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LUNAR RESOURCE EXTRACTION: LEGAL AND POLICY CHALLENGES IN THE ABSENCE OF A BINDING FRAMEWORK

Abstract

The renewed focus on lunar exploration has brought the issue of resource extraction to the forefront of space law and policy. With the Artemis Accords and various national space legislations explicitly recognising the right of private actors to extract and use lunar resources, the legal landscape is shifting towards a commercialised model. However, these initiatives remain controversial, as they lack multilateral consensus and may conflict with the fundamental principles of international space law, particularly the non-appropriation principle under the Outer Space Treaty (OST). While the Moon Agreement aimed to establish a framework for the equitable sharing of extraterrestrial resources, its limited ratification and lack of enforcement mechanisms render it ineffective in the current geopolitical and commercial context, highlighting the need for a new regulatory framework. The primary issue is the absence of a globally accepted regulatory framework to govern lunar mining, leading to fragmented national policies that may result in resource monopolisation, geopolitical conflicts, and environmental concerns. Resource monopolisation could lead to unequal distribution of wealth and power, geopolitical conflicts could disrupt international relations, and environmental concerns could lead to irreversible damage to the lunar environment. This paper addresses the research question: Is the existing international legal framework capable of regulating lunar resource extraction to ensure equitable access, environmental sustainability, and long-term governance? It critically examines whether unilateral national policies undermine the collective interests of the international community and explores possible pathways to a more inclusive regulatory regime. This paper uses a doctrinal and comparative legal analysis to assess their applicability to lunar governance by evaluating international treaties, national space laws, and regulatory models from other domains, such as deep-sea mining and Antarctica. Additionally, the paper engages with policy documents, industry white papers, and scholarly debates to identify key areas of contention and convergence. The analysis suggests that while the OST provides broad principles, it cannot regulate the commercial exploitation of lunar resources. The lack of precise mechanisms for environmental protection, benefit-sharing, and dispute resolution creates legal uncertainties that could deter responsible development. The paper argues that a multilateral governance framework is necessary and promising, ensuring that lunar resource activities remain sustainable and equitable. It proposes a hybrid model that combines elements of international regulation with industry self-governance, allowing for commercial innovation while maintaining state oversight. Establishing an international lunar resource management authority modelled after the International Seabed Authority is a possible solution to balance commercial, environmental, and ethical considerations.