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Assuring the Long-Term Sustainability of Outer Space Activities (4)

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DEVELOPING A POTENTIAL STRATEGY AND POLICIES FOR SPACE SUSTAINABILITY BASED
ON SUSTAINABLE MANAGEMENT OF COMMON-POOL RESOURCES

Abstract

Over the past few years, the long-term sustainability of space activities has become a central theme of many policy initiatives. Space sustainability is emerging as a core element of national policy and international initiatives. However, while more policymakers and stakeholders are recognizing the importance of space sustainability, none have developed an effective strategy, and accompanying policies, for accomplishing it.

This paper examines scholarly research from the field of economics and evaluates its potential to serve as a road map for space sustainability policy. In particular, it examines Nobel Prize Winner Elinor Ostrom's principles for sustainable governance of a common-pool resource (CPR). These principles were distilled from decades of studies on dozens of CPR situations, and reflect the best practices of CPRs that have managed to be used sustainably for decades or even centuries without resorting to either complete privatization or creation of a Leviathan entity to control the CPR, thus avoiding the famous "Tragedy of the Commons."

Ostrom's principles highlight the need for clear definitions of boundaries for the space domain, what entities are considered resource appropriators, who has a say in formulation of collective-choice agreements and operational rules, monitoring of behavior and accountability, graduated sanctions, and conflict-resolution mechanisms. When viewed in the context of the space domain, these principles highlight some long-standing issues, such as the definition of where space begins and gaps in the existing liability regime; and emerging issues, such as the concept of shared or collaborative space situational awareness as a monitoring and verification mechanism and how best to include emerging and developing space actors in negotiations and decision making.

The paper concludes that Ostrom's principles do provide some useful guidance by which to focus initial space sustainability efforts and national and international policy on this subject. It also recommends further analysis into how best to translate her applicable principles to the space domain, which of her principles may not be applicable due to the unique nature of space, and how to begin to evolve space governance institutions and mechanisms over time to achieve the sustainability goal.