

CopERNicus climate change Service Evolution



D8.2 Dissemination and Exploitation Plan

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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 revision has been made to this document in light of comments made by the project reviewers at RV1.

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] CERISE Project D8.3 Media and Communication Plan

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

Table 1 provides information on the CERISE Dissemination (and Communication) Targets. These targets also link to the CERISE Media and Communication plan D8.3.

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	All partners

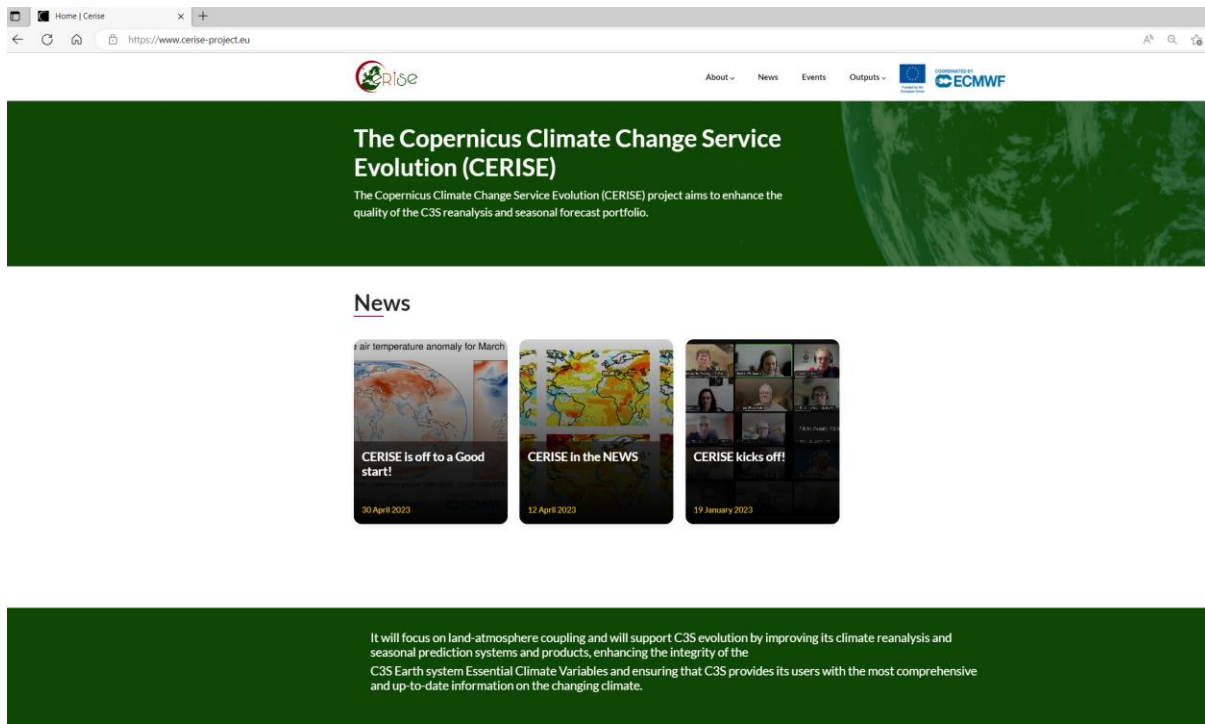
	<ul style="list-style-type: none"> – Representation at relevant conferences and fairs – Newsletters 	
General public	<p>Communication</p> <ul style="list-style-type: none"> – General Information Material – CERISE website – Project news/ Newsletters – Dissemination Material – Press releases 	ECMWF with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

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. “

Stakeholders:

Some data sets will be created, and these will be provided on data servers without any restrictions. Therefore, the C3S community, 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.

For C3S Users, we use the definition from the [ULS Factsheet.pdf \(copernicus.eu\)](#) :

- Professionals (downstream service providers) who aim to link climate data with their own data to address climate change adaptation issues in, for example, the water, agriculture, energy and shipping sectors
- Researchers and scientists with knowledge about, and interest in, climate change issues who want to use climate (change) data
- MSc and PhD Students in climate studies, meteorology, environmental sciences or related fields interested in use of climate (change) data

CERISE

User and Stakeholder definition and identification:

WMO, IPCC, research centres, Space agencies, NWP Centres and EU Member States.

