



TROP ICSU Newsletter

February 2019

Climate Across the Curriculum:

Workshop for Teachers in Bhutan

Ideas on teaching about climate change and the design of buildings (in Civil Engineering and Architecture), the possible impact of climate change on snow leopard population and range (in the Biological Sciences), and strategies for climate-smart agriculture (in Economics) were discussed at the recent TROP ICSU workshop in Bhutan in February 2019.

In February, the TROP ICSU team visited Bhutan to facilitate a workshop for teachers and educators. A **2-day workshop for school teachers and university lecturers** was conducted in collaboration with the Center for Disaster Risk Reduction and Community Development Studies (CDRR &CDS), [College of Science and Technology, Royal University of Bhutan](#) and the Commission on Education and Outreach, [International Association of Seismology and Physics of the Earth's Interior \(IASPEI\)](#)—an association of [the International Union of Geodesy and Geophysics \(IUGG\)](#), which is a partner of the TROP ICSU project—at **Thimphu, Bhutan, on February 14 and 15, 2019**. Sixty-six teachers and educators from various disciplines attended the workshop. The workshop participants were introduced to the usage of digital teaching resources in the classroom and to the idea of integrating climate science/climate change-related topics with existing curriculum. They also provided critical feedback on the existing teaching resources from the pedagogy perspective.

In other updates, the TROP ICSU team is reviewing and analyzing the feedback received at the TROP ICSU workshops to determine how the existing teaching resources on our website can be modified or enhanced for improved effectiveness and ease-of-use in classrooms across the world.

TROP ICSU is collaborating with local partners in South Africa, Egypt, China, and Australia to plan and organize workshops in these countries in April and May 2019.

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!

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TROP ICSU Workshop in Bhutan

Summary of the Workshop

A TROP ICSU workshop for teachers was conducted in collaboration with the Center for Disaster Risk Reduction and Community Development Studies (CDRR & CDS), [College of Science and Technology, Royal University of Bhutan](#) and the Commission on Education and Outreach, [International Association of Seismology and Physics of the Earth's Interior \(IASPEI\)](#)—an association of [the International Union of Geodesy and Geophysics \(IUGG\)](#), which is a partner of the TROP ICSU project—at Thimphu, Bhutan, on February 14 and 15, 2019.

The workshop was attended by 66 participants (high school teachers and university lecturers) from various disciplines such as History,

Participant Feedback and Reactions

Overall, the participants were keen on learning about the usage of digital teaching resources in the classroom and the integration of climate science/climate change-related topics in their existing curriculum. They provided critical feedback on the existing teaching resources from the pedagogy perspective. Further, they actively participated in the creation of new lesson plans and specifically, in the generation of ideas that are relevant and specific to Bhutan.

From the participants:

“The session was helpful and effective. As a mathematics teacher our challenge is to infuse value in our lesson but after this session we ourself designed a lesson plan where we would be teaching

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Engineering, and Architecture.

The workshop commenced with an introduction to the College of Science and Technology, Royal University of Bhutan; an overview of CDRR & CDS and its work; and an introduction to the work of the Commission on Education and Outreach, IASPEI. Then, participants attended a few plenary sessions for an [overview of the TROP ICSU project](#) and its teaching resources. Over the next one and a half days, the teachers and educators worked in groups to carry out hands-on, interactive activities by using various [teaching tools](#) and [lesson plans](#) from the TROP ICSU website. They reviewed the teaching resources from the pedagogy and discipline perspective. Further, they worked in discipline-based groups to develop new lesson plan ideas, some of which used examples and case studies specific to Bhutan.

lesson. Thank you”

“Didn't know earlier that climate change could be integrated to teach different disciplines. Will relate and use climate change information to teach different topics possible to make children more aware of climate change and its impact. Would like you look into the overall Bhutanese curriculum and suggested what are the possible climate change information that could be included or incorporated to teach different topics and where to find them.”

“It was very useful, thought provoking and relevant program. I have enjoyed all lectures, sessions and the workshop reminded me of the importance of the Climate change and the need to include it in our curriculum...”

[Read a Detailed Report on the Workshop](#)



Review Of Teaching Resources (Lesson Plans)

TeacherSpeak: Feedback on the TROP ICSU Teaching Resources

At the TROP ICSU workshops, teachers review the educational resources on our website and provide feedback on the effectiveness and ease-of-use of these resources. We greatly value these suggestions and are analyzing them to determine ways of enhancing the content on our website.

Some of the feedback received so far from teachers at workshops in India, Uganda, and Bhutan:

"I would reduce the time period of this lesson"

"Design teaching tools appropriate and relevant to the context and location for better learning..."

"Guest speaker instead of the video"

"...Group discussions should also be emphasized..."

"Include objectives in the lesson plan as they contribute to the outcomes"

"We need to tailor the food security crop to the local household in East Africa"

"Some content does not match the indicated level (high school or undergraduate)"

"Include questions ranging from a basic level to an advanced level"

"For a given topic, create separate lesson plans for high school and undergraduate levels"

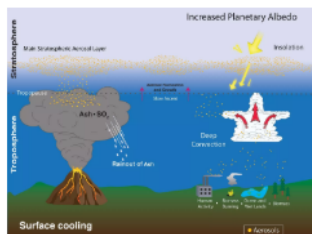
As we continue to receive and analyze feedback, we also encourage teachers



Lesson Plan: Abiotic Stress on Plants due to Climate Change

As a high school or undergraduate Biological Sciences teacher, you can use this set of computer-based tools in teaching about plant physiology, abiotic stress in plants, climate related stress factors and their influence on plant

[Read more.](#)



Lesson Plan: Aerosols and Climate

As a High School Chemistry or Environmental Sciences teacher, you can use this set of computer-based tools to teach about aerosols, their sources, and their direct and indirect impact on climate. This lesson plan will

[Read more.](#)



Lesson Plan: Natural Selection and Climate Change

As a high school or undergraduate, Biological Sciences teacher, you can use this set of computer-based tools to teach about natural selection, its role in evolution and climate change as a selective pressure in natural

[Read more.](#)

New Lesson Plans

Our suite of lesson plans continues to grow with contributions and ideas submitted by teachers. Recent additions include lesson plans on

- [Natural Selection and Climate Change](#)
- [Aerosols and Climate](#)
- [Abiotic Stress on Plants due to Climate Change](#)

To contribute to our set of teaching resources, write to us at tropicsu@iubs.org.

Upcoming Events

The TROP ICSU team will conduct a workshop for teachers in **Pretoria, South Africa on 2 and 3 April 2019** and a workshop for teachers in **Cairo, Egypt on 15 and 16 April 2019**.



Around the Web: Resources to Teach Topics in a

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Laboratory Exercises for Enriching the Curriculum by Using Climate-related Examples and Activities

[Climate Science for the Classroom](#), from the University of Washington's Program on Climate Change

Online Repository and Analysis Tool for Climate-related Data

[IRI/LDEO Climate Data Library](#), from Columbia University



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