

CopERNicus climate change Service Evolution



D8.2 Dissemination and Exploitation Plan

Due date of deliverable	May 2023
Submission date	May 2023
File Name	CERISE-D8-2-V1.0
Work Package /Task	Task 8.4
Organisation Responsible of Deliverable	ECMWF
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Revision number	1.0
Status	Issued
Dissemination Level	PUBLIC



Funded by the
European Union

The CERISE project (grant agreement No 101082139) is funded by the European Union.

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1 Executive Summary

The project's dissemination and exploitation activities present a crucial element in the success of the CERISE project, as they ensure that results are taken up by the wider community and are sustainable beyond the initial funding period, thus providing value for money.

This deliverable (D8.2) provides the starting point for both dissemination and exploitation in the project.

The dissemination plan identifies instruments and targets. These include activities organised by CERISE (including workshops, website, news items, etc.) as well as important events attended by CERISE members (i.e. workshops, conferences, seminars, etc.).

The present deliverable also provides the potential exploitation avenues in terms of outputs as well as respective exploitation activities during and after the end of the project, thus fulfilling the requirements of the Description of the Action (DoA).

The dissemination and exploitation plans are to be considered living documents as new avenues might become important to the project over its lifetime. Thus, both will be updated regularly as the need arises.

A mid-term Dissemination and Exploitation Report (Month 24) will provide an update of the dissemination and exploitation activities, whilst a final Dissemination and Exploitation Report with detailed descriptions of dissemination activities, exploitable results and related activities will be produced towards the end of the project (Month 48).

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2 Introduction

The following plan details the project's visual identity, describes the promotional exploitation options and communication channels. It aims at supporting and ensuring consistency in partners' communication and dissemination activities and efforts in promoting the project.

2.1 Background

The scope of CERISE is to enhance the quality of the C3S reanalysis and seasonal forecast portfolio, with a focus on land-atmosphere coupling.

It will support the evolution of C3S, over the project's 4-year timescale and beyond, by improving the C3S climate reanalysis and the seasonal prediction systems and products towards enhanced integrity and coherence of the C3S Earth system Essential Climate Variables.

CERISE will develop new and innovative ensemble-based coupled land-atmosphere data assimilation approaches and land surface initialisation techniques to pave the way for the next generations of the C3S reanalysis and seasonal prediction systems.

These developments will be combined with innovative work on observation operator developments integrating Artificial Intelligence (AI) to ensure optimal data fusion fully integrated in coupled assimilation systems. They will drastically enhance the exploitation of past, current, and future Earth system observations over land surfaces, including from the Copernicus Sentinels and from the European Space Agency (ESA) Earth Explorer missions, moving towards an all-sky and all-surface approach. For example, land observations can simultaneously improve the representation and prediction of land and atmosphere and provide additional benefits through the coupling feedback mechanisms. Using an ensemble-based approach will improve uncertainty estimates over land and lowest atmospheric levels.

By improving coupled land-atmosphere assimilation methods, land surface evolution, and satellite data exploitation, Research and Innovation inputs from CERISE will improve the representation of long-term trends and regional extremes in the C3S reanalysis and seasonal prediction systems.

In addition, CERISE will provide the proof of concept to demonstrate the feasibility of the integration of the developed approaches in the core C3S (operational Service), with the delivery of reanalysis prototype datasets (demonstrated in pre-operational environment), and seasonal prediction demonstrator datasets (demonstrated in relevant environment).

CERISE will improve the quality and consistency of the C3S reanalysis systems and of the components of the seasonal prediction multi-system, directly addressing the evolving user needs for improved and more consistent C3S Earth system products.

2.2 Scope of this deliverable

2.2.1 Objectives of this deliverables

This deliverable 8.2 provides the outline dissemination and exploitation plan.

The Dissemination Plan complements the Media and Communication Plan (D8.3) and identifies instruments and targets for dissemination, including important conferences, journals, and events.

The Exploitation Plan initiates the exploitation work within the CERISE project by identifying initial exploitation routes and innovation ideas. The deliverable summarises, in a first version, the general project aims. Subsequent versions – two further versions will be released in the middle of the project (deliverable D8.6) and at the end of the project (deliverable D8.7) – will include feedback from CERISE partners on their exploitation intentions as well as ideas for joint exploitation, where possible.

2.2.2 Work performed in this deliverable

In this deliverable the work outlined in The Description of Action WP8 T8.4 is performed. The aim being to “outline the dissemination activities as well as identify the potential for exploitation and their routes”.

