CLimate University for Virtual EXchanges

– C L U V E X –

CLUVEX: Virtual Exchange Weeks for Students

by CLUVEX Teams

Presentation by Hanna K. Lappalainen, University of Helsinki

EMPOANDES Kick Off 22 Jan 2026

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

Outline:

- CLUVEX project: Basic info & Partners/Teams & Staff & Aim
- Online Learning – Future of Education?
- CLUVEX stages in workflow for VEs & Dissemination, Upscaling, Networking
- Virtual Exchange (VE) Week for students – approach
- Outlined programme – Days 1-5 (Mon-Fri)
- Preparatory materials (VEG, CLG, CMC) – pre-task
- Lectures (1-8)
- Tools (1-3)
- Work in groups on “Climate Horizon” Exercise
- Learning outcomes
- Earned bonuses for students
- Welcome to Climate University Online Courses
- What you will earn/ have

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CLUVEX: Basic Info & Partners/ Teams

Action Type: Virtual Exchanges in Higher Education and Youth
Key Action: Learning Mobility of Individuals
Project #: 101111959
EU Grant: 474.359 €
Duration: 1 Jul 2023 – 30 Jun 2026
Coordinator: Dr. Hanna K. Lappalainen, hanna.k.lappalainen@helsinki.fi
University of Helsinki, UH-INAR
Website: https://www.atm.helsinki.fi/cluvex
Partners:

- **UH** – University of Helsinki, Finland
- **OSENU** – Odessa State Environmental University, Ukraine
- **TSNUK** – Taras Shevchenko National University of Kyiv, Ukraine
- **YSU** – Yerevan State University, Armenia
- **UCPH** – University of Copenhagen, Denmark
- **BioArt** – Bioart Society, Finland

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CLUVEX: Project Staff Members

Full list of CLUVEX participants : https://www.atm.helsinki.fi/cluvex/?page_id=45

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CLUVEX

CLIMATE UNIVERSITY

CLUVEX: General Aim

- to bridge students from European and Neighborhood East universities;
- to engage students with climate competences and green agenda together with interdisciplinary, green and soft skills;
- to educate 500 students in 1 Virtual Exchange (VE) Week (5 VE Weeks in total)
- to educate altogether 2500 students as Climate Messengers in 3 years

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Online Learning - the Future of Education?

- Concept of traditional education is changing (COVID-19 !)
- Being physically present in classroom isn't the only learning option anymore - not with the rise of the internet and new technologies, at least.
- Online learning - access to a quality education whenever and wherever you want, as long as you can get online
- Challenges of distance learning can be little interaction!
- Virtual Exchange is a tool to increase interaction in distance education!

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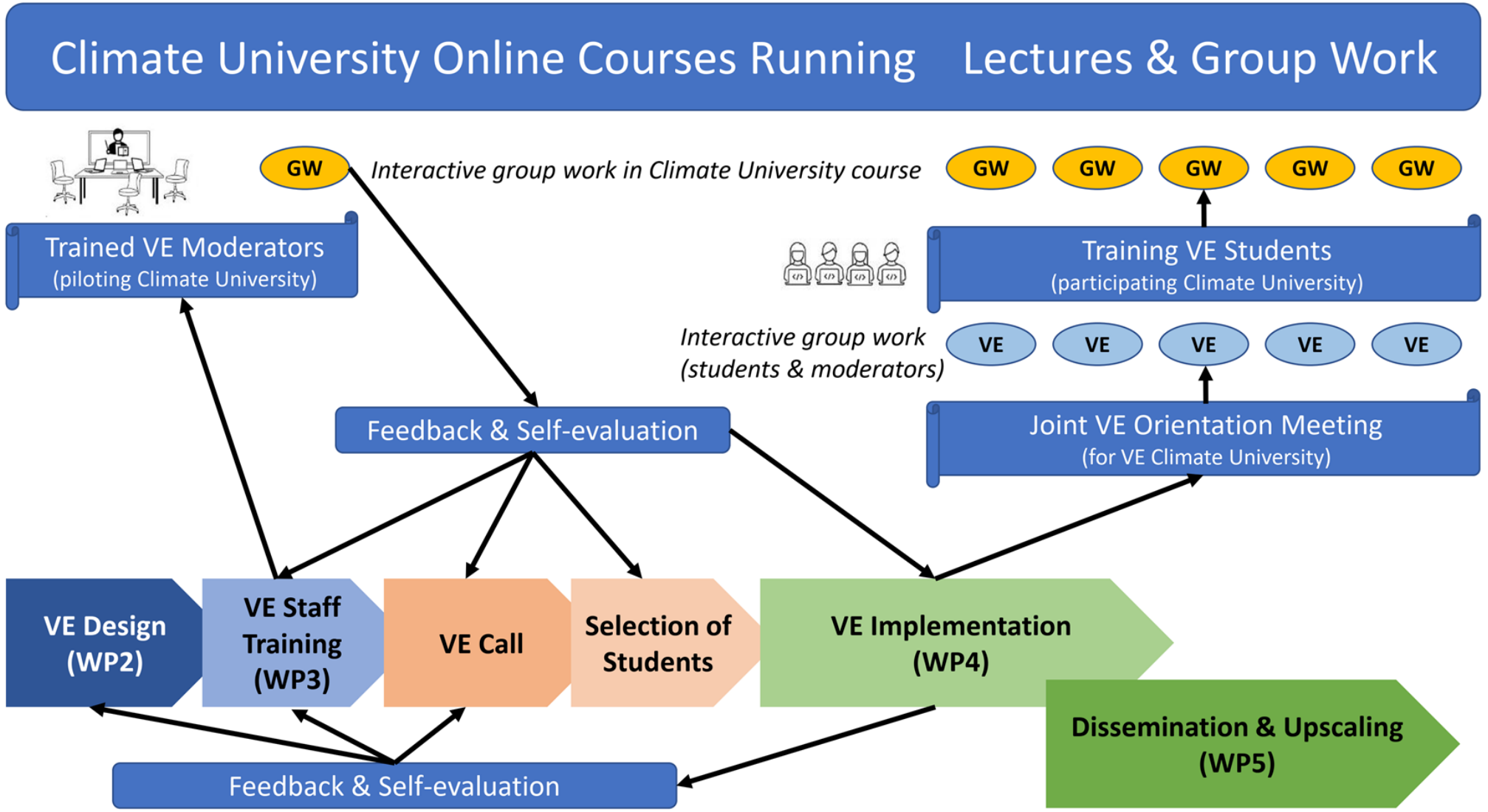
CLUVEX stages in workflow for VEs



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CLUVEX Dissemination, Upscaling, Networking

Dissemination and Upscaling

- International Assoc. of Meteorological Education & Sciences
- Air Pollution in the Arctic: Climate, Environment and Societies
- WMO Network of Regional Training Centers
- Pan-Eurasian Experiment
- Digital Belt and Road Program
- Copenhagen Science City

CLUVEX VIRTUAL EXCHANGE

International Network

- UNA Europa
- UArctic Network of Universities
- Nordic University Teachers Network
- Climate University Network in Finland
- Black Sea Universities Network
- INTENSE International Doctoral School Network

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Welcome to act as a CLUVEX Moderator

The VEs organized by CLUVEX project (led by Univ Helsinki) are currently the largest EU VEs project in their field **offer a unique opportunity to learn about remote working and teaching in an international environment, and for e.g. doing** training work at “Master of Teaching” or on “English language”.

- During CLUVEX VE Weeks for students - joint sessions with up to 500 students from all CLUVEX Partners´ universities and collaborating universities, where networking and interactions in small groups of up to 10 students, plus 1 moderator, will take place.
- Moderators´ central role is ONLINE to support and motivate international and interdisciplinary interactions, discussions, and learning in small groups of students.

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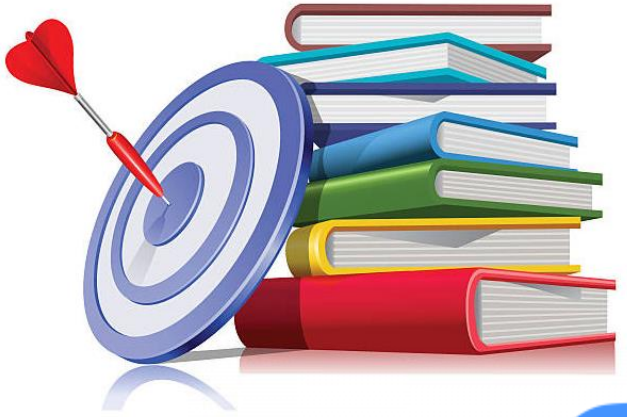
CLUVEX: Calls for VE Weeks for students

Main Activity

- To announce 5 VE Calls & organize interactive online trainings called “VE Weeks-for-students” (1 ECTS credit point) in 2024-2026.
- To carry out the VE Weeks online in Zoom with plenary sessions (lectures and demo of tools for analysis of climate related data)+ work in small groups of students discussing specific topics of climate change and working on Individual and Collaborative “Climate Horizon” exercise.
- Small groups in Zoom break-out-rooms are guided by educated CLUVEX moderators



- **1st VE Week: 14-18 Oct 2024 - completed**
- **2nd VE Week: 12-16 May 2025 - completed**
- **3rd VE Week: 6-10 Oct 2025 - completed**
- **4th VE Week: 23-27 Feb 2026**
- **5th VE Week: 20-24 Apr 2026**

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Virtual Exchange Call for students

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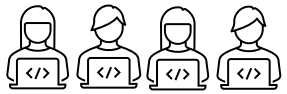
Up to 450 students

