



Deliverable 5.7.

ClimEd Training №7: Developing Skills to Use Climatic Information and Services for Various Climate-Dependent Branches of Economy

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Abstract	Summary of the 7th ClimEd Online Training on "Developing Skills to Use		
	Climatic Information and Services for Various Climate-Dependent		
	Branches of Economy" (7-11 April 2025). All materials of the training are		
	available at: http://climed.network/events/climed-trainings/climed-		
	training-7		

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1. INTRODUCTION

The ClimEd project "**Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation**" (2021-2026; <u>http://climed.network</u>) is developing the competency-based curricula for continuous comprehensive training of specialists in the field of climate services in Ukraine, as well as initiating and developing the additional education in climate change for decision-makers, experts in climate-dependent economic sectors and wider public, which are to contribute to stabilization of the national economy in the face of the climate change and its adaptation to the upcoming climate change.

The ClimEd Trainings (<u>http://climed.network/events/climed-trainings</u>) are focused on training the faculty/ teaching/ research staff and postgraduates at the ClimEd partner institutions and collaborating organizations in advanced educational and information-and-communication technologies for building a flexible multi-level integrated practice-based education system in the field of Climate Services, Climate Change Adaptation and Mitigation.

In total, 7 trainings (Tr) are planned during lifetime of the ClimEd project, and these are the following:

- Tr1: Competency-Based Approach to Curriculum Development for Climate Education
- Tr2: Adaptation of the Competency Framework for Climate Services to conditions of Ukraine
- Tr3: Digital tools and datasets for climate change education
- Tr4: Learning courses' development in climate services considering needs of different users
- Tr5: Applying different technologies of blended/on-line learning in education
- Tr6: Mastering technologies of massive open on-line courses development for general public
- Tr7: Skills to use climatic information and services for climate-dependent branches of economy.

2. THE 7TH CLIMED TRAINING: DEVELOPING SKILLS TO USE CLIMATIC INFORMATION AND SERVICES FOR VARIOUS CLIMATE-DEPENDENT BRANCHES OF ECONOMY

The ClimEd 7th Training on "ClimEd Training N7: Developing Skills to Use Climatic Information and Services for Various Climate-Dependent Branches of Economy" took place in a hybrid mode during 7-11 April 2025. The ClimEd project trainings are focused on training the faculty/ teaching/ research staff and postgraduates at the ClimEd partner institutions and collaborating organizations in advanced educational and information-and-communication technologies for building a flexible multi-level integrated practice-based education system in the field of Climate Services, Climate Change Adaptation and Mitigation.

In total, 79 persons (including 51 females and 28 males; and 15 young teachers/researchers) were accepted to participate in this onsite/online (hybrid) training. These were from the Ukrainian ClimEd partners and other institutions such as ONU - Odessa I.I. Mechnikov National University (Odessa, Ukraine); KNUCA - Kyiv National University of Construction and Architecture (Kyiv, Ukraine); BekNU - O. Beketov National University of Urban Economy (Kharkiv, Ukraine); LPNU - Lviv Polytechnic National University (Lviv, Ukraine); BTNAU - Bila Tserkva National Agrarian University (Bila Tserkva, Ukraine); ONMedU - Odesa National Medical University (Odessa, Ukraine); ICSA - Institute of Climate-Smart Agriculture NAAS (Odessa region, Ukraine); and MoES - Ministry of Education and Science of Ukraine.

The training included a series of lectures delivered and practical work in Groups during 7-11 April 2025. The Lecturing Blocks (B1, B2, B3).



B1 (Monday, 7 Apr 2025) – Climate Data, Indices, and Products. This block covers definition and development of climate indices, application of Geographic Information Systems (GIS) in climate services, climate data as well as introduction to groups presentations (prepare the climatic dataset to extract actionable information; understand and compute ClimPact indices, calculate and analyze these; explore future climate scenarios using the Climate Information Platform/Portal (<u>https://climateinformation.org</u>); review sectoral data and compare it with climate information; and discuss potential actions based on climate information).

Practical tasks (work in groups) included downloading climate data and applying ClimPact (a software package to calculate climate indices that are relevant for the health, agriculture and water sectors; <u>https://climpact-sci.org</u>).

B2 (Tuesday, 8 Apr 2025) – Sectorial Climate Products. This block includes defining of climate needs, introduction to RStudio (an integrated development environment for R, a programming language for statistical computing and graphics) and Shiny (a web framework for developing web-based applications, originally in R, and since 2022 in Python; <u>https://shiny.posit.co</u>) Apps.

