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Data Management Plans in practice:

From Horizon Europe Requirements to FAIR and CARE Data

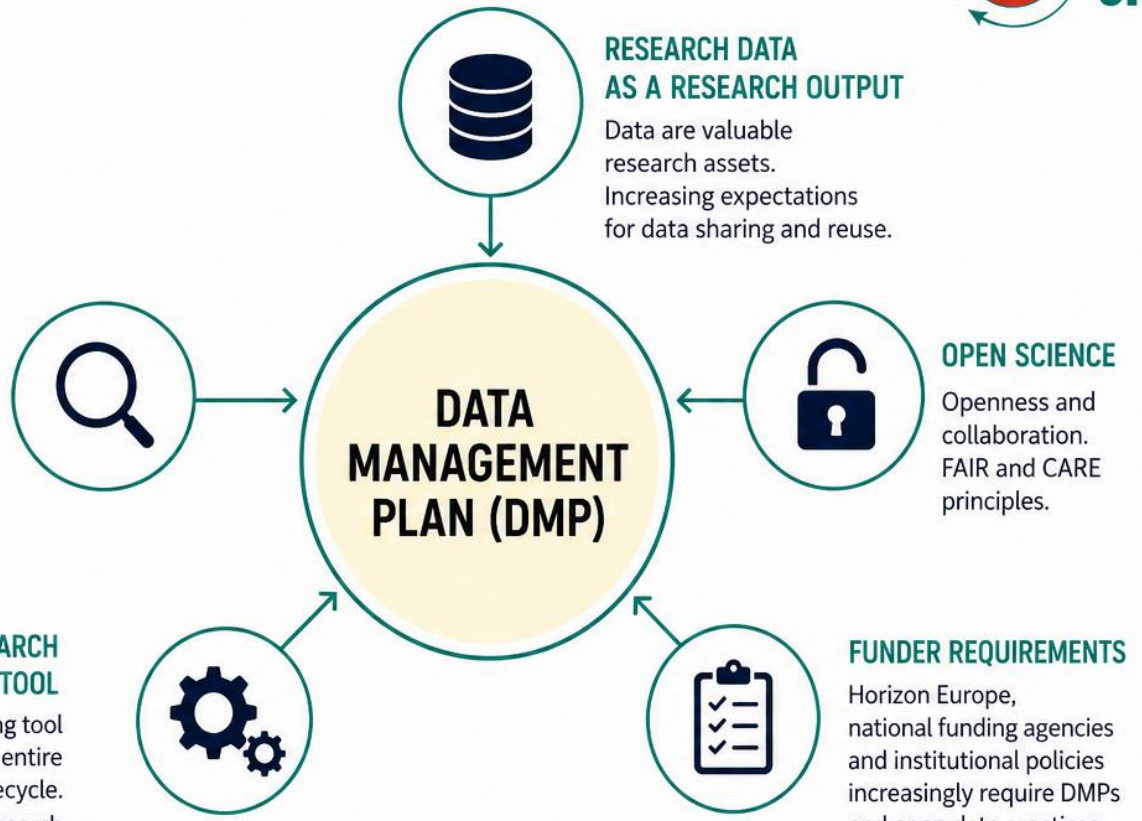
Magdalena Szuflita-Żurawska, Gdańsk University of Technology

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WHY ARE WE TALKING ABOUT DMPS?

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RESEARCH DATA AS A RESEARCH OUTPUT

Data are valuable research assets. Increasing expectations for data sharing and reuse.

REPRODUCIBILITY AND TRANSPARENCY

DMPs promote research integrity by enabling verification, reproducibility and reuse of results.

OPEN SCIENCE

Openness and collaboration. FAIR and CARE principles.

DMP AS A RESEARCH MANAGEMENT TOOL

A practical planning tool that supports the entire data lifecycle.

It is about good research management, not administrative paperwork.

FUNDER REQUIREMENTS

Horizon Europe, national funding agencies and institutional policies increasingly require DMPs and open data practices.

DMPs help researchers plan, manage and share data responsibly — strengthening quality, impact and trust in research.

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WHAT IS A DATA MANAGEMENT PLAN?

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DEFINITION

A Data Management Plan (DMP) is a formal document that describes how research data will be handled during and after a project.