Virtual Exchange Week

Up to 450 students + up to 50 moderators + tech. support staff

students

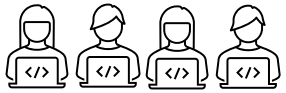


Plenary session

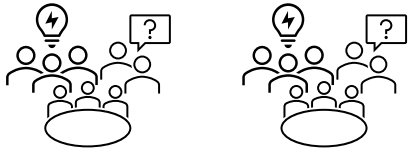
Monday

Plenary session

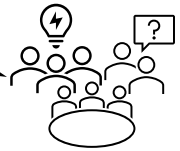
students

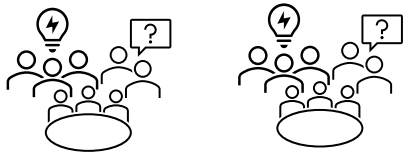


Tuesday



Wednesday





work in groups (1 moderator & 10 students) on e-platform on groups' projects

Thursday

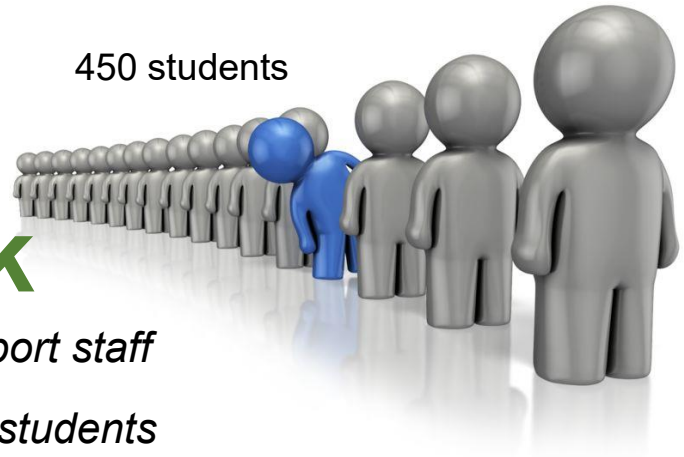
work in groups (1 moderator & 10 students) on e-platform on groups' projects

Friday

Group's projects/ presentations & discussions

Group's projects/ presentations & discussions

Virtual Exchange Call for students



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Virtual Exchange Week

Up to 450 students + up to 50 moderators + tech. support staff

students

Plenary session

Monday

zoom

Tuesday

zoom

Wednesday

zoom

Thursday

zoom

Friday

zoom

Plenary session

students

work in groups (1 moderator & 10 students) on e-platform on groups' projects

work in groups (1 moderator & 10 students) on e-platform on groups' projects

Group's projects/ presentations & discussions

Group's projects/ presentations & discussions

VE Week for Students – Outlined Programme

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Programme of the Virtual Exchange Week

All times are given in EET (i.e., in Finnish time)

❖ **1st Day: 23 February 2026 (14:00 – 17:00, 3h online)**

14:00 – Welcoming words from the Hosts
Introduction into CLUVEX project & Virtual Exchange *(Hanna K. Lappalainen, UH)*
L8: Towards Sustainable Future Utopia *(Antti Rajala, UH)*
L5: Impacts of Climate Change and Future Outlook *(Hasmik Movsesyan, YSU)*
L2: Climate Change, Disasters, Carbon Neutrality and UN SDGs *(Alexander Baklanov, UCPH)*
L7: Artistic Res. & Critical Thinking at Intersection of Art, Science & Society *(Yvonne Billimore, BioArt)*
Introduction into Climate Horizon exercise *(Julia Karhumaa, Laura Riuttanen, UH)*
15:45 – Breaking students into groups & Introduction round in groups & pre-task sharing (**1+ hour**)
17:00 – End of the day

❖ **2nd Day: 24 February 2026 (14:00 – 17:00, 3h online)**

14:00 – L1: Navigating Planetary Boundaries: Blueprint for Sustainable Future *(Inna Khomenko, ONU)*
L3: Climate Change Impact on Water Resources *(Sergiy Snizhko & Olga Shevchenko, TSNUK)*
L4: Nature Hazards – Floods *(Valeriya Ovcharuk, ONU)*
Tool for Environment and Data Visualization | Past & Present | *(Alexander Mahura, UH)*
Detailed Introduction into Climate Horizon exercise *(Julia Karhumaa, Laura Riuttanen, UH)*
15:30 – Breaking into same groups & working with tool and individual Climate Horizon (**1.5 hour**)
17:00 – End of the day

❖ **3rd Day: 25 February 2026 (14:00 – 17:00, 3h online)**

14:00 – L6: Climate Change: Mitigation and Adaptation Strategies *(Hasmik Movsesyan, YSU)*
Tool for Socio-Economic Drivers of Climate Change | Past & Future | *(Stefan Fronzek, SYKE)*
Detailed Introduction into Climate Horizon exercise *(Julia Karhumaa, Laura Riuttanen, UH)*
14:30 – Breaking into same small groups & working with tool and individual Climate Horizon (**2.5 hour**)
17:00 – End of the day

❖ **4th Day: 26 February 2026 (14:00 – 17:00, 3h online)**

14:00 – Tool for Climate Scenarios | Future | *(Risto Makkonen, FMI/UH)*
Detailed Introduction into Climate Horizon exercise *(Julia Karhumaa, Laura Riuttanen, UH)*
14:30 – Breaking into same groups & working with tool and individual Climate Horizon & discussing and drafting collaborative Climate Horizon (**2.5 hour**)
17:00 – End of the day

❖ **5th Day: 27 February 2026 (14:00 – 17:00, 3h online)**

14:00 – Breaking into same small groups & working/ finalizing collaborative Climate Horizon (**2 hour**)
16:00 – Summary by Hosts, demonstration for all groups the collaborative Climate Horizon exercises
Questionnaire with feedback about VE Week
Reminders about Climate University online courses & reports in DigiCampus & ECTS credits
Wrap up & closing the VE Week
17:00 – End of the day | End of the Virtual Exchange Week for students

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HELSINGIN YLIOPISTO

1865

BIOART SOCIETY

Preparatory Materials for VE Weeks

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Virtual Exchange Guidebook (VEG)

Lessons learnt from the "Climate University for Virtual Exchanges" (CLUVEX) project in 2023-2026

Version 3.0

ERASMUS+ CLUVEX Project Number 101111959

Work Package 02
Deliverable 2.1

28 February 2025

Funded by the European Union

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Climate Literacy Guidebook (CLG)

Reading materials for students participating in the CLUVEX Virtual Exchange Week

Version 3.0

ERASMUS+ CLUVEX Project Number 101111959

Work Package 02
Deliverable 2.2

28 February 2025

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Climate Messenger Code of Conduct (CMC)

Instructions for Virtual Exchange Week participants

Version 2.0

ERASMUS+ CLUVEX Project Number 101111959

Work Package 02
Deliverable 2.3

28th February 2025

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VE Week - Lectures

CLUVEX lectures provide a wider context of the climate change

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Lecture #1: Navigating Planetary Boundaries: Our Blueprint for a Sustainable Future

Lecturer: Inna Khomenko, Mechnikov Odessa National University (ONU), Ukraine (UA)

Lecture #2: Climate Change, Disasters, Carbon-neutrality and UN Sustainable Development Goals

Lecturer: Alexander Baklanov, Niels Bohr Institute, University of Copenhagen (UCPH), Denmark

Lecture #3: Climate Change Impact on Water Resources

Lecturers: Sergiy Snizhko & Olga Shevchenko, T.Schevchenko National University of Kyiv (TSNUK), UA

Lecture #4: Nature Hazards - Floods

Lecturer: Valeriya Ovcharuk, Mechnikov Odessa National University (ONU), UA

Lecture #5: Impacts of Climate Change and Future Outlook

Lecturer: Hamsik Movseyan, Yerevan State University (YSU), Armenia

Lecture #6: Climate Change, Mitigation and Adaptation Strategies

Lecturer: Hasmik Movsesyan, Yerevan State University (YSU), Armenia

Lecture #7: Artistic Research and Critical Thinking at the Intersection of Art, Science and Society