Practical tasks (work in groups) included definition and operationalization of sectoral indices, and downloading data and computing sectoral indices, as well as functions to compute sectoral indices.

B3 (Wednesday-Thursday, 9-10 Apr 2025) – Climate Information to Make Decisions & Develop Climate Service Prototype to Transform Data in Information. This block includes a feedback session on Moodle Courses and MOOCs developed under ClimEd Trainings 5 and 6, approaches to evaluate the ecological conditions of ecosystems and their relationship to ecosystem services. Practical tasks (work in groups) included creating a Shiny App (supported by AI if necessary).

Finally, on Friday, 11 Apr 2025 – Communication of Climate Service. The last day includes onsite presentations delivered by Groups. Participants present their group work, receive critical feedback, answer on questionaries "Evaluation of the Course" and "Evaluation of the Learning Outcomes", and completion ceremony with awarding the training certificates.

The lectures were delivered by – Drs/Profs. Jon Xavier Olano Pozo, Enric Aguilar, Anna Boqué (Universitat Rovira i Virgili, Spain), Kalev Sepp, Veljo Kabin, Lagle Löhmus, (Estonian University of Life Sciences, Estonia), and Dmytro Diadin (O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine).

During these days, all the training participants had realized onsite and remotely own small-scale research projects (SSRPs). Each mixed group included several persons from different Universities, genders, and ages. In total, 16 Groups (G01-G16) focused on the themes analysing the impacts of climate change and variability on specific sectors, such as agriculture, health, tourism, water resources, and urban infrastructure, using local climate data and tailored analytical tools. Each Group's main goal was to develop own Shiny App for specific sectors of economy. The Groups established horizontal communication within/between groups and worked on their own related Group Projects.

On 11 Apr 2025, onsite participants of Groups G01-G07, and then, on 25 Apr 2025, Groups G08-G16 online presented their own completed projects: G01 "Climate Data for River Basin Management"; G02 "Climate Indices for the Urban Stormwater Management in Ukraine"; G03



"From Concept to Prototype: Developing a Pollen Allergy Risk Forecaster for Ukraine (An Interactive Tool Using R Shiny and Local Climate Data)"; G04 "Sea Sunrise Group Kayak & SUP Commercial Tours in Odessa: Weather Conditions and Climate Change Impact"; G05 "Tourism in the Ukrainian Carpathians"; G06 "Developing skills to use climatic information and services for various climate-dependent branches of economy"; G07 "Wheat grain contamination dynamics under climate change"; G08 "Energy consumption of social building"; G09 "The Impact of Climatic Factors on the Formation and Treatment of Landfill Leachate in Ukraine: a Case Study of L'viv Region "; G10 "Forecasting the spread of dirofilariasis in the Southern Ukraine"; G11 "Developing skills to use climatic information and services for various climate-dependent branches of economy"; G12 "Development of viticulture in Odessa region"; G13 "Meteo-sensitivity and ways of its correction in patients with high blood pressure"; G14 "Climate Change and Mental Health"; G15 "Mathematical Modelling of Climate Change Impact on Lyme Disease Spread in Ukraine"; and G16 "Using climate data to optimise working conditions on construction sites". All presentations were constructively discussed, evaluated, criticized and commented as well as overall evaluated on a scale (1-10). As a result of the evaluation, the ClimEd training certificates (corresponding to 3 ECTS credit points) were awarded as recognition of participants' achieved learning outcomes. All Groups got high and good scores, and, respectively, have been awarded the certificates.

It was stressed that participants of the training had obtained an understanding of identifying key climate-sensitive decisions within a selected sector of the economy and climate-relevant information and indicators in the Shiny App to explore and interpret data for supporting informed decision-making. The training was combined with interesting social activities, such as an excursion in Tarragona, which all onsite participants enjoyed.

The e-evaluation of the ClimEd 7th Training was done using two questionnaires distributed among participants. Following the 1st questionnaire – (Evaluation of the Training) – 97 % of the participants estimated overall rating for this course as" very good" and "good"; training materials were of "excellent" (76%), and "very good" (20 %) quality and information about the training was sufficient (96%), and participants will recommend such training to colleagues (100%). Following the 2nd questionnaire – (Self-Evaluation of the Obtained Competencies and Skills) – about 97% of participants "fully agreed" and "mostly agreed" that they have obtained/ improved their competencies and got skills working as groups.

