

Space Property Rights: The Winds of Change

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Space Property Rights



- The first pillar of UNISPACE+50 addresses the space economy.
- Space economy refers to the **use of space resources for economic benefit**
- Use of space resources for economic benefit raises issues of ownership rights over such resources.

Article II of the Outer Space Treaty

“Outer Space including the Moon and other celestial bodies is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”



- Opinions of legal scholars are divided when it comes to the legality of private property rights in space.
- Depending on the legal conclusion reached different policy choices have been provided.
- Is legal analysis the correct starting point?



Nation states and private entities are not slaves of the law. The law exists to serve the needs of humanity as those adapt based on political, economic, scientific and technological developments.



Instead of beginning with a legal analysis, what we need is a systematic way to identify key policy questions and evaluate corresponding policy choices. Having evaluate those choices we can then go back and see if the existing legal framework is compatible and sufficient to address these choices.



For the creation of a comprehensive, sustainable and predictable space property rights regime, which will provide industry with investment incentives, 4 policy questions must be addressed. Each of these questions has three possible policy choices.



POLICY CHOICES

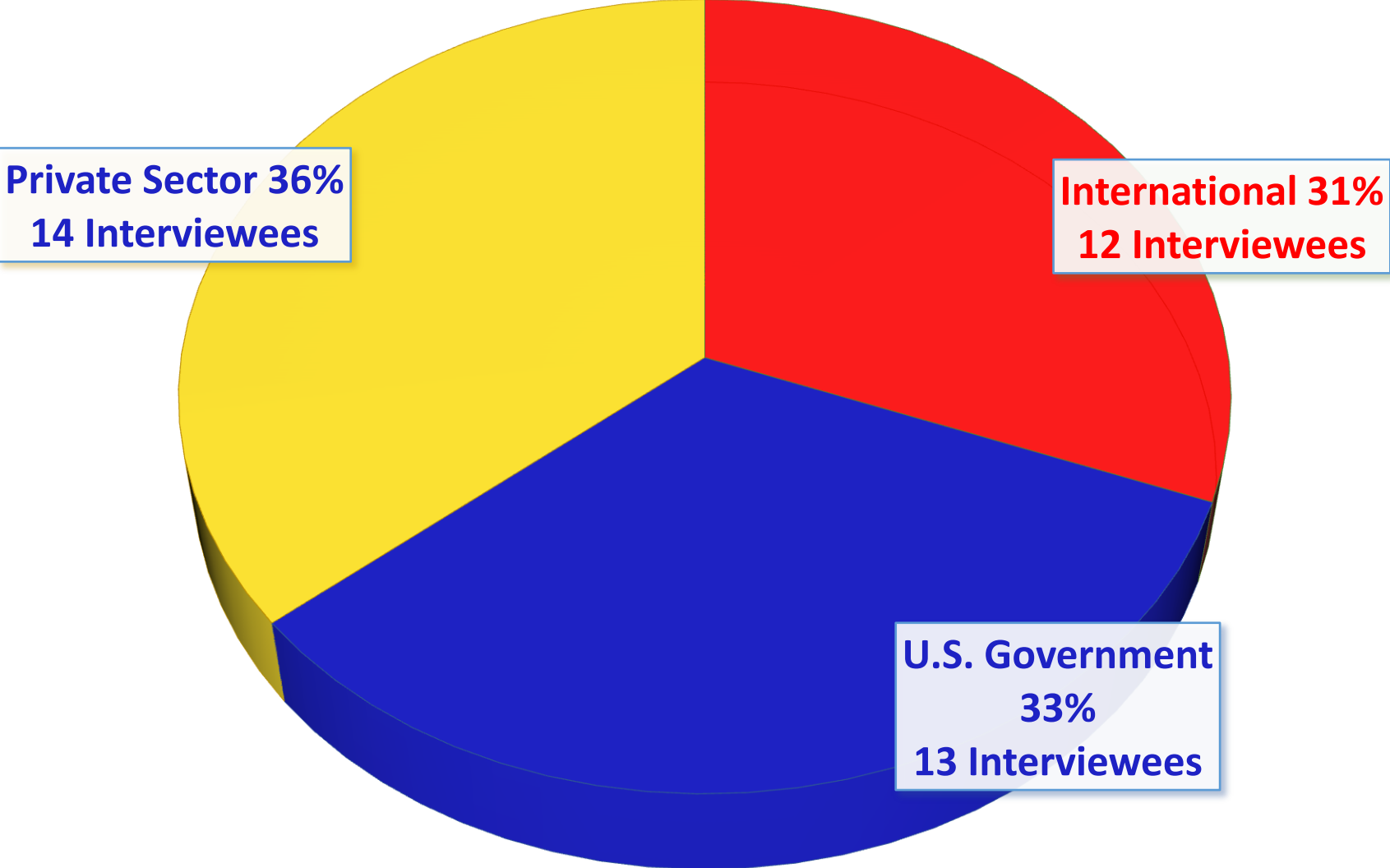
TYPE OF SPACE PROPERTY RIGHTS REGIME	BASIS FOR RECOGNIZING SPACE PROPERTY RIGHTS	ADMINISTERING REGIME	DISPUTE RESOLUTION MECHANISM
Real Property Rights	Modified Theory of First Possession	Common Heritage of Mankind Organization	Existing Mechanism
Licensing Regime	Equitable Distribution	Coordinating Body	Binding Arbitration
Common Heritage of Mankind Regime:	Auctions	Reciprocal National Agreements	Space Tribunal

