



# NATALIE

Accelerating and mainstreaming  
transformative NATure-bAsed solutions to  
enhance resiLIEence to climate change  
for diverse bio-geographical European  
regions

## D1.3 Initial Data Management Plan

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## Disclaimer

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## Project Consortium



## EXECUTIVE SUMMARY

This document presents the first version of the Data Management Plan (DMP) for open-access data handling (OA), as defined for the NATALIE project. The document addresses various aspects of data management, including data and metadata generation, data preservation, maintenance, and analysis. It ensures that data are well-managed currently and prepared for future preservation. The DMP is a living document in which information can be made available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur.

This Data Management Plan is compiled in accordance with the [Guidelines on FAIR Data Management in H2020](#), the [Guidelines on Implementation of Open Access to Scientific Publications and Research Data](#), and the [Guidelines to the Rules on the Open Access to Scientific Publications and Open Data Access to Research Data in H2020](#).

To ensure compliance with the aforementioned guidelines, several activities have and will be undertaken in Task 1.3 of WP1:

- Selection of a repository for project data storage to facilitate data sharing and accessibility among partners throughout and beyond the project's duration and to ensure open access for publications and data.
- Development of data definitions and metadata to create a comprehensive reference catalogue.
- Creation of rules and instructions for participants, including Data Collection Templates (DCT), deposit workflows, data validation guidelines, and feedback processes.

This deliverable outlines how the NATALIE consortium will follow Open Data policy, the FAIR principles and the data management life cycle for the data that will be collected, processed, and/or generated. It serves as the initial version of the DMP, which will be revised and updated specifically at M30 and M60. This initial version of the DMP is being presented at M6 and primarily illustrates the project's current expectations regarding data collection.

The goal of the DMP entails the need for good documentation and implementation of standards, infrastructure, privacy settings and interoperability of data formats making it simple to share, use and upgrade data.

## RELATED DELIVERABLES AND WORKPACKAGES' CONNECTION

The Data Management Plan will evolve along the project and will produce 3 deliverables:

- D1.3 Initial Management Plan (M6)
- D1.5 Intermediate Data Management Plan (M30)
- D1.6 Final Data Management Plan (M60)

The specific case of Personal Data Management is covered in the following deliverable:

- D1.4 Privacy, ethics and security requirements.

External publications guidelines and the internal procedures to be followed by all partners to comply with this Data Management Plan (DMP) will be incorporated in:

- D1.1 Info-pack for internal communication.

In addition to specific deliverables, all Work Packages (WPs) are linked to this deliverable and will contribute to the ongoing development of this "living" Data Management Plan (DMP) throughout the project's progression.

## DOCUMENT INFORMATION

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Lead Beneficiary	Eurecat (EUT)
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V0	20/February/2024	Iván Cester (EUT)	First version
V0		Sonia SIAUVE (OiEau)	Review of the first version.
V1		All WP leaders	All WP leaders updated the List of expected datasets to be produced in NATALIE project for each WP and Task.
V2	22/March/2024	Iván Cester (EUT)	Integrate WPs feedback and comments.
	28/March/2024	Sonia SIAUVE (OiEau)	Quality check
	22/April/2024	Joep Van den Broeke (KWR)	Final review
VF	24/April/2024	Iván Cester (EUT)	Final Version

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## LIST OF ACRONYMS

<b>CA</b>	Consortium Agreement
<b>CS</b>	Case Study
<b>DMP</b>	Data Management Plan
<b>DS</b>	Demo Site
<b>EC</b>	European Commission
<b>FL</b>	Follower (of a DS)
<b>GA</b>	Grant Agreement
<b>IP</b>	Intellectual Property
<b>NBS</b>	Natural Based Solution
<b>OA</b>	Open Access
<b>OAI-PMH</b>	Open Access Initiative Protocol for Metadata Harvesting
<b>WP</b>	Work Package

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## INTRODUCTION

The purpose of the Data Management Plan presented in this document is to describe the life cycle for the data to be collected, processed and/or generated by the NATALIE project.

The NATALIE project aims to address climate change risks by promoting ecosystem-based adaptation and Nature-Based Solutions (NBS) in Europe. It focuses on delivering innovative solutions and engagement mechanisms to support regions and municipalities in planning and implementing adaptation actions. All the results and associated data (final and intermediate if considered useful) produced in the NATALIE project, being simply collected or generated, will need to be **Findable, Accessible, Interoperable and Reusable (FAIR)** in accordance with the following reference documents: the [Guidelines on FAIR Data Management in H2020](#), the [Guidelines on Implementation of Open Access to Scientific Publications and Research Data](#), and the [Guidelines to the Rules on the Open Access to Scientific Publications and Open Data Access to Research Data in H2020](#).

As stated in the Grant Agreement, all scientific publications will also be open and accessible to the scientific community. The consortium will follow the Open Science policy as stated by the Commission [1], as a mechanism to bring society a return of the investment from the research conducted in the project.

This deliverable outlines how the NATALIE consortium intends to manage data following the FAIR principles and details the data management life cycle for the data that will be collected, processed, and/or generated. The document has been elaborated following the recommended official Data Management plan template provided by the Commission [2].

It serves as the initial version of the Data Management Plan (DMP), which will be revised and updated specifically at M30 and M60. This initial version of the DMP is being presented at M6 and primarily illustrates the project's current expectations regarding data collection.

Ensuring that data collected, generated and/or processed are FAIR, all along the course of NATALIE, entails the need for good documentation and implementation of standards, infrastructure, privacy settings and interoperability of formats making it simple to share, use and upgrade data. Data generated will be made accessible under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC 0) or a licence with equivalent rights, following the principle '**as open as possible as closed as necessary**', unless providing open access would in particular:

- be against the beneficiary's legitimate interests, including regarding commercial exploitation, or
- be contrary to any other constraints, particularly the EU competitive interests.

The partners responsible for ensuring the correct implementation this DMP will be mainly P3/EUT, supported by P1/OiEau, as leader and co-leader of Task 1.3 'Privacy, security, ethics & data management'. However, each partner will be responsible for listing any dataset generated in the Data Inventory document described in ANNEX 1: Dataset Inventory. Once a dataset will be considered of scientific relevance the partner owning the data will also be responsible to upload it to Zenodo repository in the NATALIE project Community as described in ANNEX 2: Procedure to upload datasets to Zenodo. This procedure and a whole overview of the DMP will be presented to all partners in a general meeting.

# I Data Summary

## I.1 Project background and data inventory

NATALIE project addresses the risks posed by climate change and its impacts and proposes to advance the concepts of “ecosystem-based adaptation” in Europe combined with climate resilient development pathways, as the means for impact driven Nature-Based Solutions (NBS), to accelerate and mainstreaming the adoption of NBS for resilience to climate change. NATALIE will deliver innovative and practical innovations in co-creation of solutions and stakeholder engagement, modelling, testing, monitoring, and validation mechanisms that will support regions and municipalities to plan and develop adaptation actions bringing along valuable knowledge and experience as actionable knowledge for adaptation and impact driven NBS.

To achieve this goal, NATALIE will develop a transformative NBS booster pack of 25 solutions. These are innovative actions that address the key six levers for transformative change: (1) socially acceptable, smart and financial innovative solutions; (2) societal, stakeholder and citizen engagement; (3) larger systemic solutions at regional level; (4) monitoring, evaluation and cost-benefit analysis of solutions; (5) pre-feasibility study; (6) evidence-based outcomes and recommendations.

