

Deliverable 5.2.

ClimEd Training №2: Adaptation of the Competency Framework for Climate Services to conditions of Ukraine

Grant Agreement No.	619285-EPP-1-2020-1-FI-EPPKA2-CBHE-JP
Project acronym	ClimEd
Project full title	Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation
Dissemination level	International
Contributing WP(s)	WP5. Staff training
Due date of deliverable	31.8.2021
Delivery date	29.8.2021
Deliverable name	ClimEd Training №2: Adaptation of the Competency Framework for Climate Services to conditions of Ukraine
Version	1
Type	Report, Event
Status	Final
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Reviewer(s)	Svyatoslav Tyuryakov (UHEL)
Abstract	Summary of the 2 nd ClimEd Online Training on “Adaptation of the Competency Framework for Climate Services to conditions of Ukraine” (29 June – 26 August 2021). All materials of the training are available at: http://climed.network/events/climed-trainings/climed-training-2-online

	Name	Date
Verification by WP leader	Alexander Mahura	27.8.2021
Check by coordinator	Hanna K. Lappalainen	28.8.2021

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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**” (2021-2023; <http://climed.network>) 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 (<http://climed.network/events/climed-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, 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 2ND CLIMED TRAINING: ADAPTATION OF THE COMPETENCY FRAMEWORK FOR CLIMATE SERVICES TO CONDITIONS OF UKRAINE

The [ClimEd 2nd Online Training](#) on “Adaptation of the Competency Framework for Climate Services to conditions of Ukraine” took place during 29 June – 26 August 2021 (see announcement of the training event in Annex 4.1). From about 65 applicants, 56 persons (including 45 female, 10 young teachers/researchers) were accepted to participate in this online training (see Annex 4.2). These were from the Ukrainian ClimEd consortium members and associated partner universities: Odessa State Environmental University (OSENU, Odessa), Kyiv National University of Construction and Architecture (KNUCA, Kyiv), O. Beketov National University of Urban Economy (Kharkiv), Lviv Polytechnic National University (Lviv, LNPU), Bila Tserkva National Agrarian University (Bila Tserkva), Odessa National Medical University (Odessa) and OMI IHU- Odessa Medical Institute (OMI), International Humanitarian University (IHU).

The training started from a series of lectures by Profs. Enric Aguilar, Manola Brunet, Gisella Cebrian, and Jon Olano (Universitat Rovira i Virgili, Tarragona, Spain); Marek Frankowicz (Jagiellonian University in Krakow, Poland); Yurii Rashkevych (Lviv Polytechnic National University, Ukraine); Oleh Tiapkin (National Agency for Higher Education Quality Assurance in Ukraine); and Inna Osadchuk (National Agency for Qualifications in Ukraine) during 29 June – 1 July 2021. The lectures covered the following topics/ themes: qualification framework; methodological and organizational approaches of its development; establishing the WMO competency framework for climate services; WMO reform – facing and responding to new scientific and technological challenges; present state

of implementation of competency-based approach – best practices applied in Ukraine; relationship between the competency framework and qualifications framework; practices of transformation national, sectoral and other frameworks in different countries; competency framework vs existing and foreseen educational programmes; education for sustainable development – teaching and learning practices and processes; functional analysis; and others. On 1st July, presentations with discussions on preparatory exercises on learning outcomes, constructive alignment, etc. took place, followed by introduction into homework assignments (HWAs) for 12 Groups (so-called Groups B1-B12, each mixed group included from 4 to 8 persons - from different universities, gender, age).

During the following weeks of July and August 2021 the Groups of participants realized HWAs as Group projects. In total, 12 Groups B1-B12 were focused on development of courses for master students in climatology, experts in climatology and meteorology, hydrologists, experts in water management, energy sectors, agriculture, construction and architecture, health-care experts, and experts from municipal organizations.

The Groups have established horizontal communication within/between groups and worked on own ClimEd related HWAs as thematic modules of the topic “The economic sector transformation: changes, challenges and governance” for selected directions such as Agriculture, Energy, Technical Design and Construction, Urban Economy, Water Management, and Health-Care. This work was done actively using the Moodle system of the Odessa State Environmental University (OSENU) with all materials (lectures, working documents, presentations, etc.) [uploaded](#) there.

On 25-26th August 2021, during the last two days of the training, each Group presented (in English and national languages) their “Project presentation” where the basic information about the training development plan (TDP) and the interactive module created by each group was presented. The presentations were constructively criticized and commented as well as overall evaluated on a scale (1-10). As a result of the evaluation, all Groups got the ClimEd training certificates (see examples in Annex 4.3) corresponding to 4 ECTS as recognition of their achieved learning outcomes

Two groups (B11 and B12) got the highest scores of 9.30 and 9.64, respectively, and these have been awarded the certificates with distinction (“Platinum”). Four other Groups (B01, B02, B03, B04, B09 and B10) obtained certificates having the “Gold” status (i.e. with scores higher than 8.5). Note that members of these 8 Groups were automatically accepted (i.e. without a required application procedure) as approved participants for the ClimEd 3rd Training.