CERISE's methodologies, prototype and demonstrator datasets, and diagnostics tools will be developed in strong collaboration with the existing C3S operational and development teams and will use the C3S infrastructure. These strong links between the CERISE consortium and the Copernicus operational Service will ensure efficient research to operation transition of the CERISE developments, with staged integration of the CERISE developments in C3S during the project and beyond during the current and future Copernicus phases. The integration of the CERISE developments in the core Service will directly enhance the C3S impacts on society. This is the main project pathway to impact.

Furthermore, the C3S products are freely available and disseminated by the Copernicus Climate Data Store (CDS). The output from CERISE once implemented in C3S, will directly be available to a wide range of users and stakeholders, including WMO, IPCC and research centres. The technical and scientific developments conducted in WP1, WP2, WP3 and WP7 will directly address user feedback on the current C3S products related to needs for consistent surface atmosphere ECVs and products.

CERISE is strongly engaged with businesses including from the Space Sector as the project pioneers the usage of new satellite retrieval observations, e.g. from the Metop-SG SCA instrument and in the longer term from the Copernicus Sentinels, also known as the Expansion missions, such as CIMR. CERISE has strong link with the Private Sector and has also taken on-board a private sector company (Estellus) with strong expertise on AI for satellite data exploitation. As a result, CERISE will maximise the return on investment from European space-missions and more specifically will provide valuable feedback to space agencies and data providers enabling them to further improve the retrievals of atmospheric composition variables from the Copernicus Sentinels and the EPS-SG programmes.

A further positive impact can be expected on NWP applications as the new coupled land-atmosphere assimilation and ML/AI-based novel observation operator developments will be part of the ECMWF IFS. They will thus contribute to improving ECMWF NWP performances, through enhanced consistency at land-atmosphere interface and improved satellite data usage over land surface, contributing to the ECMWF all-sky and all-surface strategy and benefitting EU member states.

The land initialisation activities will facilitate the uptake of C3S land reanalysis products by the seasonal forecasting centres and the wider community. It is expected that the improvement will translate into better quality of the climate information from reanalyses and more reliable forecasts from days to seasons ahead. New forecast products of land-related quantity (soil, snowpack) are expected to benefit sectoral applications.

Project's pathways to impact - CERISE - ECMWF Confluence Wiki

Table 2 Work programme requirements (in italics below) and how they will be addressed in CERISE

Stated requirement from the call	How and where CERISE will address this requirement
<i>Integration of emerging technologies and new methods or models must be preceded by a demonstration of an adequate level of maturity and should be based on well-identified user needs</i>	CERISE WP4 and WP5 focus on the demonstration of future reanalysis and seasonal forecasting system prototypes. The developments in WP1, WP2, WP3 and WP7 will directly address user feedback on the current C3S products related to needs for consistent surface atmosphere ECVs and products.
<i>The evolving services' needs for observations should also be a key driver for the evolution of the Copernicus Space Component</i>	Evolving needs for observations is a key driver for the CERISE proposal. Using an Earth system approach requires consistency at the land-atmosphere interfaces and thus adequate observations and adequate tools to ingest these observations in the reanalysis and seasonal prediction systems. CERISE will enhance the exploitation of the current and future observations using ground-breaking AI-based coupled observation operator developments from WP1 and WP2.
<i>Continuous dialogue and shared strategy between research and services should enable user oriented research and quick transition to operations of achieved outcomes and the integration of Copernicus services with digital technologies, including data exploitation and data access technologies fosters the exploitation of space data assets to support co-creation of value between the Copernicus services and Member States, between research and market, between the Public and the Private sector addressing the whole value chain from education to industry for a value added user uptake</i>	The CERISE consortium is led by ECMWF with a strong experience in research to operation transition. The consortium has also taken on-board a private sector company (Estellus) with strong expertise on AI for satellite data exploitation and it includes the key C3S partners involved in operational reanalysis and seasonal prediction to ensure efficient R2O transition and to achieve integration in the current and next phases of C3S.
<i>The Copernicus Services should also evolve towards additional sectors that can be considered as cross services e.g. arctic regions, SDGs indicators monitoring, climate adaptation, biodiversity, food security, compliance with EU legislation</i>	The evolution of the C3S reanalysis and seasonal forecasting systems proposed in CERISE towards a truly Earth system approach, with better exploitation of the multiple and interface observations using an all-surface approach, will improve the product quality and consistency across the Earth system components as well as the consistency in time. The CERISE developments will enhance the relevance of the C3S products to European public institutions, policymakers, industry, researchers, media and the general public. They will also support the evolution of C3S towards additional sectors, such as arctic regions and SDGs indicators monitoring.

