CO2MVS RESEARCH ON SUPPLEMENTARY OBSERVATIONS

D5.2 Project Website

Due date of deliverable	30/04/2023
Submission date	
File Name	D5.2 Project Website
Work Package /Task	WP5/ T5.4
Organisation Responsible of Deliverable	ECMWF
Author name(s)	Tanya Warnaars, Richard Engelen, Rhona Phipps
Revision number	1
Status	issued
Dissemination Level	Public

CORSO: CO2MVS Research on Supplementary Observations

Horizon Europe RIA (Research and Innovation Action)

Copernicus Anthropogenic CO_2 Emissions Monitoring & Verification Support (MVS) capacity
TOPIC ID: HORIZON-CL4-2022-SPACE-01-42

Project Coordinator: Dr Richard Engelen (ECMWF)
Project Start Date: 01/01/2023
Project Duration: 36 months

Published by the CORSO Consortium

Contact:
ECMWF, Shinfield Park, Reading, RG2 9AX, richard.engelen@ecmwf.int

Acknowledgement and Disclaimer

Funded by the European Union

The CORSO project (grant agreement No 101082194) 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.

1 Executive Summary

As per the Dissemination and Exploitation Plan (D5.3) the project website will be a major dissemination instrument. As such, the website will be an important tool for maintaining the coherence of the full project and for promoting its progress across the many stakeholders, as well as providing a project interface to the wider public.

The CORSO project website can be accessed via www.corso-project.eu. It is the main dissemination tool for the project and provides a focal point for project outputs and news. It is to be updated regularly, both throughout the lifetime of the project and thereafter. It contains information on the project, news and events, outputs (including public deliverables), to name some of the key menu options.

Table of Contents

2 Introduction

2.1 Background

To enable the European Union (EU) to move towards a low-carbon economy and implement its commitments under the Paris Agreement, a binding target was set to cut emissions in the EU by at least 40% below 1990 levels by 2030. European Commission (EC) President von der Leyen committed to deepen this target to at least 55% reduction by 2030. This was further consolidated with the release of the Commission's European Green Deal on the 11th of December 2019, setting the targets for the European environment, economy, and society to reach zero net emissions of greenhouse gases in 2050, outlining all needed technological and societal transformations that are aiming at combining prosperity and sustainability. To support EU countries in achieving the targets, the EU and European Commission (EC) recognised the need for an objective way to monitor anthropogenic CO_2 emissions and their evolution over time.

Such a monitoring capacity will deliver consistent and reliable information to support informed policy- and decision-making processes, both at national and European level. To maintain independence in this domain, it is seen as critical that the EU establishes an observation-based operational anthropogenic CO_2 emissions Monitoring and Verification Support (MVS) (CO2MVS) capacity as part of its Copernicus Earth Observation programme.

The CORSO research and innovation project will build on and complement the work of previous projects such as CHE (the CO2 Human Emissions), and CoCO2 (Copernicus CO2 service) projects, both led by ECMWF. These projects have already started the ramping-up of the CO2MVS prototype systems, so it can be implemented within the Copernicus Atmosphere Monitoring Service (CAMS) with the aim to be operational by 2026. The CORSO project will further support establishing the new CO2MVS addressing specific research & development questions.

The main objectives of CORSO are to deliver further research activities and outcomes with a focus on the use of supplementary observations, i.e., of co-emitted species as well as the use of auxiliary observations to better separate fossil fuel emissions from the other sources of atmospheric CO_2. CORSO will deliver improved estimates of emission factors/ratios and their uncertainties as well as the capabilities at global and local scale to optimally use observations of co-emitted species to better estimate anthropogenic CO_2 emissions. CORSO will also provide clear recommendations to CAMS, ICOS, and WMO about the potential added-value of high-temporal resolution $^{14}CO_2$ and APO observations as tracers for anthropogenic emissions in both global and regional scale inversions and develop coupled land-atmosphere data assimilation in the global CO2MVS system constraining carbon cycle variables with satellite observations of soil moisture, LAI, SIF, and Biomass. Finally, CORSO will provide specific recommendations for the topics above for the operational implementation of the CO2MVS within the Copernicus programme.

2.2 Scope of this deliverable

2.2.1 Objectives of this deliverables

This deliverable 5.2 outlines the structure of the CORSO Project Website and provides illustrations of pages which are being constructed for the project. As this is an evolving site, there will be continuous updating of the site over the course of the project.

2.2.2 Work performed in this deliverable

For this deliverable, an agency was appointed to carry the website construction work. Input was provided by the coordinator on the design as well as structure and content of the website.

2.2.3 Deviations and counter measures

No deviations have been encountered.

3 The CORSO Project Website

As per the Dissemination and Exploitation Plan (D5.3) the project website will be a major dissemination instrument. As such, the CORSO website is a major communication and dissemination tool for the project and for promoting its progress across many stakeholders, as well as providing an interface to the wider public.

The CORSO project website can be accessed via www.corso-project.eu. It is the main dissemination tool for the project and provides project-external sections.

The website structure is as follows:

Home

About:

- Objectives
- Structure
- Consortium
- Team
- Links with other projects

News

- news and progress

Outputs (List based):