In the concluding words, teachers emphasized that participants of the training have obtained new/upgraded (virtual learning environment, pedagogical, teamwork, presentation, etc.) skills; further own work/developments are needed in improving teaching and learning methods, formulation of learning outcomes, assessment, individualized approaches, etc.

The e-evaluation of the ClimEd 2nd Training was done using two questionnaires distributed among the participants.

Following the 1st questionnaire – (Evaluation of the Training) – 69.2% of the participants estimated this course as a “very good” and 30.8% as a “good”; 61.5% of the participants “strongly agree” and 30.8% - “agree” that training was relevant and helpful for their work; practically 100% of the participants were satisfied with the training content and agreed that the lecturers were supportive and open to participants, the time investment for such a course was Ok for 80.8% of participants, training materials were of excellent quality and information about training was sufficient, and participants will recommend such training to colleagues.

Following the 2nd questionnaire – (Evaluation of Own Learning Outcomes) – from 82 to 94% of the participants “fully agree” and “mostly agree” that they have reached the training’s learning outcomes (competences/ abilities to): explain basic principles of the development and scope of competency and qualifications frameworks, including stages and requirements in elaboration and implementation of competencies; formulate competency-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies’ development; define appropriate competencies from a competency framework for the implementation into curricula and reference learning outcomes to national qualifications framework levels; identify the WMO competency framework and its potential usage, stages in climate services development, including linking them to university-level training experiences; build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program’s goals and learning outcomes in the specialty (Earth Sciences disciplines).

All materials of the training (slides and videos of lectures, presentations of exercises and homework-assignments as group projects, etc.) are available at <http://climed.network/events/climed-trainings/climed-training-2-online> The training outcomes were also disseminated through the PEEEX (Pan-Eurasian Experiment; <https://www.atm.helsinki.fi/peex>) network through quarterly PEEEX NewsLetters & PEEEX blog: <https://peexhq.home.blog/2021/09/22/climed-2nd-online-training>).

2.1. Lecturing Materials

During the 2nd ClimEd Training, in total 8 lectures were delivered.

Lecture 1 – Qualification framework. Methodological and organizational approaches of its development. *Marek Frankowicz, Jagiellonian University in Krakow, Poland* ([slides](#), [video](#))

Lecture 2 – Establishing the WMO Competence Framework for Climate Services. *Enric Aguilar, Universitat Rovira i Virgili, Tarragona, Spain* ([slides](#), [video](#))

Lecture 3 – The WMO Reform: facing and responding to new scientific and technological challenges. *Manola Brunet, Universitat Rovira i Virgili, Tarragona, Spain* ([slides](#), [video](#))

Lecture 4 – Present state of implementation of competence-based approach – best practices applied in Ukraine. *Oleh Tiapkin, National Agency for Higher Education Quality Assurance, Ukraine* ([slides](#), [video](#))

Lecture 5 – The relationship between competence framework and qualifications framework. Practices of transformation national, sectoral and other frameworks in different countries. *Yurii Rashkevych, Lviv Polytechnic National University, Ukraine* ([slides](#), [video](#))

Lecture 6 – Competencies framework vs. existing and foreseen programs. *Jon Olano, Universitat Rovira i Virgili, Tarragona, Spain* ([slides](#), [video](#))

Lecture 7 – Education for Sustainable Development: teaching and learning practices and processes. *Gisela Cebrián Bernat, Universitat Rovira i Virgili, Tarragona, Spain* ([slides](#), [video](#))

Lecture 8 – Functional analysis. Inna Osadchuk, National Agency for Qualifications in Ukraine ([slides](#), video – [part 1](#), [part 2](#))

Lecture 9-10 – Competence profiles. Competences and learning outcomes. Marek Frankowicz (slides, video – [Lecture 9](#), [Lecture 10](#))

Lecture 11 – Sustainability competencies’ frameworks: emerging teaching and research developments. Gisela Cebrián Bernat ([slides](#), [video](#))

Introduction to group homework assignments & discussions, *Inna Khomenko & Oleg Shabliy* ([slides](#), [video](#))

2.2. Home-Work Assignments

At the last day of the lecturing period, the introduction to home-work-assignments (HWAs) to be realized as group projects was given to participants. The presentations (links to videos are below) and discussion on preparatory exercises on learning outcomes, constructive alignment, etc. by Groups B1-B12 were delivered: [Group B1](#), [Group B2](#), [Group B3](#), [Group B4](#), [Groups B5-B6](#), [Group B7](#), [Group B8](#), [Groups B9-B10](#), [Group B11](#), [Group B12](#)

HWAs on themes – Agriculture, Energy, Technical Design and Construction, Urban Economy, Water Management, Health-care – were realised by each group as own projects. The main focuses for HWAs were creating the development courses for master students in climatology, experts in climatology and meteorology, hydrologists, experts in water management, energy sectors, agriculture, construction and architecture, health-care experts, and experts from municipal organizations