Stated requirement from the call	How and where CERISE will address this requirement
<i>For each service should be identified the potential contribution to the specific domains and similarly also the existing gaps in existing observations or data exploitation to be further addressed by the programme</i>	A key driver for developing coupled assimilation in CERISE is to fill the gap in the exploitation of current and future satellite observations (WP1, WP2, WP3, WP7), especially those coming from the Sentinels missions
<i>The most important priority is to guarantee a very high level of products quality through all the different phases of the development process, including new modelling techniques, data assimilation and products validation</i>	<p>The scope of CERISE to improve the C3S product quality and consistency based on coupled assimilation and initialisation, with methodological improvement (WP1, WP3, WP3), demonstration of the proof of concept (WP4 and WP5) and validation in WP6.</p> <p>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.</p>
	All data outputs of CERISE will be made publicly available to maximise the uptake by the scientific community. Data outputs will be stored in 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.

Data outputs will be stored in 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.

The project is reviewing whether completed demonstrators and project data may be made available on request.

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, 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 33).

Table 3: Summary of Exploitation Findings

		Routes	Lead exploitation actors	Timescales
<p>Exploitable Products (in the context of C3S future offerings)</p>	<p>Data Products:</p> <ul style="list-style-type: none"> Coupled land-atmosphere global and regional scale reanalysis prototypes datasets, CERISE data Cerise (cerise-project.eu) 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>	<p>Will be used as demonstrators for ERA 7 and CARRA3 and for Copernicus phase 3 ERA6 land</p>	<p>Copernicus Climate Change Service</p> <p>Reanalysis and seasonal prediction scientific communities, including data assimilation and microwave remote sensing scientific and satellite retrieval production community</p> <p>Companies and commercial applications interested in c3S data such as UN-Habitat, AXA XL and others</p> <p>Euroenews, CNN and other media using C3S products</p> <p>General public- information via social media and website</p> <p>WMO, WCR, WWRP, GCOS, ESA, EUMETSAT and other international agencies</p> <p>EU/EC DGs such as DG-DEFIS and DG-CLIMA</p>	<p>2027- 2030 next phase of copernicus 2027-2034</p>

		Routes	Lead exploitation actors	Timescales
Exploitation Activities during the Project	The major activities will be exploited as part of the C3S take-up; <ul style="list-style-type: none"> • Project reports with recommendations will support uptake/implementation activities in C3S and potentially other frameworks 	Climate Data Store	As above	As per project deliverable time-scales.
Exploitation Activities after the end of the Project	Improved C3S portfolio capabilities; <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. 		As above	2027- 2030 next phase of copernicus 2027-2034
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. 		Consortium members	C3S ITT time-scales.

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

TRL level:

Progress has been made with each of the items since the project start (Table 4). A further update will be issued at the M24 deliverable of this document.

Table 4: TRL levels: initial, current and end of project

CERISE advances	Initial TRL	Level at RV1 (M12)	Level at M24	Final TRL
Coupled land-atmosphere assimilation capabilities for reanalysis	TRL3	TRL4	TBD	TRL6/7
AI-based observation operator over land and cryosphere surfaces	TRL3	TRL4	TBD	TRL5/6
Time varying vegetation and lake cover from 1925 onward	TRL5	TRL5+	TBD	TRL6
Balanced land-atmosphere initialisation for multi-system seasonal prediction	TRL4	TRL4+	TBD	TRL6
Novel diagnostic methods for Earth system reanalysis and seasonal prediction systems	TRL4	TRL4+	TBD	TRL6

We will be monitoring the TRL levels as part of our quarterly reporting.

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. Both deliverables D8.2 (this document) and D8.3 (Media and Communications Plan) should be seen as complementing each other as collectively, they describe the tools, methods and pathways by which CERISE outcomes will be shared.

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
2.0	Rhona Phipps, Tanya Warnars, Patricia de Rosnay	April 2024	Updated with additional info as requested by external reviewers at RV1

Internal Review History

Internal Reviewers	Date	Comments
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