



# Mining the Moon for Profit: International Space Law

Mining the Moon for Profit: a case study in space resource utilization

SDA Bocconi School of Management, Milano, 11 March 2019



Tanja Masson- Zwaan  
IIASL, Leiden University

# UN Space Treaties



Outer Space Treaty 1967



Rescue Agreement 1968



Liability Convention 1972



Registration Agreement 1975



Moon Agreement 1979

# 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
  - Accordance with international law
  - Free access to all areas of celestial bodies
- Art. II OST: **Non-appropriation**
  - Outer space is not subject to national appropriation
  - Not clear if space **resources** are covered by this principle
- Art. IV OST: Use for **peaceful purposes**
  - No nuclear weapons/ weapons of mass destruction anywhere
  - Moon: exclusively peaceful purposes



# Outer Space Treaty

- Art. VI: State **Responsibility**
  - International responsibility for **national** activities
    - Non-governmental entities: authorization & continuing supervision by the appropriate State
- Art. VII: **Liability** for damage
  - Launching State
    - Launch/ procure/ territory/ facility
  - Damage
    - On earth or in the air (abs.) / in space (fault)
    - To another State Party or its natural /juridical persons
    - By a space object or its component parts
- + **Liability Convention**



# Outer Space Treaty

- Art. IX: No **Harmful Interference**
  - Due regard, consultation
  - No harmful contamination of space
  - No adverse changes in Earth environment
- Art. IX-XII: **Cooperation**
  - Promote international co-operation
  - Inform UN, public, int. scientific community
  - **Visits** to stations, installations, vehicles in space
    - Reciprocity, reasonable advance notice



# Moon Agreement



- The only treaty to address **commercial** use
- Art. 11.1: Moon & resources are the **Common Heritage of Mankind**
- Art. 11.5: International regime & procedures to be set up 'as exploitation is about to become feasible'
- Art. 11.7: purposes of the regime:
  - Orderly & safe development
  - Rational management
  - Expansion of opportunities in use
  - Equitable sharing in the benefits, with special consideration for
    - Interests and needs of developing countries,
    - Efforts of countries which contributed directly or indirectly
- **Less than 20 ratifications**

# Ownership of resources

	Outer Space Treaty	Moon Agreement
Ownership of (parts of) celestial bodies	Prohibited	Prohibited
Ownership of resources <i>in situ</i>	Not mentioned, so allowed?	Prohibited
Ownership of <i>extracted</i> resources	Not mentioned, so allowed?	Prohibited until there is an int. regime

Private commercial activities: authorization/supervision by state

# Efforts to solve the legal gaps

- National:
  - US and LUX laws
- International intergovernmental:
  - COPUOS Legal Subcommittee adopted a new agenda item for 2017 in 2016, repeated in 2018, 2019
- International non-governmental
  - IISL adopted a Position Paper, 2015
  - The Hague Working Group, 2015-2019

# The Hague International Space Resources Governance Working Group

- Website: [www.iiasl.aero](http://www.iiasl.aero) – follow the link
- See also A/AC.105/C.2/2016/CRP.17
- Multi-stakeholder, interdisciplinary, international, informal



THE HAGUE  
INTERNATIONAL  
SPACERESOURCES  
GOVERNANCE WORKING GROUP

# Objectives

- Assess the **need** for a framework for space resource activities
- In case of need, to lay the **groundwork** for the definition of such a framework based on the UN Space Treaties
- Identification and formulation of **Building Blocks** for the governance of space resources
  - Published as preliminary results in September 2017
  - Open for consultation until 15 October 2018
- **Recommendations** on the implementation **strategy and forum** for negotiations
- **Encourage States** to start negotiating a framework

# Participants

- **Consortium**

- Research centers on each continent

- **Members**

- Important stakeholders from government, industry, academia, research centers, space agencies, international organizations, and civil society
- Limited to 35, currently 32

- **Observers**

- Professionals & academics directly involved in space resources issues
- Not limited, currently around 70

- **Technical and Socio-Economic Panels**

- Experts in these fields
- To identify technical / socio-economic challenges and advise the WG

# Draft 'building blocks'



Published as preliminary results in September 2017  
Open consultation for 1 year, now being finalized  
A Commentary will be published

# Draft Building Blocks – topics

## Introductory provisions

- E.g. objective, scope, definitions, principles (adaptive governance)

## Responsibility, access, utilization

- E.g. priority rights

## Enabling environment

- E.g. environmental aspects, non-interference, safety zones

## Benefit sharing

- Other than monetary

## Registration

- UN, ITU, authorization practices, end of operations

## Assistance, liability, visits

- In accordance with treaty requirements

## Final provisions

- E.g. institutional arrangements, disputes, review, monitoring

# Conclusions

- Current international space law sets down a **general framework** for conduct of all space activities, including those of private entities
- It does not include detailed provisions about exploitation of natural resources of outer space
- National law is being created to provide legal certainty to pioneers
- Now, **a more specific international regime** for exploitation of resources, based on current international space law, is needed to create clarity and legal certainty

# Useful links

- UN treaties:
  - <http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html>
- National laws on space mining:
  - US: <https://www.congress.gov/bill/114th-congress/house-bill/2262> (Title IV)
  - LUX: <http://legilux.public.lu/eli/etat/leg/loi/2017/07/20/a674/jo>
    - English translation:  
<http://www.spaceresources.public.lu/content/dam/spaceresources/news/Translation%20Of%20The%20Draft%20Law.pdf>
- IISL Statements 2009, 2015, <https://iislweb.org/category/position-paper/>
- Hague Working Group & Building Blocks:
  - <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-for-air-space-law/the-hague-space-resources-governance-working-group>



Thank you!



© 2019 T. Masson-Zwaan  
[t.i.masson@law.leidenuniv.nl](mailto:t.i.masson@law.leidenuniv.nl) / [www.iiasl.aero](http://www.iiasl.aero)