2.3. HWAs Defenses & Certificates

Welcome – Sergiy Stepanenko & Hanna K. Lappalainen ([video](#), [slides](#))

At the last day of the training, each Group presented (in English and national languages) HWAs as own elaborated modules. The presentations – Group B01 ([video](#), [slides](#)), Group B02 ([video](#), [slides](#)), Group B03 ([video](#), [slides](#)), Group B04 ([video](#), [slides](#)), Group B05 & B06 ([video](#), [slides](#)), Group B07 ([video](#), [slides](#)), Group B08 ([video](#), [slides](#)), Group B09 & B10 ([video](#), [slides](#)), Group B11 ([video](#), [slides](#)), Group B12 ([video](#), [slides](#)) and with [Summary](#) of the 2nd Training - were constructively criticized and commented as well as overall evaluated on a scale (1-10). As the result of the evaluation, all Groups got the ClimEd training certificates (see example in Annex 4.3) corresponding to 4 ECTS as recognition of their achieved learning outcomes.

The following modules (M1; M2; M3) and directions were developed, presented and defended by 12 Groups:

- M1: Introduction to Climate Science and Climate Change; M2: Causes of Climate Changes and Intensification; M3: Impacts of Climate Change on People and Environment;
- Climate system and its components; Energy interaction between the elements of the climate system; Study of the influence of interactions between the climate system components using numerical modeling.
- Policy of the European Union in the sphere of protection and rational use and preservation of water resources; Climate vulnerability of water resources; Impact of climate change on the hydrological regime of the Black and Azov Seas;

- Influence of global climate change on agrophytocenosis growth and development; Influence of climate change on livestock industry; Food and nutritional security in the context of climate change. Production of ecologically safe products
- Application of Climatic Information for Specialists in the Construction; Industry in terms of Implementing the Principles of “Green” Construction; The Concept of “Green Building” in the World and in Ukraine;
- The impact of the construction industry on the environment and its minimization through the use of green building technologies; Planning and management of a green building project; Minimization of environmental pollution and rational waste management;
- Climate system and its components. Atmosphere. Ocean. Cryosphere. Land surface and the terrestrial biosphere. Climatic factors. Climate change and fluctuations. Natural causes leading to change and climate fluctuations. Anthropogenic climate change. Feedbacks. Damage from the climate change. Vulnerability, resistance, adaptability, critical points of the climatic systems. Planetary boundaries;
- The impact of climate and its changes on human health Climatic models. Scenarios and forecasts. Climate forecasts for the 21st century. Uncertainty of climate forecasts. Socio-economic risks, caused by climate change, and their significance;
- Climate-associated cardiovascular and respiratory diseases; Climate-associated cardiovascular diseases; Climate-associated respiratory diseases; Climate Associated Infectious Diseases; Climate Associated Psychiatric and Neurological Diseases and Disorders; Climate-associated mental disorders and stress-related diseases; Climate-associated neurological diseases and disorders; Climate Associated Threats in Obstetrics and Gynecology; Climate change and women's health;
- Cost-benefits of global climate change Policy responses to the climate change. Mitigation of consequences of the climate change;
- Urban environment and climate change: a general idea on climate change, the main components of the urban environment, and urban microclimate; The climate change impact on the components of the urban environment: vulnerability of urban areas to climate change, and assessment of urban vulnerability to climate change.; Adaptation of the urban environment to climate change: ways to adapt the urban environment to climate change, and mitigation of climate change effects in urban areas.
- Energy Technologies of Climate Engineering; Interpret different types of climate information which is applied to the energy sector of the economy; Assess the economic damage to the country's energy systems resulting from climate change; Develop an algorithm for adaption of energy systems to the negative consequences of climate change

The Learning Outcomes (LO) of the 2nd ClimEd training included the following, as competences and abilities to:

- Explain basic principles of the development and scope of competency and qualifications frameworks, including stages and requirements in elaboration and implementation of competencies;
- Formulate competency-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies’ development;
- Define appropriate competencies from competency framework for the implementation into curricula and reference learning outcomes to national qualification framework levels;

- Identify the WMO competency framework and its potential usage, stages in climate services development, including linking them to university-level training experiences;
- Build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program’s goals and learning outcomes in the specialty (Earth Sciences disciplines).

Two groups (B11 and B12) got the highest scores of 9.30 and 9.64, respectively, and these have been awarded the certificates with distinction (“Platinum”). Four other Groups (B01, B02, B03, B04, B09 and B10) obtained certificates having the “Gold” status (i.e. with scores higher than 8.5). Note that members of these 8 Groups were automatically accepted (i.e. without required application procedure) as approved participants for the ClimEd 3rd Training.