The main goal is to promote NBS as a means to enhance resilience to climate change by forming an ecosystem-based adaptation for regional resilience. 18 measures will be demonstrated at 8 demo sites (DS), in different biogeographical regions of Europe and their replication will be studied at 4 replication sites, called “Followers” (FL). The demo sites and their followers, if any, are working in pair and form together a case study (CS). The actions undertaken in each case study will be supported by **WP3 and WP4** by producing tailored datasets, implementing models and digital tools to better characterize the impact of the NBS implementation for different scenarios and help to explore the most convenient adaptation pathways. Moreover, data will also be collected within **WP2 and WP6** activities, WP2 being dedicated to engaging with local stakeholders including citizens and WP6 aiming at testing with local actor’s different tools to source fundings for accelerating NBS implementation.

The NATALIE DMP describes the interaction of data within the whole project, from the inputs of external and reputable sources, the data generated by the partners, the inheritance of data between the WPs and case studies of the project, and the final outputs generated. Most of the data gathered and generated that will be considered relevant for the project development and achievement of its goals, will be centralized in the **Knowledge Booster**, defined and implemented by **WP3 and WP4** (Figure 1). In addition, these key data plus any other data that might be considered of general interest will be shared with any citizen through the **Zenodo repository** [3].



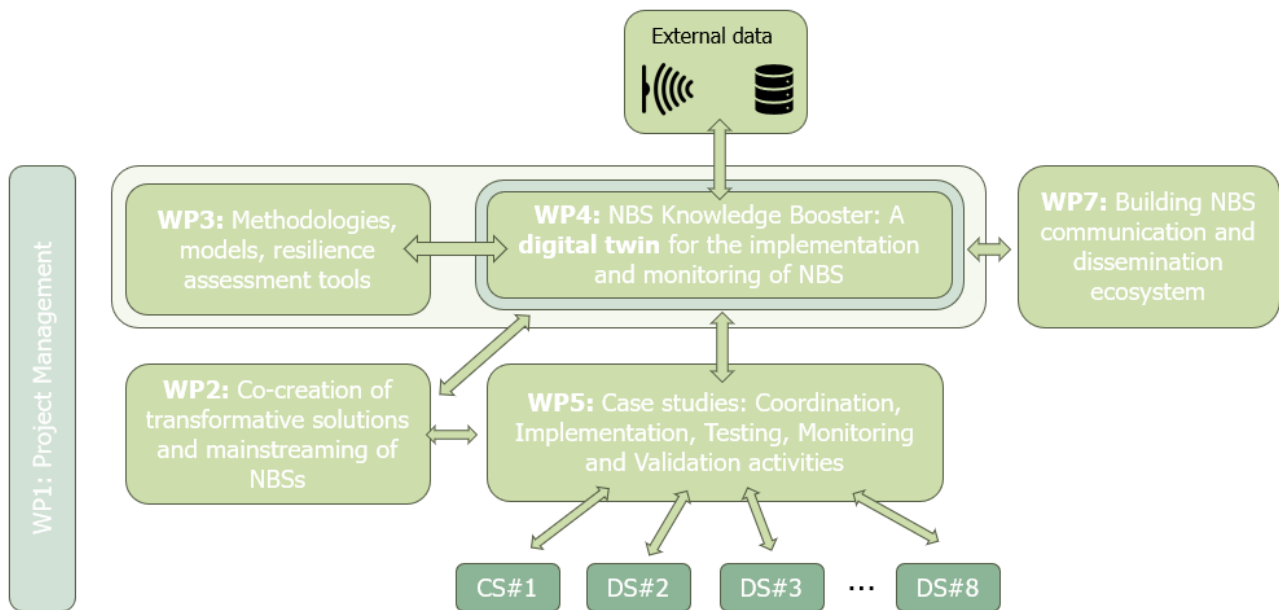


Figure 1: WP inter-linkage of the NATALIE project.

Table 1 below provides a summary of the anticipated data at the start of the project for all the Work Packages (WPs) and Tasks, as outlined in the Grant Agreement. For the next version of the DMP (M30). The actual datasets generated along the project execution will be reported and described in greater detail in the Annex.

Table 1 : List of expected datasets to be produced in NATALIE project for each WP.

	Description	Sharing Policy	Responsible/ Owner
<b>WP2</b>	<b>Co-creation of transformative solutions and mainstreaming of NBSs</b>		
<b>T2.1</b>	SH long list	confidential	UTH/WE&B
	SH - short list	confidential	UTH/WE&B
	SH relationships SNA	confidential	UTH/WE&B
<b>T2.2</b>	Stakeholder's data (confidential)	confidential	UTH/ICA
	policy documents		UTH/ICA
<b>T2.3</b>	Reports	confidential	EARTHWATCH
	list of participants		EARTHWATCH
<b>T2.4</b>	SNA surveys	confidential	WE&B/UTH
	TL list of participants		WE&B/UTH
<b>T2.5</b>	has not yet been determined		
<b>T2.6</b>	has not yet been determined		
<b>WP3</b>	<b>Methodologies, models, resilience assessment tools</b>		
<b>T3.1</b>	Classification of NBS and their role in risk assessment framework	open	AQUA
	List of climate variables of interest	open	AQUA
	List of Climate and socio-economic scenarios within NATALIE	open	AQUA
<b>T3.2</b>	NBS performance assessment simulation framework	open	NTUA
	Simulation methodologies for climate related hazards and impacts	open	NTUA
	List of tools and models for climate related hazards	open	NTUA
	List of tools and models for impacts	open	NTUA
	List of NBS Performance Assessment Indicators (simulation-related)	open	NTUA
<b>T3.3</b>	Integrated resilience assessment layer	open	NTUA
<b>WP4</b>	<b>NBS Knowledge Booster</b>		

<b>T4.1</b>	Questionnaires	open	EUT/NTUA
	User stories of the Knowledge Booster front end functionalities	open	EUT/NTUA
	Mock-ups of the Knowledge Booster front end functionalities	open	EUT/NTUA
	Architecture design of the Knowledge Booster backend	open	EUT/NTUA
<b>T4.2</b>	Architecture design of the Open Space	open	EUT/NTUA
	Knowledge Booster and Open Space software	open	EUT/NTUA
	Knowledge Booster and Open Space documentation	open	EUT/NTUA
	Simulated data for tool development	open	EUT
<b>T4.3</b>	AI and ML models for data cleaning and validation	open	UNEXE
<b>T4.4</b>	AI and ML models for data fusion	open	EUT
	Survey on data fusion tools for the NBS	open	EUT
	Documentation and User Manuals	open	EUT
	Scientific publication of results of T4.4	open	EUT
<b>T4.5</b>	KPIs management online tool software	open	NTUA
	Reports	open	NTUA
<b>T4.6</b>	Still to be defined		EUT
<b>WP5</b>	<b>Case Studies: Coord., Implem., Testing, Monitoring &amp; Validation activities</b>		
<b>T5.1</b>	Questionnaires	open	KWR
	reports	open	KWR
<b>T5.2</b>	Publications and posters	open	Multiple
	Sensor data	open	Multiple
	Satellite data	open	Multiple
	Models data	open	Multiple
	Gis data	open	Multiple
	Assets inventories	open	Multiple
	Infrastructures inventories	open	Multiple
	Elevation Maps	open	Multiple
	Fauna & flora inventories	open	Multiple
	Geologicla data	open	Multiple
	Groundwater level maps	open	Multiple
	Historical fire data	open	Multiple
	Land use maps	open	Multiple
	Livestock facilities inventory	open	Multiple
	Municipalities boundaries	open	Multiple
	Power grid Network	open	Multiple
	Protected Areas boundaries	open	Multiple
	Terrain type maps	open	Multiple
	Protected areas maps	open	Multiple
	Vegetation Maps	open	Multiple
	Water chemistry	open	Multiple
	Water distribution network	open	Multiple
	Water Quality data	open	Multiple
	Waterbodies imagery timeseries	open	Multiple
	Watercourse data	open	Multiple
<b>T5.3</b>	Surveys	open	NTUA
	reports	open	NTUA
<b>WP6</b>	<b>Investing in Ecosystem based adaptation for Climate Resilient Development</b>		
<b>T6.1</b>	Using the stakeholders long list of WP2	Confidential	GIB
	Policy and regulatory documents on national/regional/local levels		GIB
	Mapping of the stakeholders that have a stake in improving the risk of the hazard (floods, droughts etc.)		
	List of roles and responsibilities of important actors for the hazard management	Confidential	GIB
	Data for each historical floods (or droughts etc.) events, risks and hazards in the area		
	List of type of floods (or droughts etc.) in the area and the features		GIB
	List of ecosystem types in the area		GIB
	List of any potential development projects in or adjacent to the NbS site(s)		GIB
	List of potential public and private financial instruments to develop the project		GIB
	List of participants of workshops		GIB
<b>T6.2</b>	Climate data	open	ICA
	Meteorological data	open	ICA
	Socio-economic data	open	ICA

