CLINT

CLIMATE INTELLIGENCE

COMMUNICATION AND DISSEMINATION PLAN- SECOND UPDATE

June, 2024

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Author	*Revision content*	*Date*
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Table of Content

LIST OF ACRONYMS

Abbreviations

AB: Advisory Board
CA: Consortium Agreement
CS: Climate Service
DoA: Description of Action (Annex I of the Grant Agreement)
EC: European Commission
GA: Grant Agreement
GAs: General Assembly
MB: Management Board
Mx: Month number (where x is the month number)
PC: Project Coordinator
PI: Principal Investigator
PO: Project Officer
PR: Project Review
QC: Quality Control
QM: Quality Management
RP: Reporting Period
WP: Work Package
WEF: Water-Energy-Food

EXECUTIVE SUMMARY

The second update of the CLINT Communication and Dissemination Plan (Deliverable D9.6) describes the specific implementation of the communication and dissemination activities and their updated timeline to ensure the effective dissemination of results and knowledge generated in the project tailored for the different interested target groups. Building on what was defined in the first update of the Communication and Dissemination Plan (D9.4), this second update outlines what has been achieved so far for all activities foreseen in the initial plan. In particular, we provide an update on the state of the art and the development activities in all communication and dissemination areas. We describe the concrete applications that followed the realisation of the project's visual identity, which are the website updates, directly linked to the dynamism of CLINT's social media accounts, as well as the list of CLINT events and presentations and the research it has produced. All data and metrics reported in this document are up to May 2024.During the past years, a promising interaction with the XAIDA project (European-funded project in the same call as CLINT) was initiated, creating new ideas and fruitful initiatives such as synergies within the Summer School are prepared for June 2024 and the joint webinar planned for September 2024.

The exploitation plan, which outlines strategies for utilising CLINT project results to achieve maximum impact, including commercial, social, and scientific benefits was presented in D9.3 and D9.5, and it will be updated in D9.7.

1 INTRODUCTION

The uptake of the communication and dissemination plan describes the activities for the outreach and the dissemination of the results and knowledge generated within the CLINT project for its target groups (as in the Grant Agreement, Table 2.4). The report is a reference document defining the uptake of the strategy and approach to be implemented in the project for effective communication and outreach activities. Since the communication and dissemination plan is designed to be flexible and adaptive, this uptake is shaped by the information and results as they unfold during the project lifetime, now at M36 (within the upcoming D9.10).

The first review's criticisms regarding CLINT's communication level allowed us to improve and implement the strategy that will be presented in this deliverable. Outreach activities were implemented through social activities and updated website with information on ongoing activities and materials produced, such as progress in case studies, references to publications and communication materials.

All data and metrics reported in this document are up to May 2024 to allow and ensure the writing and internal revision timelines, as agreed by all PPs.

2 COMMUNICATION AND DISSEMINATION UPDATES

2.1 Communication and Dissemination Actions

This second update of the communication and dissemination actions is undertaken to check and monitor the following actions, as mentioned in the communication and dissemination plan (D9.2):

- Implement an effective communication and dissemination strategy for the project;
- Implement effective communication channels to the project's stakeholders, the scientific community, and broader audiences;
- Communicate the project activities and disseminate the project outputs to the various stakeholders and local end-users in the Climate Change Hotspots and related audiences, and support know-how transfer at the local level;
- Communicate the project activities, disseminate the project outputs, and support know-how transfer at the international level, exploiting the various scientific and business networks of the project partners;
- Organise the CLINT Summer School as a major dissemination event as well as webinars for outreach and widespread know-how transfer.

The second update on the elements of the CLINT's communication and dissemination strategy and preliminary definition of Key Performance Indicators (KPIs) at M36 are presented in Table 1, with reference on M18. All data are up to May 2024, unless otherwise noted.

Table 2.1 Update of elements of CLINT's communication and dissemination strategy and preliminary definition of Key Performance Indicators (KPIs) at M36, with reference on M18.