2.4. Evaluation of the Training

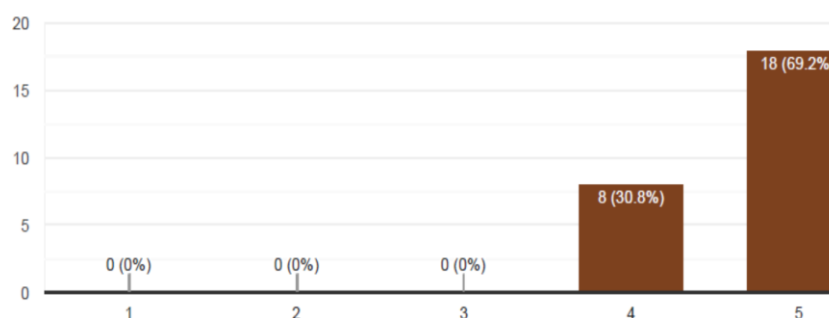
The evaluation of the training was performed through the questionnaires (“Evaluation of the Course” & “Evaluation of the Learning Outcomes”). For the questionnaires, in total 32 responses from the participants were obtained and these are summarized below.

Questionnaire N1: Evaluation of the Course:

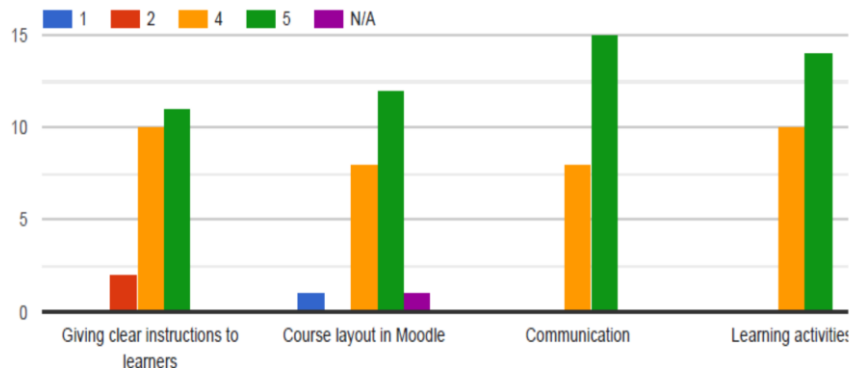
1. What is your overall rating for this course?
2. How relevant and helpful do you think it was for your job?
3. Was anything missing in this training that you had expected to learn?
4. How satisfied were you with the logistics [Giving clear instructions to learners; Course layout in Moodle; Communication; Learning activities]?
5. Additional feedback on logistics
6. We estimated the amount of time needed to follow the course at 120 hours. Was our estimate accurate in your case?
7. What is your opinion on this time investment for such a course?
8. A blended course would be nice (with both live and online events)
9. Did you achieve the following learning aims? [elaboration of training development plans in climate services and climate-dependent economic sectors under international standards]
10. How satisfied were you with the training content?

1. What is your overall rating for this course?

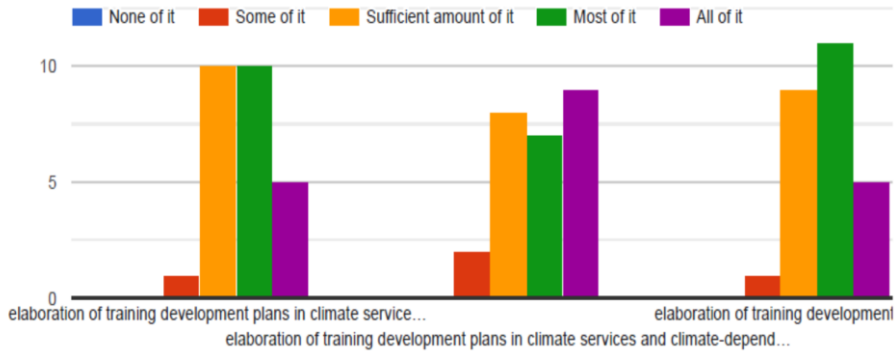
26 responses



How satisfied were you with the logistics?

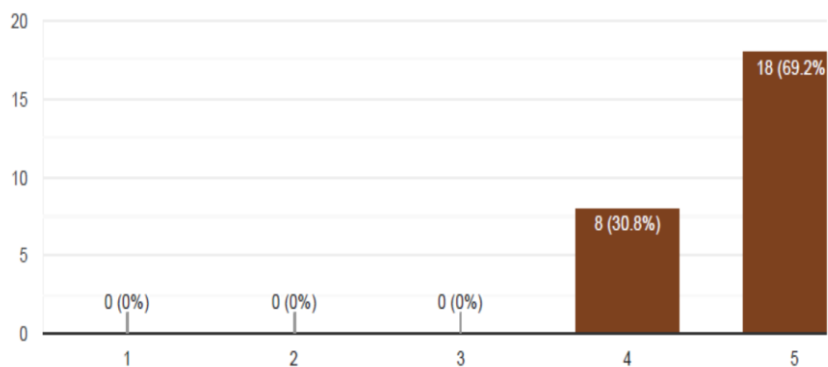


Did you achieve the following learning aims?



