Key Legal Challenges arising from Natural Resource Extraction of Celestial Bodies

United Nations/Chile Conference on Space Law and Policy: Governance and Legal Perspectives on Space Activities in Earth Orbit and Beyond

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12 May 2022
Space Resource Activities will involve many complex issues and challenges

• Key issues:
  o Legal and Governance but also ....
  o Sustainability
  o Avoiding Conflict
  o Technological / Scientific
  o Environmental / Cultural / Economic / Geopolitical / Humanistic
  o Stewardship
  o How do we regard space? / How do we interact with space?

• We need to understand the *questions* before we can begin to consider the *answers*...
What is at Stake?

• Available resources?
  o *Moon*: Rare Earth minerals? Helium 3? and most significantly water
  o *Asteroids*: Volatile, Platinum, Nickel, etc; $$$$$$$?

• Resources could be used / utilised in situ (ISRU) or (later?) sent to Earth (but does the business case make sense for the latter?)

• Proponents argue that ‘space mining’ can add to and redistribute wealth worldwide

• Others fear that it could instead lead to a ‘land grab’, ‘gold rush’ – and ultimately conflict?
Legal and Governance considerations will include:

- **UN Treaty Regime:**
  - Outer Space Treaty / Moon Agreement etc

- **Other UNCOPUOS Instruments:**
  - Space Debris Mitigation Guidelines / Long Term Sustainability Guidelines etc

- Are there lessons to be learnt from other governance structures for resources Beyond National Jurisdiction?
  - ITU? ISBA? etc
Use of Space Resources: 1967 Outer Space Treaty

- Art. I OST: Freedom of Exploration and Use
  - For the benefit of and in the interests of all countries
  - Province of all mankind
  - In accordance with international law
  - Free access to all areas of celestial bodies
  → Is commercial use of resources in line with Art. I?

- Art. II OST: Non-appropriation
  - Outer space is not subject to national appropriation
  - Are exploitation and utilization of space resources covered by this principle?
  → Artemis Accords? Correct reflection of the legal position?

- Art. IV OST: Use for peaceful purposes
  - No nuclear weapons/ weapons of mass destruction anywhere
  - Moon (+ celestial bodies): exclusively peaceful purposes
  → How to avoid conflict in competition for resources?
Use of Space Resources: 1967 Outer Space Treaty

• Art. VI: International Responsibility
  o International responsibility for national activities (including on celestial bodies)
  o Non-governmental entities: authorization and continuing supervision by the appropriate State
  o Assure compliance with Treaty provisions
  → Do resource activities fall within scope of the Treaty law?

• Art. VII: International Liability for damage
  o Launching State(s)
  o Launch/ procure/ territory/ facility
  o Damage
  o On Earth or to aircraft (absolute) / in space (fault)
  o To another State Party or its natural /juridical persons
  o By a space object or its component parts
  → How do States / corporations protect themselves?
Use of Space Resources: 1967 Outer Space Treaty

• Art. IX: No Harmful Interference
  o Due regard, consultation
  o No harmful contamination of space
  o No adverse changes in Earth environment
  ➔ How to monitor resource activities?

• Art. XI-XII: Cooperation
  o Promote international co-operation
  o Inform UN, public, international scientific community
  o Visits to stations, installations, vehicles in space
  o Reciprocity, reasonable advance notice
  ➔ Can States make non-governmental stakeholders comply with these rules?
Use of Space Resources: 1979 Moon Agreement

• The only UN Space Treaty to specifically address exploitation of space resources

• Art. 11(1): Moon and its natural resources are the ‘Common Heritage of (Hu)Mankind’

• Art. 11(5): Undertaking to establish International regime and procedures ‘as such exploitation is about to become feasible’

• Art. 11(7): purposes of the regime:
  o Orderly and safe development
  o Rational management
  o Expansion of opportunities in use
  o Equitable sharing in the benefits, with special consideration for:
    ▪ Interests and needs of developing countries,
    ▪ Efforts of countries which contributed directly or indirectly

• Only 18 ratifications – including Chile

→ Rights and Obligations of States Parties
Other relevant issues

• Waste on celestial bodies
  o 2007 UN Debris mitigation guidelines? Only address orbital debris
  o Lunar waste management?
  o Rehabilitation of extraction sites?
  o 2019 UN Long-term sustainability guidelines? Only mention celestial bodies in Guideline D.1 on promoting and supporting research

• Protection of heritage sites?
• Protection of operations?
• Avoid interference with other activities?

• Others?
Other Considerations: National / Bilateral and Civil Society Initiatives

• National Legislative Initiatives (include...)
  o USA (2015)
  o Luxembourg (2017)
  o UAE (2019)
  o Japan (2021) (in force 2022)

• Bilateral Initiatives (include...)
  o USA et al (2020)
    ▪ Artemis Accords – bilateral (political) agreements
  o China / Russia MOU (2021)
    ▪ Establishing a Lunar base (International Lunar Research Station)

• Non-governmental / Civil Society Initiatives (include....)
  o Other work by Civil Society
  o Industry initiatives
Artemis Accords (2020)

A series of bilateral non-binding (political) agreements between NASA and the Space Agencies of a number of countries – centrality around the 1967 Outer Space Treaty and recognising multilateral discussions at UNCOPUOS

Deals with *inter alia*:

- Peaceful Purposes
- Transparency
- **Interoperability**
- Emergency Assistance
- Registration of Space Objects
- Release of Scientific Data
- **Preserving Outer Space Heritage**
- Space Resources
- **Deconfliction of Space Activities**
- Orbital Debris
Initial Information Gathering for WG – How to Understand the Issues

• The **type of space resources** that fall within the mandate and scope of the Working Group

• The **type of activities** that fall within the mandate and scope of the Working Group

• The type of **information to be collected** by the Working Group in accordance with its mandate

• The **views of States members regarding the existing legal framework** for space resource activities

• The current practices and challenges in the **implementation of the existing legal framework** for such activities

• The **benefits and challenges of development of a framework** for such activities

• The relevant **factors for the development of a set of initial recommended principles** for such activities

• The format, agenda, topics and other details of the **dedicated conference** (currently) scheduled for 2024

• Any other background or information paper, or any other views, that Member States may wish to share
The (Potential) Risk

Will UNCOPUOS Member States agree on a Multilateral Framework for such activities through the Working Group? If so, on what basis? What fundamental principles will apply?

Impact of national regulation in the absence of a Multilateral Framework based on consensus?

Worst case scenario - a potential challenge to the rationale underlying non-appropriation in its original and fundamental sense?
Crystal Ball Gazing: An Optimist’s View

Establishment of Working Group is fundamental political decision to explore benefits of a new widely agreed multilateral framework that allows for cooperative partnerships.

Avoiding the potential for any conflict in space

- Multilateral cooperation involving States / UNCOPUOS will be key to ensure the interests of every stakeholder.

The world has changed significantly since 1979

Now the ‘faintly possible’ may become ‘highly probable’

Fundamental issues:
* how do we view space?
* how should we view space?
Thank you!

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