The initial version of this document will summarise the aims at project commencement. Feedback from the partners pertaining to both dissemination and exploitation will be garnered throughout the project and be presented in subsequent versions of this document.

2.2.3 Deviations and countermeasures

No deviations have been encountered.

2.2.4 Reference Documents

[1] Project 101082139-CERISE-HORIZON-CL4-2021-SPACE-01 Grant Agreement, Description of the Action (DoA)

2.2.1 CERISE Project Partners:

ECMWF	European Centre for Medium-Range Weather Forecasts
Met Norway	Norwegian Meteorological Institute
SMHI	Swedish Meteorological and Hydrological Institute
MF	Météo-France
DWD	Deutscher Wetterdienst
CMCC	Euro-Mediterranean Center on Climate Change
BSC	Barcelona Supercomputing Centre
DMI	Danish Meteorological Institute
Estellus	Estellus
IPMA	Portuguese Institute for Sea and Atmosphere
NILU	Norwegian Institute for Air Research
MetO	Met Office

3 Project Communication & Dissemination

3.1 Internal & External Communication Channels

A partner protected web-based environment has been set up at ECMWF that includes a document repository and acts as the project's collaborative platform. The CERISE website acts as the main location to showcase all project information and outputs. The details of this are described in D8.3.

3.2 EU funding acknowledgement & Disclaimer

Dissemination of results (including public and confidential deliverables, conference/workshop presentations, journal papers, and any type of information or promotional material) must display the EU emblem (see below "European Commission visual identity"); and include the following text:

"The CERISE project (grant agreement No101082139) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Commission. Neither the European Union nor the granting authority can be held responsible for them."

When displayed together with another logo, the EU emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text. For the purposes of their obligations under Article 17 of the Grant Agreement, the beneficiaries may use the EU emblem without first obtaining approval from the Commission. This does not however give them the right of exclusive use. Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

In addition, any publication, presentation, poster etc. needs to include the project logo, the EU Emblem and the above statement. These logos and statement are accessible to all partners on the internal pages of CERISE's Confluence wiki.

The project coordinator, ECMWF, has provided presentation and poster (PowerPoint) templates and Deliverable (Word) templates to the consortium partners that fulfil the above-mentioned requirements.

4 The Dissemination Plans

As per the DoA, CERISE dissemination activities are designed around providing/disseminating information to the scientific communities and relevant stakeholders in three areas:

1. Scientific and technical results through
 - a. Scientific Publications
 - b. Conference Talks
 - c. Organised Workshops, webinars providing updates on the project results
 - d. Reports to and feedback from Committees and Boards
2. Products through dissemination of
 - a. Datasets and accompanying material (e.g. descriptions, metadata)
 - b. Algorithms / Specifications
 - c. Graphics and animations
3. Progress information through provision of
 - a. News items
 - b. Public Deliverables
 - c. Dissemination Materials (brochures, posters, flyers)
 - d. Website and social media

The following table provides information on the CERISE Dissemination (and Communication) Targets.

Table 1: Dissemination Targets

Target audience	Communication/ Dissemination Means	Responsibility
European Commission, EU Member States (incl. policy makers)	Dissemination: – Workshops and resulting reports Communication: – Project news/ Newsletters – Tailored updates on the results – CERISE website	ECMWF with support from all partners
Scientific community	Dissemination: – Peer-reviewed scientific papers – CERISE data portal – Workshops – Conferences Communication – News items	All partners
Satellite agencies, technology providers	Dissemination – CERISE data webpage, MARS archive Communication – Targeted publication material – Link with relevant H2020, Horizon Europe, and other initiatives – Representation at relevant conferences and fairs – Newsletters	All partners