How satisfied were you with the training content?

26 responses



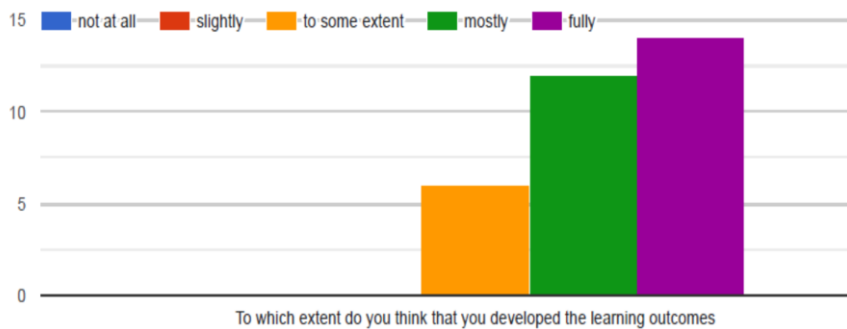
Questionnaire N2: Evaluation of the Learning Outcomes:

To which extent do you think that you developed the learning outcomes (competences/ abilities to) of the 2nd ClimEd training?

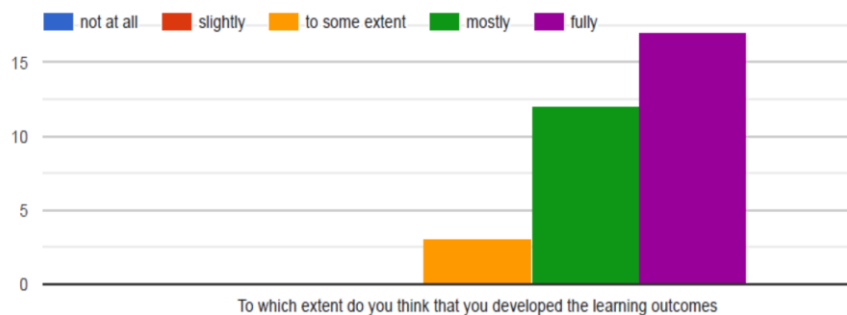
Scale: not at all | slightly | somewhat/to some extent | mostly | fully

1. Explain basic principles of the development and scope of competencies and qualifications frameworks, including stages and requirements in elaboration and implementation of a competencies framework
2. Formulate competence-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies' development
3. Define appropriate competences from competence framework for the implementation into curricula and reference learning outcomes to national qualification framework levels
4. Identify WMO competencies framework and its potential usage, stages in climate services development, including linking them to university-level training experiences
5. Build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program's goals and learning outcomes in the specialty (Earth Sciences disciplines)

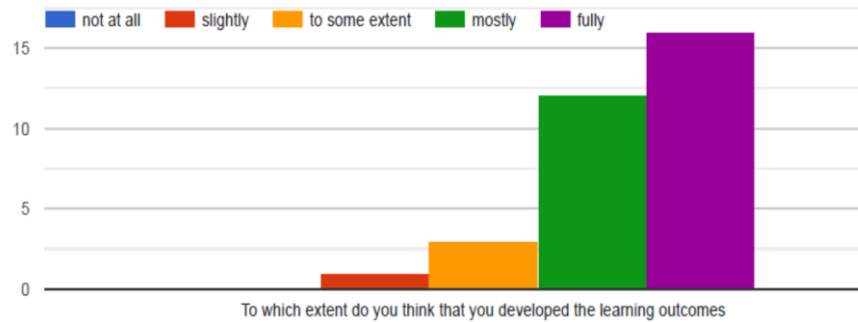
1. Explain basic principles of the development and scope of competencies and qualifications frameworks, including stages and requirements in elaboration and implementation of a competencies framework



2. Formulate competence-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies' development



3. Define appropriate competences from competence framework for the implementation into curricula and reference learning outcomes to national qualification framework levels



4. Identify WMO competencies framework and its potential usage, stages in climate services development, including linking them to university-level training experiences



3. ACKNOWLEDGEMENTS

Special thanks to all lecturers of the training – Professors. Marek Frankowicz, Yurii Razhkevych, Enric Aguilar, Gisela Cebrián Bernat, Manola Brunet, Jon Olano, Oleh Tiapkin, Inna Osadchuk – for their professionalism, enthusiasm and commitment to the training, and OSENU team - Artem Gamaun & Kateryna Husieva, for continuous technical support (OSENU Moodle system, Zoom-hosting, e-evaluations, etc.) during the entire period of the training. Especial thanks to the OSENU team members (Dr. Oleg Shabliy and Dr. Inna Khomenko) for support with ClimEd relevant modules development; continuous web-update of the training materials and introduction to Group HWAs.

All materials of the training (slides and videos of lectures, presentations of exercises and homework-assignments as group projects, etc.) are available at <http://climed.network/events/climed-trainings/climed-training-2-online>.

