

Social Dilemmas

Psychology

Local Action Theme: Biodiversity loss

Keywords: Commons Dilemmas | Overfishing | HIPPCO

Time: Instructor Prep: 2 hours | Seminar: 1-2 class slots

Learning Outcomes:

- Students can explain what social dilemmas are, and the concept of common dilemmas
- Students can relate social dilemmas, and specifically common dilemmas, to biodiversity loss

INTRODUCTION

This teaching guide is meant to seamlessly fit into existing lesson plans in Psychology courses. The guide is created for teachers and professors interested in including environmental issues as examples for their students to understand the concepts in their introductory courses. This particular guide uses the topic of biodiversity loss to aid students in understanding social dilemmas. It also hopes to create an understanding of the vital role psychology can play in the creation of a sustainable future for our planet.

CONCEPTS - SOCIAL DILEMMAS

Social dilemmas is a concept in psychology that refers to situations where there is a conflict between immediate self-interest and longer-term collective interests. These are challenging situations because acting in one's immediate self-interest is tempting to everyone involved, even though everybody benefits from acting in the longer-term collective interest.

These dilemmas revolve around four core issues:

- **Individuals differences,**
- **Dynamic processes** within groups
- **Intergroup conflicts,** and,
- **Uncertainty.**

One specific type of social dilemmas are *Common Dilemmas*. **Commons Dilemmas** are situations where noncooperation between individual people leads to the deterioration and possible collapse of a resource. This concept was first introduced by Garrett Hardin in his work "The Tragedy of the Commons" in 1968. In a commons dilemma, each individual has an incentive to consume a resource at the greatest possible rate because they receive the full benefit of their consumption. As a result, there is unsustainable use of resources, and, in the end, everyone loses.

A classic example of a commons dilemma is a shared pasture or "common" where each herdsman has an incentive to graze as many animals as possible. Each herdsman receives the full benefit of each additional animal they add, but the cost of overgrazing is shared by all. If all herdsmen act in their immediate self-interest, the pasture will become overgrazed and unusable, to the detriment of all.

In the context of biodiversity loss, a commons dilemma can occur when individuals or groups overexploit natural resources or habitats, leading to a loss of biodiversity. This overexploitation

can be driven by immediate self-interest, such as fishing or logging for timber, without considering the long-term collective interest of maintaining biodiversity.

SUSTAINABILITY CONCEPT - BIODIVERSITY LOSS

Biodiversity is the variety of life on Earth, ranging from single-cell organisms up to blue whales. Through the increased pressure of humanity, biodiversity loss is now a significant threat. For example, a 69% decline in global populations of mammals, fish, birds, reptiles and amphibians has been estimated by the WWF in their Living Planet Report. This is due to a range of factors, including habitat fragmentation, pollution, climate change, and overexploitation (for example overfishing).

Biodiversity is of paramount importance to humanity due to the ecosystem services it provides. These ecosystem services provide goods like crops or freshwater, provide non-material benefits like recreation, and regulate natural processes like temperature regulation. For example, many different insects are important for pollination of our crops, and we depend on them for our food. Yet, in many regions their numbers are declining, sometimes by 80% or more. This can cause serious issues for our long-term food production.

For ease, we have developed several videos that provide basic information on these issues which can be assigned to students. You can see them on local-actions.com

CONNECTING THE DOTS

A typical example is overfishing. It is a commons dilemma that leads to biodiversity loss. Each fisher has an incentive to catch as many fish as possible to maximise their immediate benefit. However, if all fishers do this, the fish population can decline or even collapse, leading to an irreversible loss of biodiversity.

A well-documented case of overfishing leading to biodiversity loss is the collapse of the Atlantic Cod fishery off the east coast of Newfoundland in 1992. For centuries, the Atlantic Cod was a highly valued fishery resource. However, intense fishing pressure in the second half of the 20th century using industrial-scale fishing vessels led to a dramatic decline in cod numbers. Despite warnings from scientists about the declining fish stocks, overfishing continued due to economic, social, and political incentives.

In 1992, the Canadian government declared a moratorium on the Northern Cod fishery, which for the first time in 500 years, completely shut down a major economic resource. This led to significant socio-economic impacts, with around 40,000 people from the fishing industry becoming unemployed overnight. The cod stocks have not recovered even decades after the moratorium, turning this into one of the most striking examples of a commons dilemma and its impact on biodiversity.

Understanding and managing commons dilemmas is essential for biodiversity conservation. Strategies to manage commons dilemmas and thus prevent biodiversity loss include establishing protected areas, promoting sustainable use of resources, and educating the public about the importance of biodiversity.

Importantly, in other cases people have been able to manage common resources effectively, especially at a local scale. This has been highlighted by Nobel Prize winner Elinor Ostrom, who highlighted that social dilemmas at a local scale often don't lead to overuse of resources, as

people actually get together to manage the resources sustainably for the long term. This is presented in an important paper: *Revisiting the Commons: Local Lessons, Global Challenges* www.science.org/doi/10.1126/science.284.5412.278

LOCAL ACTION AND IN-CLASS ACTIVITIES

Local Action: Biodiversity around you

NOTE: a more detailed instruction which can be downloaded can be found on local-actions.com

- Biodiversity is crucial for our well-being, yet it is declining globally. Insect populations in certain areas have decreased by 80%, while populations of vertebrate animals (mammals, reptiles, birds, fish, and amphibians) have decreased by approximately 70%.
- Yet, biodiversity is still present all around us, especially when we start paying attention.
- In this local action you will go out and find biodiversity around your home.
- Download the app iNaturalist from your app store. This app helps you to identify plants and animals around you
- Go out, and spend 30-60 minutes trying to collect as many different species of plants and animals as possible
- Next, consider ways within your own town or city on how biodiversity is currently protected, or think of ways to promote biodiversity.

In-class activity 1: The M&M game (20 minutes)

NOTE: a more detailed instruction which can be downloaded can be found on local-actions.com

- In this game students will learn about common dilemmas by using a fish stock (represented in M&Ms or another candy) that they need to distributed amongst each other.
- This game can be used to highlight the challenges of sharing a resource, and the dilemmas arising from trying to maximise a profit
- As the instructions are elaborate, they can be downloaded here

RESOURCES

Elinor Ostrom et al. ,Revisiting the Commons: Local Lessons, Global Challenges. Science 284, 278 - 282(1999). www.science.org/doi/10.1126/science.284.5412.278

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