Lecturer: Yvonne Billimore, Bioart Society, Finland

Lecture #8: Towards Sustainable Future Utopia

Lecturer: Antti Rajala, University of Helsinki (UH), Finland

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VE Week – Lectures 1 & 2

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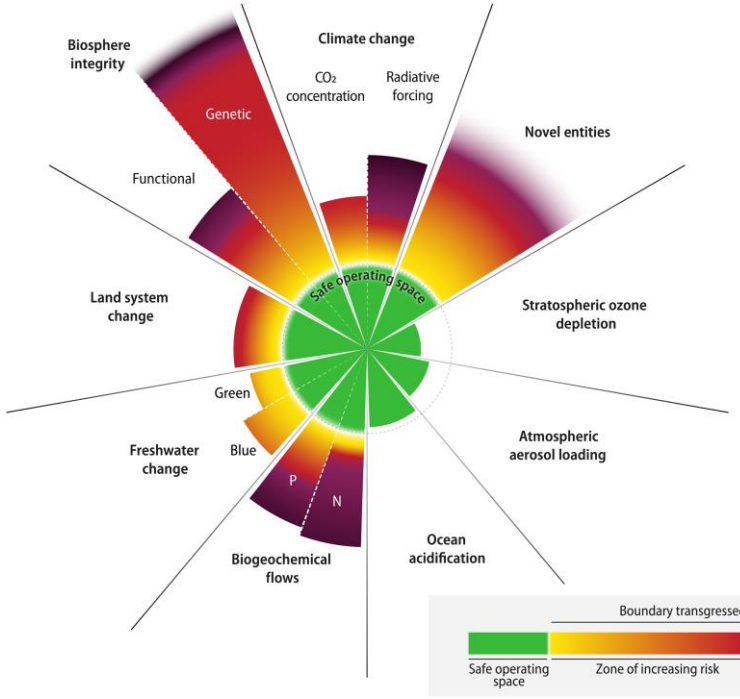
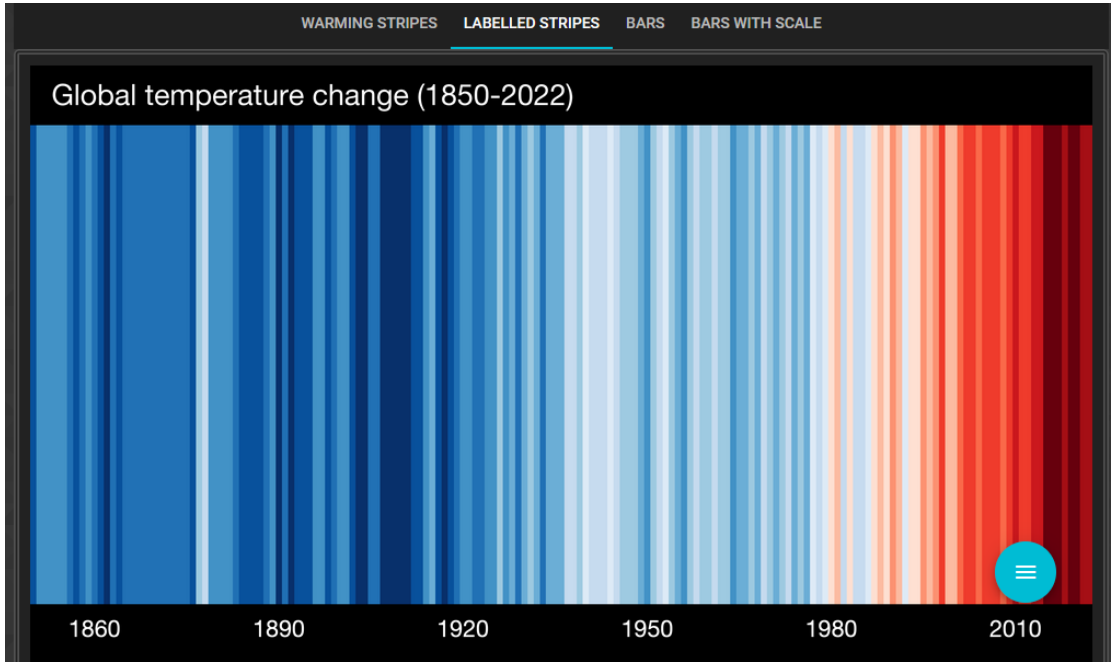
Lecture #1: Navigating Planetary Boundaries: Our Blueprint for a Sustainable Future

***Inna Khomenko**, Mechnikov Odessa National University, Ukraine*



Current status of control variables for planetary boundaries (source/ credit - Richardson et al. 2023)



Ed Hawkins' Global Labelled Stripes
source: https://showyourstripes.info/l/globe

Lecture #2: Climate Change, Disasters, Carbon-neutrality and UN Sustainable Development Goals

***Alexander Baklanov**, Niels Bohr Institute, University of Copenhagen, Denmark*

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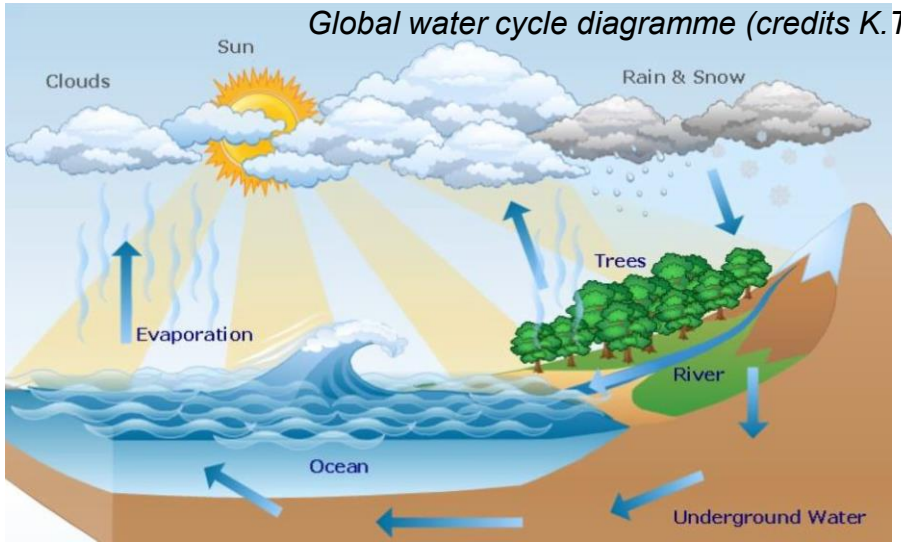
VE Week – Lectures 3 & 4

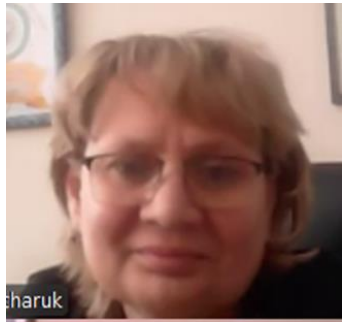
Lecture #3: Climate Change Impact on Water Resources

Sergiy Snizhko & Olga Shevchenko

Taras Shevchenko National University of Kyiv
Ukraine

Global water cycle diagramme (credits K.Tapdıqova)

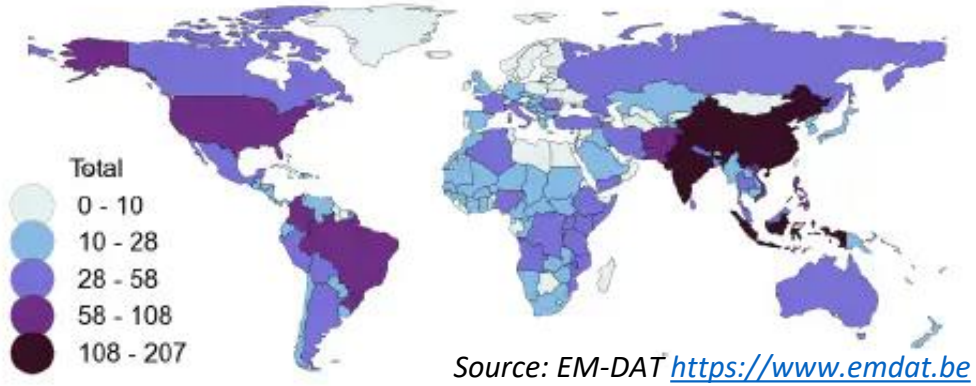




Lecture #4: Nature Hazards – Floods

Valeriya Ovcharuk
Mechnikov Odessa National University
Ukraine

Flood occurrence per country (2000-2022)



Source: EM-DAT https://www.emdat.be international disaster database

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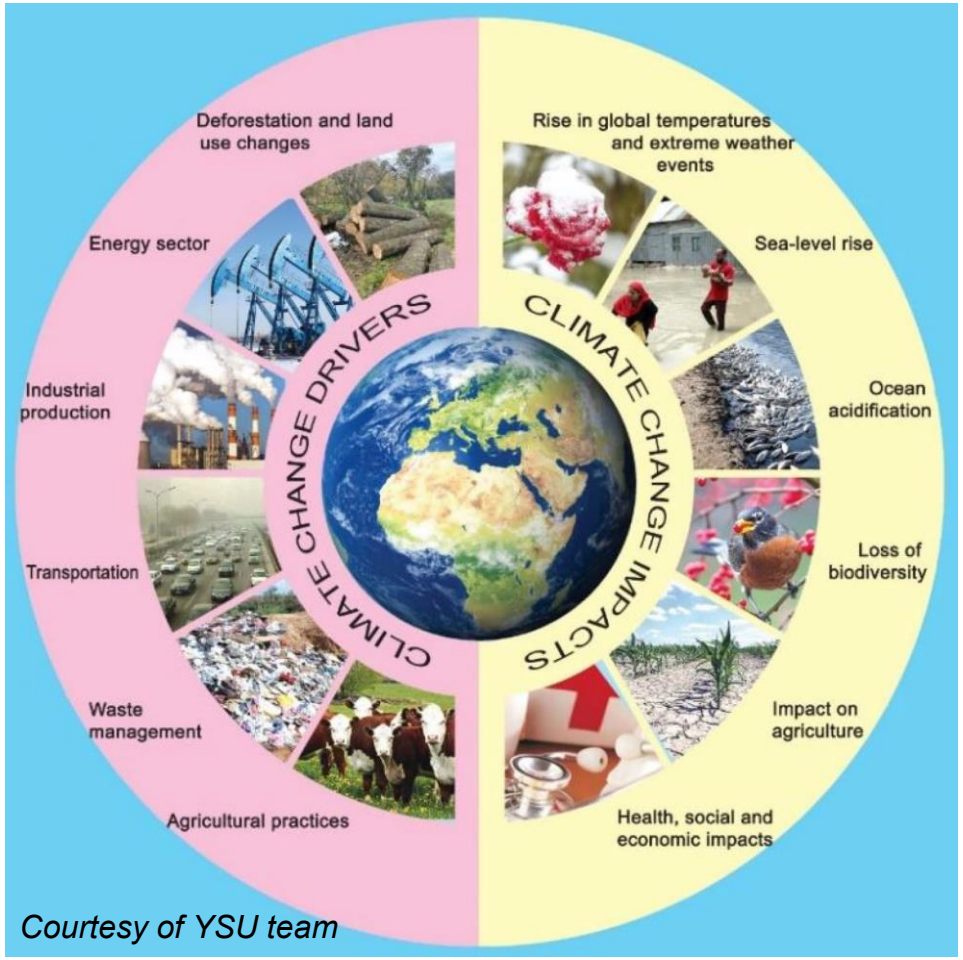
VE Week – Lectures 5 & 6