Target groups	Goal	Communication & dissemination channels and activities	KPIs	M18	M36 update
Climate Services experts and practitioners	Maximise the uptake of project results by experts and practitioners, particularly from the Copernicus programme.	Face-to-face and online meetings	Number of meetings ≥ 4 (e.g., annual meetings with Copernicus staff)	1	1
		Conference and workshops	Number of events ≥ 12	3	3
		Demonstrator of AI-enhanced CS	online	TBD	planned to be online M38
		Open-source software	online	TBD	Planned for year 4th
		Open datasets	online	TBD	Planned for year 4th
CLINT end- users, including both decision- and policy- makers at the European level and in the local Climate Change Hotspots	Generate a bi- directional dialogue for the co-development of the AI-enhanced Climate Services	Periodic Face-to-face and online meetings	Number of meetings ≥ 4 (e.g., annual meetings with CLINT end-users)	Planned for year 4th	Planned for year 4th
		Policy briefs	Number of policy briefs ≥ 2 (one in WP6 targeting EU policy makers and one in WP7 targeting local decision makers)	Planned for year 4th	Planned to 2024 and 2025

		CLINT webinars	Number of webinars ≥ 6	1 done (7 Oct./10/2022) 3 planned (March/June/October 2023) 2 TBD 2024	4 done, 1 planned 2024, 2 planned 2025
Scientific community	Create formal and informal networks for sharing the project results	Open access peer- reviewed publications in scientific journals	TBD	8	19
		Conferences and workshops	Number of events ≥ 12	3	6
		Open datasets	online	TBD	Planned for year 4th
		Open-source software	online	TBD	Planned for year 4th
		CLINT website	Number of visitors ≥ 3,000	500	2860 (april 2024)
Climate change adaptation practitioners in NGOs, humanitarian organisations, & global initiatives for adaptation, early warning/early action and DRR	Generate a dialogue for sharing the project results and extend the potential uptake of AI-enhanced Climate Services beyond the CLINT case studies	Face-to-face and online meetings	Number of meetings ≥ 2 for each involved organisation	TBD	Planned for year 5th
		CLINT website	Number of visitors ≥ 3,000	500	2860 (april 2024)
		CLINT webinars	Number of webinars ≥ 6	1 done (7 Oct./10/2022) 3 planned (March/June/October 2023) 2 TBD 2024	4 done, 1 planned 2024, 2 planned 2025
		Demonstrator of AI-enhanced CS	online	TBD	planned to be online M38
		Open datasets	online	TBD	Planned for year 4th

		Open-source software	online	TBD	Planned for year 4th
General Public and civil society	Establish an effective communication for promoting the project findings to a vast virtual community	CLINT website	Number of visitors ≥ 3,000	500	2860 (april 2024)
		Social media	Number of total contacts ≥ 1,000	323	1022 contacts (LinkedIn 759 followers, X 263 followers)
		Press releases and news	Number of news ≥ 6	2 (news)	1 press relase + 18 news
		CLINT webinars	Number of webinars ≥ 6	1 done (7 Oct./10/2022) 3 planned (March/June/October 2023) 2 TBD 2024	4 done, 1 planned 2024, 2 planned 2025

2.2 Refining the Communication and Dissemination Plan

The update aims to ensure effective communication and dissemination of project updates and activities to relevant stakeholders, utilising various channels and platforms based on the project's current status and objectives.

Table 1 has been updated with dissemination events for the CLINT project, particularly under the M36 updates. These events include both local/national and international activities, often organised alongside specific events.

Communication and dissemination activities at the international level are directed towards the scientific community, policy-makers, practitioners, and students. At this stage of the project, enough results are showcased on the outcome page of the website, and all the relevant news and project activities are planned and disseminated throughout social media.

The exchange of information and experiences with other EU-funded projects with similar scopes as CLINT is supported through the involvement of the project in H2020 consultation meetings and networking events. For example, CLINT is in close interaction with XAIDA, a EU-funded project with structure and aims similar to those of CLINT. Details of the communication and dissemination plan and associated activities for individual communication channels are presented in the following sections.

2.3 Next Deliverables & Milestones

Table 2 illustrates the next/upcoming communication- and dissemination-related deliverables and milestones as defined in the Grant Agreement. These events will be documented and accompanied by adequate communication activities and the continuous communication and dissemination activities described in this document.