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” https://odeku.edu.ua/wp-content/uploads/2021-a-conference_proceedings-21-09-isbn.pdf;

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- 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”; https://climatechange2021.org/wp-content/uploads/Book-of-Abstracts_Virtual_Workshop_AC0710-js1.pdf;
 - SYMET-14 “Education and Training in a Period of Rapid Change” (*22-25 November 2021, Switzerland*); poster presentation “Online trainings in climate-oriented education”; <https://symet-14.virtualpostersession.org>.

4. ANNEXES

4.1. Announcement of the 2nd ClimEd Training

Adaptation of the Competency Framework for Climate Services to conditions of Ukraine

ClimEd 2nd Training (Online)

29 June – 26 August 2021



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



Training Programme

- **Block 1 – Lecturing – 29 June - 1 July 2021**
 - Lectures (& exercises) about application of competence-oriented approach in education and training and present state of implementation of the competence-based approach in Ukraine, Europe and World Meteorological Organisation.
- **Block 2 – Home-Work-Assignments (HWAs) – approximately 9 weeks**
 - Work on HWAs in groups: ClimEd's independent University teams vs. inter-Universities teams
 - HWAs based on topics important for Ukrainian partners/universities and national levels
 - 26 July 2021 - mid-term report by teams on status/ progress for HWAs
 - Possible to arrange/ ask extra consultations with lecturers
- **Block 3 – Final Presentations and Discussions – 25-26 August 2021**
 - Groups' presentations on HWAs and discussions
 - E-evaluations of HWAs, 2nd ClimEd Training and feedback
 - Awarding e-certificates (4 ECTS)

Organizing Committee

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Odessa State Environmental University (OSENU), Odessa, Ukraine

Enric Aguilar, Manola Brunet, Gisella Cebrian, Jon Olano
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University of Helsinki (UHEL), Helsinki, Finland

Organizers

Odessa State Environmental University, Ukraine
 Universitat Rovira i Virgili, Spain
 International Erasmus⁺ ClimEd project (<http://climed.network>)

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 long-term online training & CV (max 2 pages)

Registration deadline

26 June 2021

Language

English / Ukrainian

Costs

no fee

Please, apply (including motivation letter and CV) from the web-page:
<http://climed.network/events/climed-trainings/climed-training-2-online/online-application-form>

4.2. List of Participants of the 2nd ClimEd Training



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



ClimEd Training 2 (Online)
Adaptation of the Competency Framework
for Climate Services to conditions of Ukraine
29 June – 26 August 2021

List of Participants

N	Participant: Surname Name	University
1.	Agayar Ellina	OSENU
2.	Barsukova Olena	OSENU
3.	Batashova-Halinska Viktoriia	ONMU
4.	Bohushenko Anna	OSENU
5.	Boiko Yurii	ONMU
6.	Borovska Halyna	OSENU
7.	Bozhko Liudmyla	OSENU
8.	Buchynska Iryna	OSENU
9.	Buheruk Viktoriia	ONMU
10.	Chernova Tetiana	ONMU
11.	Diadin Dmytro	BNUUEK
12.	Dokus Anhelina	OSENU
13.	Drozd Olena	BNUUEK
14.	Dyman Nataliia	BTNAU
15.	El Hadri Youssef	OSENU
16.	Ermolenko Tetyana	ONMU
17.	Goptsiy Maryna	OSENU
18.	Honcharenko Artem	KNUCA
19.	Hornovska Svetlana	BTNAU
20.	Husieva Kateryna	OSENU
21.	Katerusha Halyna	OSENU
22.	Khandogina Olga	BNUUEK
23.	Kovalevska Ludmila	OMI IHU
24.	Kozishkurt Olena	ONMU
25.	Kryvomaz Tetiana	KNUCA
26.	Kuryshyna Viktoriia	OSENU
27.	Liuta Oksana	LPNU
28.	Loboda Nataliia	OSENU
29.	Maidanyuk Volodymyr	ONMU
30.	Melnik Olga	ONMU
31.	Mishchenko Natalia	OSENU
32.	Nedostrelova Larysa	OSENU
33.	Nienova Oksana	ONMU
34.	Pavlenko Olena	OSENU
35.	Piatakova Viktoriia	OSENU
36.	Popovych Olena	LPNU
37.	Prokofiev Oleg	OSENU
38.	Rybalka Inna	BNUUEK
39.	Savchenko Antonina	KNUCA
40.	Semenova Inna	OSENU
41.	Semerhei-Chumachenko Alina	OSENU
42.	Shablui Tetiana	ONMU
43.	Shakirzanova Zhannetta	OSENU