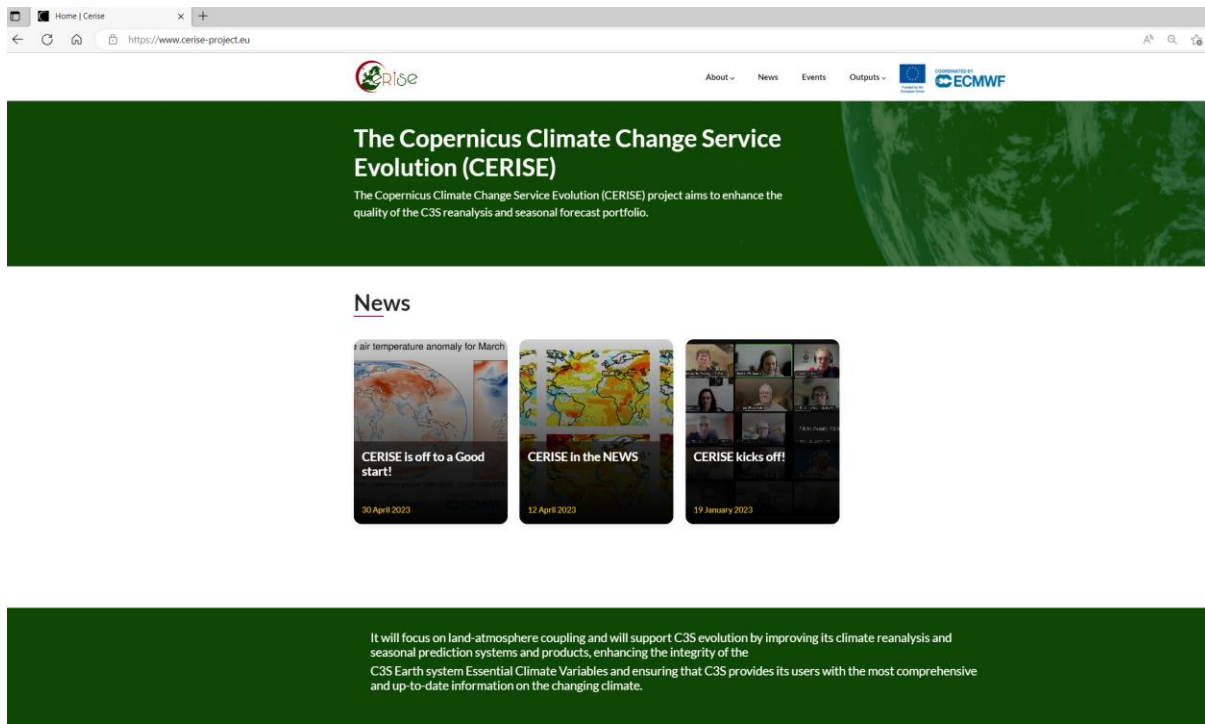
General public	Communication <ul style="list-style-type: none"> – General Information Material – CERISE website – Project news/ Newsletters – Dissemination Material – Press releases 	ECMWF with support from all partners and in close collaboration with the European Commission (HaDEA and DG-DEFIS).
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4.1 Dissemination Instruments

This subsection provides an overview of the instruments used for dissemination.

4.1.1 CERISE Website

The CERISE website (www.cerise-project.eu) serves as the main dissemination instrument for the project. It contains various sections both for the general public as well as specifically targeted towards stakeholders including the scientific community.



Screenshot of the home page of CERISE website

The CERISE website provides access to information on the progress of the project. All deliverables that are published in the form of reports will be hosted on the website. A news slot on the website will draw attention to highlights such as new data deliveries and reports, eye-catching developments, and so forth, when they become available.

Important information of general interest will be published on the CERISE website, including the project status on milestones and deliverables. Further details are provided in the CERISE deliverable D8.3 Media and Communication Plan.

Reports will be openly available from the public pages of the central CERISE website. To increase its visibility, the CERISE website will be linked on the websites of ECMWF, CAMS, C3S, Horizon Europe CORSO project and other partners.

4.1.2 CERISE Journals, Conferences and Workshops

Strong engagement with the academic sector and national meteorological agencies will promote the work performed in CERISE and at the same time follow the scientific developments taking place outside the consortium. This exchange of information and knowledge will be realised through attendance of scientific conferences, organisation of sessions devoted to CERISE and related topics at relevant scientific conferences (e.g., EGU, WMO/ WCRP/ WWRP, ESA-LPS), and by the general process of CERISE scientists attending and presenting seminars and engaging in discussion at universities and research institutes. Conferences and Workshops of interest for CERISE include:

- European Geoscience Union General Assembly
- American Geophysical Union Fall Meetings
- WMO/WCRP/ WWRP reanalysis conference
- ECMWF Machine learning workshop
- GCOS
- CEOS
- European Space Agency (ESA) Living Planet Symposium (LPS) 2025

Publication in open-access scientific journals will play a major role as this allows a rigorous peer-review to take place, ensuring that CERISE results are relevant to the community. Relevant Journals include:

- The Cryosphere (<https://www.the-cryosphere.net/>)
- Quarterly Journal of the Royal Meteorological Society (<https://rmets.onlinelibrary.wiley.com/journal/1477870X>)
- Hydrology and Earth system Sciences (<https://www.hydrology-and-earth-system-sciences.net/>)
- Biogeosciences (<https://www.biogeosciences.net/>)

It is envisaged that over the course of the project, and for up to one year after project closure, a minimum of 7 peer-reviewed, co-authored (journal) publications will be produced covering the topics of the scientific-technical work packages of the CERISE project (WPs 1 to 7). In addition, regular conference and workshop publications and attendance with talks on topics from CERISE will complement these publications.