Table 2 Next communication- and dissemination-related deliverables & milestones

Project month	Communication & dissemination deliverables
M48	D6.4 Policy brief – Local Climate Services D7.4 Policy brief – Local Climate Services
M46	D9.7 Final exploitation strategy
M48	D9.8 AI-enhanced operational prototypes D9.9 AI-enhanced S2S forecast demonstrator
M48	D9.10 Final Communication and Dissemination Report

3 COMMUNICATION AND DISSEMINATION CHANNELS AND ACTIVITIES

In order to track the communication and dissemination activities, CLINT employs various communication channels and activities using different platforms and instruments to reach diverse target audiences in different contexts, as described below.

3.1 Online Channels

3.1.1 Website

The CLINT project website (https://climateintelligence.eu) provides information and updates about the topics, activities, and results of the project to a wide range of users, including the CLINT consortium members, end-users, potential users, the scientific community, climate change disaster risk managers and adaptation practitioners, policy-makers, the general public, and the civil society. Since 30 September 2021, the website reached nearly 3000 unique visits (see Table 1) of which around 700 in the last four months (January 2024 -April 2024). The *Home Page* is regularly updated to highlight the latest information and content. It is enriched with updated and new material as the project advances and completes its activities. News is published monthly. A dedicated section for the forthcoming summer school has been created (see Section 4.1).

3.1.2 Newsletter

Thanks to the good performance of the CLINT LinkedIn Page (see Section 3.1.3), a newsletter will be produced and disseminated with detailed updates on the progress of activities, new initiatives, publications, etc. The newsletter will provide continuity to the communication and will keep regular contact with the target readership. The newsletter will be posted on the CLINT LinkedIn page so members can easily find it. In addition, a notification will be released to the Page's network once published to invite new followers to subscribe. The Newsletter will be available at this link.

3.1.3 Social Media

CLINT has two social media platforms suitable for its communication and dissemination activities: X and LinkedIn. The X channel was activated on 30 September 2021, and it reached 263 followers. The LinkedIn page (https://www.linkedin.com/in/clint-climate-intelligence-53901a222/) reached 759 followers (12 June 2024). During the project's lifetime, there was clear evidence of the advantages of using LinkedIn over X, especially for networking and science-related activities. LinkedIn provides a platform that is tailored for academia, offering benefits that Twitter may lack in certain aspects. In the last year (May 2023-May 2024) we got more than 7k impressions[1] on LinkedIn. For this reason, we prioritized growing our LinkedIn page.

3.2 Press Releases

Press Releases will be issued for activities and results of high public relevance (meetings, outcomes, publications, etc.). Press releases will be published on the website and delivered to the media contact list of the different partners to reach out to local/national/EU media and get appropriate coverage, thus contributing to raising awareness among the communities interested in the

[1] Impressions refer to the total number of views when the content is at least 50% on screen for at least 300 ms, or the total number of times the content is clicked on, whichever comes first.

outcomes of the project. A press release will be available as soon as relevant outcomes are available. On 18 May 2023, a CLINT paper was featured in the prestigious Eos AGU Editor's Highlight establishing a starting point for future peer-reviewed publication.

3.3 Networking Activities

An informal liaison and information sharing through the existing contacts and related projects of the consortium partners will support the wider diffusion of CLINT project activities. CLINT is actively linked to other projects through its partners to further promote the project activities. Specifically, a connection with the XAIDA project has been set up to share challenges from two different angles, more methodological from XAIDA and more application and service-oriented for CLINT. A dedicated session is present within the CLINT Summer School and a Joint Webinar is planned for September 2024 on Compound Weather and Climate events within the XAIDA Webinar Series.

3.4 Scientific Publications

Scientific publications based on project methodologies, processes, and results will be published on partner websites and research collaboration platforms (when the length of the embargo period is acceptable). Journal papers will present the most significant project results at the highest scientific standards and disseminate them to a scientific audience. To date, 19 peer-reviewed papers have been published, as listed in Table 3.

Table 3 List of scientific published publications, with authors and titles.