	Scenarios	open	ICA
	Questionnaires	open	ICA
	List of NbS benefits	open	ICA
	Cost and benefits assessment	open	ICA
	Reports	open	ICA
	Surveys	open	ICA
	List of participants of workshops		ICA
<b>T6.3</b>	Project survey	open	IISD
	Climate data	open	IISD
	Infrastructure scenarios	open	IISD
	Economic, environmental and social indicators	open	IISD
	CBA analysis	open	IISD
	Causal Loop Diagram (CLD)	open	IISD
	Excel based model or Vensim model	open	IISD
	Technical report	open	IISD
	Spatial Analysis	open	IISD
	Spatial Maps	open	IISD
	List of participants at workshops		
<b>T6.4</b>	Climate data	open	ICA
	Meteorological data	open	ICA
	Socio-economic data	open	ICA
	Scenarios	open	ICA
	Questionnaires	open	ICA
	List of NbS benefits	open	ICA
	Cost and benefits assessment	open	ICA
	Reports	open	ICA
	Surveys	Open	ICA
	Storyboards on NBS for FLs	Open	ICA
	List of participants of coaching sessions, webinars	Open	IISD
	Reports	Open	ICA, IISD
	Video records of coaching sessions	Confidential	IISD
	Presentations	open	ICA, IISD
	Funding web-platform	open	ICA
	Manuals	open	ICA
<b>T6.5</b>	Exploitation Roadmap for NBS	open	ICA
	Guidelines	open	ICA
	Presentations	open	ICA
<b>WP7</b>	<b>Building NBS communication and dissemination ecosystem</b>		
<b>T7.1</b>	Questionnaire data	Open	OiEau/ Multiple
	Multimedia data (interviews, video)	Open	OiEau/ Multiple
	Project communication materials (leaflet, roll-up, ..)	Open	Multiple
	Templates for presentations	Open	Multiple
	Participants/stakeholders contact email	Confidential	OiEau
	Website	Open	OiEau
	Social media posts	Open	OiEau/ Multiple
<b>T7.2</b>	Recommendation	Open	
	Participation data /workshop, webinars: (Personal data of participants, Audio recordings, interview transcripts, videos, images)	Open	OiEau
<b>T7.3</b>	Participation data: Personal data of participants, Audio recordings, interview transcripts, videos, images	Open	OiEau
	Presentations	Open	Multiple
<b>T7.4</b>	Social innovation Factsheet	Open	OiEau/Multiple
<b>T7.5</b>	Participation data /workshop, webinars: Personal data of participants, Audio recordings, interview transcripts, videos, images	Open	OiEau

This table will be updated in the following versions of the DMP. A list of specific datasets and their details will be collected with the shared living document “[NATALIE Data Inventory for the DMP.xlsx](#)” that will be shared across the consortium to be filled by all the partners. The content of this file will be added in ANNEX 1: Dataset Inventory. It will be filled by the partner responsible to collect each specific datasets and their

corresponding metadata. The owning partner of the dataset will also be responsible to upload it in Zenodo if applicable. Detailed instructions are provided in ANNEX 2: Procedure to upload datasets to Zenodo.

## 1.2 Purpose of data

The main goal of the data collection and generation is to foster the development of methodologies, strategies, and tools that effectively enhance the deployment of the NBS to be undertaken in the demo sites. Specifically, the purpose of data collection and generation is to:

- Develop a common conceptual, methodological, and practical framework for monitoring, modelling, and analysing the interventions in the DS through WP3 and WP4.
- Provide practical guidance tools and analysis framework to the DS to maximize the results of the interventions through WP2 and WP5.
- Develop tools to aid results exploitation and dissemination, and generate recommendations to enhance social knowledge about climate change risks and mitigation solutions, and to support data driven decision-making within the scope of WP7:
  1. individual utilization and interpretation of methodologies, policies, and tools.
  2. Insights gained from implementing these elements in the NATALIE demo sites.

The datasets gathered, generated, and stored within the NATALIE project will be potentially valuable, not only for the consortium partners but also for a diverse range of profiles like public administration, research sector, land planners, environmental associations, municipalities, governments, and citizens. The design of the plan will consider the utilization of project results not only during the project's duration but also in the post-project phase. The project will actively engage in promoting and creating awareness about the innovative solutions and advantages developed within NATALIE, with the objective of inspiring similar initiatives and enhancing business opportunities. All the valuable insights, conclusive recommendations, replication exercises, and informative workshops of the project will be made accessible to the general public and relevant stakeholder, thereby ensuring the sustained utilization of the project's outcomes in the long term.

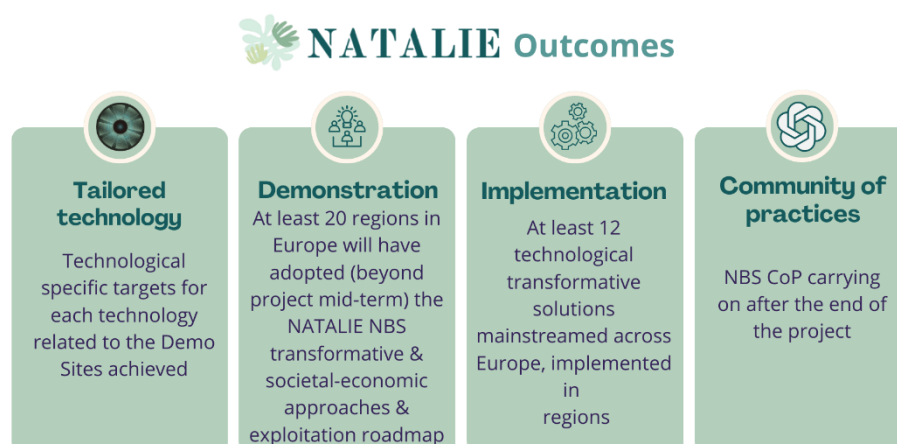


Figure 2: NATALIE's outcomes

It should also be taken into consideration that the primary purpose of NATALIE is not the collection of personal data. However, certain aspects of the data may be necessary for building various operational applications and conducting research, such as information on the Member State or region in which an individual is located, attributing a view to a particular organization or expert, and human markers. Additionally, research activities may indirectly result in the collection of personal data as part of a broader collection process. This implies that:

- The potential collection of personal data during NATALIE does not constitute an output of the research project, which further ensures data protection and safety.
- Any personal data that is not currently publicly available will be completely anonymized for external communications or publications, unless prior approval has been obtained from the individual concerned. Completely anonymized data is exempt from data privacy regulations once it has been fully anonymized.

