

Lesson Plan: Teaching the Tragedy of the Commons using Climate Change

As an **undergraduate Economics** teacher, you can use this set of computer-based tools to help you in teaching the concept of the **tragedy of the commons**.

This lesson plan will help students to understand the concept of tragedy of the commons, and to identify the “commons” and the “tragedy” in some example problems. In the activity, students will examine climate change as a tragedy of the commons and will discuss possible economic solutions (policy, development) for the problem.

Thus, the use of this lesson plan allows you to integrate the teaching of a climate science topic with a topic in Economics.

Use this lesson plan to help your students find answers to:

- *Describe the concept of tragedy of the commons.*
- *Discuss climate change as a tragedy-of-the-commons problem. Identify the “commons” and the “tragedy”.*
- *Explain why “atmospheric sinks for greenhouse gases” can be considered as a “commons”.*
- *Discuss different types of governance solutions for climate change as a tragedy of the commons. Analyze the strengths and weaknesses of each type of solution.*

About the Lesson Plan

Grade Level

Undergraduate

Discipline	Economics
Topic(s) in Discipline	Tragedy of the Commons; The Economics of Climate Change
Climate Topic	Energy, Economics, and Climate; Policy, Politics, and Environmental Governance
Location	Global
Access	Online, Offline
Language(s)	English
Approximate Time Required	120 min

1 Contents

- 1. Micro-lecture (video) (~11 min)**

A micro-lecture (video) that introduces the concept of tragedy of the commons and provides examples to explain the terms “tragedy” and “commons”.

<https://www.coursera.org/lecture/sustainability/tragedy-of-the-commons-MtxUU>
- 2. Classroom/Laboratory activity (~50 min)**

A classroom/laboratory activity to further understand tragedy of the commons through case studies, discuss “Earth’s atmosphere” as a *commons* and “global warming” as a *tragedy*, and propose solutions to solve this tragedy-of-the-commons problem.

<https://serc.carleton.edu/integrate/programs/implementation/program2/activities/135953.html>

3. Reading (~60 min)

A reading that discusses climate change as a tragedy-of-the-commons problem (atmospheric sinks for greenhouse gases are the *commons*), provides an overview of current climate change governance, and describes polycentric governance strategies to address global climate change at various levels and scales.

https://www.lincolnst.edu/sites/default/files/pubfiles/climate-change_0.pdf

4. Suggested questions/assignments for learning evaluation

- Describe the concept of tragedy of the commons.
- Discuss climate change as a tragedy-of-the-commons problem. Identify the “commons” and the “tragedy”.
- Explain why “atmospheric sinks for greenhouse gases” can be considered as a “commons”.
- Discuss different types of governance solutions for climate change as a tragedy of the commons. Analyze the strengths and weaknesses of each type of solution.

2 Step-by-step User Guide



Here is a step-by-step guide to using this lesson plan in the classroom/laboratory. We have suggested these steps as a possible plan of action. You may customize the lesson plan according to your preferences and requirements.

1. Introduce the topic by playing a micro-lecture (video)

- Play the micro-lecture “[Tragedy of the Commons](#)” to introduce the concept of tragedy of the commons.

The micro-lecture (video) “Tragedy of the Commons”, delivered by Dr. Jonathan Tomkin, from the Introduction to Sustainability course by University of Illinois at Urbana-Champaign is available on Coursera at <https://www.coursera.org/lecture/sustainability/tragedy-of-the-commons-MtxUU>.

- Guide a brief discussion among students to cite other examples of the tragedy of the commons problem, and to identify the “commons” and the “tragedy” in each example.

2. Conduct a classroom/laboratory activity

Next, explore the topic in further detail through a classroom/laboratory activity “[Introducing the economic concept of ‘tragedy of the commons’ using global warming](#)”.

