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GOVERNING SPACE SUSTAINABILITY: EVALUATING APPROPRIATE GOVERNANCE  
ARRANGEMENTS FOR SUSTAINABLE SPACE EXPLOITATION

**Abstract**

Outer space is a complex system and a commons that has undergone a change from humans wanting to explore the space environment to exploiting the resources for the benefits they bring in space and on Earth. Due to the complex nature of space, governance and regulations are of great importance to ensure that space is dealt with sustainably. The complexity results in higher costs, higher benefits, and higher risks, and a great interconnectedness exists between the different space activities and actors. Due to the growing number of stakeholders, it becomes more challenging to define and consolidate power. There is a huge degree of uncertainty, particularly in the ways in which space can be exploited with an expanding range of exploitation possibilities. Therefore, there is a growing need for new governance arrangements that can handle the arisen complexity as well as the risks. The aim of this research was to identify current governance arrangements of space exploitation, explore appropriate governance arrangements for sustainable space exploitation, and contribute to the existing research. This was done by analysing and evaluating the current governance arrangements by considering challenges of sustainability, governance, and power. The research focusses on evaluating the current governance arrangements and gives an insight into how governance arrangements should look in the future based on challenges identified and examples of terrestrial global commons governance. The results show that the current governance arrangements are not adequately addressing the growing complexity of the space sector with regard to sustainable space exploitation. However, the principles of the OST and the LTS guidelines are of great importance and offer a very valuable basis for space governance, serving as inspiration but do not provide clear regulations of mechanisms. Considering the developments of space governance in the near future there was a clear indication that sectoral frameworks will develop. Although an overarching global framework is necessary, experts explain that this is not realistic due to the need for consensus and states not willing to give up their sovereignty. Regarding future appropriate governance arrangements for sustainable space exploitation, inspiration can be drawn from the ideal scenarios described by interviewees as well as the governance processes and structures of global commons.