Authors	Title	Journal
N Hempelmann, C Ehbrecht, E. Plesiat, G Hobona, J Simoes, D Huard, TJ Smith, US McKnight, IG Pechlivanidis, and C Alvarez-Castro	Deployment of AI-enhanced services in climate resilience information systems	(2022) Journal of Photogrammetry and Remote Sensing, *XLVIII-4/W1-2022, 187–194,*
AM Gómez-Orellana, D Guijo-Rubio, Jorge Pérez-Aracil, PA Gutiérrez, S Salcedo-Sanz, and C Hervás-Martínez	One month in advance prediction of air temperature from Reanalysis data with eXplainable Artificial Intelligence techniques	(2022) Atmospheric Research,Volume 284, 106608
A Dasgupta, L Arnal, R Emerton, S Harrigan, G Matthews, A Muhammad, K O'Regan, T Pérez-Ciria, E Valdez, B van Osnabrugge, M Werner, C Buontempo, H Cloke, F Pappenberger, I Pechlivanidis,C Prudhomme, MH Ramos, and P Salamon	Connecting hydrological modelling and forecasting from global to local scales: Perspectives from an international joint virtual workshop	(2022) Journal of Flood Risk Management, e12880
D Fister, J Pérez-Aracil, C Peláez-Rodríguez, J Del Ser and S Salcedo-Sanz	Accurate Long-term Air Temperature Prediction with a Fusion of Artificial Intelligence and Data Reduction Techniques	(2022) arXiv:2209.15424
S González-Herrero, D Barriopedro, RM Trigo, JA López-Bustins and M Oliva	Climate warming amplified the 2020 record-breaking heatwave in the Antarctic Peninsula	(2022) Commun Earth Environ 3, 122

C Peláez-Rodríguez, J Pérez-Aracil, D. Fister, L Prieto-Godino, RC Deo, and S. Salcedo-Sanz,	A hierarchical classification/regression algorithm for improving extreme wind speed events prediction,	(2022) Renewable Energy, Volume 201, Part 2 Pages 157-178
S Salcedo-Sanz, J Pérez-Aracil, G Ascenso, J Del Ser, D Casillas-Pérez, C Kadow, D Fister, D Barriopedro, R García-Herrera, M Giuliani and A Castelletti	Analysis, characterization, prediction, and attribution of extreme atmospheric events with machine learning and deep learning techniques: a review	(2022) Theor Appl Climatol 155, 1–44
E Rousi, AH Fink, LS Andersen, FN Becker, G Beobide-Arsuaga, M Breil, G Cozzi, J Heinke, L Jach, D Niermann, D Petrovic, A Richling, J Riebold, S Steidl, L Suarez-Gutierrez, JS Tradowsky, D Coumou, A Düsterhus, F Ellsäßer, G Fragkoulidis, D Gliksman, D Handorf, K Haustein, K Kornhuber, H Kunstmann, JG Pinto, K Warrach-Sagi, and E Xoplaki	The extremely hot and dry 2018 summer in central and northern Europe from a multi-faceted weather and climate perspective	(2023) Nat. Hazards Earth Syst. Sci. NHESS, 23, 1699–1718
E Scoccimarro, O Cattaneo, S Gualdi, F Mattion, F Bizeul, A Risquez, A Martin, and R Quadrelli	Country-level energy demand for cooling has increased over the past two decades	(2023) Communications Earth & Environment, 208, 4
A Castelletti, A Ficchì, A Cominola, P Segovia, M Giuliani, W Wu, S Lucia, C Ocampo-Martinez, B De Schutter, and JM Maestre	Model Predictive Control of water resources systems: A review and research agenda	(2023) Annual Reviews in Control, 55,442-465
M M Kuglitsch, AAlbayrak, J Luterbacher, A Craddock, A Toreti, J Ma, P Padrino Vilela, E Xoplaki, R Kotani, D Berod, J Cox, and I Pelivan	When it comes to Earth observations in AI for disaster risk reduction, is it feast or famine? A topical review	(2023) Environ. Res. Lett. 18 093004
P Bonetti, AM Metelli, and M Restelli	Interpretable Linear Dimensionality Reduction based on Bias-Variance Analysis	(2023) arXiv:2303.14734
A Shyrokaya, F Pappenberger, I Pechlivanidis, G Messori, S Khatami, M Mazzoleni, and GDi Baldassarre	Advances and gaps in the science and practice of impact-based forecasting of droughts	(2023) Water, e1698
D Barriopedro, R García-Herrera, C Ordóñez, DG Miralles, and S Salcedo-Sanz	Heat waves: Physical understanding and scientific challenges	(2023) Reviews of Geophysics, 61, e2022RG000780
L Cavicchia, E Scoccimarro, G Ascenso, A Castelletti, M Giuliani, and S Gualdi	Tropical Cyclone Genesis Potential Indices in a New High-Resolution Climate Models Ensemble: Limitations and Way Forward.	(2023) Geophysical Research Letters, Volume 50, Issue 11
G Ascenso, L Cavicchia, E Scoccimarro, and A Castelletti	Optimisation-based refinement of genesis indices for tropical cyclones	(2023) Environmental Research Communications, Volume 5, Number 2
S Jerez, D Barriopedro, A García-López, RLorente-Plazas, AM Somoza, M Turco, J Carrillo, and RM Trigo	An Action-Oriented Approach to Make the Most of the Wind and Solar Power Complementarity	(2023) Earth's Future, 11, e2022EF003332
V Torralba, S Materia, L Cavicchia, MC Álvarez Castro, C Prodhomme, R McAdam, E Scoccimarro, and S Gualdi	Nighttime heat waves in the Euro-Mediterranean region: definition, characterisation, and seasonal prediction	(2024) Environmental Research Letters 19 034001
K Katharina, P Berg, D Bozhinova, L Crochemore, Y Du, I Pechlivanidis, C Photiadou, and W Yang	Robustness of hydrometeorological extremes in surrogated seasonal forecasts	(2024) International Journal of Climatology 1-14