39 Experts

Stakeholders, decision makers or proxies to stakeholders and decision makers regarding space property rights.



INTERVIEWEE PROFILE BY SECTOR
TOTAL NUMBER: 39



1. **Beavin, Michael:** U.S. Senate Committee on Commerce, Science & Transportation
2. **Bingham, Jeff:** Retired, Former Senior Advisor on Space and Aeronautics, U.S. Senate Committee on Commerce, Science, and Transportation
3. **Boucher, Dale:** Chief Executive Officer, Deltion Innovations Ltd
4. **Claybaugh, Bill:** Vice President, Strategic Space Solutions
5. **Choe, Namni:** Head, Policy Analysis Department, Korea Aerospace Research Institute
6. **Davidian, Ken:** Director of Research at the FAA Office of Commercial Space Transportation (AST)
7. **Diamandis, Peter:** Chairman & CEO of the X Prize Foundation, Co-Founder/ Co-Chairman of Planetary Resources
8. **Dickey, Chuck:** General Counsel, Civil Space, Lockheed Martin Space Systems Company
9. **Gold, Mike:** Director of D.C. Operations & Business Growth Bigelow Aerospace, LLC
10. **Griffin, Michael:** Chairman and Chief Executive, Schaefer Corp
11. **Hazane, Phillipe:** Space Counselor & CNES Representative, Embassy of France
12. **Hodgkins, Ken:** Director of Space and Advanced Technology, U.S. State Department
13. **Hinzer, Joe:** President, Watts, Griffis and McQuat Limited
14. **International Representative,** who wishes to remain anonymous
15. **Israel, Brian:** Attorney Adviser, Office of the Legal Adviser for Oceans, International Environmental and Scientific Affairs, U.S. Department of State & US Representative to Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPOUS)
16. **Iwamoto, Hiroyuki:** Director, Japan Aerospace Exploration Agency (JAXA), Washington, D.C. Office
17. **Kaissi, Talal:** Chief of Staff & Advisor to the Commercial Counselor, UAE Embassy Trade & Commercial Office
18. **Kasnzica, Justine:** Special Counsel, Saul Ewing LLP
19. **Keelor, Bradley:** Senior Science and Innovation Policy Adviser, British Embassy
20. **Keravala, Kim:** COO, Shackleton Energy Company, Inc.
21. **Kfir, Sagi:** General Counsel, Deep Space Industries
22. **Kim, Jason:** Senior Policy Analyst, Office of Space Commercialization, NOAA, Satellite and Information Service, US Department of Commerce
23. **Kronmiller, Ted:** Law Office of Theodore G. Kronmiller
24. **Mackey, William:** Counsellor, Space Affairs- Canadian Space Agency, Canadian Embassy
25. **Mineiro, Mike:** Legislative Counsel, US House of Representatives
26. **Montgomery, Laura:** Space Law Branch Manager, Federal Aviation Administration
27. **Clay, Mowry:** President, Arianespace Inc.
28. **Obermann, Richard:** Chief of Staff, House Committee on Science, Space and Technology
29. **Pelz, Chris:** Secured Utilization of Resources of Outer Space (SUROS), Canada
30. **Roberts, Ben:** Assistant Director, Civil and Commercial Space, Office of Science and Technology Policy
31. **Shank, Chris:** Policy director for the Science, Space, and Committee of the U.S. House of Representatives
32. **Schrogl, Kai-Uwe:** Head of the Relations with Member States Department, Director General's Cabinet, European Space Agency (ESA) & Chairman of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPOUS)
33. **Shawcross, Paul:** Branch Chief for Science and Space, Office of Management and Budget
34. **Smith, Marcia:** Founder & Editor SpacePolicyOnline
35. **Soucek, Alexander:** Legal Services, European Space Agency (ESA) & ESA Representative to Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPOUS)
36. **Tabache, Micheline:** Head, European Space Agency (ESA) Washington Office
37. **Vittori, Roberto:** Space Attache, Embassy of Italy
38. **Wells, Kim:** Senior International Trade Specialist, US Department of Commerce
39. **Yioshoka, Nobuto:** Deputy Director, Japan Aerospace Exploration Agency (JAXA), Washington, D.C. Office

