



TROP ICSU Newsletter

January 2019

Climate Across the Curriculum:

A New Year, A Renewed Effort

Happy New Year 2019! We hope you are having a great start to the year.

We ended 2018 on a great note with TROP ICSU being well represented at COP 24 in Katowice, Poland. The [TROP ICSU project](#) and its resources were presented at **four sessions on climate change education** at [the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change \(COP 24\)](#) on 13 and 14 December, 2018.

And we have started 2019 on a promising note by publishing **new lesson plans and lesson plan ideas that have been contributed by teachers of various disciplines**. The outlines and ideas for these lesson plans were developed by teachers and educators at TROP ICSU workshops. This content was then further developed, enhanced, and edited through a collaborative, continuing engagement between the TROP ICSU team and the teachers.

In other updates, **workshops focusing on lesson plan creation for specific disciplines** were held at Pune and New Delhi in India. The workshop conducted at IISER Pune in December was attended by Mathematics and Statistics teachers from Mumbai, India. Two workshops were conducted in New Delhi in January: one at Sri Venkateswara College, New Delhi, focusing on the Biological Sciences and Chemistry, and another at Jesus and Mary College, New Delhi, focusing on the Humanities, Social Sciences, and Economics. Several lesson plan ideas and outlines were discussed and developed during these focused workshops. These will be reviewed and further enhanced in collaboration with the teachers.

TROP ICSU is now on [Facebook](#), [Twitter](#), and [LinkedIn](#). Like us, follow us,

We are looking forward to our **upcoming workshop in Bhutan in February 2019**. This workshop is being organized and facilitated with the valuable support of the International Union of Geodesy and Geophysics (IUGG); the Center for Disaster Risk Reduction and Community Development Studies (CDRR & CDS), Royal University of Bhutan, Rinchending, Bhutan; and the Commission on Education and Outreach, the International Association of Seismology and Physics of the Earth's Interior (IASPEI).

Workshops for teachers in South Africa, Egypt, China, and Australia are also being planned.

Stay tuned to the Upcoming Events section of the newsletter for information about a TROP ICSU workshop near your location.

We hope you enjoy reading this edition of our newsletter.

Thank you for your interest and support!

[Team TROP ICSU](#)

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TROP ICSU at COP24

At COP24, 13 December 2018 was celebrated as **Education Day**.

On this day, the TROP ICSU project was presented at the session "**Climate Education and Capacity**

On 14 December 2018, the TROP ICSU project was presented at the EU pavilion event "**Climate Change Education and Training: Leadership and Excellence**."

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Centre for Environment Education (CEE) and Ashoka Trust for Research in Ecology and the Environment (ATREE). At this event, speakers from TROP ICSU, OCE, WMO, CEE, GIZ, and UNFCCC shared their experiences in empowering local communities and students through climate education and capacity building. Dr. Rahul Chopra provided an overview of the [TROP ICSU project](#), its vision, and strategy. Further, he presented examples of teaching resources (teaching tools and lesson plans) from the TROP ICSU website and a summary of the teachers workshops conducted so far.

Event Listing:

https://seors.unfccc.int/seors/reports/events_list.html

On the same day, he also participated in a panel discussion at the UN side event **"Quality Education: Climate Change Education for All,"** organized by UNESCO, UNITAR, FAO, and UNDP. In the panel discussion moderated by Mr. Angus Mackay (UNITAR), Rahul Chopra used the TROP ICSU project to answer, discuss, and elaborate on the following questions:

- How can we increase awareness of climate change amongst high school and undergraduate students in classrooms across the world?

India Story."

TROP ICSU was introduced as an example to describe the state of climate, sustainability, and environmental education in India today. The project was also introduced as a means of democratizing knowledge through the digital. Rahul Chopra presented the objectives of the project and an overview of the educational resources.

Event Listing:

http://ec.europa.eu/clima/events/0124/calendar_en.htm#schedule

On the same day, the TROP ICSU project was presented at the IPCC WMO pavilion in a one-and-a-half hour session titled, **"Climate Across The Curriculum: Educational Resources For Teachers Trans-disciplinary Research Oriented Pedagogy for Improving Climate Studies and Understanding (TROP ICSU)."**

Event Listing:

<https://apps.ipcc.ch/outreach/eventinfo.php?q=446>

In summary, the audience and participants at all these sessions provided positive feedback on TROP ICSU and its educational resources, emphasizing and recognizing the urgent need for such an initiative. They also exhibited significant

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in different parts of the world use to increase knowledge of climate change amongst their students?