It is considered “Personal data” any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. (For the full definition, see [REGULATION \(EU\) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 - General Data Protection Regulation](#)).

“Processing” means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organization, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

NATALIE partners will collect and process personal data only if and insofar as it is necessary for their research or other project activities such as stakeholder engagement, communications and dissemination. Partners will not use the data for other objectives than those explained to the participants in an appropriately worded information sheet / registration form / consent form / email. Examples of processing of personal data that are relevant to NATALIE include creating a list of participants or managing a database with personal data (e.g. to send invitations).

The collection of personal data as part of NATALIE may be undertaken using different methods. The main methods used will be interviews, questionnaires circulated to stakeholders and potentially through the direct online retrieval of publicly available data. Data collection, including personal data collection, is foreseen particularly in the context of the demo sites, their resilience knowledge booster (RKB) and stakeholder engagement activities, and the related communication and dissemination actions. This data collection will be done via (i) face-to-face interviews, (ii) interactive workshops, (iii) specific surveys; (iv) focus group sessions, (v) cookies inside the visual part of the platform, to gather information on individuals' views and experiences on various topics (being compliance with the GDPR). Interactions via email, social media or other means of communication could also generate personal data, as well as registration for events and the seeking of consent to publish photos, quotes, and other communications-related content. In this context, WP1 and WP7 are also involved. In addition, WP7 activities may also generate personal data collection needs.

More details about the management of personal data can be found in the dedicated deliverable D1.4 - Privacy, ethics and security requirements.

### 1.3 Types and formats of data

A wide range of data types and formats is expected to be collected and/or generated within NATALIE project. Some of the expected dataset types at this initial stage of the project after reviewing the Grant Agreement and summarizing the information gathered in consortium meetings and internal surveys are listed in Table 1 and Table 2. Data types detected so far are:

- Reports
- Publications and posters
- Multimedia data (image, video)
- Software
- Sensors data
- Observations data
- Models data
- Georeferenced data
- Models
- Simulated and historical data for tools development.
- Questionnaire and surveys
- Stakeholder data (confidential).

The data format selected will differ based on the type of data, but an effort will be made to achieve common formats among partners for each specific data types. Specific datasets generated along the project development will be listed in ANNEX 1: Dataset Inventory. The format of the first datasets of a specific type of data will be discussed and will serve as example of format for the upcoming datasets of the same type. The chosen formats will adhere to common practices considering the specific data type. The available formats include ASCII files like Log ASCII Standard (LAS), Comma Separated Values (CSV) files, Excel files, Geographic Information System (GIS) files, Shapefiles and vectors, as well as Grid and raster formats (netCDF, zarr), python notebooks.

The data format chosen will vary based on the type of data, but efforts will be made to achieve harmonization among partners for each specific data type. Specific datasets generated during the project's development will be listed in ANNEX 1: Dataset Inventory. The format of the first datasets of a particular data type will be discussed and will serve as an example of the format for the upcoming datasets of the same type. The chosen formats will adhere to common practices for the specific data type. The available formats might include ASCII files such as Log ASCII Standard (LAS), Comma Separated Values (CSV) files, Excel files, Geographic Information System (GIS) files, Shapefiles and vectors, as well as Grid and raster formats (netCDF, zarr), among others.

### 1.4 Origin of the data and re-use of existing datasets

All data used during the project will be sourced from reputable institutions to ensure quality. The selection of datasets for specific purposes, when multiple sources are available, will be determined after consulting experts in the field and conducting an extensive literature review. Data obtained from measurements conducted within the project will be analyzed and, if necessary, preprocessed using the tools developed in T4.3 'Small Data Empowerment, Reliability, and Trustworthiness' to ensure the required quality. A summary list of all required datasets detected so far by the Demo Sites is listed below in Table 2. Whether or not this data will be considered of interest to be stored or used as an intermediate step only is to be decided.

Table 2 : Data origin of expected datasets that will be used by the Case Studies.

#	Dataset	Responsible partner	Case Study	Origin
1	Downscaled Climate projections	AQUA	All	IPCC 6
2	Meteorological data	TBD	All	TBD
3	Sensor data (custom)	Each CS	All	TBD
4	Aerial Images	Each CS	1, 6,	TBD
5	Anti-fire zones	Each CS	1,	TBD
6	Assets repository	Each CS	5,	TBD
7	Bathymetry	Each CS	4,	TBD
8	Biodiversity indicators	Each CS	1, 4, 6, 8	TBD
9	Drainage network	Each CS	4	TBD
10	Elevation Maps	Each CS	2, 3, 4, 6, 8	TBD
11	Fauna & flora inventories	Each CS	6, 8	TBD
12	Fuel management maps	Each CS	1,	TBD
13	Fire suppression facilities	Each CS	1,	TBD
14	Gas Network	Each CS	2, 5	TBD
15	Geological data	Each CS	1, 2, 4, 5, 6	TBD
16	Groundwater level	Each CS	1, 5, 6,	TBD
17	Hydrological data	Each CS	1, 3, 4, 6, 8	TBD
18	Historical fire data	Each CS	1,2,3,4,6,7	TBD
19	Land use maps	Each CS	1, 2, 3,4, 5	TBD
20	Livestock facilities inventory	Each CS	3,	TBD
21	Municipalities boundaries	Each CS	1,	TBD
22	Pedologic data (soil)	Each CS	5,6	TBD
23	Powergrid Network	Each CS	1, 5	TBD
24	Roads	Each CS	CS1,	TBD
25	Terrain type maps	Each CS	2, 6, 8	TBD
26	Protected areas maps	Each CS	1,2,3,8	TBD
27	Surface Infrastructures	Each CS	2	TBD
28	Vegetation Maps	Each CS	1,2	TBD
29	Land use maps	Each CS	1, 2	TBD
30	Water distribution network	Each CS	2, 5	TBD
31	WWTP specifications of Latvia region	Each CS	3,	TBD
32	Water Quality data	Each CS	4, 5	TBD
33	Water storage facilities	Each CS	2	TBD
34	Water Treatment facilities inventory	Each CS	3, 5	TBD
35	Waterbodies imagery timeseries	Each CS	2	TBD
36	Watercourse data	Each CS	5, 6	TBD

## I.5 Data assets storage and preservation procedures

At the current stage of the project (M6), this section outlines the proposal for data asset storage technologies and preservation procedures tailored to the various expected data types. The diverse solutions presented will be re-evaluated as the project advances. The initially proposed solutions may change, and additional ones might be suggested as the project evolves and new requirements emerge. The proposed solutions, summarized in Table 3, include Github repository for storing and sharing code and Zenodo for the rest of the datasets. Both platforms take care of backup and preservation of the content.

Table 3: Open repositories proposed in NATALIE

Data repository	URL of the repository	Brief description of the dataset
Zenodo	<a href="https://zenodo.org/communities/h2020_natalie_project">https://zenodo.org/communities/h2020_natalie_project</a>	A data repository to share datasets and other digital assets in open source.
Github	To be implemented	Github is the preferred open repository for code. A project repository will be proposed by Eurecat to store all the code generated. However, some partners can decide to use their own Github repositories for sensitive code.
Argos	<a href="https://argos.openaire.eu/">https://argos.openaire.eu/</a>	Argos is not a repository but a data management online tool that can be easily connected to Zenodo repository.

With respect to storage, protection, retention, destruction, or re-use of personal data, this takes place at the level of each individual organisation in the NATALIE consortium. These organizations should fully comply with applicable EU and national legislation on the issue of personal data protection.

## I.6 How these data will be useful

Most of the data generated in the NATALIE project will be openly accessible and will hold significant value not only for the NATALIE consortium, but also to other actors as public administration, research sector, land planners, water utilities, river basin authorities, environmental associations, municipalities, governments, and citizens alike among others.