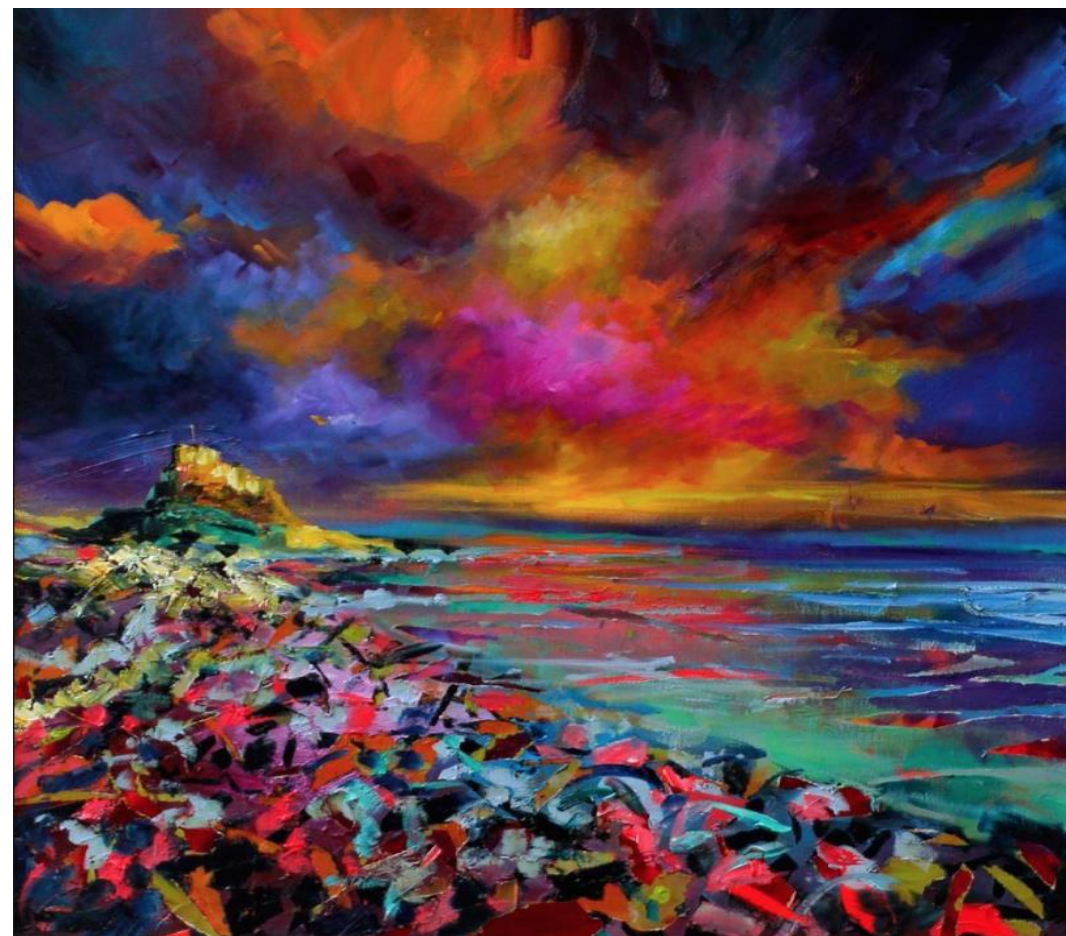
Evaluation Criteria

1. Domestic Political Feasibility
2. International Political Feasibility
3. Economic Incentives
4. Administrative Feasibility
5. Efficiency