- Data
- Publications
- Deliverables

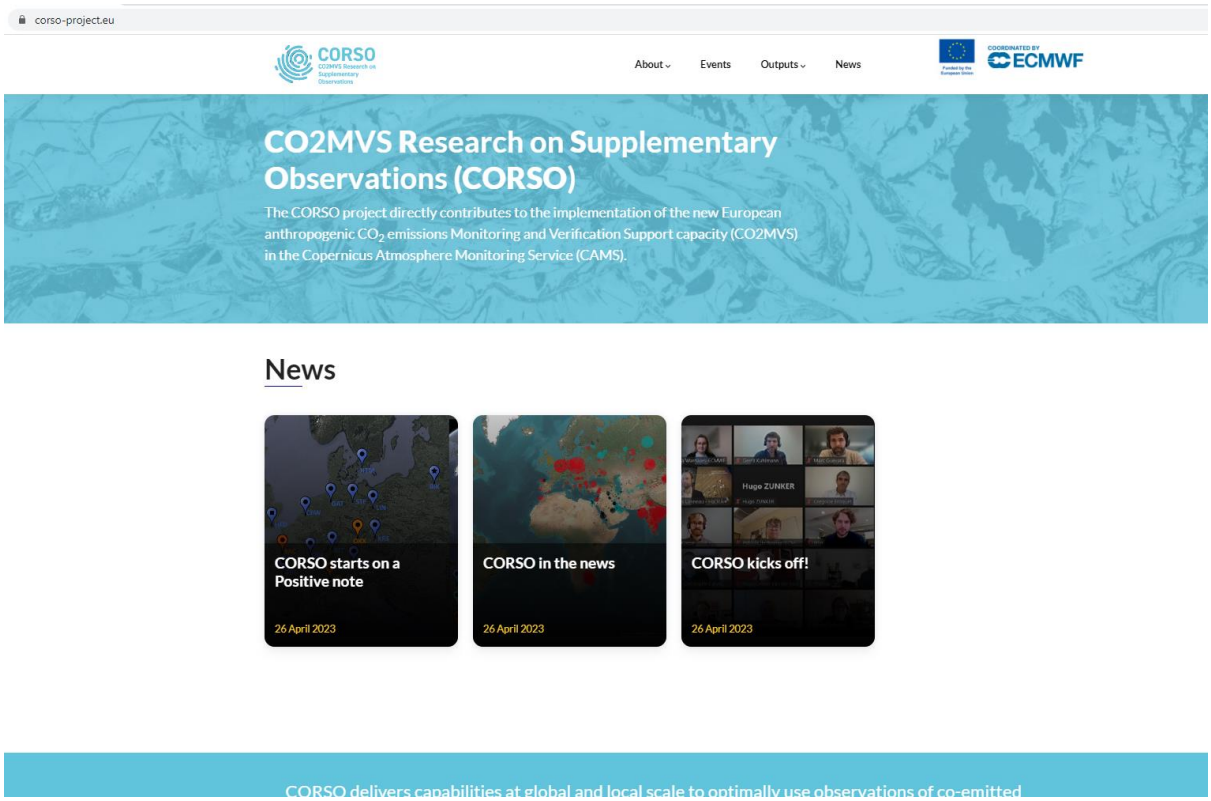
Events

- list of upcoming meetings (project and non-project), conferences and link to previous events.

All pages allow sharing via social media networks (e.g. Twitter and LinkedIn). In the following we will present illustrations of the various project website sections.

3.1 Home Page

The Home Page is the starting point for the project website.



It provides the entry points for the sections “About”, “Events”, “Outputs” and “News” via the top bar, and highlights from “News” and “Events” are presented on the page. In addition, a facility for *contact-us* is provided via the bottom bar.

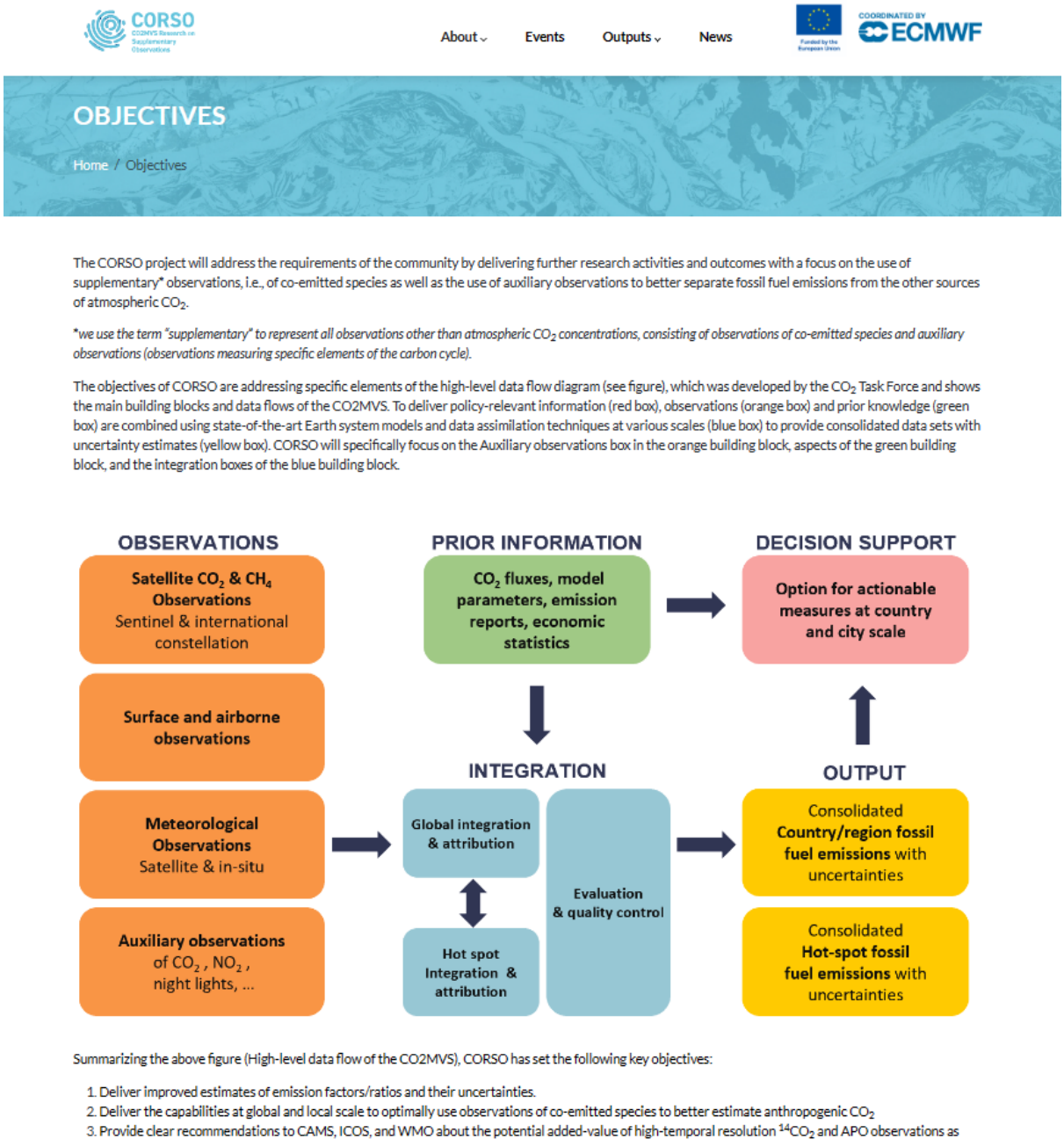
The footer acknowledges EC funding and includes links to the project Privacy Policy as well as our Terms and Conditions.