The findings of the project will be utilized not only throughout its duration but also in the post-project phase by all project partners and associated stakeholders. The project will actively promote and raise awareness about the innovative solutions and advantages developed within NATALIE, with the aim of attracting new users and expanding business prospects. Valuable insights, final recommendations, replication exercises, and informative workshops will be made accessible to the public and relevant stakeholders, ensuring the long-term utilization of the project's outcomes.



## I.7 Open Science

NATALIE project must be compliant with Open Science policy as stated in Article 17 of the Grant Agreement. According to the European Commission, Open Science is “An approach to the scientific process that focuses on spreading knowledge as soon as it is available using digital and collaborative technology” [1]. It promotes the **principles of openness, transparency, and accessibility in scientific research**. It emphasizes the importance of making research outputs, such as publications and data, freely available to the public and other researchers. One of the cornerstones of Open Science is open access to scientific publications, which ensures that anyone can access and read research articles without any barriers, such as paywalls or subscription fees.

Under the Open Science framework, each beneficiary of research funding must ensure that all peer-reviewed scientific publications related to their results are openly accessible online. This is achieved through self-archiving in online repositories and providing immediate open access to the deposited publication under the latest version of the Creative Commons Attribution International Public License or a licence with equivalent rights, following the principle ‘**as open as possible as closed as necessary**’. For the publications on hybrid journals, the cost for publication will not be covered. The partners can check the policies of various journals with the online [journal checker tool](#) to find publishing options supported by OA policy.

There will be no specific publication procedures or journals imposed on the beneficiary partner for publishing their scientific work, as long as they comply with the FAIR (Findable, Accessible, Interoperable, and Reusable) and Open Science principles described in this document. However, as a consortium, we encourage each partner to consider the Open Research Europe open access publishing platform [4]. This platform is managed by the European Commission for the fast publication of research stemming from HORIZON Europe funding across all subject areas. It operates on an open peer review publishing model, where publications are made available within days of submission, followed by open invited peer review.

## II FAIR data

The FAIR data refers to a set of 4 core principles that delineate crucial considerations for contemporary data publishing framework. These principles focus on enabling both manual and automated processes for depositing, exploring, sharing, and reusing data [8]. Termed **Findable, Accessible, Interoperable, and Reusable**, they serve as the cornerstone for efficient data management and distribution.

The aim of adhering to these FAIR principles is to enhance the overall quality and impact of research. Making data transparent, shareable, and usable across various disciplines and research communities fosters collaboration, accelerates discoveries and maximizes the value of research data.

This section presents the FAIR principles and how NATALIE project will be compliant to them. As the project evolves, and unforeseen requirements arise, it might undergo iterative updates to furnish comprehensive details on how the data will adhere to the FAIR principles.

### II.1 Making data findable, including provisions for metadata

#### II.1.1 Making the data findable

All relevant scientific data and information will be easily accessible. The sharing of data involves two aspects: (i) distributing documents like deliverables and papers, and (ii) providing curated and/or raw data.

To ensure broad accessibility, sharable data will be uploaded to Zenodo. A standardized dataset reference and naming convention will be implemented for easy identification, following prescribed metadata standards. Zenodo, a widely used research data repository, will be extensively used throughout the project. It assigns a unique Digital Object Identifier (DOI) to all publicly available uploads, allowing easy and distinct citation. Zenodo also supports comprehensive content harvesting through the OAI-PMH protocol as defined by the Open Archive Initiative [5].

Given the complexity of Data Management Plans (DMP), adopting the online data management tool ARGOS will ease the streamlining management, validation, monitoring, and maintenance tasks.

Tools developed during the project will be shared on a GitHub code repository platform. This approach allows for the dissemination of both the code and associated properties (metadata) and usage instructions.

### II.1.2 Metadata creation standards

Standardizing metadata is essential to foster a shared understanding of the data and promote accurate and appropriate utilization by both owners and users. These standards serve two primary purposes: (i) establishing a common comprehension of the data's significance and (ii) ensuring the correct interpretation and utilization of the data. To fulfil these objectives, a set of defined characteristics or attributes has been established for the datasets. Metadata generation starts by naming the files according to a shared convention among all partners in the project. Figure 3 shows an example still to be confirmed by all partners.

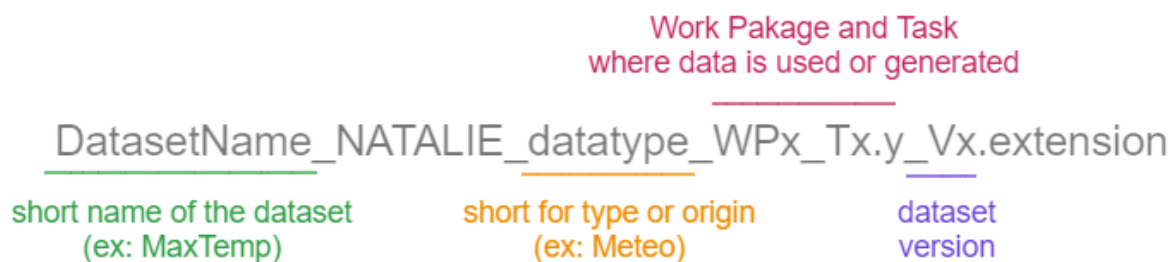


Figure 3: NATALIE naming convention for data files.

In addition to the dataset naming, and regardless of the final dataset being uploaded or not to Zenodo, the minimum metadata will also be collected for all datasets in the dataset inventory table (see ANNEX 1: Dataset Inventory). For datasets to be uploaded to Zenodo, detailed metadata will be required to be able to make the upload including information such as file size, format, data provider (owner), last update date, and time of update (see ANNEX 2: Procedure to upload datasets to Zenodo).

### II.1.3 Defining search keywords

The metadata creation standard includes a standardized description for each dataset, which aims to enhance the search and discovery of data properties. Zenodo repository standardization ensures that data is stored under specific structure to be easily identified in a historical basis. This common description will facilitate efficient and effective exploration of the data.

## II.2 Making data openly accessible

### II.2.1 Data availability

NATALIE is committed to producing and sharing public datasets through Open Access (OA) following the principal ‘as open as possible as closed as necessary’. These datasets will include a wide range of information, such as socio-economic, biophysical, climatic, and geospatial data. All these datasets will be made available on Zenodo under the latest available version of the Creative Commons Attribution International Public License, unless providing open access would in particular:

- be against the beneficiary’s legitimate interests, including regarding commercial exploitation, or
- be contrary to any other constraints, in particular the EU competitive interests.

Furthermore, the outcomes of the models applied to the case-study information will be disseminated alongside the datasets. In this process, permissions will be diligently sought from the relevant case-study partners and data providers, ensuring responsible and transparent sharing of valuable insights.

This section will be refined in subsequent iterations to provide detailed information on how data will be made accessible, assessable, and intelligible, more specifically:

- Specifics on which data will be made openly available.
- Which data is kept closed and provide the rationale?
- How the data will be made available.
- What methods and software tools are used to access the data.
- Documentation of software needed to access the data included.
- Inclusion of relevant software.
- Data and associated metadata, documentation, and code deposit.
- Provision of access provided in case of restrictions.

The future versions of the Data Management Plan will be supported by the [ARGOS](#) open access web tool. This tool can be easily integrated with Zenodo repository and can automatically retrieve datasets descriptions and metadata. Given the growing complexity of the Data Management plan this will be the optimal solution to ease the process of management, validation, monitoring, and maintenance. The laborious process of validating dataset formats will be significantly expedited, leading to substantial time savings.