For more details of TROP ICSU at COP24, read the Special Edition of our Newsletter.

Event Listing:

https://seors.unfccc.int/seors/reports/events_list.html

[View the COP24 Special Edition of the Newsletter](#)

TROP ICSU Lesson Plans from Teachers

New Lesson Plans From Teachers

New teacher-contributed lesson plans have recently been added to the suite of educational resources available on the TROP ICSU website.

The new lesson plans in various disciplines are:

1. [**Buffers, Buffer Action and Ocean Acidification**](#): for teaching topics in Chemistry, Environmental Sciences, and Earth Sciences
2. [**Permafrost and Climate Change**](#): for teaching topics in Geography, Environmental Sciences, and Earth Sciences
3. [**Phase Diagrams and Phase Equilibria**](#): for teaching topics in Chemistry, Physics, and Earth Sciences

Contributing a Lesson Plan to the TROP ICSU Project

A Lesson Plan contains a set of teaching tools and a detailed step-by-step guide describing how to teach a topic in the existing curriculum of a discipline by using examples, case studies and exercises related to climate change.

A typical lesson plan may consist of:

- an introductory video micro-lecture or reading
- a classroom/laboratory activity or another type of central activity
- reading material, and
- additional resources for further exploration of the topic

Detailed step-by-step instructions to use these teaching tools are provided.

- for teaching topics in Chemistry
5. **Fertilizers and Climate**: for teaching topics in Chemistry
 6. **Impact of Climate Change on Photosynthesis**: for teaching topics in the Biological Sciences
 7. **Hydrocarbons and Climate Change**: for teaching topics in Chemistry

supplementary teaching aids or as a complete module to teach a particular topic in a discipline.

Share a Lesson Plan Idea or Outline

To share an idea for a lesson plan or submit a lesson plan outline, write to us at tropicsu@iubs.org.



TROP ICSU Lesson Plan Development Workshop for Mathematics and Statistics

On 20 December 2018, a one-day workshop for Mathematics and Statistics teachers was held at IISER Pune, India. This event focused on lesson plan development and was attended by 21 undergraduate-level teachers from various colleges in Mumbai, India. During the workshop, the participants discussed ideas and developed outline lesson plans for the integration of climate topics with existing curriculum in their disciplines.

Some of the ideas that were discussed were the teaching of

2. Time-series Analysis by using global temperature data
3. Calculus by using flood risk data
4. Differential Equations by using global temperature equations of climate models





TROP ICSU Lesson Plan Development Workshops for Various Disciplines

On 28 January 2019, a one-day workshop for teachers of the Humanities, Social Sciences, and Economics was held at Jesus and Mary College, New Delhi, India. This event focused on lesson plan development in these specific disciplines and was attended by approximately 40 undergraduate-level teachers from various colleges in New Delhi, India. During the workshop, the participants discussed ideas and developed outline lesson plans for the integration of climate topics with existing curriculum in their disciplines. The workshop also included participants from Mathematics, Computer Science, Commerce, Business Administration, and Elementary Education.

Some of the ideas that were discussed were the teaching of

1. Resource Distribution, Ownership, and Conflict in the context of climate change (in Economics)
2. Empathy in the context of those affected by climate change (in Psychology)
3. Displacement due to climate change (in the Social Sciences)

On the same day, a discussion focused on lesson plan ideas in the Biological Sciences, Chemistry, Biochemistry, and Mathematics was held for approximately 15 undergraduate-level teachers at Sri Venkateswara College, New Delhi, India.

TROP ICSU on Social Media

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Upcoming Events

The TROP ICSU team will conduct a **workshop for teachers in Thimphu, Bhutan on 14 and 15 February 2019**. We are grateful for the valuable support of IUGG; CDRR and CDS, Royal University of Bhutan; and the Commission on Education and Outreach, IASPEI in organizing the event.



Around the Web: Resources to Teach Topics in a Discipline with Climate-related Examples

Ideas for teaching Mathematics and Statistics through the Context of Climate

[Sustainability Math](#), edited

Educational Resources on Climate and Health

[Climate Change and Human Health Lesson Plans](#), from the National Institute of Environmental Health

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