

## **Space Resource Activities: Legal Dilemmas and Brief Possible Policy Positions**

Against the background of the ongoing debated over

the *Draft Building Blocks for the Development of an International Framework on space resource activities* (hereinafter referred to as “DBB”) issued by the Hague International Space Resources Governance Working Group,

we have identified following dilemmas:

- I. International legal framework vs. domestic legal framework
- II. Should the international legal framework address individuals?
- III. Access to space resources – jurisdiction over space products vs. internationally recognized resource right ensured by the international framework
- IV. Sharing of benefits: International legal framework vs. domestic legal framework
- V. Coordination of mining activities: Do we need a special authority?
- VI. Monitoring: Global problems require global monitoring
- VII. Liability in case of damage resulting from space resources activities
- VIII. Settlement of disputes: International adjudication



## I. International legal framework vs. domestic legal framework

There is no doubt that a solid and efficient international framework will require its subsequent implementation at the national level. However, the debate over the DBB should include an analysis of what should be enshrined in international law and what should be address and specified by national law. In other words, since national issues are addressed at a national level, regional issues at a regional level and international issues at an international level, how should planetary issues be ideally addressed? Legal theory provides us only with tools of national (in form of domestic law) and international law (in form of international treaties and customary international law).

Options:

- a) An international legal framework setting basic principles + **fragmented system of domestic laws on the exploration of space and the use of space resources**. International treaty includes only fundamental principles, their implementation lies with state governments. Domestic laws may differ significantly (benefit-sharing, liability...)
- b) **A comprehensive international legal framework** including key legal principles as well as legal mechanisms (benefit-sharing), rights and obligations of individuals (operators).
- c) **A balanced approach combining tools of international and domestic law**.

### Dilemma 1:

To what extent should space resource activities be governed by international law?  
Which issues related to space resource activities should be in detail addressed by international law/national law?

Especially:

benefit-sharing, responsibility for space resource activities, legal protection, resource right



## II. Should the international legal framework address individuals?

According to the DBB, the international legal framework should address states and intergovernmental organizations. However, should individuals be covered as well?

Since individuals are expected to play a major role in future space resource activities, they will be exposed to enormous political risks in form of direct/indirect expropriation or regulatory changes. We find it desirable to cover individuals - in order to provide them with stable legal/regulatory environment - as well as to impose obligations arising from international law on them.

### Dilemma 2:

Should international legal framework address individuals (operators carrying out space resource activities)?



### III. Access to space resources – jurisdiction over space products vs. internationally recognized resource right ensured by the international framework

How to create an international framework on space resource activities in compliance with 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.*”?

According to the DBB, the international framework should provide that **space resource activities require prior authorization and continuing supervision by the appropriate State or intergovernmental organization. Moreover, states and intergovernmental organizations shall exercise jurisdiction and control over space products used in space resource activities authorized by them** (See Article 5).

Bearing in mind the **principle of non-appropriation** as outlined in the Outer Space Treaty, states would gain jurisdiction over space resource activities and space products (*product made in outer space wholly or partially from space resources*), NOT over any territory. Such framework implies major role of domestic role in governing activities of operators (*space resource activities require prior authorization and continuing supervision by the appropriate State or intergovernmental organization* as outlined in Article 5 of the DBB) as well as in maintenance, use, enjoyment or disposal of space products (*jurisdiction and control over space products used in space resource activities authorized* as outlined in Article 5 of the DBB). Such framework would fully reflect the scope of the international framework addressing exclusively states and intergovernmental organizations, having no ambition to provide operators with rights or to impose any obligations on them.

On the other hand, Article 7 of the DBB implies a recognition of a **resource right over raw mineral or volatile materials extracted from space resources**. We assume that such a right would arise from international law. Pursuant to the DBB, authorized operator would be allowed to lawfully acquire resource rights recognized between states. This concept implies fundamentally different approach and suggests inclusion of individuals (operators) within the scope of the international legal framework.

#### Dilemma 3:

Should space resource activities be governed exclusively by national law? Under this concept, states or intergovernmental organizations would exercise full jurisdiction and control over a mining activity + over space products. Domestic law would play a dominant role.

Should the international legal framework provide rights and obligations of operators? Rights arising from international law can provide operators with stability and predictability as well as, to some extent, protection against the authorizing state or third states or intergovernmental organizations.



#### IV. **Sharing of benefits: International legal framework vs. domestic legal framework**

Bearing in mind that the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and humankind, the international framework should provide for benefit-sharing.