3.2 About page

The “About” section describes the project in further detail: its mission, objectives, and has the following subsections “Objectives”, “Structure”, “Consortium”, “Team” and “Links with other Projects”.

3.2.1 Objectives Page

The screen shot below displays the layout of the Objectives page:

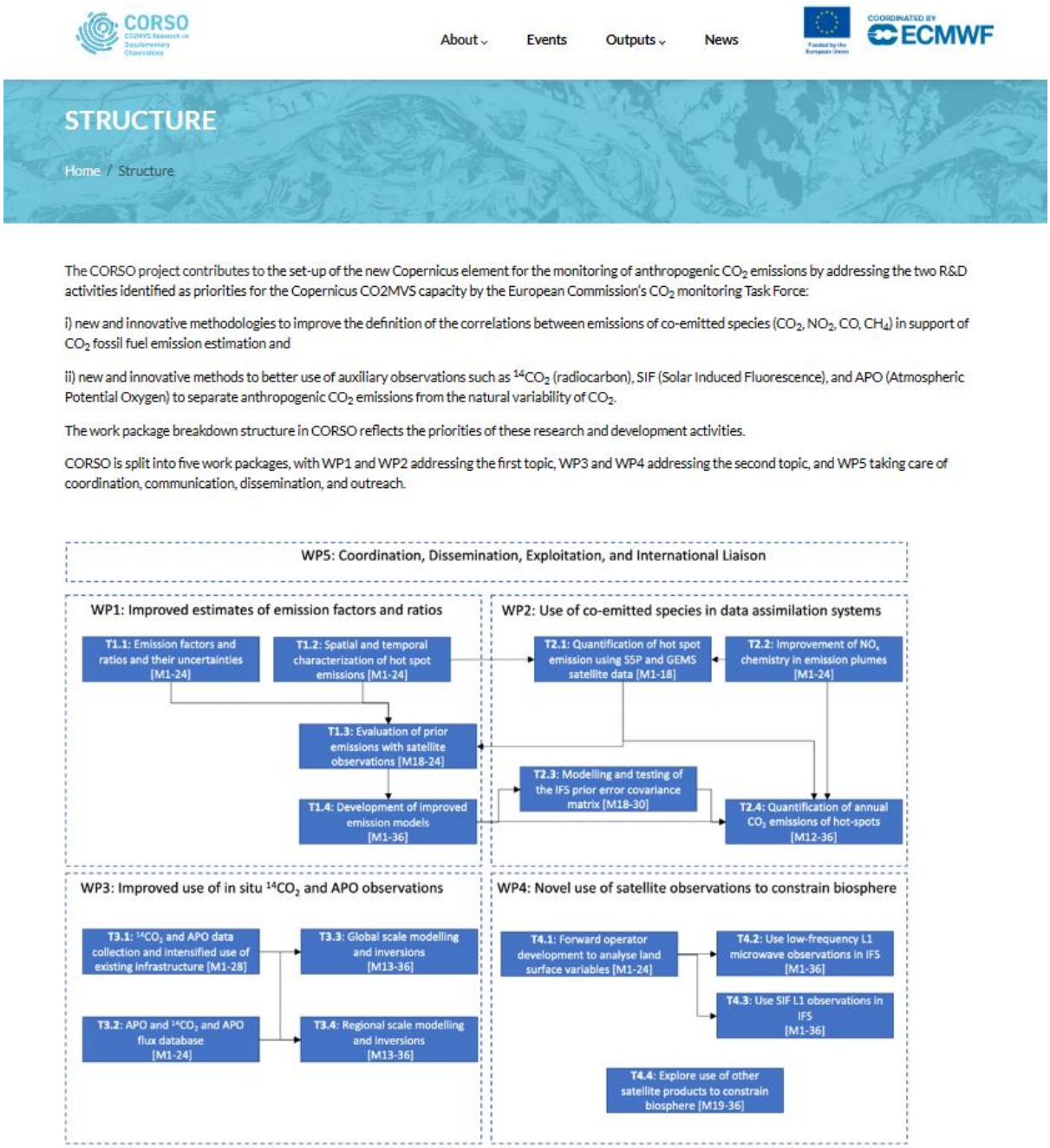


Summarizing the above figure (High-level data flow of the CO2MVS), CORSO has set the following key objectives:

1. Deliver improved estimates of emission factors/ratios and their uncertainties.
2. Deliver the capabilities at global and local scale to optimally use observations of co-emitted species to better estimate anthropogenic CO_2
3. Provide clear recommendations to CAMS, ICOS, and WMO about the potential added-value of high-temporal resolution $^{14}CO_2$ and APO observations as

3.2.2 Structure Page

The screen shot below displays the layout of the page outlines CORSO's structure:

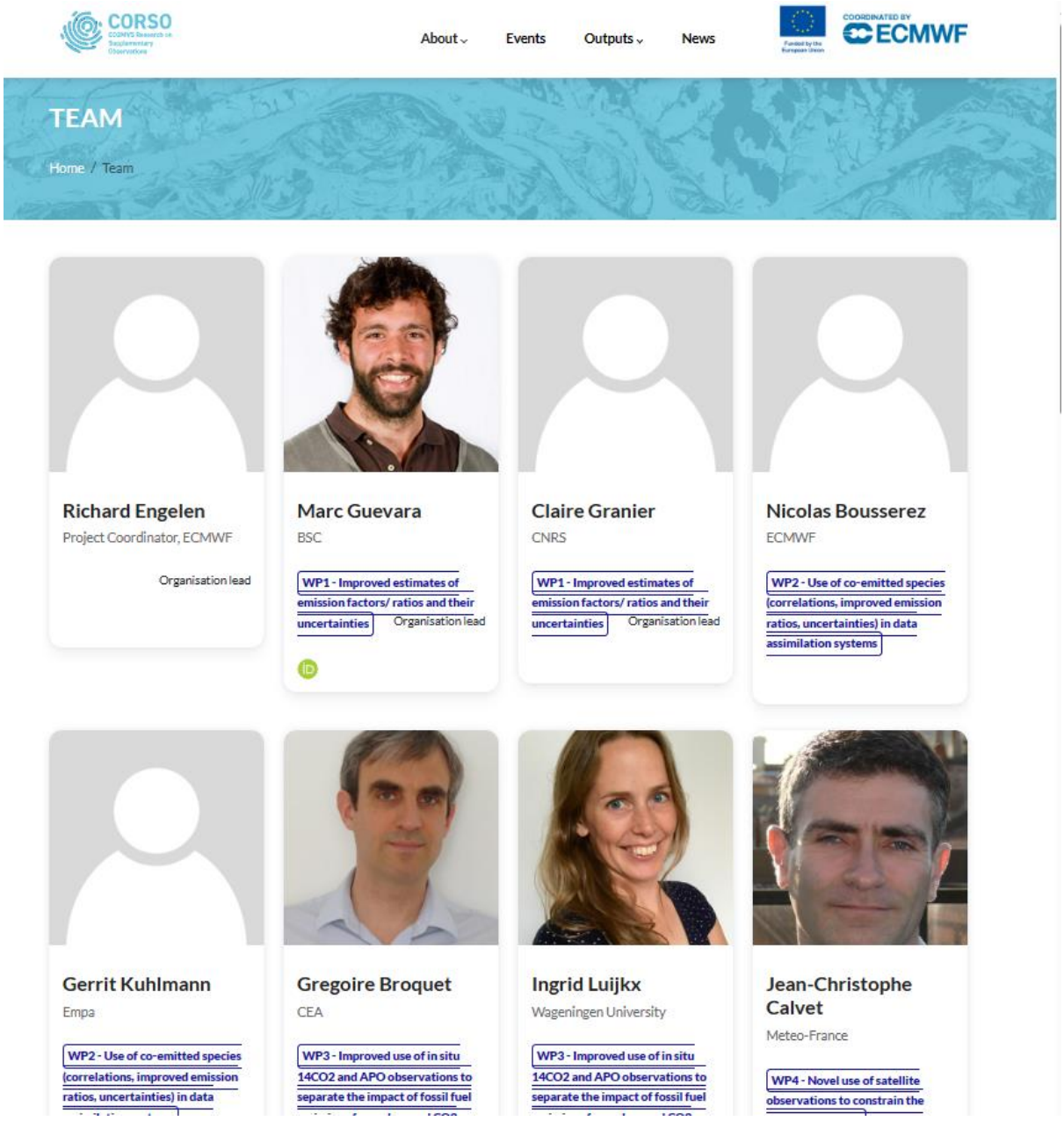


3.2.3 Consortium Page

The screen shot below displays the layout of the Consortium page, with links to the home page of each institution:

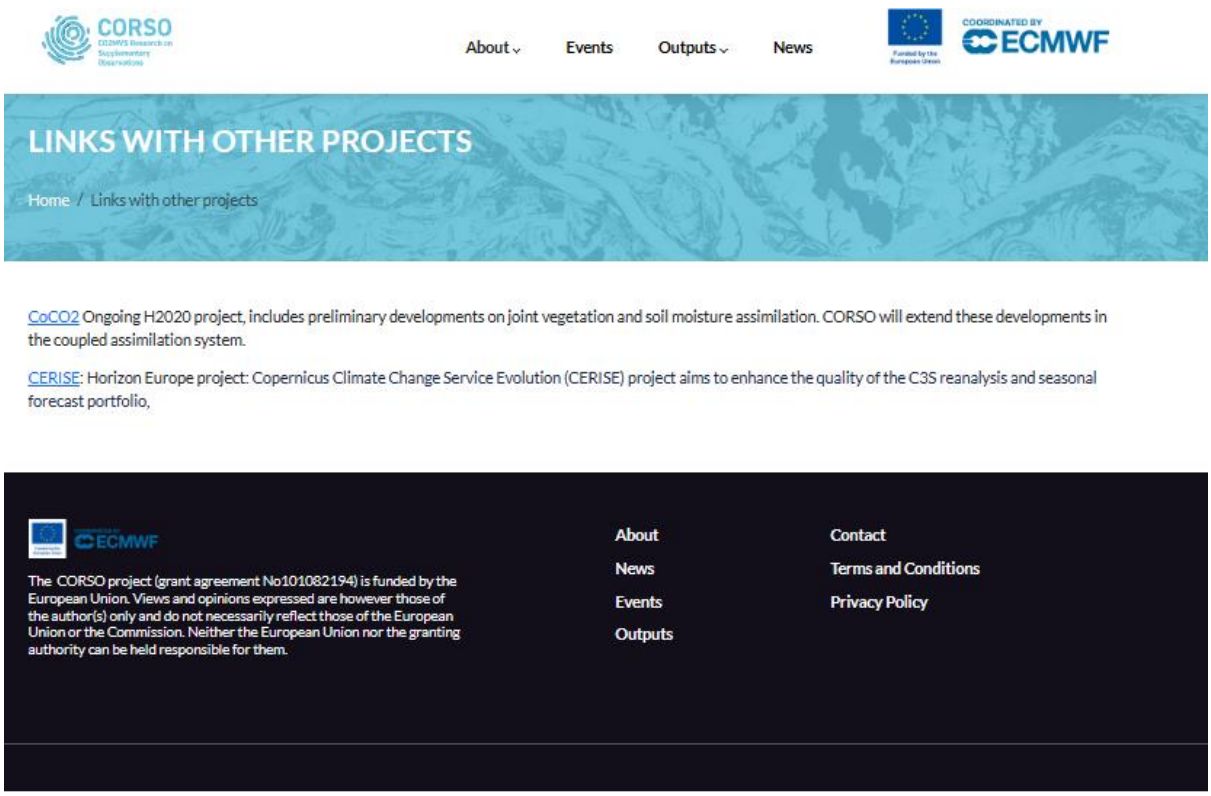
3.2.4 Team Page

The screen shot below displays the layout of the Team page: where WP leads, main contact for each partner organisation and personal researchers links are visible in the style of a business card.