4.1.3 Scientific Committees

The representation of ECMWF and project partners in international committees will be used as a channel for disseminating CERISE results and outputs in the weather and climate prediction communities, in particular to support the C3S capacity.

Scientific results from CERISE will be conveyed to international programmes and bodies such as the Global Climate Observing System (GCOS), Committee on Earth Observation Satellites (CEOS), the World Climate Research Programme (WCRP), WMO, EUMETSAT and ESA. Finally, progress and results will be directly shared with the European Commission.

4.1.4 Other Instruments

Other instruments used by the CERISE project to disseminate its results include:

- Web / wiki pages
- Dissemination of information through relevant social media,
- Linked communication with the C3S communication sites
- Overview of project results in partners' newsletter.

Other instruments also include ad-hoc and planned interactions and liaison with relevant international research activities, such as Horizon Europe projects, as well as the Copernicus Services relevant, CAMS and C3S with their annual General Assemblies.

The products of CERISE will comprise reports, graphical displays, datasets and improved methods, algorithms and code. All these elements have their own important role. Reports are targeted at informing C3S on assessments, innovation progress and future directions. Graphical displays, where applicable, are targeted at all users as supportive information for the various model runs, method comparisons, and input datasets. The datasets will also target a wide user community to support them with parallel or alternative studies. Finally, improved methods, algorithms and code are meant to form the basis for follow-on development after the CERISE project has finished.

Reports will be openly available from the public pages of the central CERISE website. To increase its visibility, the CERISE website will be linked to the websites of ECMWF, C3S and other partners.

The data outputs will be made available, subject to the data management plan. Data output shall be stored on the MARS archive. Should such data be considered mature and user relevant, C3S will look at options on how to make it available through the Climate Data Store.

5 Exploitation Plan

Exploitation has various intentions, though in the context of Horizon Europe projects these activities are geared towards increasing the impact of their project results, notably:

- They must share publicly research results with the scientific community, commercial players, civil society and policymakers ('dissemination').
- They must use their best efforts to exploit their results directly or to have them exploited indirectly by another entity – notably the use of results in further research and innovation activities other than those covered by the action concerned, ('exploitation')

Dissemination and exploitation are a requirement of the CERISE GA (Article 17), and provide a route for the use of results that ultimately:

- Lead to new legislation or recommendations
- For the benefit of innovation, the economy and the society
- Help to tackle a problem and respond to an existing demand

Both dissemination and exploitation activities need to adhere to Fair and reasonable conditions.

5.1 Exploitation Targets

The CERISE Description of Action states the following with respect to exploitation:

"The important outputs of CERISE are the various detailed designs and prototype components. Although various developments within CERISE will be based on pre-existing technology and will be realised through developing integrated technology, these developments will be shared publicly through proper documentation, either through public project documents or through articles in the peer-reviewed literature.

Sharing this information publicly will support the implementation of the future C3S elements, which is normally done through competitive Invitations To Tender. In addition, some data sets will be created, and these will be provided on data servers without any restrictions, as described above. Therefore, the wider science community as well as the policy makers will be target audiences.

Science communities include those related to Earth system monitoring and seasonal prediction, as well as the wider weather and climate modelling communities.

Policy makers include those on regional, national as well as European level. There may in addition be some exploitation of CERISE products in the other activities undertaken by partners in the consortium operating CERISE, in particular at the national level."

5.2 Exploitation Activities and Routes

To gather an overview of the exploitation intentions of the partners, and to identify potential exploitation actions, a questionnaire will be used to share with partners to collect their response for continual improvements to Table 2. The questions outlined below will be used for the upcoming deliverables D8.6 and D8.7 that are due at the mid-term and the end of the project. The information included in Table 2 in this first version of the Dissemination and Exploitation plan is provided by the coordinator and reflects the original aims in the proposal.

The following questions will be included as a guide for partners:

Exploitable Results

- Which deliverables from CERISE do you intend to exploit?
- Which specific output(s) from the deliverable(s) do you intend to exploit?
- Is this output owned by you/another Partner/joint?
- At what TRL (Technology Readiness Level) do you expect this output to be at the end of the project (if applicable)?
- What assessments/ evaluations do you plan within CERISE to test whether outputs are exploitable?