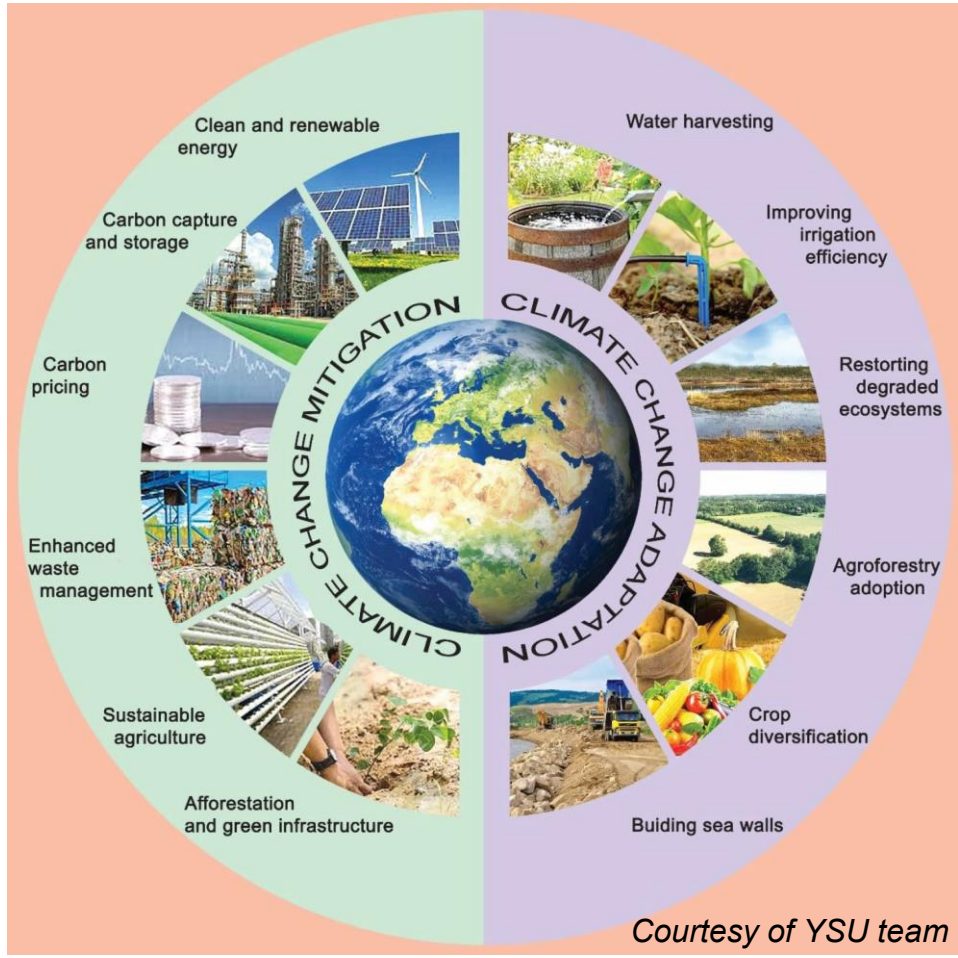
Lecture #5: Impacts of Climate Change and Future Outlook

Hasmik Movsesyan
Yerevan State University
Armenia



Courtesy of YSU team

Lecture #6: Climate Change, Mitigation and Adaptation Strategies



Courtesy of YSU team

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VE Week – Lectures 7 & 8

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Lecture #7: Artistic Research and Critical Thinking at the Intersection of Art, Science and Society


The Heavens (photo by Till Bovermann)


The North Escaping (photo by Teemu Lehmusruusu)

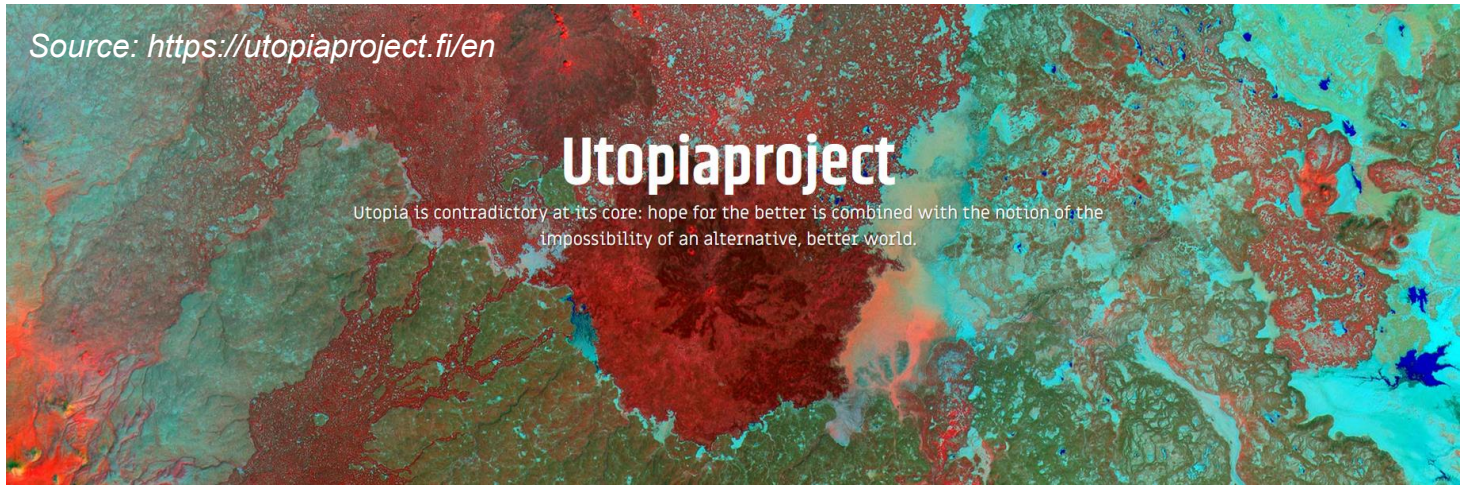
Yvonne Billimore
Bioart Society
Finland

SLU | BIOART SOCIETY

Antti Rajala
University of Helsinki
Finland

UNIVERSITY OF HELSINKI

Lecture #8: Towards Sustainable Future Utopia



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VE Week - Tools

User-friendly tools to examinate regions from local to global scales

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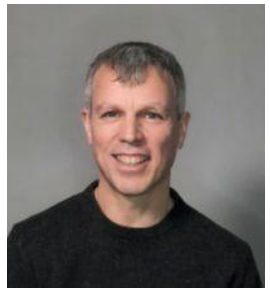
Tool #1 | Past & Present | Environment and Data Visualization

Lecturer: Alexander Mahura, University of Helsinki, Finland

ERA-5 Past Climate Explorer (PCE) tool: https://era5.lobelia.earth

- *Questions for environment/ climate conditions/ society/ pollution …*

SYKE



Tool #2 | Past & Future | Socio-Economic Drivers of Climate Change

Lecturer: Stefan Fronzek, Finnish Environment Institute, Finland

Shared Socioeconomic Pathways (SSP) Database: https://tntcat.iiasa.ac.at/SspDb

Historic Time-Series of Socio-Economic Indicators: https://data.worldbank.org/indicator

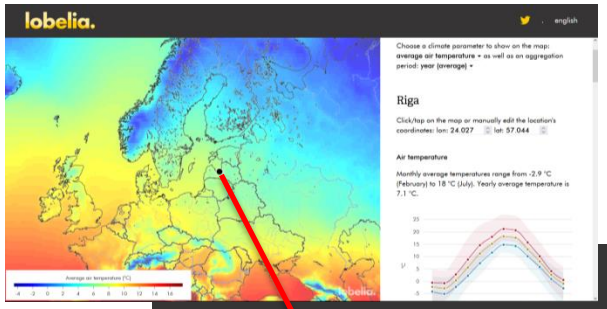
- *Questions for historical/ political/ social/ natural causes that lead into current situation …*

Tool #3 | Future | Climate Scenarios

Lecturer: Risto Makkonen, Finnish Meteorological Institute, Finland

IPCC Interactive Atlas: https://interactive-atlas.ipcc.ch

- *Questions for historical/ political/ social/ natural causes that lead into current situation …*



Tool #1 | Past & Present | ERA5 PCE

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Past Climate Explorer

Source: ERA5 dataset, 1981-2010

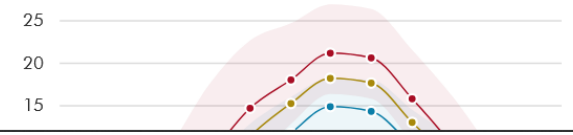
Choose a climate parameter to show on the map:
average air temperature as well as an aggregation
period: January

Riga

Click/tap on the map or manually edit the location's
coordinates: lon: 24.027 lat: 57.044

Air temperature

Monthly average temperatures range from -2.9 °C
(February) to 18 °C (July). Yearly average temperature is
7.1 °C.



english

Past Climate Explorer

Source: ERA5 dataset, 1981-2010

Choose a climate parameter to show on the map:
average air temperature as well as an aggregation

- Average air temperature
- Maximum air temperature
- Minimum air temperature
- Frost days
- Warm nights
- Precipitation
- Rainy days (≥ 0.5 mm)
- Heavy rainy days (≥ 10 mm)
- Very heavy rainy days (≥ 20 mm)
- Relative humidity
- Average wind speed
- Wind gusts
- Cloud cover

english

Past Climate Explorer

Source: ERA5 dataset, 1981-2010

Choose a climate parameter to show on the map:
average air temperature as well as an aggregation
period: January