Special thanks to all lecturers of the training – Jon Xavier Olano Pozo, Anna Boqué, Enric Aguilar, (Universitat Rovira i Virgili, Spain), Kalev Sepp, Veljo Kabin, Lagle Löhmus(Estonian University of Life Sciences, Estonia), Dmytro Diadin (O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine) – for their professionalism, enthusiasm, and commitment to the training; and URV team – Jon Xavier Olano Pozo, Anna Boqué, Enric Aguilar, Òscar Saladié– for excellent organization, hosting and warm atmosphere during the training. Thanks to the ONU team members (Drs. Valeriya Ovcharuk, Inna Khomenko, and Nataliia Bulat, and IT-manager Vladimir Andrusenko) for support with ClimEd relevant modules development; e-evaluations; continuous web-update of the training materials.

All materials of the training (slides and videos of lectures, presentations of exercises, and homeworkassignments as group projects, etc.) are available at <u>http://climed.network/events/climedtrainings/climed-training-7</u>. The training outcomes were also disseminated through the PEEX (Pan-Eurasian Experiment; <u>https://www.atm.helsinki.fi/peex</u>) network through quarterly PEEX NewsLetters & PEEX Blog (<u>https://peexhq.home.blog/2025/04/30/climed-training-n7</u>), maintained by UHEL; at Facebook <u>https://www.facebook.com/share/p/1YbB5hougz</u>, <u>https://www.facebook.com/share/p/16WyHPmsu1</u>,



<u>https://www.facebook.com/share/p/1BbjzU2n3K</u>, maintained by ClimEd and another resources of project partners <u>https://surl.lu/whrjhc</u>.

2.1. Lecturing Materials

During the 7th ClimEd Training, in total 11 lectures were delivered.

Lecture 1 – "<u>Climate Indices</u>" by Enric Aguilar (Universitat Rovira i Virgili, Spain) (link to <u>video</u>) *Lecture 2* – "<u>Developing climate indices: The Climpact App</u>" by Enric Aguilar, Anna Boqué, Jon

Olano (Universitat Rovira i Virgili, Spain) (link to video)

Lecture 3 – "<u>GIS Applications in Climate Services</u>" by Dmytro Diadin (O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine) (link to <u>video</u>)

Lecture 4 – "<u>User friendly Climate Data</u>" by Anna Boqué, Jon Olano (Universitat Rovira i Virgili, Spain) (link to <u>video</u>)

Lecture 5 – "<u>Workgroup Presentation</u>" by Anna Boqué. Jon Olano (Universitat Rovira i Virgili, Spain) (link to <u>video</u>)

Lecture 6 – "<u>Defining Climate Needs // Recovering indices of training IV</u>" by Jon Olano, Anna Boqué (Universitat Rovira i Virgili, Spain) (link to <u>video</u>)

Lecture 7 – "<u>Introduction to RSTUDIO</u>" by Jon Olano, Anna Boqué (Universitat Rovira i Virgili, Spain) (link to <u>video</u>)

Lecture 8 – "<u>Introduction to Shiny</u>" by Jon Olano, Anna Boqué (Universitat Rovira i Virgili, Spain) (link to <u>video</u>)

Lecture 9 – "Feedback Session on Moodle Courses and MOOCs developed under Training V & VI" by Veljo Kabin, Lagle Löhmus (Estonian University of Life Sciences, Estonia) (link to video) *Lecture 10* – "How to Evaluate the Ecological Conditions of Ecosystems and Their Relationship to Ecosystem Services" by Kalev Sepp (Estonian University of Life Sciences, Estonia) (link to video) *Lecture 11* – "Climate information portal" by Enric Aguilar, Anna Boqué, Caterina Cimolai Jon Olano (Universitat Rovira i Virgili, Spain).

2.2. Group Work / Group Projects

During the 7th training, group work included lectures on the development and application of climate indices, the use of the Climpact App, integration of GIS tools in climate services, user-friendly access to climate data, practical skills in R and R Shiny for interactive visualization, as well as feedback on online climate education tools and methods for evaluating ecosystem conditions about ecosystem services, and practices on how to access and process climate datasets using the Climpact App (Practice I), the definition and operationalization of sectorial climate indices (Practice II), downloading and processing climate data for calculating these indices (Practice III), and developing interactive tools using R Shiny (Practice IV, Practice V), with optional support from AI. Participants explored practical examples and learned to analyse climate datasets, compute and interpret relevant indices, and present their findings through interactive applications. All onsite and online participants conducted small-scale research projects (SSRPs) throughout the training. Each group worked on its respective project, focusing on analysing the impacts of climate change and variability on specific sectors, such as agriculture, health, tourism, water resources, and urban infrastructure, using local climate data and tailored analytical tools.