Products resulting from Exploitation

- What final product do you have in mind as the result of the exploitation?
- What are the key functions of this product?
- What is the Unique Selling Point (USP) for this product?
- What proportion of this product will have been funded by CERISE?
- Who are the customers for this product?
- What similar systems are already in the marketplace offered by other suppliers?

Exploitation Activities during the CERISE project

- What exploitation activities do you plan to perform in CERISE and when?

Exploitation Activities after the CERISE project

- What exploitation activities do you plan to perform post- CERISE and when?

Consortium-wide Exploitation

- What would be consortium-wide result(s) and product(s) to be exploited?
- How might the Consortium work at a collective level to exploit the CERISE proposition?
- Would your organisation take a part in this, and in what role?
- Which additional stakeholders are needed to operate the model?

Naturally, at this early stage in the project (month 5 of 48) not all questions can be answered by all partners. Therefore, the questionnaire also serves the purpose of reminding partners of the importance of exploitation in a project such as CERISE, and to actively consider potential routes and related exploitation activities.

The following table summarises the findings at this stage (Table 2).

Table 2: Summary of Exploitation Findings

Exploitable Products (in the context of C3S future offerings)	Data Products: <ul style="list-style-type: none"> • Coupled land-atmosphere global and regional scale reanalysis prototypes datasets, • Seasonal forecasts demonstrators datasets with balanced land-atmosphere in initial conditions, • Time varying datasets of lake cover, LAI and land cover back to 1925. <p>New methodologies; Innovative C3S coupled land-atmosphere data assimilation approach for reanalysis and seasonal systems,</p> <p>New AI-based observation operators to enhance exploitation of surface sensitive Earth system satellite observations, fully integrated in the C3S coupled data assimilation systems.</p> <p>Novel diagnostic tools and prediction skill metrics that use new observations and include hydrological variables to assess Earth system coupled reanalysis and seasonal prediction.</p>
Exploitation Activities during the Project	<p>The major activities will be exploited as part of the C3S take-up;</p> <ul style="list-style-type: none"> • Project reports with recommendations will support uptake/implementation activities in C3S and potentially other frameworks
Exploitation Activities after the end of the Project	<p>Improved C3S portfolio capabilities;</p> <ul style="list-style-type: none"> • Extend C3S portfolio to seamless centennial global fully coupled Earth system reanalyses • Improved representation of land conditions to improve predictability of continental heatwaves, droughts and water availability forecasts at seasonal timescale. • Any dataset that has been identified as public will be made available to external scientists. • Project reports with recommendations will support uptake/implementation activities in C3S and potentially other frameworks.
Consortium-wide/Joint Exploitation	<ul style="list-style-type: none"> • While outputs will be shared publicly as much as possible through documentation and peer-reviewed literature, the project will also support its consortium members to be better prepared for any upcoming C3S implementation ITTs.

(Any datasets and databases produced will follow the data management plan).

The activities during the project will be taken up by the relevant work packages to ensure that exploitation is pursued and maximised. However, it should be noted that a complete consortium-wide exploitation of results (e.g., through structures such as a Joint Venture or Association) after the end of the project is unlikely, due to the nature of this research project CERISE.

The Exploitation Plan will be revisited regularly and is thus to be understood as a living document, as developments during the course of the project may open up new avenues for exploitation.

6 Conclusion

In this deliverable, the CERISE dissemination and exploitation has been defined.

For dissemination a set of instruments have been identified, namely a website, news items and numerous scientific conference and workshop involvements.

Initial exploitation ideas from all partners have been collected in this document, complemented by the identification of exploitation activities. Project Office and Work Package leader can now use this information to steer the activities towards innovation realisation within the various work packages and the project as a whole.

A mid-term Dissemination and Exploitation Report will provide an update of the dissemination and exploitation activities, whilst a final Dissemination and Exploitation Report with detailed descriptions of dissemination activities, exploitable results and related activities will be produced towards the end of the project. These will ensure that the results are sustainable and realised into innovations.

Document History

Version	Author(s)	Date	Changes
0.1	Rhona Phipps, Tanya Warnars, Patricia de Rosnay	4/5/2023	Initial version
1.0	Rhona Phipps, Tanya Warnars, Patricia de Rosnay	25/05/2023	Updated after internal review

Internal Review History

Internal Reviewers	Date	Comments
Silvia Guldi (CMCC), Xiaohua Yang (DMI)	24/5/2023	Minor comments

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