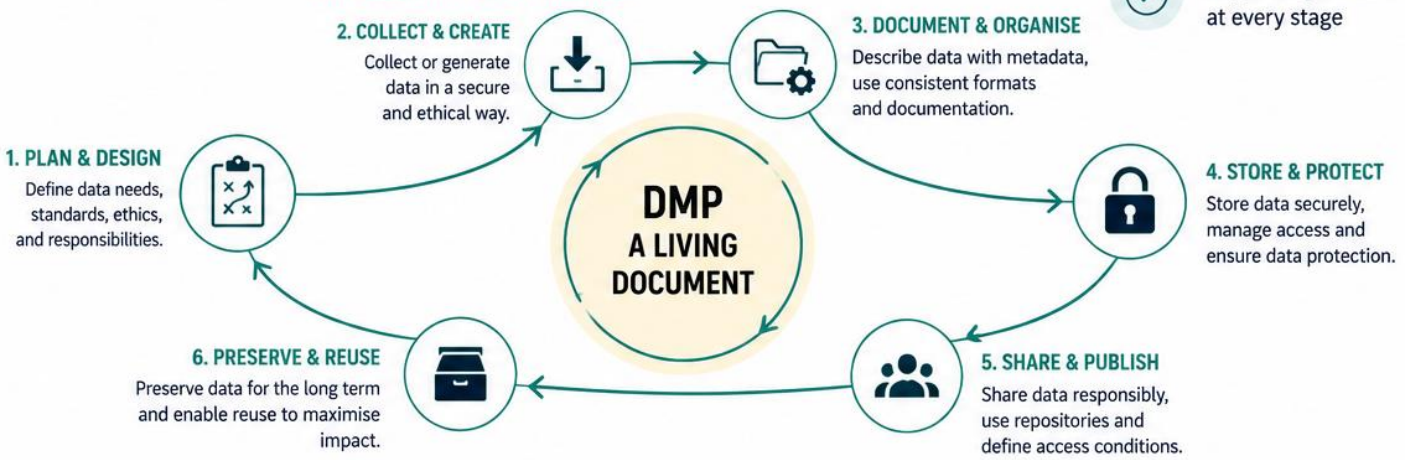
KEY MESSAGE:

A **DMP describes** how **research data** will be **collected, documented, stored, protected, shared** and **preserved throughout and after a project.**

LIVING DOCUMENT

- Created early in the project
- Updated as the project evolves
- Revised when data, risks or plans change
- Supports good decisions at every stage

THE RESEARCH DATA LIFECYCLE



A good DMP helps you:

- Protect your data and participants
- Meet funder requirements
- Increase research quality and impact
- Enable sharing and reuse

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HORIZON EUROPE REQUIREMENTS

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CURRENT REQUIREMENTS

- DMP mandatory for projects generating or reusing data
- Living document
- Updated during project lifecycle
- FAIR principles expected
- Repository deposition encouraged

What is changing in Horizon Europe FP10?

FUTURE TRENDS

- Stronger emphasis on FAIR-by-design
- Machine-actionable DMPs (maDMPs)
- Integration with EOSC
- Data stewardship support
- Increasing attention to AI readiness and metadata quality

HORIZON EUROPE
Funding requirements promote responsible data management and reuse.

→

EOSC
European Open Science Cloud enables secure, trusted sharing and access to research data.

→

AI-READY DATA
High-quality, well-described and FAIR data are essential for trustworthy and responsible AI.

Horizon Europe → EOSC → AI-ready data

Better data management today builds the foundation for Open Science and the AI-enabled future.

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DMPs ACROSS THE HORIZON EUROPE PROJECT LIFECYCLE

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Horizon Europe expects researchers to plan for Open Science and Data Management from the proposal stage to long-term preservation.

1 PROPOSAL SUBMISSION

Open Science Practices

Applicants describe:

- research data management approach
- FAIR principles
- open access strategy
- reuse and sharing plans

Proposal section: Open Science

2 GRANT AGREEMENT

Project starts

Researchers review:

- data types
- repositories
- legal and ethical constraints
- responsibilities

3 MONTH 6

First Data Management Plan

Mandatory for projects generating or reusing research data

The DMP should describe:

- data collection
- documentation
- storage
- sharing
- preservation

4 PROJECT IMPLEMENTATION

Living Document

DMP is updated when:

- new data are collected
- methods change
- repositories change
- ethical risks emerge
- access conditions change

5 PROJECT END

Data deposited in trusted repositories

Research outputs become:

- FAIR
- reusable
- preserved

At proposal stage → Start of the project → By month 6 → Throughout the project → End of the project and beyond

A good DMP is a living document that supports responsible data management, compliance with funder requirements and high-quality research.

DMP TOOLS AND RESOURCES

- **DMPonline** by Digital Curation Centre (DCC)
- **Argos** by OpenAIRE
- **DAMAP** by TU Wien
- **Data Stewardship Wizard** by ELIXIR

Explore more tools and guidance through your institution or national support services.

PROPOSAL (Open Science commitments) → DMP (Plan data management in detail) → FAIR DATA (Well-managed, findable and reusable) → EOSC (Share and connect via European Open Science Cloud) → REUSE (Maximise impact and scientific value) → AI-READY DATA (High-quality data to support AI and innovation)

★ See the Horizon Europe Programme Guide (Part A, Annex 5) for detailed requirements on Open Science and Data Management.