2.3. Group Work, Projects Defenses & Certificates

Each Group presented (in English) Group Work as its own realized SSRPs with a specific focus. The presentations – Group G01-G16 (link to <u>video</u>), were constructively criticized and commented on as



well as overall evaluated on a scale (1-10). As a result of the evaluation, all Groups got the ClimEd training certificates (see example in Annex 4.3) corresponding to 3 ECTS as recognition of their achieved learning outcomes.

The following Small-Scale Research Projects (SSRPs) were presented and defended by 16 Groups:

- G01 "Climate Data for River Basin Management";
- G02 "Climate Indices for the Urban Stormwater Management in Ukraine";
- G03 "From Concept to Prototype: Developing a Pollen Allergy Risk Forecaster for Ukraine (An Interactive Tool Using R Shiny and Local Climate Data)";
- G04 "Sea Sunrise Group Kayak & SUP Commercial Tours in Odessa: Weather Conditions and Climate Change Impact";
- G05 "Tourism in the Ukrainian Carpathians";
- G06 "Developing skills to use climatic information and services for various climate-dependent branches of economy";
- G07 "Wheat grain contamination dynamics under climate change";
- G08 "Energy consumption of social building";
- G09 "The Impact of Climatic Factors on the Formation and Treatment of Landfill Leachate in Ukraine: Case Study of L'viv Region";
- G10 "Forecasting the spread of dirofilariasis in the Southern Ukraine";
- G11 "Developing skills to use climatic information and services for various climate-dependent branches of economy";
- G12 "Development of viticulture in Odessa region";
- G13 "Meteo-sensitivity and ways of its correction in patients with high blood pressure";
- G14 "Climate Change and Mental Health";
- G15 "Mathematical Modelling of Climate Change Impact on Lyme Disease Spread in Ukraine";
- G16 "Using climate data to optimize working conditions on construction sites".

The Obtained Competencies and Learning Outcomes (OC&LO) of 7th ClimEd training included the following:

- Identifying and selecting the most appropriate online sources of climate related data;
- Downloading, quality checking and preparing climate related data in required formats;
- Computing core climate indices, interpreting results in context of specific location;
- Understanding sectorial climate information needs and defining sectorial indicators;
- Identifying key climate-sensitive decisions within a selected sector of economy;
- Selecting climate variables and thresholds to sector's decision-making processes;
- Formulating and justifying climate indicators tailored to support decisions;
- Building basic functionalities (incl. input/ visualization/ output) of Shiny App to show climate information and sectorial indices;
- Integrating climate relevant information and indicators into Shiny App to explore and interpret data for supporting informed decision-making.

2.4. Evaluation of the Training

The evaluation of the training was performed through the questionaries ("Evaluation of the Course" & "Evaluation of the Learning Outcomes") distributed among participants. For the questionaries, in



total 50 responses from the participants were obtained for both the 1^{st} and 2^{nd} questionaries, and these are summarized below.

Following the 1st questionnaire – (Evaluation of the Training) – 97% of the participants estimated overall rating for this course as" very good" and "good"; training materials were of "excellent" (76%), and "very good" (20%) quality and information about the training was sufficient (96%), and participants will recommend such training to colleagues (100%). Following the 2nd questionnaire – (Self-Evaluation of the Obtained Competencies and Skills) – about 97% of participants "fully agreed" and "mostly agreed" that they have obtained/ improved their competencies and got skills working as groups.

Questionnaire N1: Evaluation of the Course:

Scale: strongly agree | agree | neither agree nor disagree | disagree | strongly disagree

- 1. The lecturers were supportive and open to participants
- 2. The lecturers conducted the training excellently (clearly, sparkled interest etc.)
- 3. Training materials were of excellent quality (content, layout, clarity etc.)
- 4. Information about the training was sufficient (announcement, programme, etc.)
- 5. I will recommend such training to my colleagues

Question	1	2	3	4	5	AVG, %
strongly agree	41	40	38	38	41	79,2
agree	9	9	10	10	9	18,8
neither agree nor disagree	-	1	2	-		1,2
disagree	-	-	-	2		0,8
strongly disagree	-	-	-	-	-	







Questionnaire N2: Evaluation of the Learning Outcomes (LOs):

To which extent do you think that you developed the learning outcomes (competences/ abilities to) of the 7th ClimEd training?