- year (average)
- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

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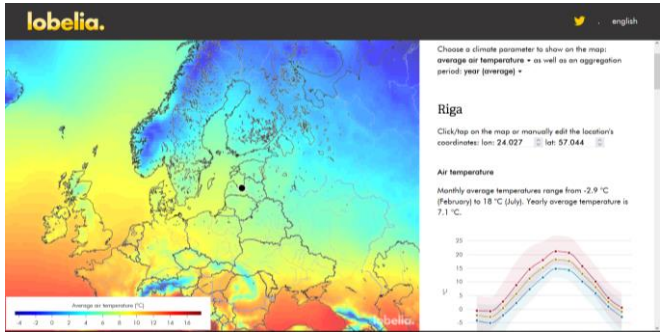
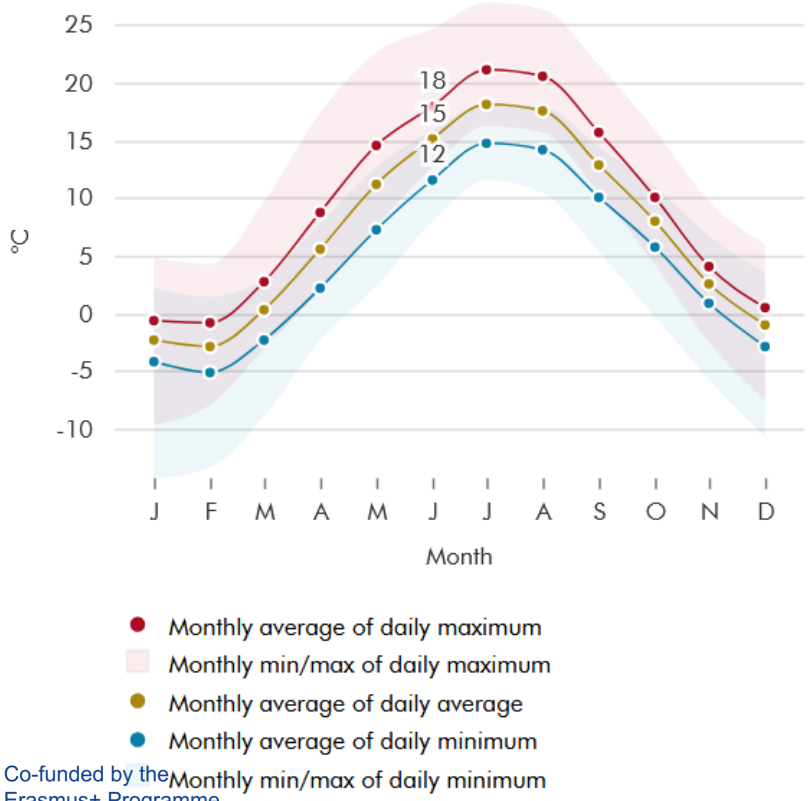
Tool #1 | Application | Riga
Air temperature & Warming stripes

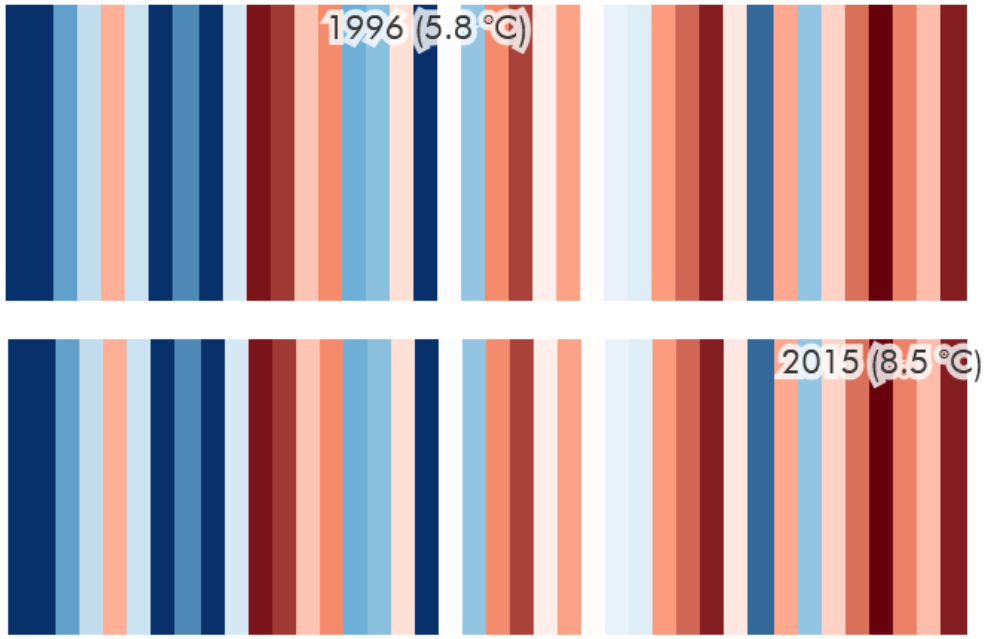


Monthly average temperatures range from -2.9 °C (February) to 18 °C (July). Yearly average temperature is 7.1 °C.



Warming stripes (sometimes referred to as climate stripes, climate timelines) are data visualization graphics that use a series of coloured stripes chronologically ordered to visually portray long-term temperature trends

Warming stripes for the extended period 1979-2018 (what's this?):



progression from blue (cooler) to red (warmer) stripes portrays annual increases of global average temperature intuitively convey global warming trends to non-scientists.

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Tool #2 | Past & Future | Socio-Economic Drivers of Climate Change

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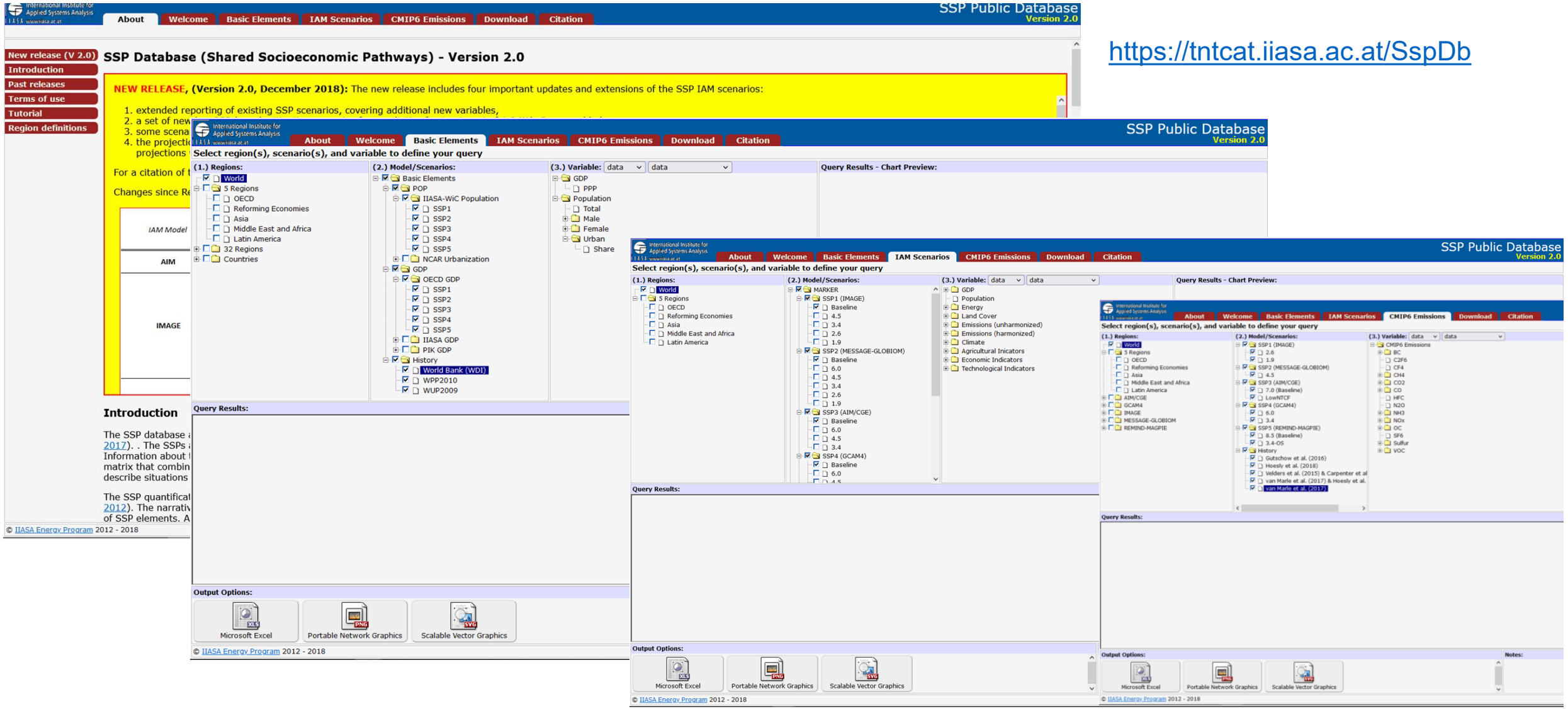
https://tntcat.iiasa.ac.at/SspDb