As detailed in Section 0, all data, information, and knowledge considered relevant for the scientific community will be made accessible under OA. When a dataset is made publicly accessible, the corresponding information in the DMP will be fulfilled and updated accordingly.

Regarding Scientific publications, the open science principles will be followed as described in section I.7.

### II.2.2 Data to be kept closed.

Certain data collected throughout the project may need to be kept confidential for various reasons, such as intellectual property (IP) concerns, personal information gathered from surveys, or sensitive details related to infrastructures and institutions. As the project progresses, any such data requiring confidentiality will be identified and documented in this section (Table 4). Additionally, metadata concerning the dataset can be uploaded to Zenodo to communicate the existence of the dataset and granting the opportunity to third parties to request access to the dataset.

Table 4: Summary of data collected and/or produced to be kept closed. (to be populated as the project evolves and confidential datasets are identified)

Dataset identifier	Short description	Reason(s) to be kept confidential

## II.3 Making data interoperable

All data collected and/or generated within the project will adhere to interoperability standards. A dedicated effort will be made to adopt international standards for naming conventions, metadata, formats, and other relevant aspects. This commitment aims to facilitate seamless data exchange and reusability among researchers, institutions, organizations, and across borders. Consistent application of standard vocabulary for all data types will further enhance interdisciplinary interoperability.

## II.4 Increase data re-use

This section will undergo updates in subsequent iterations to furnish comprehensive details on enhancing the usability of data beyond its original intended purpose. The specifics include:

- Licensing strategies for data to facilitate extensive reuse
- Ensuring data availability for reuse
- Explanation and duration of data embargoes
- Making data usable by third parties post-project completion
- Imposing restrictions on the reuse of certain data
- Implementing processes for assuring data quality
- Determining the duration during which data will remain reusable

As elaborated in Section 3, all data, information, and knowledge deemed pertinent to the scientific community will be made accessible under Open Access whenever feasible. When a dataset is slated for public accessibility, this information will be provided, and the Data Management Plan (DMP) will be updated accordingly.

### II.4.1 Data Licensing to Permit the Widest Reuse Possible

The initial proposal suggests employing the Creative Commons Attribution Share-Alike 4.0 License, enabling sharing, remixing, transforming, and building upon the material for any purpose, with redistributed products under the same license. The final decision on this matter is pending at this stage of the proposal.

### II.4.2 Data useability after the end of the project

Open Data used by third parties should be cited accordingly with the rules established by Zenodo in case datasets and model outputs. These rules include the name of the authors, the project, the DOI, the nature of the document and the year of publication. For the possible restricted data sources, it will be assessed with the consortium partners the best way to publish them if possible before M48.

### II.4.3 Data quality assurance processes

All data used in NATALIE will be derived from trustworthy open data repositories and in-situ measurements conducted within the project. Datasets uploaded to Zenodo will be reviewed before the final publication.

### II.4.4 Length of time for which the data will remain re-usable

The data slated for open accessibility will undergo continuous updates along the duration of the NATALIE project. After the end of the project, the data will be archived in Zenodo without any additional updates where they will remain accessible for at least 20 years according to the last Zenodo Policies [3]. The digital tools crafted during the project will remain accessible throughout the project's duration in the Knowledge booster. Beyond this period, the services offered by the digital tools will be suspended for public use if no income is generated to support their maintenance, but the source code will be kept in GitHub repository which does not state a deletion date in their current policy.

## III Allocation of resources

### III.1 Costs of making data FAIR in NATALIE

The estimated cost to ensure Data Management according to the FAIR standards as described in this document is 0.75 PM per each of the 8 Case Study. That is a total of 6 PM. Each WP leader will also be responsible for providing metadata and maybe (depending on the procedures you will decide) upload datasets on Zenodo/Argos + publishing codes in Github.

Need to also specify the coverage of costs linked to open access publication and accessibility of scientific articles.

**How will these be covered?** The aforementioned costs will be covered by each partner's project budget.

**Responsible for data management:** Eurecat (EUT) is the responsible partner for coordination of the data management. However, all partners that will generate or gather data will be responsible of complying this DMP. Specifically, they will be responsible for listing any dataset generated in the Data Inventory document described in ANNEX 1: Dataset Inventory. For datasets considered of scientific relevance the partner owning the data will also be responsible to upload it to Zenodo repository in the NATALIE project Community as described in ANNEX 2: Procedure to upload datasets to Zenodo.

## IV Data security

All provisions for data security will be established by the following data repositories and digital assets:

- Zenodo: As wide used repository, has its own data protection, backup strategies and also data accessibility and authorship.
- Github: Widely used code repositories, they also have their own protection, backup strategies, and the authorship and intellectual property control by the automated definition of software licenses.
- Knowledge Booster (KB): The KB will include specific security mechanism to access information. Cookies and other aspects will be in compliant with GDPR.

In NATALIE, all production servers with corresponding open access will be situated in the EU and will adhere to EU legislation on data security and privacy. Within this service, NATALIE will implement backup strategies to ensure the long-term assurance of data.

For Zenodo, in accordance with their policies on longevity, the following capacities will be adopted for data preservation and curation[3]:

- **Versions**: Data files will be versioned. The uploaded data will be archived as a Submission Information Package. Derivatives of data files will be generated, but original content will never be modified. Records can be retracted from public view; however, the data files and record are preserved.
- **Replicas**: All data files will be tentatively stored in CERN Data Centres, primarily Geneva, with replicas in Budapest. Data files will be kept in multiple replicas in a distributed file system, which is backed up to tape on a nightly basis.
- **Retention period**: Items will be retained for the lifetime of the repository. This is currently the lifetime of the host laboratory CERN, which currently has an experimental program defined for the next 20 years at least.
- **Functional preservation**: Zenodo makes no promises of usability and understandability of deposited objects over time.
- **File preservation**: Data files and metadata are backed up nightly and replicated into multiple copies in the online system.
- **Succession plans**: In case of closure of the repository, best efforts will be made to integrate all content into suitable alternative institutional and/or subject based repositories.

## V Ethical Aspects

Ethical aspects are further developed in deliverable D1.4 Privacy, ethics and security requirements. This section outlines the main ideas regarding this topic.

Within the NATALIE project only general ethical issues are relevant such as informed consent, anonymity and confidentiality associated with the voluntary involvement of human participants in the European Union. Types of such data collected in NATALIE are various user interviews, opinions and reviews associated with project's components and demo-cases. Non-exhaustive list is as follows:

- Close involvement of industrial operators, managers and regionalities in order to distil efficient practices and demonstrate the NATALIE reference digital platform.
- The visualization and human interfaces to collect information from users so that the NATALIE NBS KB and subsequent modules could support in industrial decision-making to put in practice efficient operational decisions.
- A series of interviews with key stakeholders and decision makers.
- The relevant stakeholders (end-users, potential developers, and partners, etc.) will be provided the opportunity to test and review the latest products and services offered by NATALIE.
- Methodology and procedures for sensitive data processing and storing will be specified as a part of the ethics. It is important to emphasize that special efforts will be devoted to ensuring data integrity and privacy (Task 1.3) as well as trustworthy and reliability. Mechanisms to delete personal data will be provided in an easy and usable manner.

To strengthen further commitment of NATALIE partnership research, a good ethical practices and guidelines will ensure fair and equal power relationships between researchers and participants. In this regard, the consortium agrees to comply with the principles laid down in the [European Code of Conduct for Research integrity](#) published by the European Science Foundation. These principles mainly highlight:

- Honesty in communication of the research's goals and intentions, in reporting methods and procedures and in conveying interpretations;
- Reliability in performing research;
- Objectivity, which requires facts capable of proof, and transparency in the handling of information;
- Impartiality and independence;
- Openness and accessibility;
- Duty of care - all researchers have a duty of care for the humans, animals, the environment or the objects that they study;
- Fairness in providing references and giving credit for the work of others;
- Responsibility for the scientists and researchers of the future;
- Care will be taken to minimize the potential collection of personal data, e.g. while taking photos and/or videos during events.