How should the utilization of space resources reflect the benefit-sharing principle? According to the DBB, states and intergovernmental organizations authorizing space resource activities shall provide for benefit-sharing. Operators should be encouraged (ONLY) to provide for benefit-sharing.

The DBB impose an obligation of benefit-sharing on states and intergovernmental organizations (See Article 12 of the DBB). Thus, the DBB imply implementation of benefit-sharing obligations at the domestic level (at the discretion of states).

Profit making is a core objective of operators. Benefit-sharing mechanism set up at the domestic level may be exposed to political risks.

#### Dilemma 4:

Should the benefit-sharing mechanism be enshrined in the international legal framework (every space mission would have to comply with the benefit-sharing principle enshrined in international level), or should it be implemented at a national level (at the discretion of states)?



## V. Coordination of mining activities: Do we need a special authority?

The DBB do not address coordination of future space resource activities. States will only supervise space resource activities authorized by them (states and intergovernmental organization shall be responsible for space resource activities, Article 5 of the DBB). In addition, states and intergovernmental organizations shall require the conduct of a review prior to the authorization of a space resource activity that such an activity is carried out in a safe manner to avoid harmful impact (Article 5 of the DBB).

Since there is no international authority competent to regulate space resource activities and the state's supervision will be likely concentrated (and limited) only on the effects of mining they have authorized, we emphasize the importance of intergovernmental coordination and cooperation of space resource activities. **As long as space resource activities are coordinated by special authority taking into account the overall impact of space resource activities, the harmful impact of such activities cannot be avoided.**

### Dilemma 5:

Do we need an international authority coordinating mining activities?  
Should we learn a lesson from a deep-sea mining (establishment of the International Seabed Authority)?



## VI. Monitoring: Global problems require global monitoring

Due to potential devastating consequences of space resource activities, international legal framework should establish a robust monitoring system. (“**cosmopolitanism**”)

The DBB provide that states and intergovernmental organizations **shall monitor any harmful impacts resulting from space resource activities authorized by them** (See Article 11 of the DBB).

We consider the above-mentioned framework based on the principle “space resource activities are principally monitored by authorizing states” to be **insufficient**, especially in light of the “exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and humankind” principle.

**Recalling potentially devastating consequences for Earth, it is necessary to establish a special space international authority monitoring space resources activities** (analogy with the International Atomic Energy Agency). Such authority should primarily represent the world community, especially countries not engaged in space resource activities due to economical or technological reasons. Such authority should monitor, for instance, whether operators follow good practices and compliance of operator’s activities with the authorization. Thus, an international authority should be equipped with necessary powers to carry out effective monitoring functions.

### Dilemma 6:

**Do we need an international organ representing humankind in order to ensure that space resource activities are carried out in the interests of all countries and humankind?**



## VII. Liability in case of damage resulting from space resources activities

Pursuant to the Convention on International Liability for Damage Caused by Space Objects,

- a) a launching state shall be **absolutely liable** to pay compensation for damage caused by its space object on the surface of the earth or to aircraft flight
- b) a launching state shall be **liable only if the damage is due to its fault or the fault of persons for whom it is responsible** for damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching state

However, we do question whether – in light of the future commercialization of space activities – the liability principle included in the Convention on International Liability for Damage Caused by Space Objects should be applicable to future space resource activities. To be precise, the DBB aim at **encouraging** initiatives of operators to provide, individually or collectively, compensation for damage resulting from their space resource activities.

We do not consider the above-mentioned liability related provisions as appropriate for the following reasons:

- a) operators would be shielded from international responsibility for their space resource activities,
- b) domestic litigation before domestic courts would be the only way to held operators responsible (domestic courts may lack expertise and independence(!))
- c) there is a risk that states authorizing space resource activities would not be able to pay a compensation.

### Dilemma 7:

In case of damage resulting from space resources activities, should the operator and the state authorizing space resource activity be jointly liable?  
Should the international framework impose obligations on operators?  
Should the international framework establish international liability of operators?





### VIII. Settlement of disputes: International adjudication

Effective dispute settlement mechanism can play a key role in engagement of private sector in space resource activities. Thus, international legal framework should address settlement of disputes between states, disputes between states and operators as well as disputes between operators (private investors).

In our opinion, international legal framework should provide private investors with international protection and an access to international adjudication. For the sake of commercialization of space resource activities, the international framework should provide an independent dispute settlement mechanism.

#### Dilemma 8:

Should international legal framework provide operators with an access to international adjudication?

Should we establish a special adjudicative body to adjudicate liability in case of damage resulting from space resources activities?