Tool #2 | Shared Socioeconomic Pathways

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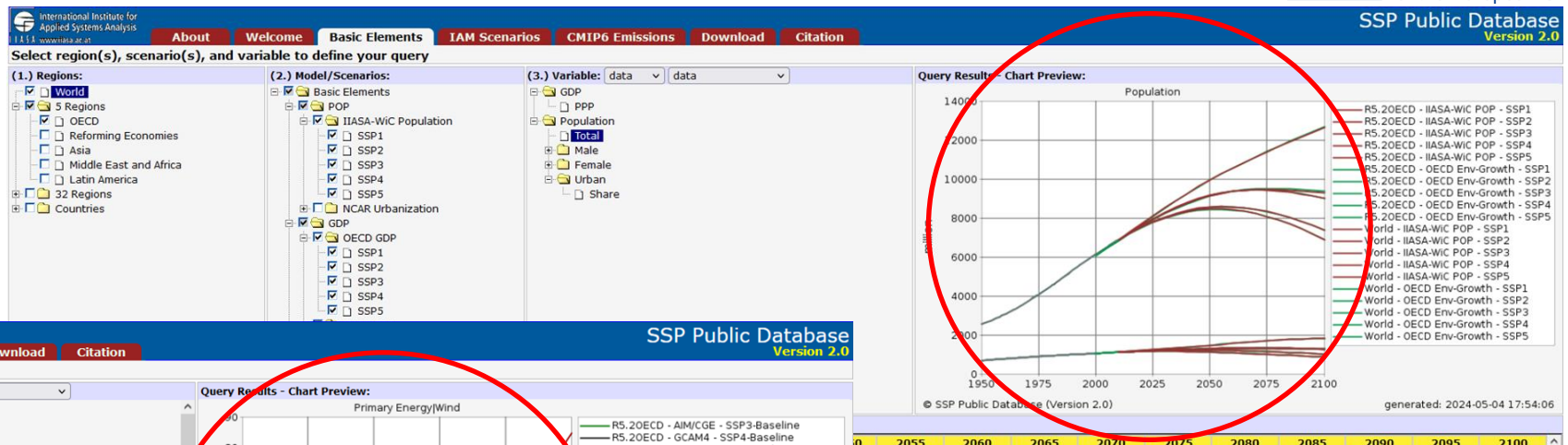
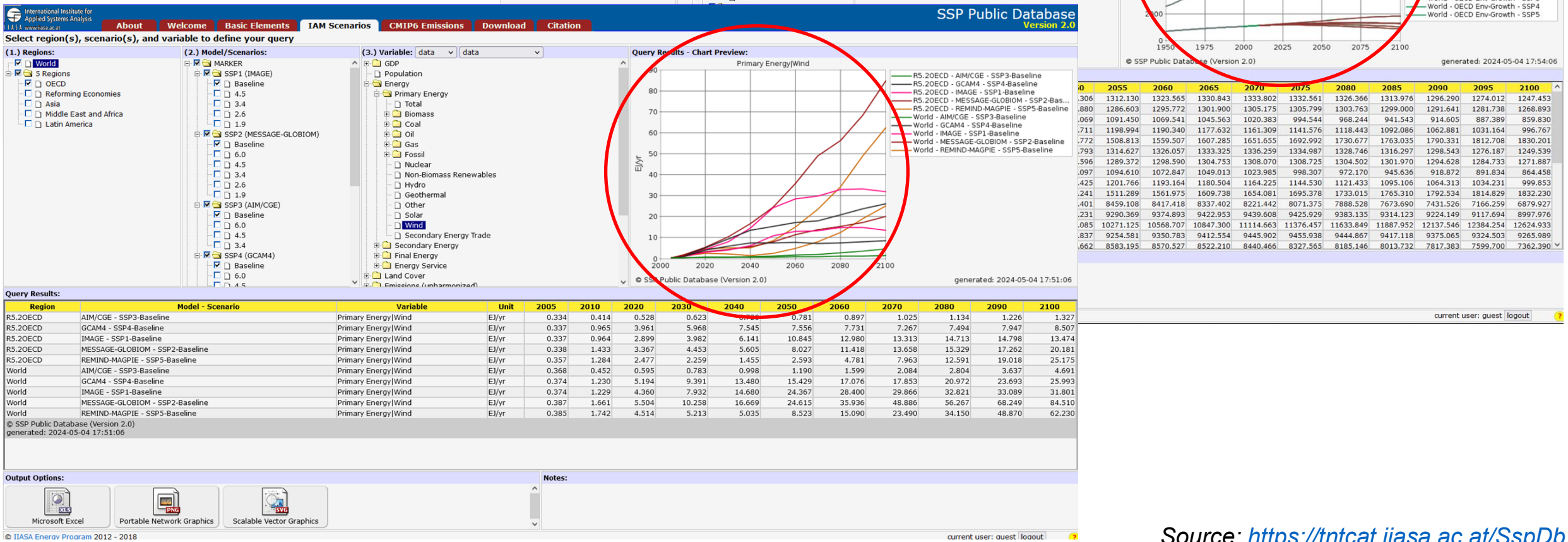
Basic Elements



IAM Scenarios



Source: https://tntcat.iiasa.ac.at/SspDb

Tool #3 | Future | IPCC Interactive Atlas

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ipcc
INTERGOVERNMENTAL PANEL ON climate change

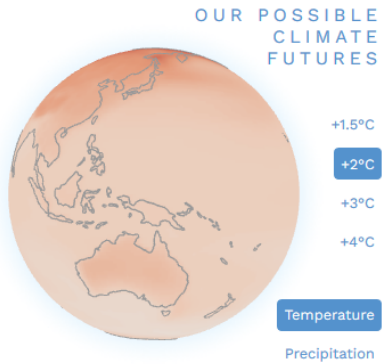
https://interactive-atlas.ipcc.ch

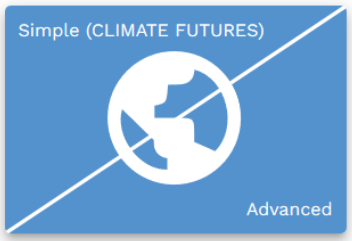
IPCC Working Group I (WGI): Sixth Assessment Report

IPCC WGI Interactive Atlas

A novel tool for flexible spatial and temporal analyses of much of the observed and projected climate change information underpinning the Working Group I contribution to the Sixth Assessment Report, including regional synthesis for Climatic Impact-Drivers (CIDs).

Participate in the user testing survey | Errata and problem reporting





REGIONAL INFORMATION

REGIONAL SYNTHESIS

DOCUMENTATION

Tool #3 | Future | IPCC Interactive Atlas

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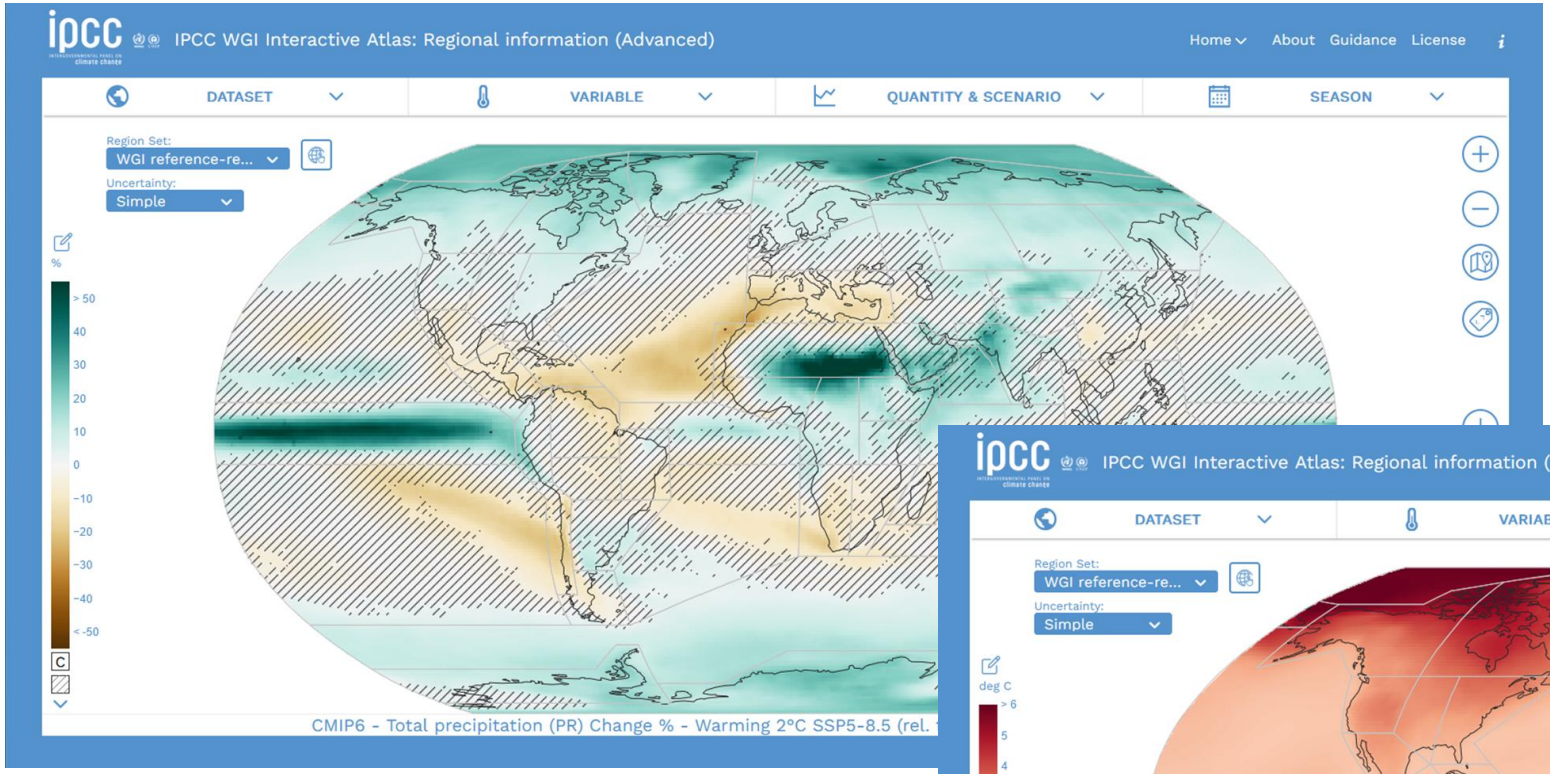
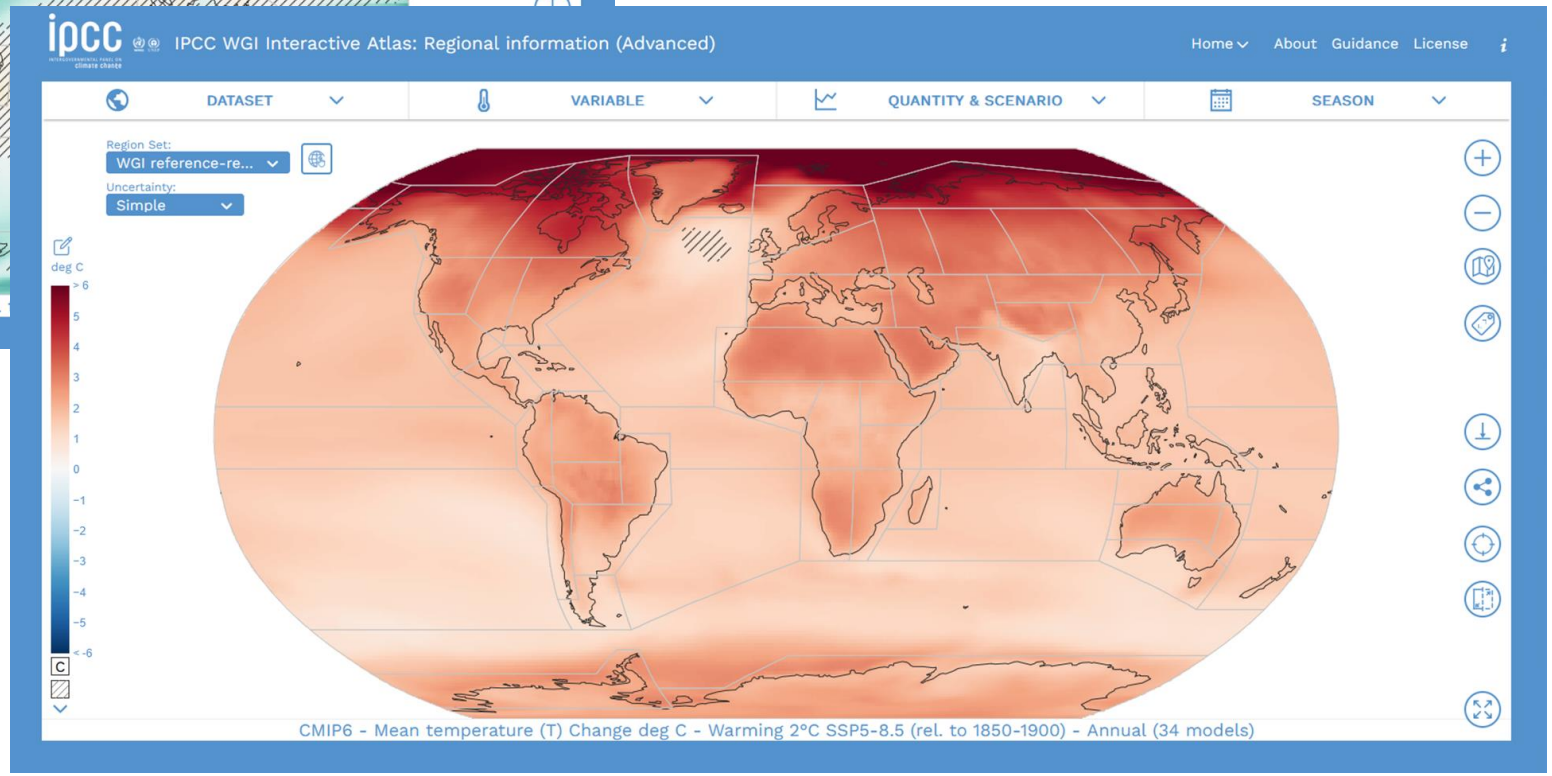