In this regard, NATALIE will not involve any potentially vulnerable groups or people unable to consent (children, those with a learning disability or cognitive impairment, or individuals in a dependent or unequal relationship). Moreover, it will not involve sensitive topics which might induce psychological stress, anxiety or humiliation, deception or any potential increased danger to participants, or the collection of personal data from participants.

Further, the NATALIE solutions, processes and methodologies will not involve the collection or processing of the following types of data:

- Research involving sensitive topics - for example participants' sexual behaviour, their illegal or political behaviour, their experience of violence, their abuse or exploitation, their mental health, or their gender or ethnic status;
- Research involving groups where permission of a gatekeeper is normally required for initial access to members - for example, ethnic or cultural groups, native peoples or indigenous communities;
- Research involving deception, or which is conducted without participants' full and informed consent at the time the study is carried out;
- Research involving access to records of personal or confidential information, including genetic or other biological information, concerning identifiable individuals;
- Research which would induce psychological stress, anxiety or humiliation or cause more than minimal pain;
- Research involving intrusive interventions - for example, the administration of drugs or other substances, vigorous physical exercise, or techniques such as hypnotherapy. Participants would not encounter such interventions, which may cause them to reveal information, which causes concern, in the course of their everyday life;
- Research involving the tracking or observation of participants (e.g. surveillance or localization data, and Wide Area Network -WAN- data, such as IP address, MACs, etc.). However, 'cookies' will be used in the website and the graphic user interface to help analyse how users behave while interact with NATALIE digital tools.

- A privacy statement will be put on the website regarding the use of external services like Google Analytical (or similar) to track and get statistics from users in the use and interaction with the website. A similar privacy statement will be put on the graphical user interface with similar purposes. Moreover, it is important to notice that none of the data collected by the NATALIE project requires a notification or authorisation for the collection and/or processing of the personal data to authorities or other responsible entities.

To ensure that NATALIE partnership's participatory research approaches (including those activities to collect user requirements and involvement of the demo-cases) follows good ethical practices and ensures fair and equal power relationships between researchers and participants, the consortiums agrees that they will sign, make public and implements an ethics agreement, based on [the European Code of Conduct for Research Integrity](#), published by the European Science Foundation.

The NATALIE consortium also agrees to follow the rules and guidelines of the [GDPR EU](#) regulation adhered to the data privacy and security of personal information across their digital and [non-digital developments](#). In this regard, the following conditions enable to elaborate the [Data Impact Assessment](#) to ensure correct protection of the users' information:

- Use and elaboration of newer technology.
- Track of people's location and behavior.
- Systematically monitoring a public accessible place on a large scale.
- Processing personal data related to "racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation".
- Data processing is used to make automated decisions about people that could have legal (or similarly significant) effects.
- Processing could result in physical harm to the data subjects if it is leaked.

Two Partners in the consortium are not EU members and are located in Norway (UIT), and United Kingdom (EXETER). The consortium confirms that the ethical standards and guidelines of Horizon2020 will be rigorously applied, regardless of the country in which the research is carried out. According to Commission decisions, personal data can flow to and from Norway and the UK without any safeguards being necessary.

## V.1 Consent guidelines

For the purposes of the project and according to the GDPR guidelines specific consent guidelines are practiced:

- Consent must be freely given. No data subject will be cornered into agreeing upon the usage of their data. Consent to data processing will not be a condition of using the data. The one exception is when some piece of data is needed for the data subject to provide them a data related service.
- Consent must be specific. The request for consent will be presented in a manner which is clearly distinguishable from the other matters. It will be clear what data processing activities are carried out, granting the subject an opportunity to consent to each activity.



- Consent must be informed. The users will be aware of the data processor’s identity, the processing activities that will be conducted, the purpose of the data processing, and that they can withdraw their consent at any time. The latter will be described in plain language (“in an intelligible and easily accessible form, using clear and plain language”). That means no technical jargon or legalese. Anyone accessing the digital twin will be able to understand what they are asked to agree to.
- Consent must be unambiguous. There will be no question about whether the data subject has consented. Consent will be clear in any circumstances.
- Consent can be revoked. Digital tools and data users will have the right to withdraw consent at any time. This process will be foreseen to be made easy for them to do so.

## V.2 Intellectual Property Rights (IPR)

Intellectual Property Rights (IPR) will receive special attention from the beginning. All rules regarding management of knowledge and IPR are governed by the CA. NATALIE will not act in contradiction with the rules laid down in Annex II of the Grant Agreement. The CA will address background and foreground knowledge, ownership, protected third party components of the products, and protection, use and dissemination of results and access rights. In this regard, the following principles are applied:

- **Confidentiality**: During the project duration and beyond, the contractors shall treat any information, which is designated as property by the disclosing contractors, as confidential. They also shall impose the same obligations to their employees and suppliers.
- **Pre-existing know how**: Each Contractor is and remains the sole owner of its IPR over its pre-existing know-how. The Contractors will identify and list the pre-existing know-how over which they may grant access rights for the project. The Contractors agree that the access rights to the pre-existing know-how needed for carrying out their own work under the project shall be granted on a royalty-free basis.
- **Ownership and protection of knowledge**: The ownership of the knowledge developed within the project will be governed by an open-source license.
- **Open data**: Data and results obtained during the project that are based on open public-sector data will be made available free of charge.

The procedures for the dissemination, protection and exploitation of intellectual property rights (IPR) are in the Consortium Agreement (SECTION 2 RULES FOR CARRYING OUT THE ACTION, ARTICLE 16: INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS —ACCESS RIGHTS AND RIGHTS OF USE). The intention has been to balance the requirements necessary to protect such intellectual property and the foreseen dissemination objectives. IPR will be applied according to the rules of the employer under the applicable European and national laws and regulations.

## VI References

- [1] [Open Science - European Commission \(europa.eu\)](#)
- [2] Horizon Europe, Data Management Plan Template: URL: <https://enspire.science/wp-content/uploads/2021/09/Horizon-Europe-Data-Management-Plan-Template.pdf>
- [3] [Zenodo](#) repository
- [4] [Open Research Europe | Open Access ... | Open Research Europe \(europa.eu\)](#)
- [5] Open Archives Initiative (AOI) <https://www.openarchives.org/>
- [6] European Commission (2021): «Forging a climate-resilient Europe - The new EU Strategy on Adaptation to Climate Change», SWD (2021)
- [7] European Commission (2021): «Climate change adaptation mission, Support at least 150 European regions and communities to become climate resilient by 2030 Implementation plan».
- [8] WILKINSON M. D. *et al* (2016): The FAIR Guiding Principles for scientific data management .and stewardship, *Scientific Data*, Vol.3, article 160018, 2016.

## VII ANNEXES

### VII.1 ANNEX 1: Dataset Inventory

Every partner gathering/generating a new dataset needs to update the “NATALIE Data Inventory for the DMP.xlsx” document that located in the folder WP1 – Project Management > 1.3 – Privacy, security, ethics & data management > Data Management Plan (DMP).

In the first Seet of the document, we can find instructions to fill the table (Figure 4). The second sheet is a table where all datasets with the corresponding metadata will be listed (Figure 5).

**PROCEDURE FOR NEW DATASET ACKNOWLEDGMENT and DMP UPDATING**
**Summary:**

- 1- Fill the inventory table in the next tab with all the information of new dataset.
- 2- Upload the dataset to Zenodo when applicable (Make sure you select community "H2020 NATALIE Project". More details on the process in D1.3).
- 3- The dataset uploaded will be validated by the consortium (in the Zenodo platform) before publishing.
- 4- EUT/OIEau will update the DMP (D1.3 being a living document).