Scale: not at all | slightly | somewhat/to some extent | mostly agree | fully agree

- 1. Identifying and selecting the most appropriate online sources of climate related data
- 2. Downloading, quality checking and preparing climate related data in required formats
- 3. Computing core climate indices, interpreting results in context of specific location
- 4. Understanding sectorial climate information needs and defining sectorial indicators
- 5. Identifying key climate-sensitive decisions within a selected sector of economy
- 6. Selecting climate variables and thresholds to sector's decision-making processes
- 7. Formulating and justifying climate indicators tailored to support decisions
- 8. Building basic functionalities (incl. input/ visualization/ output) of Shiny App to show climate information and sectorial indices
- 9. Integrating climate relevant information and indicators into Shiny App to explore and interpret data for supporting informed decision-making

Learning Outcomes	1	2	3	4	5	6	7	8	9
fully agreed	30	31	28	32	29	32	32	30	32
mostly agreed	14	14	17	13	15	14	13	12	11
somewhat/to some extent	2	1	1	1	1	0	1	3	2
slightly	0	0	0	0	1	0	0	1	1
not at all	0	0	0	0	0	0	0	0	0









3. ACKNOWLEDGEMENTS

Special thanks to all lecturers of the training – Jon Xavier Olano Pozo, Anna Boqué, Enric Aguilar, (Universitat Rovira i Virgili, Spain), Veljo Kabin, Lagle Löhmus, Kalev Sepp, (Estonian University of Life Sciences, Estonia), Dmytro Diadin (O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine) – for their professionalism, enthusiasm, and commitment to the training; and URV team – Jon Xavier Olano Pozo, Anna Boqué, Enric Aguilar, Òscar Saladié– for excellent organization and hosting as well as warm atmosphere during the training. Thanks to the ONU team members (Dr. Valeriya Ovcharuk, Dr. Inna Khomenko, Dr. Nataliia Bulat, and IT-manager Vladimir Andrusenko) for support with ClimEd relevant modules development; e-evaluations; continuous web-update of the training materials.

All materials of the training (slides and videos of lectures, presentations of exercises and homework assignments as group projects, etc.) are available at <u>http://climed.network/events/climed-trainings/climed-training-7</u>.

Results of the ClimEd Trainings were also presented at:

- International Research-To-Practice Conference "Climate Services: Science and Education" (22-24 September 2021, Odessa, Ukraine) oral presentation "Online Approaches for Climate-Oriented Education" in section "Education in Climate Services" <u>https://odeku.edu.ua/wpcontent/uploads/2021-a-conference_proceedings-21-09-isbn.pdf;</u>
- Eastern Mediterranean & Middle East Climate Atmosphere Research Center Workshop (*11-12 October 2021, Cyprus*); oral presentation "Climate-related education: on-line approach in COVID times" in section "Education and Training Opportunities"; <u>https://climatechange2021.org/wp-content/uploads/Book-of-Abstracts_Virtual Workshop_AC0710-js1.pdf;</u>
- SYMET-14 "Education and Training in a Period of Rapid Change" (22-25 November 2021, Switzerland); poster presentation "Online trainings in climate-oriented education"; <u>https://symet-14.virtualpostersession.org</u>.
- European Geosciences Union (EGU) General Assembly 2022 (May 2022); oral presentation "Climate-Oriented Trainings in the Field of Climate Services, Climate Change Adaptation and Mitigation"; <u>https://meetingorganizer.copernicus.org/EGU22/EGU22-4895.html</u>; Ovcharuk, V., Mahura, A., Kryvomaz, T., Aguilar, E., Olano, J., Khomenko, I., Shabliy, O., Sogacheva, L., Zhou, P., Mäkelä, A., Krakovska, S., Lappalainen, H., Stepanenko, S., Lauri, K., Riuttanen, L.,



Tyuryakov, S., and Bashmakova, I.: CLIMATE-ORIENTED TRAININGS in the field of Climate Services, Climate Change Adaptation and Mitigation, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-4895, https://doi.org/10.5194/egusphere-egu22-4895, 2022.

