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A HUMAN RIGHTS-BASED APPROACH TO FOOD SUSTAINABILITY IN OUTER SPACE

**Abstract**

The application of a human rights framework upon outer space affairs is relevant to addressing issues of food security and sustainability in support of long-term human activities in space and upon the lunar surface. The extraterritorial extension international human rights law (IHRL) values and principles into international space law (ISL) jurisprudence will hold states to account concerning their continuing obligations to respect, protect, and fulfill human rights under international law. This bears additional relevance upon the promotion of humanity's ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Human rights represent universal, inherent, and indivisible rights possessed by all individuals by virtue of their existence as human beings. While States bear responsibility for the health and well-being of their citizens, the growing role of commercial space activities invites debate upon how the outer space activities of public and private actors alike can be regulated via the extraterritorial extension of international public law. This has been established under core ISL instruments (1967 Outer Space Treaty), and illustrated across IHRL customary law by uniform and consistent state practice.

The application of a harms-based approach to human spaceflight activities underscores how outer space presents an inhospitable and hostile environment to sustaining human life, health, security, and dignity. This underscores the essentiality of a sustainable food system in providing astronauts and human spaceflight participants with ample sustenance to support human exploration both in low-earth orbit and upon the lunar surface. Conversely, the development of food safety systems by NASA contributed to the formation of global standards for hazard prevention under the HACCP system – highlighting how space applications can result in a tangible contribution upon terrestrial food security.

Cognizant of established criteria for space food systems by NASA and leading space agencies, state actors in space must work to clarify a universal and human-rights based framework premised upon key aspects of the human right to food, including: a) availability – ensuring the east-of-production or procurement of food in the outer space environment; b) accessibility – ensuring the continuing affordability of food for human spaceflight participants; c) adequacy – providing food which satisfies the dietary needs of differing groups and is safe for human consumption; and d) sustainability – requiring interoperable and resilient food systems which account for the needs of present and future generations.