3.5 Dissemination to Policy Makers

CLINT dissemination also aims to present project results to selected public, private and academic institutions through dedicated workshops and policy briefs. Workshops seek to support bottom-up EU policies and discuss the potential uptake of the project's results and the remaining research gaps. In turn, policy briefs are intended to translate scientific findings into bite-sized pieces, allowing us to reach public administrators and have a potential impact on public policy.
They are planned for 2024 (1) & 2025 (2).

4 KNOWLEDGE TRANSFER AND TRAINING

4.1 CLINT Summer School

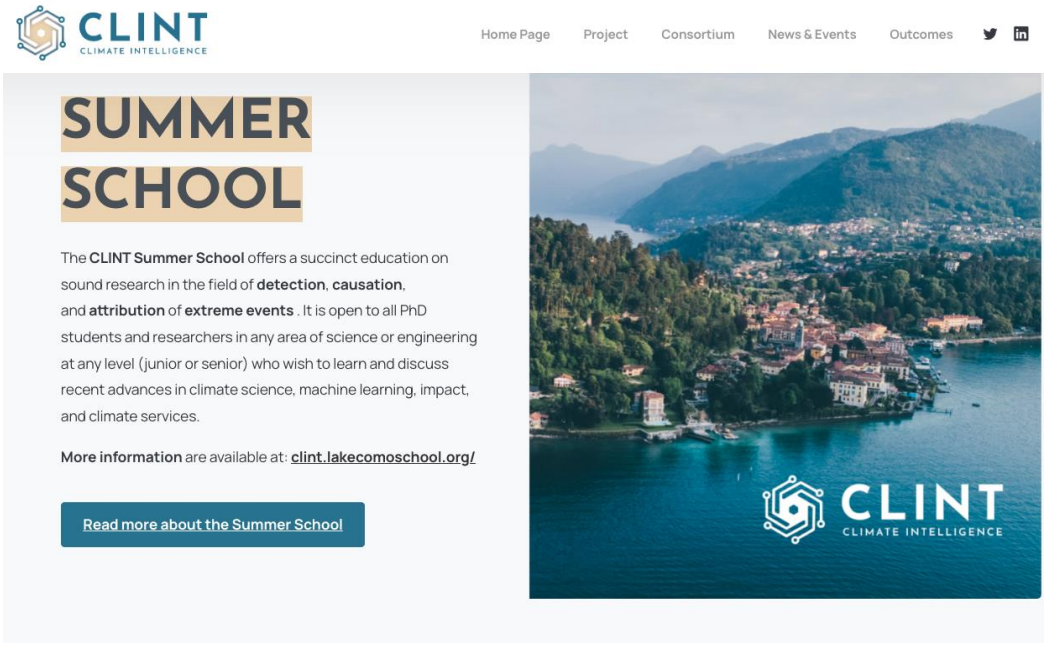
As part of the knowledge transfer process towards all levels and target groups, CMCC (responsible partner) organised a summer school running from the 17th to the 20th of June in Como. The summer school is open to university students, young researchers, and practitioners, including those from the local Climate Change Hotspot areas. We want to share knowledge gained in the project, as well as guidance on the key technologies and tools developed and employed in the CLINT framework. The curriculum developed for the summer school was drawn from the project and its case study areas, as well as from other relevant sources as appropriate (e.g. literature, educational and training material complementary to the covered themes). In addition, curriculum has been successfully implemented due to the valuable input from both the Advisory Board and the collaboration with the Xaida project. Instructions will be provided by partners in the project who are themselves teaching in higher education institutions.