- The International Conference on Regional Climate-CORDEX 2023 (ICRC-CORDEX 2023) was held 25-29 of September 2023 in Trieste, Italy; pico-presentation "Development of Multilevel Local, Nation- and Regionwide Education and Training in Climate Services in Ukraine" <u>https://icrc-cordex2023.cordex.org/</u>
- ACCC-FASN Science Conference 11-12 Nov 2024. CLIMED: CLIMATE-ORIENTED TRANINGS. A. Mahura, V. Ovcharuk, T. Kryvomaz, E. Aguilar, J. Olano, I. Khomenko, O.Shablii, V. Kaskevich, S. Kalev, V. Kabin, H.K. Lappalainen, L. Riuttanen, S. Tyuryakov <u>https://en.ilmatieteenlaitos.fi/accc-fasn2024</u>
- The Second International Conference on Climate Services, April 16-18, 2025, Odesa, Ukraine https://cs2025.onu.edu.ua/ Mahura Alexander, Ovcharuk Valeriya, Khomenko Inna, Lappalainen Hanna, Tyuryakov Svaytoslav Climate-Oriented Trainings on Climate Services, Climate Change Adaptation and Mitigation Climate Services: Science and Education [Electronic resource] :Proceedings of the Second International Research-to-Practice Conference (Odesa, 16-18 April 2025). Electronic text data (1 file : 5,7 MB). –Odesa : Odesa I. I. Mechnikov National University, 2025. –p101-102. ISBN 978-966-186-334-6 https://cs2025.onu.edu.ua/proceedings/
- European Geosciences Union (EGU) General Assembly 2025 (Apr-May 2025); oral presentation "Virtual Exchanges and Climate Education as a Tool for European Partnership Development for SDGs"; Mahura, A., Lappalainen, H. K., Karhumaa, J., Riuttanen, L., Vauhkonen, A., Tyuryakov, S., and Ovcharuk, V. and the & Erasmus+ CLUVEX, UnaVEx and ClimEd projects teams: Virtual Exchanges and Climate Education as a Tool for European Partnership Development for SDGs (<u>https://meetingorganizer.copernicus.org/EGU25/EGU25-15778.html</u>), EGU General Assembly 2025, Vienna, Austria, 27 Apr-2 May 2025, EGU25-15778, <u>https://doi.org/10.5194/egusphere-egu25-15778</u>, 2025.
- European Geosciences Union (EGU) General Assembly 2025 (Apr-May 2025); oral presentation "Multilevel Local, National, and Regional Education and Training: Building Academic Excellence in Climate Services in Ukraine"; Olano Pozo, J. X., Aguilar, E., Khomenko, I., Stepanenko, S., Boqué-Ciurana, A., Cimolai, C., Vergeles, Y., Diman, T., Malovanyy, M., Voloshkina, O., Ovcharuk, V., and Tyuryakov, S.: Multilevel Local, National, and Regional Education and Training: Building Academic Excellence in Climate Services in Ukraine (https://meetingorganizer.copernicus.org/EGU25/EGU25-9098.html), EGU General Assembly 2025, Vienna, Austria, 27 Apr-2 May 2025, EGU25-9098, <u>https://doi.org/10.5194/egusphereegu25-9098</u>, 2025.



4. ANNEXES

4.1. Announcement of the 7th ClimEd Training

Developing Skills to Use Climatic Information and Services for Various Climate-Dependent Branches of Economy

ClimEd 7th Training (onsite/ hybrid)

7-11 April 2025 Vila-Seca, Tarragona, Spain



ANNOUNCEMENT

Erasmus⁺ ClimEd Project

"Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation" (619285-EPP-1-2020-1-FI-EPPKA2-CBHE-JP) http://climed.network



Co-funded by the Erasmus+ Programme of the European Union





Aim

The ClimEd Trainings are focused on training the faculty staff at the ClimEd partner institutions in advanced educational and information-and-communication technologies for building a flexible multi-level integrated practice-based education system in the field of Climate Services, Climate Change Adaptation and Mitigation.

Training Programme

- Lecturing (Blocks B1, B2, B3)
 - B1 (Mon) Climate Data and Products
 - B2 (Tue) Sectorial Climate Products
 - B3 (Wed, Thu) Develop Climate Service Prototype to Transform Data in Information

• Groups'/ teams' work (Tue-Wed-Thu)

- Groups'/ teams' reporting (Fri)
 - Groups' presentations and discussions
 - Evaluations of group, training course, and learning outcomes of the training
 - Awarding e-certificates & 3 ECTS credits

Organizing Committee

Jon Xavier Olano, Enric Aguilar, Anna Boqué, Antoni Domènech University Rovira i Virgili, Vila-Seca, Tarragona, Spain Hanna Lappalainen, Svyatoslav Tyuryakov, Alexander Mahura University of Helsinki, Helsinki, Finland Inna Khomenko, Valeriya Ovcharuk, Nataliia Bulat Mechnikov I.I. Odessa National University, Odessa, Ukraine