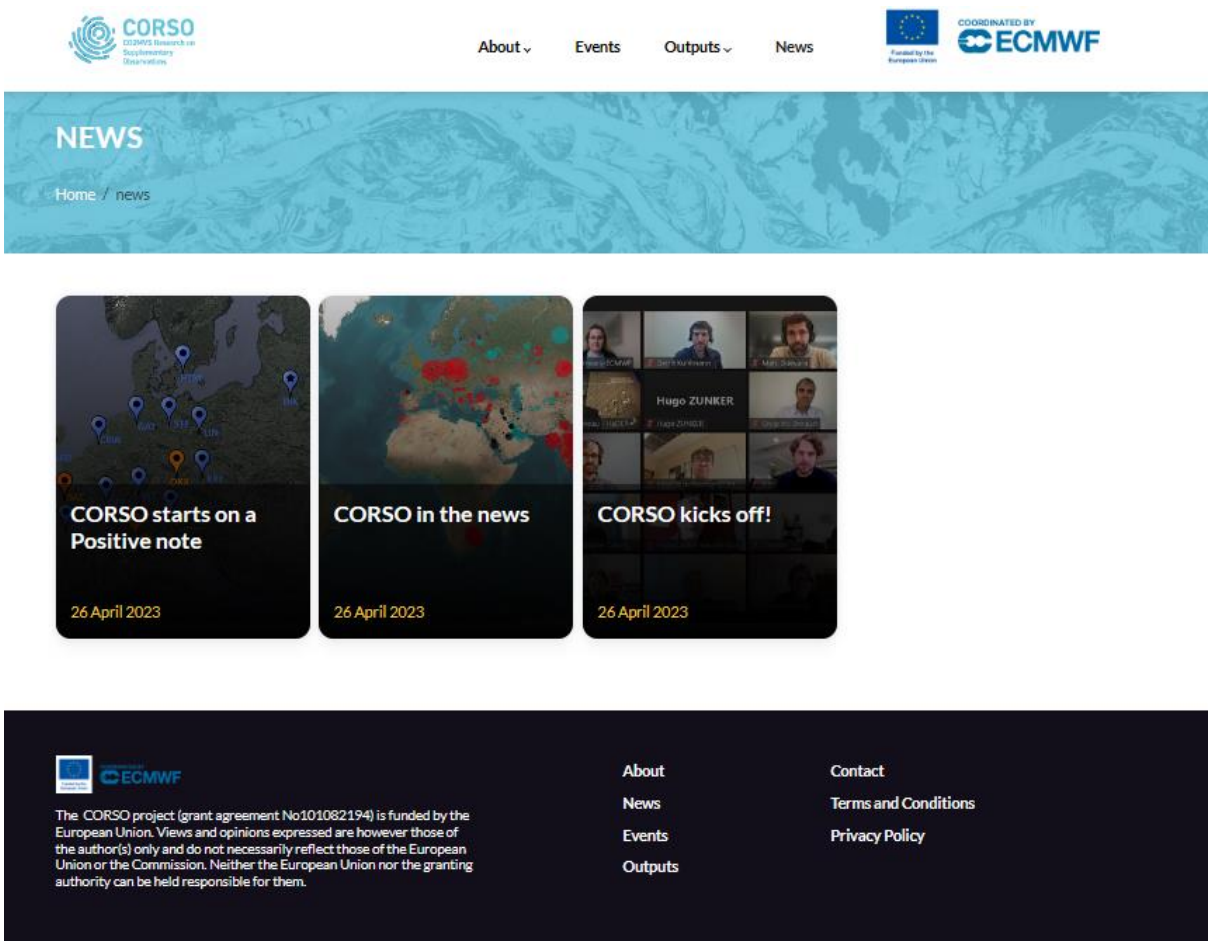
3.2.5 Interactions with other projects Page

The screen shot below displays the layout of the page: this provides information on other ongoing projects of relevant to CORSO or with whom we are interacting with.