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DMPs AND THE FAIR PRINCIPLES

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A good Data Management Plan helps you put FAIR data into practice – responsibly.

FAIR PRINCIPLES

Making data Findable, Accessible, Interoperable and Reusable

F – FINDABLE

Data and metadata are easy to find for both humans and machines.

A – ACCESSIBLE

Data are available using clear access conditions and standards.



R – REUSABLE

Data are well-described, licensed and of high quality so they can be reused with confidence.

I – INTEROPERABLE

Data use standard formats and vocabularies so they can work with other data and systems.

CARE PRINCIPLES

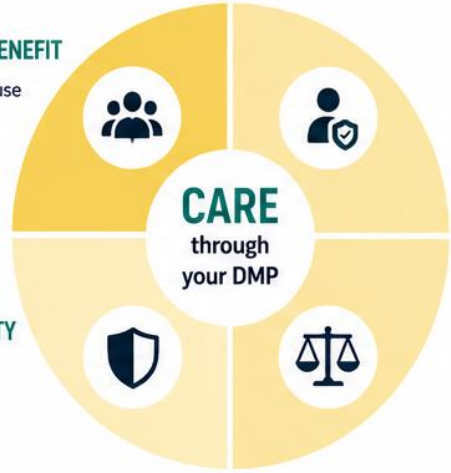
Ensuring responsible and ethical data management

C – COLLECTIVE BENEFIT

Consider how data use benefits individuals, communities and society.

A – AUTHORITY TO CONTROL

Respect the rights and governance of data owners and communities.



R – RESPONSIBILITY

Manage data with care, minimise harm and ensure accountability.

E – ETHICS

Identify and mitigate risks, protect privacy, and ensure ethical use of data.

Your DMP connects FAIR and CARE

FAIR makes data usable and valuable.

CARE ensures data are used responsibly and ethically.

Together they enable trustworthy, open and impactful research.

FAIR without CARE can cause harm.
CARE without FAIR limits benefit.

→ **A good DMP balances openness with responsibility throughout the research data lifecycle.**

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TYPICAL STRUCTURE OF A DMP

1. Data description
2. Documentation and metadata
3. Storage and security
4. Ethical and legal issues
5. Data sharing
6. Preservation and reuse
7. Responsibilities and resources

1 DATA DESCRIPTION

KEY QUESTIONS	EXAMPLES
What data will be created?	Survey data
Existing data reused?	Interviews
Formats?	Laboratory measurements
Expected volume?	Simulation outputs
	Software code

2 DOCUMENTATION AND METADATA

WHY METADATA MATTERS

- Makes data findable and understandable
- Supports reuse and reproducibility
- Enables proper citation
- Essential for long-term preservation

EXAMPLES OF METADATA STANDARDS

- **DataCite** — Widely used for datasets and DOIs
- **Dublin Core** — General standard for resource description
- **Disciplinary standards** — Domain-specific metadata (e.g., MIxS, Darwin Core, ISA-Tab)

GOOD DOCUMENTATION

- Clear and consistent
- Complete and accurate
- Uses standards
- Well-structured and readable

POOR DOCUMENTATION

- Incomplete or unclear
- Inconsistent
- No metadata standards
- Hard to understand or reusle

3 STORAGE AND SECURITY



Secure and well-managed storage protects data and ensures research integrity.

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4 ETHICAL AND LEGAL ISSUES

Ensure that data are collected, processed and shared in compliance with ethical principles and laws.

KEY CONSIDERATIONS

GDPR and data protection
Comply with data protection regulations.

Consent forms
Obtain informed consent where required.

Anonymisation
Remove direct identifiers from data.

Pseudonymisation
Use codes instead of direct identifiers.

Intellectual property
Respect copyright, licenses and third-party rights.

Ethical and legal compliance builds trust and protects research participants and your project.

5 DATA SHARING AND REPOSITORIES

Plan how and where data will be shared, under which conditions and with whom.

WHERE CAN DATA BE SHARED?

General-purpose repositories
e.g., Zenodo – widely used, assigns DOIs, integrates with GitHub.

Institutional repositories
Hosted by universities or research institutions.

Disciplinary repositories
Subject-specific repositories for your research community.

FIND A REPOSITORY

re3data.org — Global Registry of Research Data Repositories

OpenDOAR — Directory of Open Access Repositories

PaRRharing.org — Information on standards, repositories and policies

Choose trusted repositories that are widely used in your community and support long-term access.

6 PRESERVATION AND REUSE

Ensure that data remain accessible, understandable and usable in the long term.

