IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Space Sustainability (4)

Author: Dr. Elena Cirkovic
Max Planck Institute, Luxembourg

Dr. Minoo Rathnasabapathy
Massachusetts Institute of Technology (MIT), United States
Prof. Danielle Wood
Massachusetts Institute of Technology (MIT), United States

PROMOTING SUSTAINABLE VALUE IN EARTH'S ORBIT

Abstract

Orbital debris poses a risk to functional satellites and threatens observation of the complex variables involved in climate change and environmental degradation. One of the current challenges in outer space activities regulation is the balancing of plural interests and an integration of different perspectives in such a diverse field (outer space sustainability in particular-but also humanity's relationship with what is generally understood as non-human, and in different domains) (Cirkovic, 2021). While disciplines and relevant methods can differ, if an overall objective is to be reached, the transdisciplinary approach will require a convergence on that objective.

International legal responses to the increasing commercial activities in outer space requires a new approach to law, grounded in an ontology of the cosmos, as well as with direct involvement of plural human actors and activities and including state and non-state actors. Ambiguous (or even missing) definitions of what constitutes pollution in outer space, corporate social responsibility (CSR) and even of the 'global commons', leave open a wide margin of legal interpretation by individual states.

The aim of this paper is to implement an interdisciplinary approach to sustainability and protection of the orbital environment. We argue that orbital and planetary sustainability, and the corresponding evolution of domestic, international, and regional regulatory instruments, need to take place in conjunction with sustainability of the Earth System. The paper applies complex systems framework of multiple environments and their interconnectivities from the perspective of two disciplines: engineering and social sciences (law and economics). The contribution of this article is to position the discussion of sustainable business within the broader context of international law of outer space, as well the definition of sustainability as securing the foundation for the Earth System and outer space, and how this can be translated for business into sustainable value creation. This includes mitigation of space debris, space traffic management, as well as mitigating climate change, but it is not limited to these issues. The goal of creating sustainable value would reflect multifaceted and interconnected environmental, social, cultural, economic and governance aspects. On this basis, the paper will also streamline some of the existing proposals for sustainability-oriented business including the initiatives such as Space Sustainability Rating, which aims to increase the transparency of organizations' debris mitigation efforts.