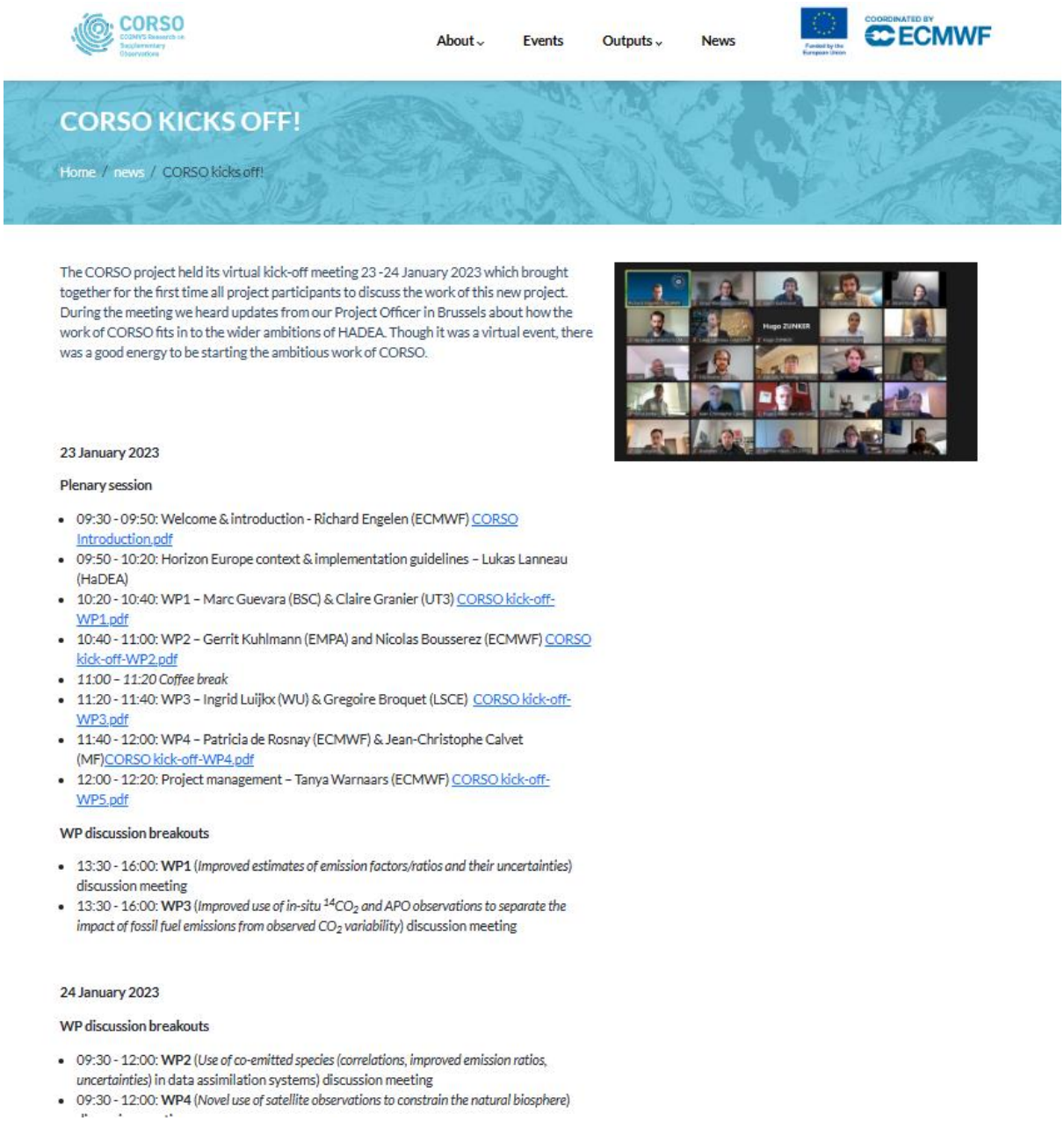


3.3 News

News items are featured on the front page and call also be accessed via the “News” section. All news article entries will be shared as news posts on the project’s Twitter account, that will become active later in the project. Relevant updates will also be disseminated to websites with high reach and impact in the science community, with particular emphasis on the CAMS community



Each News item opens to provide more details such as:



CORSO

About Events Outputs News

COORDINATED BY ECMWF

CORSO KICKS OFF!

Home / news / CORSO kicks off!

The CORSO project held its virtual kick-off meeting 23 -24 January 2023 which brought together for the first time all project participants to discuss the work of this new project. During the meeting we heard updates from our Project Officer in Brussels about how the work of CORSO fits in to the wider ambitions of HADEA. Though it was a virtual event, there was a good energy to be starting the ambitious work of CORSO.

23 January 2023

Plenary session

- 09:30 - 09:50: Welcome & introduction - Richard Engelen (ECMWF) CORSO Introduction.pdf
- 09:50 - 10:20: Horizon Europe context & implementation guidelines – Lukas Lanneau (HaDEA)
- 10:20 - 10:40: WP1 – Marc Guevara (BSC) & Claire Granier (UT3) CORSO kick-off-WP1.pdf
- 10:40 - 11:00: WP2 – Gerrit Kuhlmann (EMPA) and Nicolas Bousserez (ECMWF) CORSO kick-off-WP2.pdf
- *11:00 – 11:20 Coffee break*
- 11:20 - 11:40: WP3 – Ingrid Luijkx (WU) & Gregoire Broquet (LSCE) CORSO kick-off-WP3.pdf
- 11:40 - 12:00: WP4 – Patricia de Rosnay (ECMWF) & Jean-Christophe Calvet (MF)CORSO kick-off-WP4.pdf
- 12:00 - 12:20: Project management – Tanya Warnaars (ECMWF) CORSO kick-off-WP5.pdf

WP discussion breakouts

- 13:30 - 16:00: **WP1** (*Improved estimates of emission factors/ratios and their uncertainties*) discussion meeting
- 13:30 - 16:00: **WP3** (*Improved use of in-situ $^{14}CO_2$ and APO observations to separate the impact of fossil fuel emissions from observed CO_2 variability*) discussion meeting

24 January 2023

WP discussion breakouts

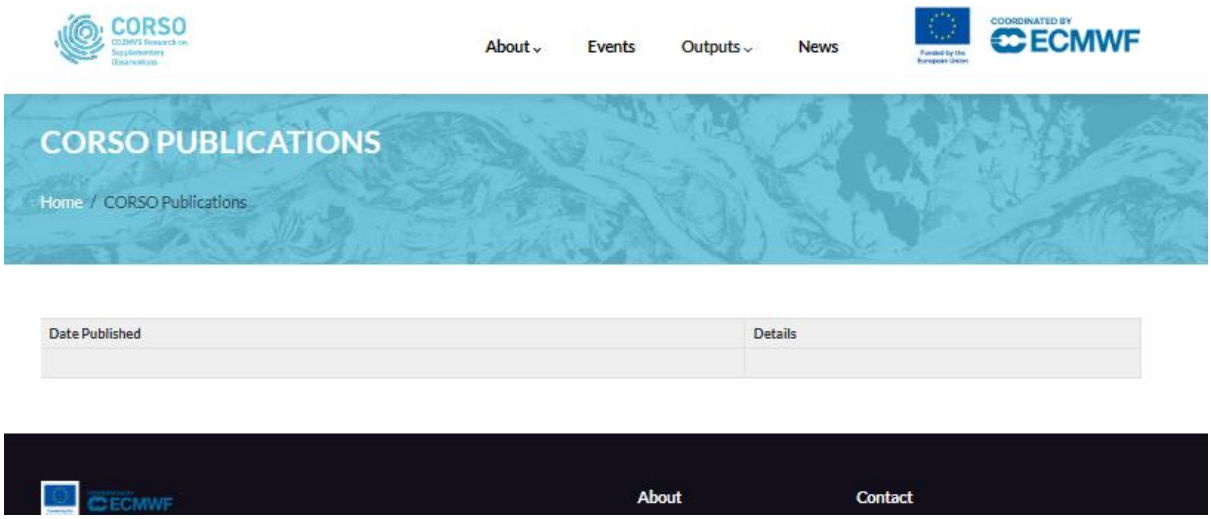
- 09:30 - 12:00: **WP2** (*Use of co-emitted species (correlations, improved emission ratios, uncertainties)* in data assimilation systems) discussion meeting
- 09:30 - 12:00: **WP4** (*Novel use of satellite observations to constrain the natural biosphere*)

3.4 Outputs

This section is an entrance point for partners or stakeholders to find the information and the general outputs provided by the project. Outputs is foreseen as a general repository for all project's results. It includes the library of CORSO documents including deliverables and reports, publications, and other relevant material. A sub-menu option provides a list based display of the project outputs, notably: Publication, Deliverables, and Data. The relevance of these sub-menus will be reviewed to include further items as necessary through the project's lifetime.