Total Precipitation

Mean Temperature



Source: https://interactive-atlas.ipcc.ch

VE Week – Work in Groups on Climate Horizon

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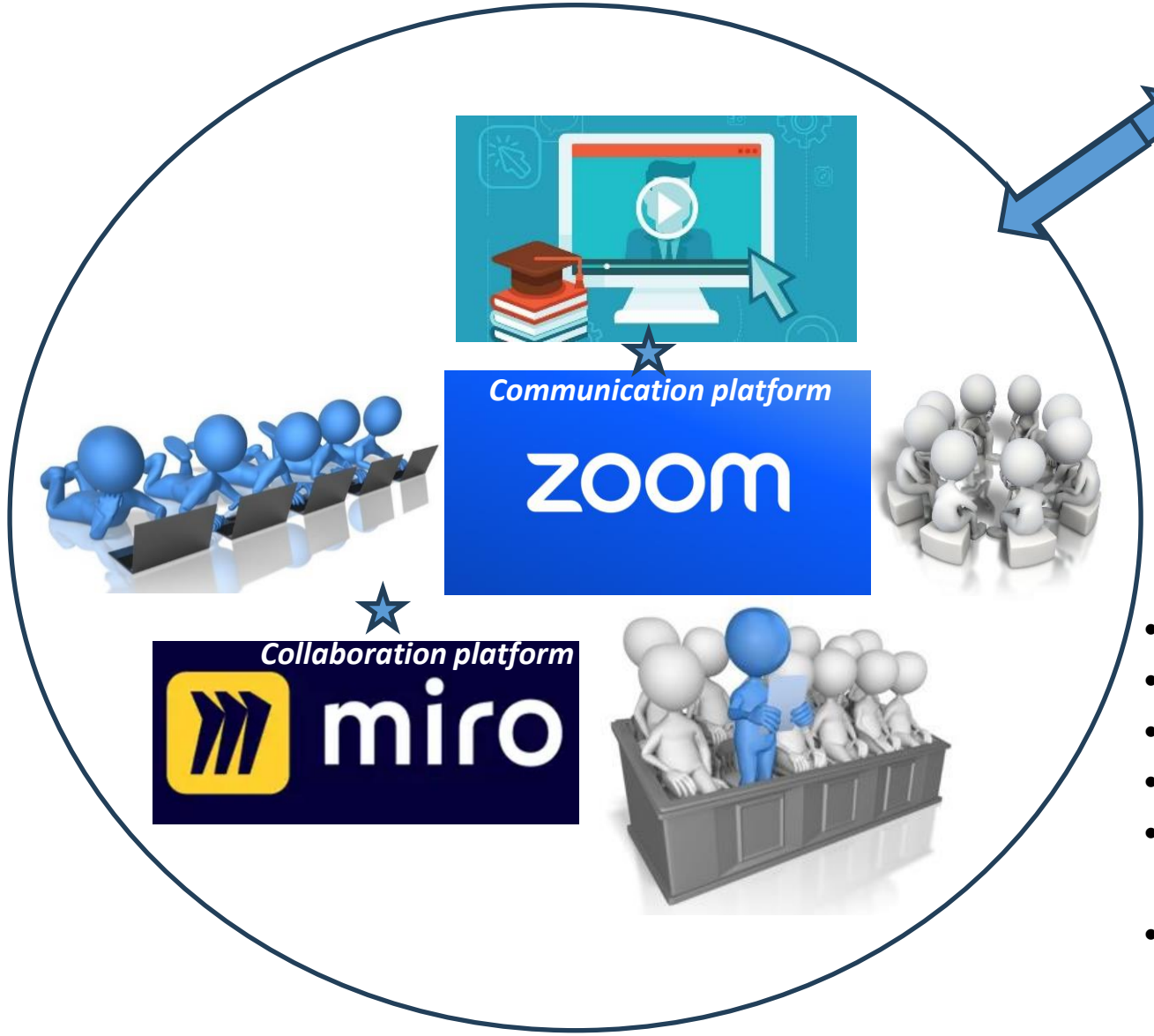
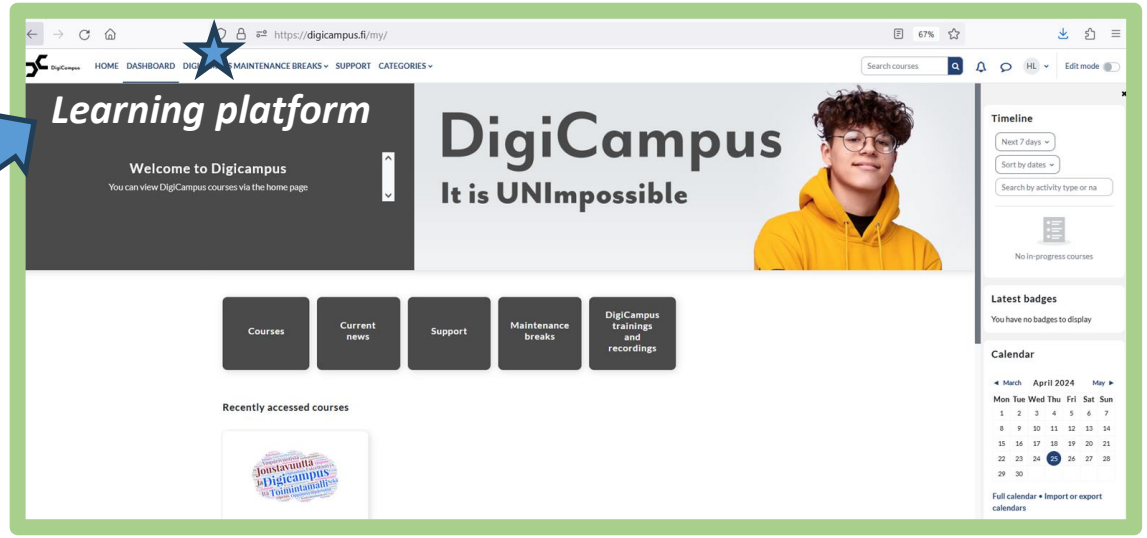
Learning + Communication + Collaboration Platforms (★)





DigiCampus for sharing materials for students & moderators:

- VEG – Virtual Exchaneg Guidebook
- CLG – Climate Literacy Guidebook
- CMC – Climate Messenger Code of Conduct
- Videos+slides of 8 lectures & 3 tools for data analysis
- Group Exercise ”Climate Horizon” & linking to SDGs
- Questionaries