44.	Shandra Oleksii	ONMU
45.	Shmakova Iryna	ONMU
46.	Sierha Eduard	OSENU
47.	Slizhe Mariia	OSENU
48.	Tsilko Stanislav	ONMU
49.	Tymchuk Ivan	LPNU
50.	Vergeles Yuriy	BNUUEK
51.	Vladymyrova Olena	OSENU
52.	Voloshkina Olena	KNUCA
53.	Voloshyna Olena	OSENU
54.	Volvach Oksana	OSENU
55.	Zhukova Olena	KNUCA
56.	Zhygailo Olena	OSENU
	Aguilar Enric	URV
	Brunet Manola	URV
	Cebrian Gisella	URV
	Olano Jon	URV
	Frankowicz Marek	JUK
	Rashkevych Yuriy	LPNU,
	Osadchuk Inna	NAQU
	Tiapkin Oleh	NAHEQA

OSENU	- Odessa State Environmental University (Odessa, Ukraine)
URV	- Universitat Rovira i Virgili (Tarragona, Spain)
NAQU	- National Agency for Qualifications in Ukraine, Ukraine
KNUCA	- Kyiv National University of Construction and Architecture (Kyiv, Ukraine)
BNUUEK	- 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)
ONMU	- Odessa National Medical University (Odessa, Ukraine)
OMI IHU	- Odessa Medical Institute (OMI), International Humanitarian University (IHU)
JUK	- Jagiellonian University in Krakow (Krakow, Poland)
NAHEQA	- National Agency for Higher Education Quality Assurance, Ukraine

4.3. 2nd ClimEd Training Certificates (Platinum, Gold, Ordinary)




PLATINUM CERTIFICATE

This is to confirm that

Yuriy Vergeles

has attended and successfully completed
the Erasmus+ ClimEd Training (online)
on Adaptation of the Competency Framework for
Climate Services to conditions of Ukraine



29 June – 26 August 2021

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>

Hanna K. Lappalainen
University of Helsinki

Sergiy Stepanenko
Odessa State Environmental University

Yuriy Vergeles

has been awarded four (4) credits according to the
European Credit Transfer and Accumulation System (ECTS)

ClimEd Training included:

Lectures (L):

- L1 – Qualification framework. Methodological and organizational approaches of its development. **Marek Frankowicz**, Jagiellonian University in Krakow (JUK), Poland
- L2 – Establishing the WMO Competence Framework for Climate Services. **Enric Aguilar**, Universitat Rovira i Virgili (URV), Tarragona, Spain
- L3 – The WMO Reform: facing and responding to new scientific and technological challenges. **Manola Brunet**, URV
- L4 – Present state of implementation of competence-based approach – best practices in Ukraine. **Oleh Tiapkin**, National Agency for Higher Education Quality Assurance, Ukraine
- L5 – The relationships between competence framework and qualifications framework: peculiarities of structure, comparison and use. **Yurii Rashkevych**, Lviv Polytechnic National University, Ukraine
- L6 – Competencies framework vs. existing and foreseen programs. **Jon Olano**, URV
- L7 – Education for Sustainable Development: teaching and learning practices and processes. **Gisela Cebrián Bemat**, URV
- L8 – Functional analysis. **Inna Osadchuk**, National Agency for Qualifications in Ukraine
- L9-10 – Competence profiles. Competences and learning outcomes. **Marek Frankowicz**, JUK
- L11 – Sustainability competencies' frameworks: emerging teaching and research developments. **Gisela Cebrián Bemat**, URV

Home-Work-Assignment (Projects) & Defense:
Training courses for experts from municipal organizations on 'Environmental Protection Technology'

Obtained Competencies/ Training Learning Outcomes:

1. Explain basic principles of the development and scope of competencies and qualifications frameworks, including stages and requirements in elaboration and implementation of a competencies framework
2. Formulate competence-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies' development;
3. Define appropriate competences from competence framework for the implementation into curricula and reference learning outcomes to national qualification framework levels;
4. Identify WMO competencies framework and its potential usage, stages in climate services development, including linking them to university-level training experiences;
5. Build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program's goals and learning outcomes in the speciality (Earth Sciences disciplines)

Certificate Category: with Distinction




GOLD CERTIFICATE

This is to confirm that

Oleg Prokofiev

has attended and successfully completed
the Erasmus+ ClimEd Training (online)
on Adaptation of the Competency Framework for
Climate Services to conditions of Ukraine



29 June – 26 August 2021

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>

Hanna K. Lappalainen
University of Helsinki

Sergiy Stepanenko
Odessa State Environmental University

Oleg Prokofiev

has been awarded four (4) credits according to the
European Credit Transfer and Accumulation System (ECTS)

ClimEd Training included:

Lectures (L):