Creating a dedicated website to showcase CLINT summer school is a strategic way to provide detailed information, attract potential students, and highlight the value of the program. The webpage was set up and structured in different sections/pages to help disseminate and collect applications. The structure was the following:

- The Homepage provides a brief overview of the summer school program with details on the objectives and goals of the school;
- The Program page outlines the schedule and duration of the summer school along with descriptions and learning outcomes;
- The Lectures page introduces the faculty members and instructors involved in teaching the courses, highlighting their qualifications;
- The Application page explains how students can apply for the school. It provides details about application deadlines, required documents, and any selection criteria, including a link to the application form for submission.

A defined space for the Summer School on the CLINT homepage was created (Figure 1) to provide information and resources to prospective participants, ensuring they are well-informed and engaged. This section functioned as an entry point for new visitors, drawing them into the broader offerings of CLINT, fostering greater overall engagement, and integrating it seamlessly while ensuring it stands out enough to attract attention.

Figure 1. *The dedicated section for CLINT Summer School on the CLINT homepage*



We collected **110** *Curriculum Vitae* from students from **24** countries worldwide, 15 of which were Extra EU. The final number of participants is **39** students, selected according to their curricula; a selection had to be done because of the maximum capacity of the venue. Additional statistics on the number/gender/academic background of the enrollees and the results of the survey conducted at the end of the last day will be analysed and reported on D9.10 (Final Communication and Dissemination Report, M48).

A dedicated outreach activity was organised one month before the student's application deadline (4th March 2024). It consisted of an e-invitation (Figure 2), taking into account the brand identity rules (as stated in D9.2), which was disseminated throughout CLINT social media accounts, CMCC social media accounts, as well as CMCC Newsletter and CMCC Website[2].

Figure 2. *The e-invitation of the CLINT Summer School.*

2 https://www.cmcc.it/lectures_conferences/mastering-tropical-cyclone-representation-with-the-clint-project

4.2 CLINT Webinars

A series of *CLINT Webinars* and dissemination meetings are planned for know-how transfer and direct outreach to policy-makers and practitioners.

For all CLINT webinars an e-invitation was developed (Figures 3, 4, 5) taking into account the brand identity rules stated in D9.2, and disseminated throughout CLINT social media accounts, CMCC social media accounts, CMCC Newsletter and CMCC Website[3]. The info about the first webinar was defined and presented in D9.4.

The second webinar was streamed (via Zoom) on 29th March 2023, and the title was "**Mastering tropical cyclone representation with the CLINT project**". The speakers of the second webinar were Leone Cavicchia (CMCC), and Guido Ascenso (POLIMI). The moderator was Ronan McAdam (CMCC). The abstract is the following:

Tropical cyclones are devastating low-pressure systems occurring across all tropical ocean basins. When they make landfall, they are among the worst natural disasters in terms of fatalities and economic loss due to the associated extreme winds, heavy precipitation, and storm surge. Therefore, understanding the factors responsible for their formation is very important to society. This webinar will begin with a description of the main characteristics of tropical cyclones, focusing on the recent record-breaking cyclone Freddy in February-March 2023. We will then discuss indicators (genesis potential indices) commonly used to link tropical cyclone occurrence to climate variables, highlighting their strengths and weaknesses. Finally, we will discuss methods developed within the CLINT project to improve the representation of tropical cyclone year-to-year variability.

This webinar reached **108** enrolled people with **85** active participants. The video recording of the webinars is available on the CLINT homepage and the CMCC YouTube page.

3 https://www.cmcc.it/lectures_conferences/mastering-tropical-cyclone-representation-with-the-clint-project

Figure 3. *The e-invitation of the second CLINT Webinar.*

The third CLINT webinar was streamed (via Zoom) on 21st March 2024, and the title was "**Attribution of extreme events to climate change**". The speaker of the third webinar was David Barriopedro (CSIC), and the moderator was Carmen Alvarez Castro (CMCC). The abstract is the following:

Attribution of extreme events quantifies the influence of climate change on a particular extreme event. In this talk, we briefly describe some of the approaches employed for attribution and illustrate them using the European 2022 heatwave as an example. We also present the research and developments that are being carried out within the CLINT project to support the attribution of single events and observed trends to man-made climate change. They include efforts to improve classical methodologies, develop hybrid approaches and explore novel methods for fast attribution of EE.