**Who is concerned by Data Management?**

In the context of NATALIE, all the partners have to be involved in Data Management which includes: creation, collection, storage and accessibility of data. The coordinator organises general Data Management with the support of WP Leaders. Each partner creating a dataset has to safely store it, provide metadata and ensure accessibility.  
*For more details: read "D1.3: Initial Data Management Plan"*

**Reminder of contractual obligations**

NATALIE project, as all the H2020 projects, is Open Data compliant and follows the FAIR principles for data management (Findable, Accessible, Interoperable and Reusable). It implies that the NATALIE consortium has to make it possible to:  
 - Develop (and update) a Data Management Plan (DMP) → initial DMP done M6 (intermediate DMP will be written in M29 and final DMP in M60)  
 - Deposit the data produced in a research data repository → a community for NATALIE has been created on the public repository ZENODO  
 - Ensure that our data are FAIR for third parties → each partner creating a dataset will be asked to fill in the Inventory Table in the next sheet of this excel file

**What is a dataset?**

A dataset is primarily related to research results. → All Peer-reviewed research articles (published in scholarly journals) and research data (datasets underlying publications, curated data and/or raw data) generated by NATALIE project are concerned and must be deposited on ZENODO.

A dataset could also be several other type of information, in different formats: a table containing information (word or excel), a picture, code, a ppt presentation, an article (wether scientific or popularized), a video ... Whatever you would like to share or to promote.



Upload a dataset on ZENODO is also a mean to increase the visibility of your research.

To upload a dataset on Zenodo, all formats are accepted (even .zip (with different files inside)).

**Objective of this excel?**

This Excel file will be used to monitor all datasets created within the NATALIE project and their associated metadata. It will ensure that the consortium complies with the Open Data and FAIR guidelines outlined in the Grant Agreement by adhering to the procedures described in the Data Management Plan (D1.3, D1.5, D1.6).

All these information are needed to organize Data Management.

The objective is to centralize all information related to datasets used/generated in NATALIE and minimize the number of documents to be filled by each partner.

**What do you have to do and when?**

In the Initial DMP, several datasets have been identified by WP leaders, task per task. *(full list available on D1.3)*

Each time a dataset is created, the partner ownig this dataset has to:

- 1- fill the 2<sup>nd</sup> sheet "Inventory Table" for a dataset to be put on D1.3
- 2- upload the dataset to the H2020 Natalie Project" community in Zeneodo when applicable (find details about the procedure in D1.3)
- 3- when the dataset is code, make sure it is uploaded in the project github repository

Once you have filled in this excel, and uploaded the repository for review comunicte to EUT and OIEau who will start the review process and feed the DMP.

**Naming convention for dataset files ( according to D1.3)**

Work Package and Task  
where data is used or generated

DatasetName\_NATALIE\_datatype\_WP<sub>x</sub>\_Tx.y\_Vx.extension

short name of the dataset (ex: MaxTemp)      short for type or origin (ex: Meteo)      dataset version

Figure 4: First Sheet of the Data inventory document with Instructions on how to proceed when a new dataset is generated. This includes how to fill the Data Inventory table in sheet 2.

NATALIE Data Inventory																	
Dataset No	Dataset Description				Data source				Data Sharing								
	Related Task	Owner partner(s)	Last Update	Identifier	Data Type	Detail if "other"	Short Description	Cite associated Scientific publication(s) if any	File(s) format	Estimated size (MB,GB)	Origin	Detail if "other"	ref. if pre-existing	Openness	Reasons for restriction	Uploaded to Zenodo	Uploaded to GitHub
0	T3.1	KLCX	10-11-23	(this is an exemple) Climate scenarios for CS	report		A report with the recommendations to select climate scenarios for each CS.	"Climate scenarios..." the journal of...	pdf	25 MB	Compilation			Open Access (OA)	N/A	Pending	N/A
0	T4.2	EUT	11-11-23	(this is another exemple) NBS open space	software		Repository with the code of the back end of the open data space	N/A		500 MB	Coding			Open Access (OA)	N/A	N/A	Yes

Figure 5: Second sheet of the Data Inventory document with the table to be filled by partners when a new dataset is generated.

## VII.2ANNEX 2: Procedure to upload datasets to Zenodo.

To upload a dataset to Zenodo, you need to create an account in the platform. Once you are logged in the platform you can upload a dataset following the instructions given in the portal and making sure you select the community “HEU Natalie Project”. A summary of the process is explained below:

1. Log in the Zenodo Platform
2. Select New upload
3. **Select the community HEU Natalie Project (Figure 6)**

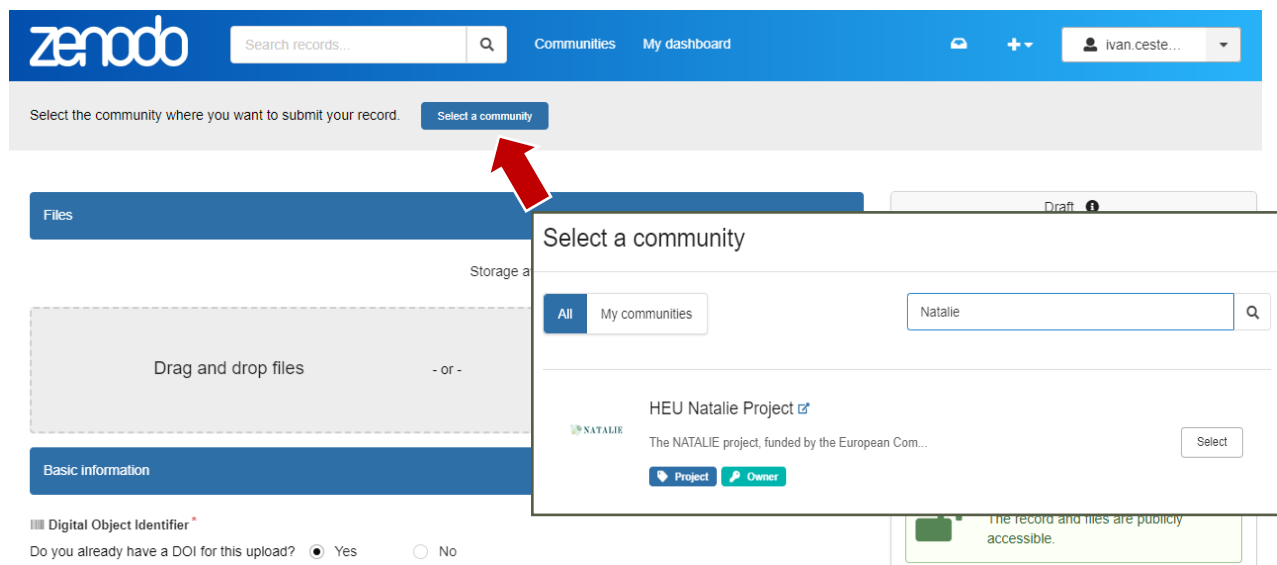


Figure 6: Select the correct community before uploading the dataset.

4. Follow the instructions provided by the platform to upload your dataset and fill the required metadata. Metadata marked with the red\* is compulsory, the rest is recommended depending on the type of dataset. This is left to the dataset owner.
5. Select Visibility “Public”.
6. Once all the information is filled in press “Publish”. The dataset will be reviewed before being online.



# NATALIE

Accelerating and mainstreaming transformative NATure-bAsed solutions to enhance resiLIEence to climate change for diverse bio-geographical European regions



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