2020, aims to make research data generated by projects accessible with minimal restrictions, while ensuring the protection of sensitive data. According to the MEESO Grant agreement, each beneficiary must ensure open access to all peer-reviewed scientific publications related to their results. Moreover, research data beyond publication use, as specified in the DMP, must be deposited in a research data repository. The aim of the data collection in the MEESO project is to generate new knowledge about the mesopelagic community, including its biodiversity, biomass drivers, carbon sequestration, role in the oceanic ecosystem, and interactions with the epipelagic community, which includes important commercial fish stocks.

MEESO partners contribute data from standard monitoring cruises and plan to conduct additional scientific and commercial trial cruises. Regarding the data policy, the overarching ambition is to maximize the availability of data to the community, enabling its use and contributing to a better understanding of the marine environment. The policy emphasizes the principles of providing data to ICES (International Council for the Exploration of the Sea) as a trusted, long term data host including quality assurance, and appropriate citation of data. To align with existing practices at ICES, the proposal suggests adopting the <u>CC-BY 4.0 license</u>, which allows unrestricted access and use and only requires appropriate credit to be given to the data providers. By establishing a comprehensive data management and dissemination system, the MEESO project seeks to promote transparency, enable evidence-based decisionmaking, and contribute to the advancement of environmental sustainability in organizations.





2 Method

WP1 takes several important steps to ensure effective management and accessibility of the data collected. These measures include making the data findable, openly accessible, interoperable, increasing data re-use, ensuring data security, and addressing ethical aspects.

To make the data findable, metadata is produced using the ISO 19115 standards template. This metadata, which includes information about the scientists responsible for generating the data, is published in an online metadata catalogue hosted by the <u>ICES metadata catalogue system</u>. Additionally, if there is a requirement, Digital Object Identifiers (DOIs) are assigned to make the data persistently identifiable and locatable. Search keywords and version numbers are provided to optimize data re-use. The project milestones M1.1, M1.2, and M1.8 focus on developing the ICES Geonetwork, producing metadata guides, and ensuring alignment between datasets and metadata records.

To promote openness, all data generated by the project are made openly accessible by default. However, personal data from stakeholders involved in the project cannot be made publicly available due to privacy concerns. ICES Geonetwork publishes metadata for all datasets (irrespective of whether the underlying data are open or restricted access) collected within the MEESO project, and specific data portals host acoustic, biotic, and oceanography data after undergoing quality control procedures. Milestones M1.6, M1.10, and M1.11 involve updating metadata catalogue links, recommending open data licenses, and incorporating feedback from international data portals. WP1 collected official acceptance of the CC BY open data license from partners before they can upload their data. Partners received a one-page document explaining the license review process in ICES and providing relevant links for information on how ICES adopts the CC BY license.

To ensure data interoperability, proper documentation and description of data formats and vocabularies are provided, using recognized domain or international standards. Controlled lists from the ICES vocabulary and relevant EU regulations are employed where applicable. Milestones M1.4, M1.7, and M1.9 address establishing a central project repository, formal partner acceptance of data licenses, and transferring datasets in agreed formats to international data portals.

Increasing data re-use is facilitated by making non-personal data publicly accessible without restrictions. The data from the MEESO project is available for re-use directly from the ICES database and specific portals, encouraging broad utilization by researchers and stakeholders.

Data security is ensured by safely storing the data in the originating data collecting partners' systems and international repositories. The ICES Data Centre, operating independently of specific projects, actively maintains the data and ensures its safekeeping.

Ethical considerations are addressed through separate deliverables. These cover procedures for identifying and recruiting research participants, implementing informed consent procedures for human participation.





3 Data transfer

The partners in the MEESO project have successfully submitted their data by following the specified steps outlined in the <u>ICES Acoustic Trawl Data Portal</u>. This portal plays a crucial role as a central platform for uploading, validating, and accessing processed acoustic data and its associated biotic trawl data (<u>Annex 1</u>). To begin with, the portal supports data uploads in either CSV or XML format. As soon as the data are uploaded, they undergo real-time conversion and validation using XSD schemas, schematron rules, and controlled vocabularies. These controlled vocabularies are managed through the <u>ICES vocabulary server</u>, ensuring that the data remains consistent and of high quality.

The data format utilized within the portal comprises two main parts: the acoustic part, which adheres to the <u>SISP 4</u> metadata convention for processed acoustic data, and the biotic part, based on the <u>ICES Database of Trawl Surveys</u>. Detailed information about this data format is readily accessible through the portal itself. During the validation process, the uploaded data is thoroughly examined, including checks against controlled vocabularies. If any issues arise during validation, submitters receive comprehensive error reports, enabling them to rectify any problems before resubmitting their data. Moreover, the portal offers a range of features that enhance the user experience. Submitters can browse their submissions, view data on a map, and apply various filters based on survey, year, country, and platform. Additionally, users can access metadata through the ICES metadata catalogue and customize the reporting format to meet their specific data requirements.

Partners are submit their data to the <u>ICES Metadata Catalogue</u>. They understand the importance of making their data accessible to the public and easy to find. To achieve this, they are creating detailed metadata records for each dataset. The partners are using the ICES Metadata Catalogue, which supports standard formats like ISO19115, ISO19119, and ISO19139. This catalogue also has features that comply with the INSPIRE standards, allowing the partners to validate, edit, and view their metadata (<u>Annex 1</u>).