Lecturers

Enric Aguilar, Jon Olano, Anna Boqué, Antoni Domènech, Oleg Skrynyk Centre for Climate Change, Research Institute for Sustainability, Climate Change and Energy Transition -Universitat Rovira I Virigili, Vila-Seca, Spain Kalev Sepp, Volha Kaskevich, Veljo Kabin, Lagle Lõhmus Estonian University of Life Sciences, EMU, Tartu, Estonia

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Organizers

International Erasmus⁺ ClimEd project (<u>http://climed.network</u>) Centre for Climate Change (C3), Rovira i Virgili University, Tarragona, Spain Mechnikov I.I. Odessa National University, Odessa, Ukraine

Target audience

Teaching/ Research staff and postgraduates in educational and research disciplines

Selection criteria

Based on motivation letter (incl. why you need this training; how you use climatic information in your profession; how you plan to use such information in future; your commitment to training) & CV (max 2pages)

Registration deadline	31 March 2025
Language	English
Costs	no fee

Please, apply (including motivation letter and CV) from the web-page: http://climed.network/events/climed-trainings/climed-training-7/online-application-form



4.2. List of Participants of the 7th ClimEd Training





ClimEd Training 7 (onsite/ hybrid) Developing Skills to Use Climatic Information and Services for Various Climate-Dependent Branches of Economy 7-11 April 2025

List of Participants

N	Participant: Surname	Participant: Name	University	Group			
ON-SITE PARTICIPANTS							
1.	Bereznytska	Yuliia	KNUCA	G1			
2.	Diadin	Dmytro	BekNU	G1			
3.	Dyman	Tetyana	BTNAU	G3			
4.	Grabovskyi	Mykola	BTNAU	G1			
5.	Hryhoriev	Oleksandr	ONU	G1			
6.	Karpuk	Lesia	BTNAU	G2			
7.	Khandogina	Olga	BekNU	G4			
8.	Khomenko	Inna	ONU	G5			
9.	Liuta	Oksana	LPNU	G3			
10.	Losieva	Kateryna	ONMedU	G6			
11.	Malovanyy	Myroslav	LPNU	G2			
12.	Mishyn	Mykhailo	MoES	G5			
13.	Movchan	Tetiana	MoES	G4			
14.	Nadvorna	Olga	ONMedU	G2			
15.	Nedostrelova	Larysa	ONU	G6			
16.	Nikolaieva	Maiia	ONU	G4			
17.	Ovcharuk	Valeriya	ONU	G4			
18.	Popovych	Olena	LPNU	G1			
19.	Pyrogova	Anastasiia	ONMedU	G3			
20.	Shevchuk	Hanna	ONMedU	G6			
21.	Smitiukh	Andrii	ONU	G4			
22.	Starets	Olena	ONMedU	G3			
23.	Tkachenko	Tetiana	KNUCA	G5			
24.	Tytarova	Olena	BTNAU	G6			
25.	Vergeles	Yuriy	BekNU	G5			
26.	Volvach	Oksana	ONU	G3			
27.	Yarmystyi	Maksym	MoES	G2			
28.	Zadorozhna	Ruslana	BTNAU	G5			
29.	Zhuk	Volodymyr	LPNU	G2			
	ON-L	INE PARTICIPANTS					
30.	Antonenko	Petro	ONMedU	G15			
31.	Antonik	Iryna	ICSA	G11			
32.	Babienko	Volodymyr	ONMedU	G15			
33.	Barsukova	Olena	ONU	G7			
34.	Bugeruk	Victoria	ONMedU	G15			
35.	Bulat	Nataliia	ONU	G12			
36.	Chernova	Tetyana	ONMedU	G14			
37.	Drozd	Olena	BekNU	G16			
38.	Fasuliak	Vadym	LPNU	G12			
39.	Godlevsky	Leonid	ONMedU	G14			
40.	Grekova	Alla	ONMedU	G11			





