



## **EDUCATIONAL RESOURCES for TEACHERS to INTEGRATE CLIMATE TOPICS across THE CURRICULUM**

### **TROP ICSU: Climate Change Education Across the Curriculum**

(by Anita Nagarajan, on behalf of the TROP ICSU project)

#### **Introduction**

The goal of the TROP ICSU project, of which IUGS is a key partner, is not to introduce Climate Education as a stand-alone topic, but to integrate it with the core curriculum of Science, Mathematics, Social Sciences, and other disciplines. From [Glaciers in Earth Science](#) to [Isotopes in Chemistry](#), from [Introductory Calculus in Mathematics](#) to [Sea-Level Rise in Geography](#), a range of topics in existing curriculum can be taught using a climate-related example or activity. Teachers and educators can choose a [lesson plan](#) from the [TROP ICSU project website](#) to teach a topic in any discipline or subject with the help of examples, case studies, and exercises related to climate change.

TROP ICSU (“Trans-disciplinary Research Oriented Pedagogy for Improving Climate Studies and Understanding”) is a global project funded by the [International Science Council](#). The International Union of Biological Sciences (IUBS) is the lead partner, and the International Union for Quaternary Research (INQUA) is the co-lead partner. The project partners include other international unions, national academies of several countries, national research centers, and United Nations agencies. Chris King, representing [IUGS-COGE](#), offers valuable support to TROP ICSU as a Working Group member.



The TROP ICSU team is collating and curating digital/ICT-based teaching resources that integrate climate studies with curriculum in various disciplines, including Science, Mathematics, Social Science, and Humanities. These teaching resources are locally rooted in their context, but globally relevant for their science. The project is a proof of concept to demonstrate a way of integrating climate change education with existing curriculum.

#### **A Lesson Plan for Every Discipline**

On the [TROP ICSU website](#), teachers can access and use [more than 20 detailed lesson plans](#) that integrate the teaching of a topic in a specific discipline with a topic in climate science or climate change. Users can visit the [TROP ICSU Lesson Plans page](#), select a discipline of their choice, and then choose a lesson plan from the displayed options.

The content of each lesson plan is organized into various sections and includes a step-by-step guide for improved ease-of-use and relevance in classrooms across the world. Each lesson plan

on the website consists of an Introduction, a Step-by-Step User Guide, Questions/Assignments, Learning Outcomes, and Credits.

These lesson plans serve as a proof of concept and have been designed to provide detailed examples of how teachers can develop their own lesson plans using local, relevant climate-related examples.

### **A Curated Suite of Teaching Tools**

The TROP ICSU website also contains a [curated suite of more than 100 teaching tools](#) that integrate a topic in high school or undergraduate curriculum with climate science. These teaching tools are categorized by [Discipline](#), [Climate Topic](#), [Grade Level](#), and [Tool Type](#).

### **Reaching Out to Teachers Across the World**

The TROP ICSU team, with the valuable support of its partners, has started to conduct workshops across the world to provide educators with an engaging, hands-on introduction to the teaching resources and to seek feedback and suggestions on enhancing the quality and effectiveness of these resources.