Metadata include important contextual information, such as where the data come from, what format it is in, and how it can be used. By doing this, they are increasing the visibility and usability of their data.

Throughout the process, the ICES Secretariat is providing support and guidance to the partners. They are available to answer questions and ensure that the submitted metadata meets the requirements of the INSPIRE directive. By working together to contribute to the ICES Metadata Catalogue, the MEESO partners are establishing a strong data management system for the project.





4 Status of Data Collection

The MEESO project relies on the participation of three key partners—Fundacion AZTI (ES), IMR (NO), and the Marine Institute (IE)—to collect and upload acoustic data. These partners play a vital role in the data collection process, utilizing specialized equipment and techniques to gather valuable information about marine organisms' distribution and abundance. Through a user-friendly interface, the partners submit data, which undergoes a thorough validation process to ensure accuracy and quality. Once validated, the data becomes accessible to authorized users, offering browsing, searching, and filtering options. This collaborative effort among the partners ensures the availability of reliable acoustic data, supporting research and decision-making within the MEESO project.

Survey	Country	Data Files
JUVENA-MEESO	ES	4
MEESO	NO	6
IBWSS	IE	4

Table 1: Collection of MEESO project Acoustic and Biotic data in the ICES system:

Sumue Cada V	C	Diatés	Chart Date			Assessment	Acoustic		Biotic	
Survey Code 🔍 Y 📄	Coun	Platro	Start Date	End Date	Cruise localib	AccessionID	Submission DateY	Y	Submission DateY	Y
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MEESO	IE	45TC	2022-09-02	2022-09-09	45TC2022M2S2	20223475			2022-12-13 18:43	
MEESO	NO	58GS	2021-06-01	2021-06-30	578-4174-2021105	20222780	2022-09-09 18:38	0	2022-09-09 19:22	
MEESO	NO	58US	2019-05-01	2019-05-27	578-9566-2019703	20212068	2021-07-08 16:33		2021-07-08 16:01	(
MEESO	NO	58GS	2018-06-06	2018-06-24	578-4174-2018106	20212386	2021-07-08 15:33	(2021-07-08 15:25	
MEESO	NO	58GS	2016-10-13	2016-10-27	578-4174-2016115	20212385	2021-07-08 14:46	(2021-07-08 14:41	
MEESO	NO	58GS	2013-05-01	2013-06-14	578-4174-2013107	20211964	2021-07-08 14:13	0	2021-07-08 13:48	
JUVENA~MEESO	ES	29EB	2022-08-17	2022-10-03	29EB202209	20223424	2022-12-07 16:01		2022-12-07 12:33	
JUVENA~MEESO	ES	29AJ	2020-08-17	2020-09-29	29AJ202009	20220612	2022-03-28 18:48		2022-03-28 16:56	
JUVENA~MEESO	ES	29EB	2020-08-17	2020-09-29	29EB202009	20220776	2022-03-28 18:49	()	2022-03-28 16:40	
JUVENA~MEESO	ES	29EB	2021-08-19	2021-10-04	29EB202109	20220457	2022-03-25 14:46	()	2022-03-28 14:44	

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IBWSS		IE	45CE	2023-03-20	2023-04-13	45CE2023IBWSS	20231235	2023-04-08 09:20			
IBWSS		IE	45CE	2022-03-24	2022-03-31	45CE2022IBWSS	20221482	2022-04-08 14:33		2022-04-07 17:34	
IBWSS		IE	45CE	2021-03-20	2021-04-09	45CE2021IBWSS	20211583	2021-04-08 11:49	(2021-04-21 12:58	(
IBWSS		IE	45CE	2019-03-26	2019-04-15	45CE2019IBWSS	20191503	2019-04-12 15:01		2019-04-12 15:53	





The MEESO project's metadata system currently includes 48 published datasets, accompanied by metadata records that follow established standards. These records provide essential information about the datasets, such as their origin, format, and potential uses. Additionally, there are three datasets that have not yet been published, but efforts are underway to finalize and validate them according to quality standards in due course. The ongoing work focuses on ensuring that these unpublished datasets meet the necessary requirements before they are made available. User submissions of data to the metadata system are expected to the same standards, which enable easy discovery and access. The WP1 team is committed to maintaining a comprehensive metadata system that facilitates collaboration and knowledge sharing among partners.

		2	023
Partners	Metadata records	Published	Unpublished
	·Interview data		
Wageningen	·Fishing trip expenses	g trip expenses	
University	-Transcripts of interviews and focus group discussions with stakeholders	2	
	·Analysis of nutritional composition		
Fundacion AZTI	·Acoustic and biotic data	4	
	·Oceanography data		
	·Economic data		
NOFIMA AS	•Catch data from cruises performed in 2019/2020	1	
MEDI	·Acoustic and biotic data	11	
WIT INI	·Oceanography data	11	
World Maritime	·Interview data		2
University	·GIS/Map data		2
IMR	·Acoustic and biotic data	30	
	·Oceanography data	50	
Marine Institute	·Biotic and Oceanographic data		1

Table 2 Collection of MEESO project Metadata record in the ICES system:





Annex 1. Links

ICES Acoustic Trawl Data Portal					
Submission	LINK				
Download	LINK				
Мар	LINK				
Format and Rules	<u>LINK</u> and <u>LINK</u>				
Vocab	LINK				
ICES Metadata Catalogue					
Meta data Submission	LINK				
MEESO Metadata	<u>LINK</u>				
SUMMER Metadata	LINK				
Data Policy	LINK				