41.	Grishko	Vitaliy	ONMedU	G9
42.	Halych	Yelyzaveta	ONU	G8
43.	Hrinchenko	Yurii	ONU	G10
44.	Hruzevskyi	Oleksandr	ONMedU	G14
45.	Huhlych	Serhiy	LPNU	G9
46.	Kotiuzhynska	Svitlana	ONMedU	G12
47.	Kravchenko	Maryna	KNUCA	G16
48.	Kuryshyna	Viktoriia	ONU	G12
49.	Kushchenko	Liliia	ONU	G10
50.	Kyrnasivska	Nataliia	ONU	G7
51.	Liashenko	Svitlana	ONMedU	G15
52.	Lykhovyd	Pavlo	ICSA	G11
53.	Mileikovskyi	Viktor	KNUCA	G8
54.	Mysak	Pavlo	LPNU	G13
55.	Naidyonova	Olena	ONMedU	G10
56.	Narizhnyy	Sergiy	BTNAU	G11
57.	Odnorih	Zoriana	LPNU	G13
58.	Onufryenko	Oksana	ONMedU	G14
59.	Oprya	Yevgen	ONMedU	G7
60.	Ostrovskiy	Denys	ONMedU	G9
61.	Pervak	Mykhailo	ONMedU	G11
62.	Prokofiev	Oleg	ONU	G10
63.	Prybolovets	Kseniia	ONMedU	G9
64.	Savchenko	Antonina	KNUCA	G16
65.	Semerhei-Chumachenko	Aina	ONU	G14
66.	Sereda	Andriy	LPNU	G9
67.	Shanyhin	Anton	ONMedU	G10
68.	Shevchenko-Bitenskyi	Kostiantyn	ONMedU	G13
69.	Shevelenkova	Alla	ONMedU	G15
70.	Stavetska	Ruslana	BTNAU	G7
71.	Talalayev	Kostyantyn	ONMedU	G8
72.	Tarasov	Tetiana	ONMedU	G8
73.	Tymchuk	Ivan	LPNU	G8
74.	Vashchuk	Yuliya	BTNAU	G12
75.	Vasylenko	Lesya	KNUCA	G16
76.	Voloshkina	Olena	KNUCA	G16
77.	Voloshyna	Olena	ONMedU	G13
78.	Vovk	Lesya	LPNU	G13
79.	Zhygailo	Olena	ONU	G7

ONU

BekNU

MoES

- Odesa I.I. Mechnikov National University (Odessa, Ukraine)

- Kyiv National University of Construction and Architecture (Kyiv, Ukraine) KNUCA

- O. Beketov National University of Urban Economy (Kharkiv, Ukraine)

LPNU - Lviv Polytechnic National University (Lviv, Ukraine)

BTNAU - Bila Tserkva National Agrarian University (Bila Tserkva, Ukraine) - Odesa National Medical University (Odessa, Ukraine)

ONMedU ICSA

- Institute of Climate-Smart Agriculture NAAS (Odessa region, Ukraine)

- Ministry of Education and Science of Ukraine (Kyiv, Ukraine)





Lesya Karpuk

has been awarded three (3) credits according to the European Credit Transfer and Accumulation System (ECTS) ClimEd Training included:

Lectures : Lecture I. Climate Indices. Enric Aguilar Lecture II. Developing climate indices: The Climpact App. Enric Aguilar, Anna Boqué, Jon Olano Lecture III. GIS Applications in Climate Services. Dmytro Diadin Lecture IV. User friendly Climate Data. Anna Boqué, Jon Olano Lecture V. Workgroup Presentation. Anna Boqué, Jon Olano Lecture V. Defning Climate Needs // Recovering indices of training IV. Jon Olano, Anna Boqué Lecture VII. Introduction to RSTUDIO. Jon Olano, Anna Boqué Lecture VIII. Introduction to Shiny. Jon Olano, Anna Boqué Practice I. Download Climate Data and Apply Climpact Software. Anna Boqué. Jon Olano Practice II. Definition and operationalization of sectorial indices. Jon Olano, Anna Boqué Practice III. Download Data and Computation of sectorial indices. Jon Olano, Anna Boqué Practice IV. Work in groups. Functions to compute sectorial indices. Jon Olano, Anna Boqué Practice V. Work in groups. Tunctions to compute sectorial indices. Jon Olano, Anna Boqué Practice V. Work group. Creating a Shiny App (supported by IA if necessary) Obtained Competencies/ Training Learning Outcomes:

Obtained compatencies, learning outcomes and skills in: (1) Identifying and selecting the most appropriate online sources of climate (2) Downloading, quality checking and prepared climate related data in reg (3) Downloading, quality checking and prepared climate related data in reg (3) Understanding sectorial climate information meaks and defining sectorial (3) Understanding sectorial climate information sector's decision (3) Selecting (1) understanding sectorial climate information sector's decision-making g (5) Selecting (1) understanding and junctifying climate information sector's decision-making g (7) Building basic functionalities (incl. input visualization/ output) of Shiny / information and sectorial information ng p ny App to sh and sectorial indices. ing climate relevant inform (9) Integrat tors into Shiny App to explore and interpret data for