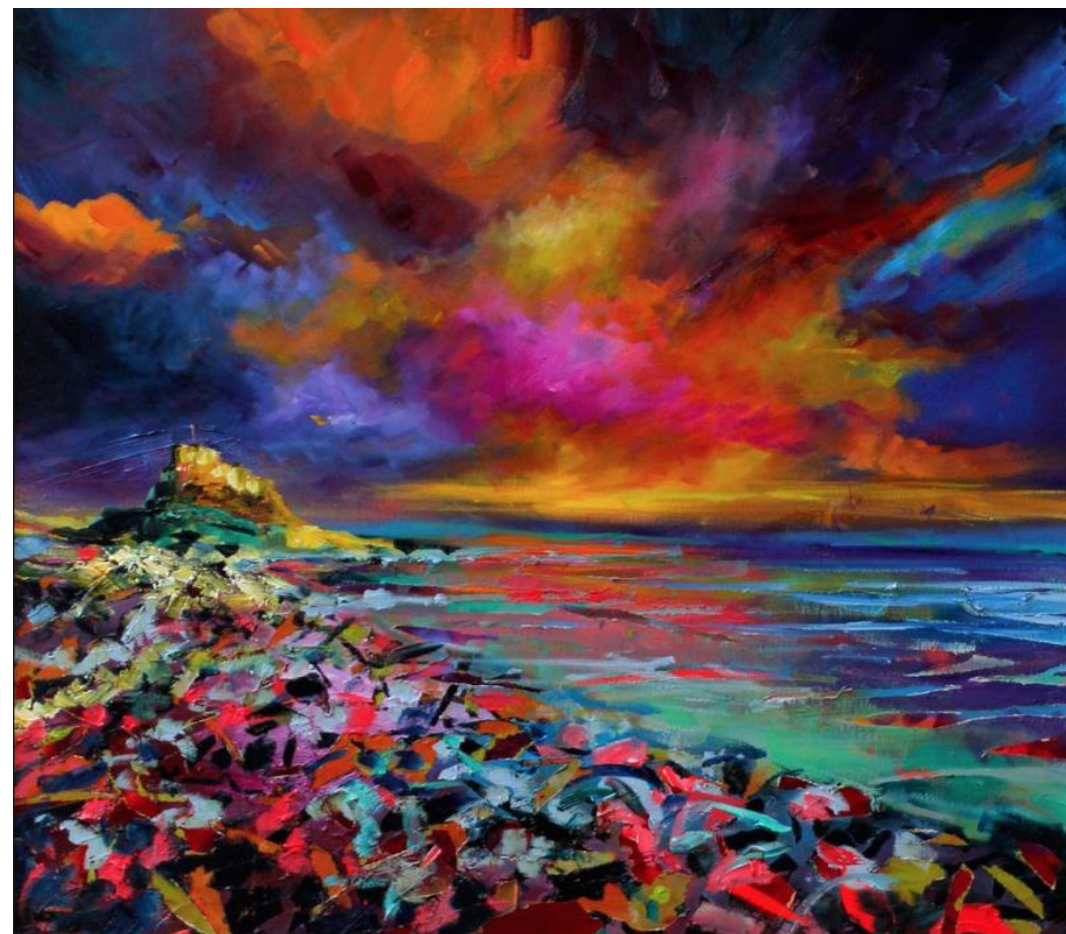
Empirical Research Finding #1

At the initial stages of economic development celestial areas involving economic activities should be regulated by a licensing regime



Empirical Research Finding #2

Initial recognition of space property rights should be made on the basis of a modified theory of first possession



Empirical Research Finding #3

The regime should be administered via a web of reciprocal bilateral agreements between nations willing to enact domestic space property rights legislation (a) requiring the private entities of these nations to apply to their home country for licenses to exploit outer space resources so that they can acquire permits to recover resources and (b) prohibiting citizens under the jurisdiction of reciprocating states from interfering with the activities of other licensees or permit holders.



Empirical Research Finding #4

Space property rights disputes between entities, under the jurisdiction of nations participating into the web of Reciprocal Reciprocal Bilateral Agreements, should be resolved by arbitration, in the event parties are not successful in resolving their disputes using the traditional negotiation, mediation and conciliation methods.



Empirical Research Finding #5

Space is not the exclusive club of the few. These recommendations fail to achieve the UNISPACE+50 objective unless accompanied by the appropriate incentives for emerging and non spacefaring nations to participate in this web of agreements.



Possible incentives could include:

- Share data, which will assist emerging and non-spacefaring nations with natural disaster prevention, reduction, response and recovery;
- Share scientific, non-proprietary, information gained in the process of prospecting, exploring, and exploiting resources, which other nations can use in connection with space resource development.