This webinar was a great success. In fact, it reached **604** enrolled individuals, with **387** actively participating because of the importance of the subject. This high level of engagement demonstrates the strong interest and value perceived by the attendees. The video recording of the webinars is available on the CLINT homepage and the CMCC YouTube page.

Figure 4. *The e-invitation of the third CLINT Webinar.*

The fourth CLINT webinar was streamed (via Zoom) on 10th June 2024, and the title was "**Advancing impact-based drought detection via Machine Learning**". The speaker of the fourth webinar was Matteo Giuliani (POLIMI), and the moderator was Andrea Toreti (JRC). The abstract is the following:

Drought is a slowly developing natural phenomenon that can occur in all climatic zones and propagates through the entire hydrological cycle with long-term socio-economic and environmental impacts. Intensified by anthropogenic climate change, drought has become one of the most significant natural hazards in Europe. Different definitions of drought exist, i.e. meteorological, hydrological, and agricultural droughts, which vary according to the time horizon and the variables considered. Just as there is no single definition of drought, there is no single index that accounts for all types of droughts. Capturing the evolution of drought dynamics and associated impacts across different temporal and spatial scales still remains a critical challenge. In this talk, we discuss the role of Machine Learning for advancing impact-based drought detection. Our main goal is the identification of relevant drivers of observed drought impacts (e.g., water deficits or crop stress) from a pool of candidate hydro-meteorological predictors. The selected predictors are then combined into an index representing a surrogate of the drought impacts in the considered area. To support this task, we developed a ML pipeline that integrates (1) a novel dimensionality reduction method that allows an interpretable aggregation of spatially distributed drivers, (2) feature extraction techniques including both filters and wrappers to select the most informative and non-redundant information, and (3) existing and new causal inference algorithms for verifying the causal links between the selected drivers and the target impacts.

Our new indexes advance state-of-the-art drought monitoring practices, which often rely on standardized drought indexes that are poorly correlated with drought impacts, and provide reliable projections of drought impacts' trends under different climate change scenarios. Several real-

world examples will be used to provide a synthesis of recent applications of our methodology in case studies featuring diverse hydroclimatic conditions, variable levels of data availability, and increasing spatial domain from single river basins to a pan-European analysis.

This webinar was very successful. It reached **403** enrolled individuals, with **248** actively participating because of the importance of the subject. This high level of engagement demonstrates the strong interest and value perceived by the attendees. The video recording of the webinars is available on the CLINT homepage and the CMCC YouTube page.

Figure 5. *The e-invitation of the fourth CLINT Webinar.*

An additional joint webinar with the XAIDA project is planned for October 2024 on compound events with speaker Elena Xoplaki (JLU).

Two additional webinars are planned for 2025 on Climate Services at Pan-European scale, with speaker Ilias Pechlivanidis (SMHI) and on Climate services at local scale with speaker Schalk Jan van Andel (IHE). All the webinars are hosted on the CMCC servers.

5 CONCLUSION

The consistently updated information on ongoing activities and materials produced led us to an effective improvement of CLINT communication. This ensured to reach the target audience clearly and persuasively. Throughout this new strategy, we have outlined a systematic approach to engage stakeholders, disseminate key information, and foster meaningful dialogue. By leveraging diverse channels, such as webinars and summer school, we meet the needs and preferences of the audience, hoping to enhance understanding and trust in our initiatives. Specifically, we tailored our content to start discussing the capabilities and constraints of AI/ML-driven methods in providing intelligent climate services, determining causation, attribution, and predicting extreme events, while also addressing the associated uncertainties. Thanks to the network enhancements with XAIDA, we broadened our perspective and collaboration sharing knowledge, resources, and expertise. Continuous evaluation and adaptation will be crucial in maintaining relevance and effectiveness. We are committed to accomplishing and pushing boundaries further to contribute to lasting positive impacts and to investigate how CLINT results can contribute to the EU AI Act.

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