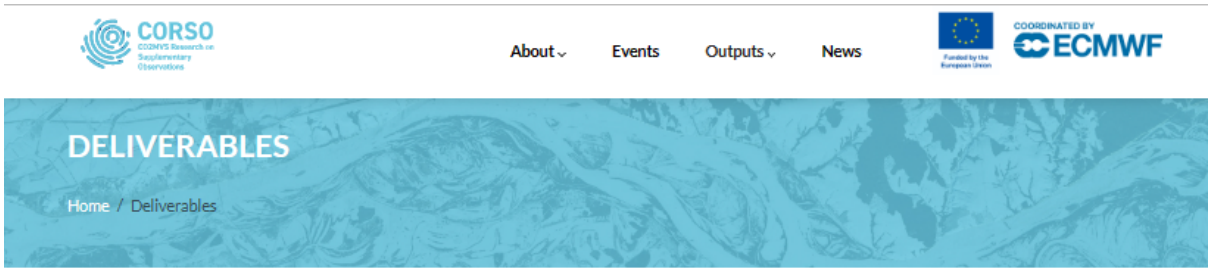
3.4.1 Publications

This page will display the peer-review publications arising from the project. At this starting point of the project there are no Publication to list but this screen shot shows the list structure to be used:



3.4.2 Deliverables

This page will display the list of deliverable reports arising from the project, as the public deliverable reports become available these will be added here as downloads.



WP1 - Improved estimates of emission factors/ ratios and their uncertainties

Del No	Title	Type	Due Month	Download
D1.1	Global maps of CO2, CO and NOx emission factors and their uncertainties per sector for the year 2021	DATA	Dec-2024	
D1.2	Improved global point source emissions dataset	DATA	Dec-2024	
D1.3	Validation of the spatio-temporal characterisation of prior emissions and recommendations for improvement	REPORT	Jun-2025	
D1.5	Results of CCFFDAS assessments with recommendations on the formulation/parameterisation of the MVS fossil emission model and on the observational constraints to be used for assimilation	REPORT	Dec-2025	

WP2 - Use of co-emitted species (correlations, improved emission ratios, uncertainties) in data assimilation systems

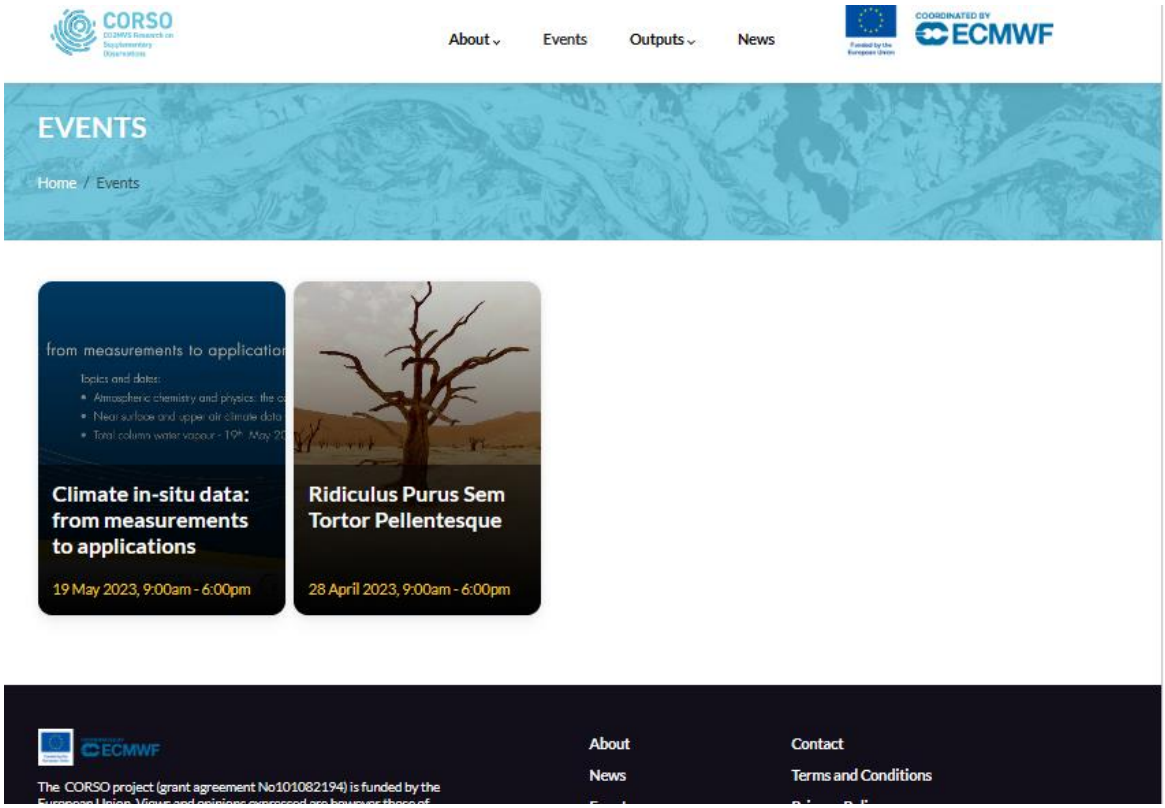
Del No	Title	Type	Due Month	Download
D2.1	List of CO2, NO2 and CO hot spot locations for the year 2021 identified in satellite observations	DATA	Dec-2023	
D2.2	Time series of NOx and CO emissions of hot spots in Africa, Europe and SE Asia in reference year	OTHER	Jan-2024	
D2.3	Software library for data-driven emission quantification of hot spots	OTHER	Jun-2024	
D2.4	Analysis of ratios of atmospheric columns over and downwind of emission hotspots located in contrasting geographical regions and the responsible ratios of emitted trace gases	OTHER	Dec-2024	
D2.5	A prototype for a simplified chemistry scheme to describe observed variations in NO2 on spatial scales of ~25 km, suitable for global-scale models	OTHER	Dec-2024	
D2.6	Optimized B matrix parameters (i.e., temporal, spatial, cross-species correlations)	DEM	Dec-2024	
D2.7	Multi-scale global IFS inversion outputs (2021) with assimilated posterior emissions from hot-spots	DATA	Dec-2025	