- Support reasonable loan requests by emerging and non-spacefaring nations to international institutions aimed to assist these nations to invest in companies engaged in space resource development or other space projects of interest.
- Create appropriate offset programs for the space resource development industry for countries with private sector companies interested in investing in resource development similar to those existing in the defense industry.



Examples

The Dream Chaser of Sierra Nevada is great example of how the industry of a leading spacefaring nation such as the United States, can enable emerging and non spacefaring nations to have a quick start at a domestic space program.



Examples

The UAE has set the example of how a once non-spacefaring nation with hard and meticulous work, innovative strategy, dedication and determination can perform a “space miracle.”

In November of 2008 I arrived in Abu Dhabi to attend the first UAE Space Conference marking the beginning of the UAE space program. In October of 2015, the United Arab Emirates gained membership to the International Space Exploration Coordination Group (ISECG). Membership of this group requires evidence of skilled human resources and experience that qualifies it to be in the ranks of the advanced countries in the field of space exploration.



UNOOSA and the way forward

- Facilitate discussions among interested nations and develop incentives for emerging and non-spacefaring nations to enact space property rights laws and regulations on the domestic and international level.
- Place space property rights under the mandate of the newly created Global Partnership in Space Exploration and Innovation Action Team and thus shifting the focus from legal analysis to the development of policy serving the needs of the international community.



Safety, Environmental & Security Considerations

Safe, responsible and sustainable use of space:
Duty each nation owes to the international community-at-large