VE Week – Learning Outcomes /in Certificate/

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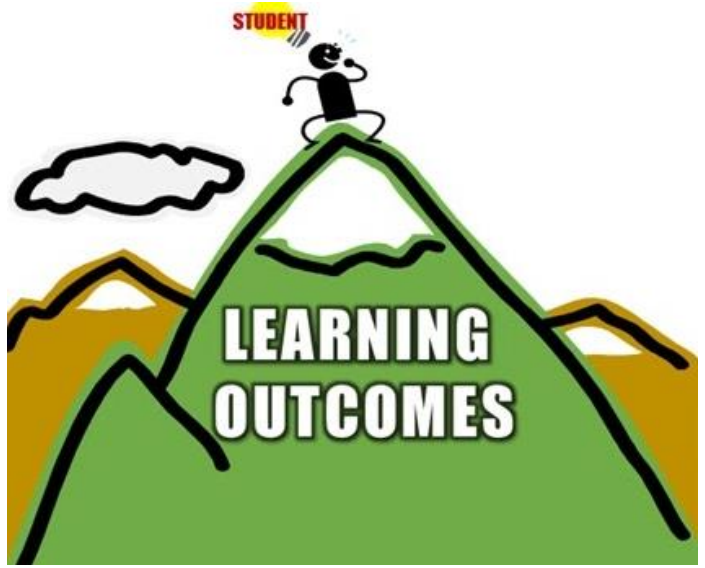
- Basics of the atmosphere, biosphere, hydrosphere and anthroposphere interaction and feedbacks.

- Basics of climate change based on latest science: Planetary boundaries concept, Last methodological tools used in observing the Earth System.

- Understanding of the human role from different perspectives like ethical, social, different cultural backgrounds in climate change, adaptation, and mitigation advances.

- Critically reflect owns views on climate change, sustainability, and create new visions.

- Reflect different international and intercultural perspectives on climate change and sustainability.



VE Week – Learning Outcomes /in Certificate/

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- Reflect about global versus local challenges in finding adaptation and mitigation solutions.
- Work together in different online working environments.
- Work and be part of an international teams and manage small joint projects.
- Communicate and present their work in English.
- Learning basic study skills such as use of open data, literature search, critical reading and thinking.

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CERTIFICATE

This certifies that

(name, surname)

has attended the Erasmus+ CLUVEX

Virtual Exchange Week
14 - 18 October 2024

Hanna K. Lappalainen
CLUVEX Coordinator
University of Helsinki, FI

Laura Riuttanen
Lead, Climate University
University of Helsinki, FI

Erasmus+ CLUVEX Project "Climate University for Virtual Exchanges" (Project No 101111959)
https://www.atm.helsinki.fi/cluvex

UNIVERSITY OF HELSINKI
1865
S L U BIOART SOCIETY

VE Week – Earned Bonuses for Students

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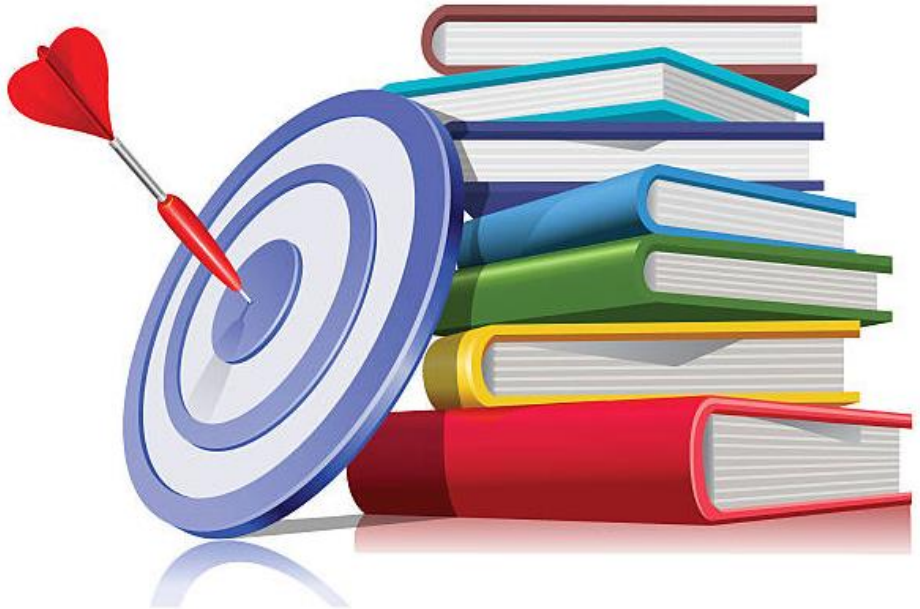
Students awarded the following:

- 1 ECTS credit by University of Helsinki
- CLUVEX Certificate
- Status of Climate Messenger
- Welcome to Climate University Online Courses



Welcome to Climate University Online Courses

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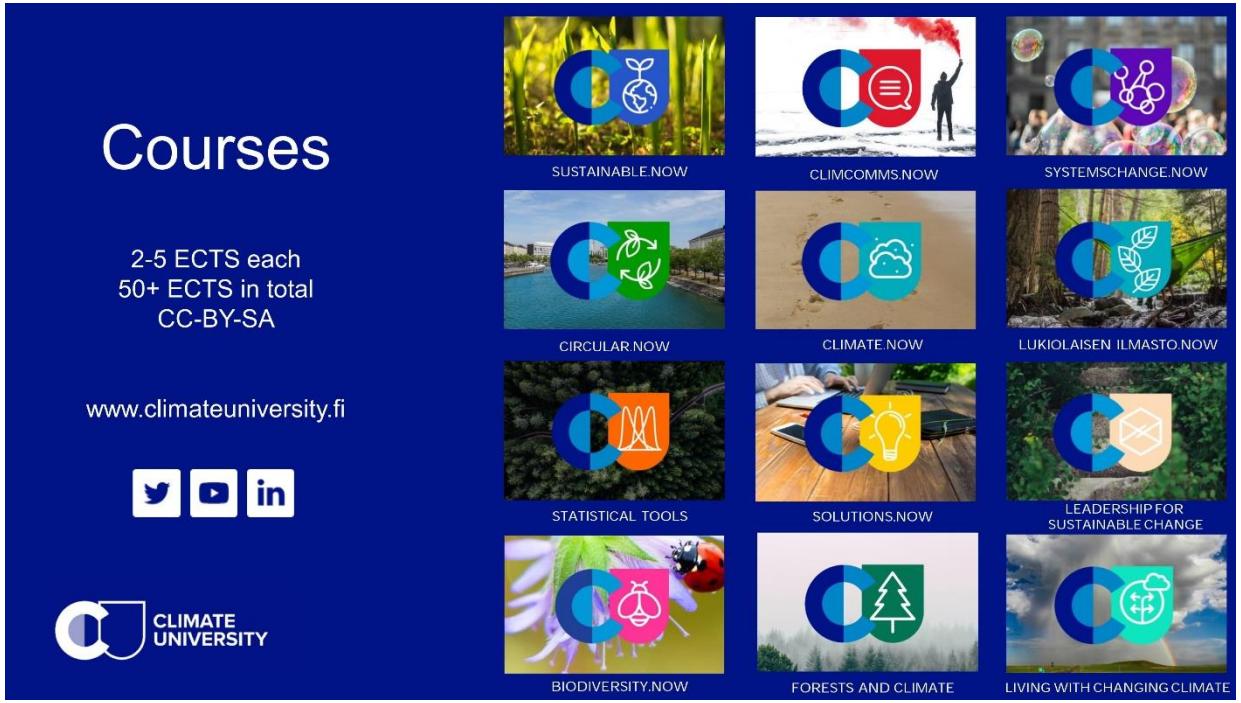
CLIMATE UNIVERSITY

Students (BSc, MSc, PhD, PostDocs)
who paricipated in CLUVEX VE Weeks
and became the **Climate Messengers**

are also encouraged to take the Climate University online courses



After moderators' training & self-education, you will:

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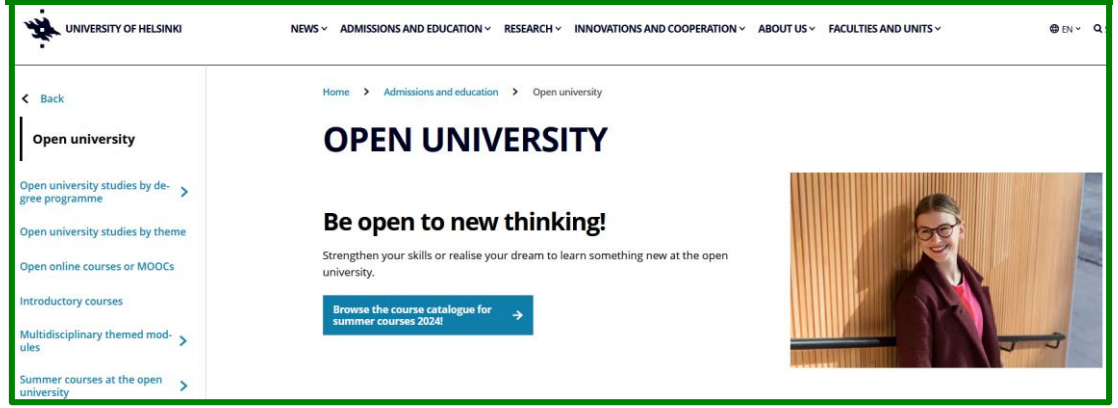
- get the necessary credits from the University of Helsinki (2 ECTS),
- get an internship certificate related to your studies,
- try pedagogy and language skills in a national small group,
- learn technical remote working and interaction skills that you will need when you move into working life,
- increase your network with the organizing universities,
- have a unique experience that broadens your world view.

Materials --- DigiCampus

Registration --- Open University



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Looking forward to see you at the Virtual Exchange Week for Students

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