WP3 - Improved use of in situ 14CO2 and APO observations to separate the impact of fossil fuel emissions from observed CO2 variability

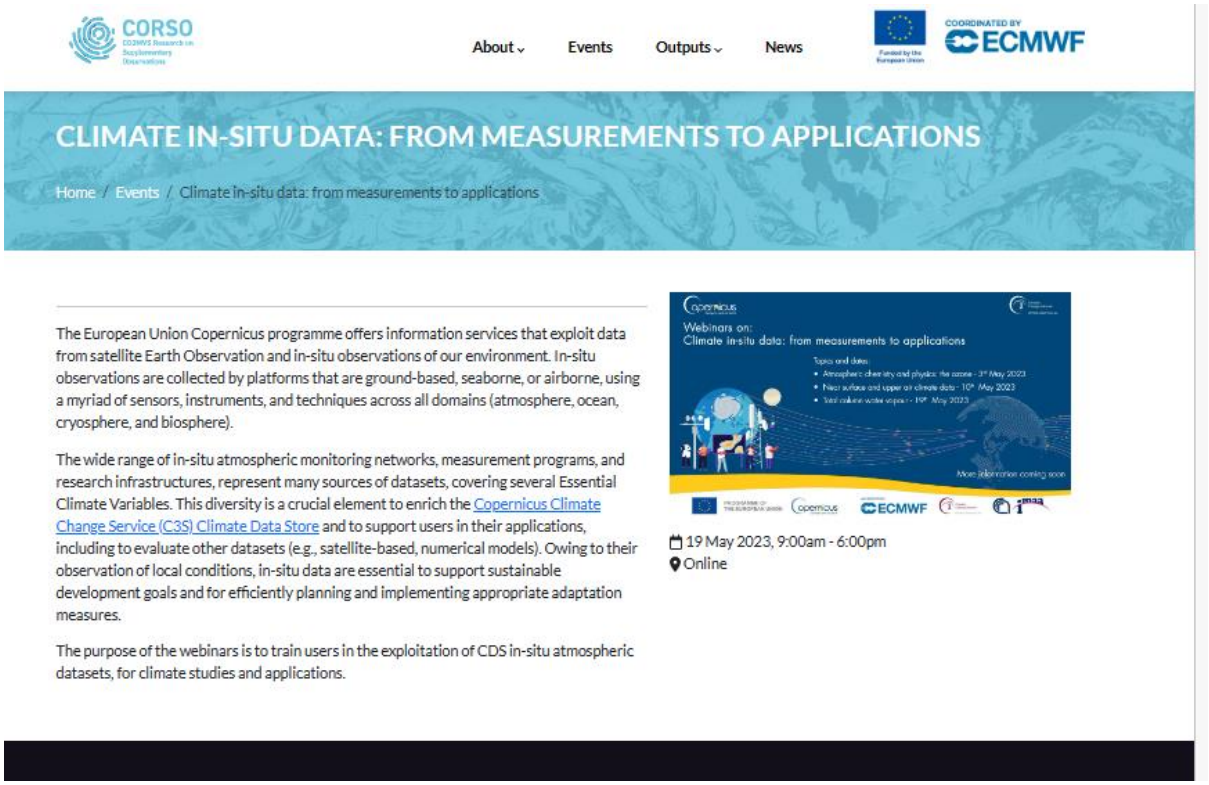
Del No	Title	Type	Due Month	Download
D3.1	Database of existing 14CO2 measurements	DATA	Sep-2023	
D3.2	Database of existing APO measurements	DATA	Sep-2024	
D3.3	Final APO and 14CO2 measurement datasets from the 1-year intensive observations in Western Europe	DATA	Apr-2025	

3.5 Events

Events are featured on the front page and can also be accessed via the “Events” section.



Each item will open as separate page:



3.6 Other Aspects

The website will link directly to a project's Twitter feed which aims to become active in the second year of the project. This delay is chosen to better align with the workflow of the project.

As mentioned previously there is a "contact us" option at the bottom bar, this will allow interested parties to contact us via a dedicated mailing address that is monitored by the Coordinator. This feature enables contact to project experts as the Coordinator can direct specific questions to the relevant partners.

3.7 Testing, Content Management System and Tracking

Testing: the website is built with Drupal 9,and uses reliable plugins to support part of its functionality. The website is built to be "responsive" and has been tested on different platforms and devices, and has been optimised for browsing from both PC and mobile devices. Various browsers have been tested including Firefox, Google Chrome and Internet Explorer. In this way the website has been developed to be compatible with mobile devices.

Content management: Accessing and editing, updating and uploading the material (digital media, posts) is easy for all partner members who would need to administrate the website.

Visitor tracking : In order to monitor its performance over time, the project website makes use of Google Analytics. The account is configured to secure the use of personal data and compliance with the GDPR rules. It will track the number of views, unique visits and monitor the downloads of the project's outputs

4 Project Internal Pages

The CORSO project utilises Confluence and Jira for internal communication and co-development.

Confluence is a wiki-style tool that allows for co-editing of information.

The CORSO Confluence provides a collaborative spaces for each work package in addition to project management information. This is a secure and password protected environment where partners can share information, plans and monitor the project progress and quality procedures.

5 Conclusion

This document, D5.2, provides a high-level description of the CORSO project website. It presents details on the structure of the website. The website (accessible via www.corso-project.eu) is to be updated regularly, both throughout the lifetime of the project and thereafter. It contains information on the project, news and events, outputs (including public deliverables), links to other projects of relevance to name a few of the main menu options.

Document History

Version	Author(s)	Date	Changes
1.0	Tanya Warnaars, Rhona Phipps (ECMWF)	13/04/2023	Initial version

Internal Review History

Internal Reviewers	Date	Comments