



Promoting Cooperative Solutions for Space Sustainability

An Introduction to Ostrom's Eight Principles for Sustainable Governance of Common-Pool Resources as a Possible Framework for Sustainable Governance of Space

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- **Key questions:**
 - How do we achieve space sustainability?
 - How can we learn from lessons in other domains?

- **Approach:**
 - Think about space as a commons (or common-pool resource)
 - Apply lessons learned in other commons governance scenarios to the space environment

- **One framework:**
 - Ostrom's eight principles for sustainable governance of common-pool resources
 - Adaptive governance

- **What is a commons?:**
 - Also known as a common-pool resource (CPR)
 - A resource environment or domain
 - Open-access: cannot easily bar others from using the CPR
- **Space as a commons:**
 - Inherently international
 - Extremely difficult to own in whole or in part
 - Accessible to any actor who can develop or purchase the means to reach orbit

- **Commons are prone to irresponsible use:**
 - Over-extraction and exploitation
 - Pollution
 - Congestion
 - Environmental degradation
- **“Tragedy of the Commons:”** Garrett Hardin’s 1968 *Science* article
 - People will overuse commons and eventually deplete them beyond repair, even though it is not in their best interest to do so
 - Private property system or powerful, central authority “Leviathan” are the only ways to prevent tragedy

- **Tragedy is not inevitable:**
 - Ostrom’s research found many cases of sustainably *self-governed* commons
 - No need for privatization or “Leviathan”
 - Resource users team up to cooperatively manage the commons resource
 - Leads to sustainable governance: users benefit now while also ensuring benefit for future generations

Ostrom's Eight Principles

1. Clearly-defined boundaries
2. Congruence
3. Collective-choice decision-making arrangements
4. Effective and participatory monitoring
5. Graduated punishments
6. Low-cost, accessible conflict resolution mechanisms
7. Self-determination recognized by higher authorities
8. Nested arrangements

- **Rules need to be able to adapt as:**
 - More information is learned about the commons environment
 - The environment changes over time
 - Users find ways to undermine or evade the rules
- **No need to start over:**
 - Work within the current space governance system
 - Build in flexibility to new governance initiatives

- Just an introduction
- If space is a commons, let's learn from other sustainably governed commons
- Ostrom's eight principles and her concept of adaptive governance can inform our efforts toward space sustainability
- More study needs to be done

Thank you! Any questions?

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References

- Dietz, T., E. Ostrom, P. Stern. The Struggle to Govern the Commons, *Science*, Vol. 302, pp. 1907-1912, 2003
- Hardin, G.: Tragedy of the Commons, *Science*, Vol. 162, pp. 1243-1248, 1968
- Ostrom, E.: *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, UK, 1990