The classroom/laboratory activity “Introducing the economic concept of ‘tragedy of the commons’ using global warming” by Laura Triplett, Gustavus Adolphus College, is available on SERC’s InTeGrate portal at <https://serc.carleton.edu/integrate/programs/implementation/program2/activities/135953.html>.

In this activity, students will discuss case studies for different tragedy-of-the-commons problems. Then, they will examine Earth’s atmosphere as a *commons* and global warming as a *tragedy*, and will propose economic solutions to solve this tragedy.

- Download the Teaching Materials from <https://serc.carleton.edu/integrate/programs/implementation/program2/activities/135953.html>.
- Conduct the activity described on the page.

3. Discuss solutions through a reading

Read “[Climate Change: The Ultimate Tragedy of the Commons](#)” by Jouni Paavola in “Property in Land and Other Resources”, edited by Daniel H. Cole and Elinor Ostrom, Cambridge, MA: Lincoln Institute of Land Policy, pp. 417-433.

The reading “Climate Change: The Ultimate Tragedy of the Commons” is available at https://www.lincolinst.edu/sites/default/files/pubfiles/climate-change_0.pdf.

This reading describes climate change as a tragedy of the commons problem (atmospheric sinks for greenhouse gases are the *commons*) and analyzes the current state of climate change governance. It also discusses polycentricity as a governance approach to address global climate change at various levels and

scales, providing specific examples of the Cities for Climate Change program and the Cement Sustainability Initiative.

4. Questions/Assignments

Use the tools and the concepts learned so far to discuss and determine answers to the following questions:

- *Describe the concept of tragedy of the commons.*
- *Discuss climate change as a tragedy-of-the-commons problem. Identify the “commons” and the “tragedy”.*
- *Explain why “atmospheric sinks for greenhouse gases” can be considered as a “commons”.*
- *Discuss different types of governance solutions for climate change as a tragedy of the commons. Analyze the strengths and weaknesses of each type of solution.*

3 Learning Outcomes

The tools in this lesson plan will enable students to:

- describe tragedy of the commons
- provide examples of tragedy-of-the-commons problems
- identify the *commons* and the *tragedy* in a given tragedy-of-the-commons problem
- examine climate change as a tragedy-of-the-commons problem
- propose economic solutions (policy, development) for the climate change tragedy-of-the-commons

4 Additional Resources



If you or your students would like to explore the topic further, these additional resources will be useful.

1. **Micro-lecture (video)**

A micro-lecture (video), “Tragedy of the Commons: Solutions”, delivered by Dr. Jonathan Tomkin, from the Introduction to Sustainability course by University of Illinois at Urbana-Champaign, on Coursera:

<https://www.coursera.org/lecture/sustainability/tragedy-of-the-commons-solutions-wBRcA>

5 Credits/Copyrights

All the teaching tools in our collated list are owned by the corresponding creators/authors/organizations as listed on their websites. Please view the individual copyright and ownership details for each tool by following the individual links provided.

We have selected and analyzed the tools that align with the overall objective of our project and have provided the corresponding links. We do not claim ownership of or responsibility/liability for any of the listed tools.

1. **Micro-lecture, “Tragedy of the Commons”** Dr. Jonathan Tomkin, [Introduction to Sustainability course by University of Illinois at Urbana-Champaign, on Coursera](#)
2. **Classroom/Laboratory activity, “Introducing the economic concept of ‘tragedy of the commons’ using global warming”** Laura Triplett, Gustavus Adolphus College; available on [SERC’s InTeGrate portal](#)
3. **Reading, “Climate Change: The Ultimate Tragedy of the Commons”** Jouni Paavola in “Property in Land and Other Resources”, edited by Daniel H. Cole and Elinor Ostrom, Cambridge, MA: Lincoln Institute of Land Policy, pp. 417-433; <https://www.lincolnst.edu/>
4. **Additional Resources** Dr. Jonathan Tomkin, [Introduction to Sustainability course by University of Illinois at Urbana-Champaign, on Coursera](#)