- L1 – Qualification framework. Methodological and organizational approaches of its development. **Marek Frankowicz**, Jagiellonian University in Krakow (JUK), Poland
- L2 – Establishing the WMO Competence Framework for Climate Services. **Enric Aguilar**, Universitat Rovira i Virgili (URV), Tarragona, Spain
- L3 – The WMO Reform: facing and responding to new scientific and technological challenges. **Manola Brunet**, URV
- L4 – Present state of implementation of competence-based approach – best practices in Ukraine. **Oleh Tiapkin**, National Agency for Higher Education Quality Assurance, Ukraine
- L5 – The relationships between competence framework and qualifications framework: peculiarities of structure, comparison and use. **Yurii Rashkevych**, Lviv Polytechnic National University, Ukraine
- L6 – Competencies framework vs. existing and foreseen programs. **Jon Olano**, URV
- L7 – Education for Sustainable Development: teaching and learning practices and processes. **Gisela Cebrián Bemat**, URV
- L8 – Functional analysis. **Inna Osadchuk**, National Agency for Qualifications in Ukraine
- L9-10 – Competence profiles. Competences and learning outcomes. **Marek Frankowicz**, JUK
- L11 – Sustainability competencies' frameworks: emerging teaching and research developments. **Gisela Cebrián Bemat**, URV

Home-Work-Assignment (Projects) & Defense:
Training courses for master students in climatology on 'The Climate System and Its Components'

Obtained Competencies/ Training Learning Outcomes:

1. Explain basic principles of the development and scope of competencies and qualifications frameworks, including stages and requirements in elaboration and implementation of a competencies framework
2. Formulate competence-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies' development;
3. Define appropriate competences from competence framework for the implementation into curricula and reference learning outcomes to national qualification framework levels;
4. Identify WMO competencies framework and its potential usage, stages in climate services development, including linking them to university-level training experiences;
5. Build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program's goals and learning outcomes in the speciality (Earth Sciences disciplines)

Certificate Category: with Distinction

 Co-funded by the Erasmus+ Programme of the European Union  <h2 style="text-align: center;">CERTIFICATE</h2> <p style="text-align: center;">This is to confirm that</p> <p style="text-align: center;"><i>Olena Zhukova</i></p> <p style="text-align: center;">has attended and successfully completed the Erasmus+ ClimEd Training (online) on Adaptation of the Competency Framework for Climate Services to conditions of Ukraine</p> <div style="text-align: center;">  <p>29 June – 26 August 2021</p> </div> <p style="text-align: center;">Erasmus+ ClimEd Project "Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation" (619285-EPD-1-2020-1-F1-EPDKA2-GBHE-JP) http://climed.network</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> Hanna K. Lappalainen University of Helsinki </td> <td style="width: 50%; border: none;"> Sergiy Stepanenko Odessa State Environmental University </td> </tr> </table>	Hanna K. Lappalainen University of Helsinki	Sergiy Stepanenko Odessa State Environmental University	<p style="text-align: center;">Olena Zhukova</p> <p style="text-align: center;">has been awarded four (4) credits according to the European Credit Transfer and Accumulation System (ECTS)</p> <p>ClimEd Training included:</p> <p>Lectures (L):</p> <ul style="list-style-type: none"> L1 – Qualification framework. Methodological and organizational approaches of its development. Marek Frankowicz, Jagiellonian University in Krakow (JUK), Poland L2 – Establishing the WMO Competence Framework for Climate Services. Enric Aguilar, Universitat Rovira i Virgili (URV), Tarragona, Spain L3 – The WMO Reform: facing and responding to new scientific and technological challenges. Manola Brunet, URV L4 – Present state of implementation of competence-based approach – best practices in Ukraine. Oleh Tiapkin, National Agency for Higher Education Quality Assurance, Ukraine L5 – The relationships between competence framework and qualifications framework: peculiarities of structure, comparison and use. Yurii Rashkevych, Lviv Polytechnic National University, Ukraine L6 – Competencies framework vs. existing and foreseen programs. Jon Olano, URV L7 – Education for Sustainable Development: teaching and learning practices and processes. Gisela Cebrián Bemat, URV L8 – Functional analysis. Inna Osadchuk, National Agency for Qualifications in Ukraine L9-10 – Competence profiles. Competences and learning outcomes. Marek Frankowicz, JUK L11 – Sustainability competencies' frameworks: emerging teaching and research developments. Gisela Cebrián Bemat, URV <p>Home-Work-Assignment (Projects) & Defense:</p> <p style="text-align: center;"><i>Training course for experts in construction and architecture on "The concept of "green building" in the world and in Ukraine"</i></p> <p>Obtained Competencies/ Training Learning Outcomes:</p> <ol style="list-style-type: none"> 1. Explain basic principles of the development and scope of competencies and qualifications frameworks, including stages and requirements in elaboration and implementation of a competencies framework 2. Formulate competence-based education principles and practices and identify teaching and learning methods, topologies and assessment tools for measuring competencies' development; 3. Define appropriate competences from competence framework for the implementation into curricula and reference learning outcomes to national qualification framework levels; 4. Identify WMO competencies framework and its potential usage, stages in climate services development, including linking them to university-level training experiences; 5. Build a logically interconnected system of the sustainable educational program core components and curricula content taking into account processes and practices and allowing to achieve program's goals and learning outcomes in the speciality (Earth Sciences disciplines)
Hanna K. Lappalainen University of Helsinki	Sergiy Stepanenko Odessa State Environmental University		