KEY ELEMENTS

Retention periods
Define how long data will be preserved.

Preferred formats
Use open, non-proprietary formats when possible.

Persistent identifiers
Assign DOIs or other PIDs to guarantee stable access.

Licensing
Use clear licenses to define how data can be reused.

Long-term preservation
Deposit in repositories that ensure sustainability.

Good preservation enables reuse, increases impact and supports open science.

7 RESPONSIBILITIES AND RESOURCES

Define who is responsible for each task and what resources are available.

ROLES AND RESPONSIBILITIES

Data owner / Principal Investigator
Overall responsibility for data management.

Research team members
Collect, document and manage data according to the plan.

Data steward / Support staff
Provide guidance, tools and training.

Institution / Organisation
Provide infrastructure, policies and support.

RESOURCES TO CONSIDER

- Training and guidance
- Storage and IT infrastructure
- Budget for data management

Clear roles and sufficient resources are essential for successful data management.

A well-structured DMP supports your research from start to finish.

Plan your data → Protect your data → Share responsibly → Preserve for the future → Enable reuse and impact

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TEMPLATES AND EXAMPLES

DMP templates provide a common structure
while allowing flexibility for different disciplines and institutions.

Use a template as a **starting point**,
adapt it to your project's needs and context.

HORIZON EUROPE TEMPLATE
(European Commission)

Official template required for projects
funded under Horizon Europe.

TYPICAL SECTIONS

1. Data summary
2. FAIR data
3. Other research outputs
4. Allocation of resources
5. Data security
6. Ethics
7. Other issues

Focused on compliance with Horizon Europe requirements:

- FAIR principles
- Open science
- Ethics and security
- Resource allocation

SCIENCE EUROPE TEMPLATE
(Science Europe)

Widely used across Europe.
More detailed guidance for researchers.

TYPICAL SECTIONS

1. Data description
2. Documentation and metadata
3. Storage and backup during the research
4. Data sharing and reuse
5. Responsibilities and resources
6. Ethical and legal compliance
7. Preservation and archiving
8. Other research outputs

More detailed and explanatory.

Provides practical guidance and examples for each section.

Flexible for different disciplines.

INSTITUTIONAL TEMPLATES
(Universities / Research Institutions)

Developed by universities or research support services.

TYPICAL SECTIONS

1. Data description
2. Documentation and metadata
3. Storage and security
4. Data sharing
5. Preservation and reuse
6. Legal and ethical issues
7. Responsibilities and resources

Tailored to local policies, services and infrastructure.

May include specific requirements, tools or support contacts.

SIMILARITIES AND DIFFERENCES

COMMON ELEMENTS

- Cover the full research data lifecycle
- Address FAIR principles
- Include legal, ethical and security issues
- Promote data sharing and reuse
- Define responsibilities and resources

PURPOSE

- Horizon Europe: compliance and reporting
- Science Europe: guidance and good practice
- Institutional: local requirements and support

LEVEL OF DETAIL

- Horizon Europe: concise, high-level
- Science Europe: more detailed and explanatory
- Institutional: varies, context-specific

FLEXIBILITY

- All templates are flexible but to different extents
- Adapt to your discipline, data types and institutional context

Choose a template that fits your needs,
and adapt it to your project.

A well-prepared DMP helps you manage your data better
and demonstrates good research practice.

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COMMON MISTAKES IN DMPs

Vague statements do not demonstrate good data management.
Be specific, concrete and realistic.

Reviewers look for clear, actionable plans – not generic promises.

COMMON MISTAKE	BETTER APPROACH
"Data will be stored safely."	"Data will be stored on **institutional servers** with **daily backups** and **regular integrity checks**."
"Data will be shared."	"Data will be deposited in **repository X**" (https://example.org) under a **CC BY 4.0 licence**."
"We will protect personal data."	Personal data will be **pseudonymised**. Access will be **restricted to the research team** via password-protected storage.
"Metadata will be provided."	Metadata will be created using the **DataCite schema** and will include keywords, methods, and licence information.
"Data will be kept for a long time."	Data will be retained for **10 years** after project end, in accordance with institutional policy.
"Responsibilities are clearly defined."	The **data manager (Name, Role)** will oversee DMP implementation. All partners are responsible for following the agreed procedures.

WHY IT MATTERS

- Demonstrates planning and professionalism
- Ensures data security and compliance
- Enables sharing, reuse and reproducibility
- Increases transparency and trust
- Improves chances of a successful evaluation

BE SPECIFIC • BE CLEAR • BE REALISTIC

A strong DMP shows that your data will be well managed, usable and valuable for the future.

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Magdalena Szuflita-Żurawska

magdalena.szuflita@pg.edu.pl

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