Off Earth Mining under the Outer Space Treaty:

Legal with Future Challenges

1. Current National Laws: United States and Luxembourg

2. Mining is legal under international law because appropriation of extracted resources is not the same as territorial appropriation

3. Appropriation of space resources is legal regardless of whether a governmental or private entity is involved.

4. National objections to ownership of extracted resources are not coherent

5. Future problems?

United States:

"A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States."
(from U.S. Commercial Space Launch Competitiveness Act Title IV: Space Resource Utilization and Exploration)

Luxembourg:

"Les ressources de l’espace sont susceptibles d’appropriation."
(Art. 1er. of Loi du 20 juillet 2017 sur l’exploration et l’utilisation des ressources de l’espace.)

Permanent Court of International Justice described the general presumption of freedom of state action early in the twentieth century:
“International law governs relations between independent States. The rules of law binding upon States therefore emanate from their own free will as expressed in conventions or by usages generally accepted as expressing principles of law and established in order to regulate the relations between these co-existing independent communities or with a view to the achievement of common aims. Restrictions upon the independence of States cannot therefore be presumed.”

(*The Case of The S.S. "Lotus"*, (France v. Turkey) (7 September 1927), Permanent Court of International Justice. (Series A.) No. 70, 18)

Outer Space Treaty Article I

“The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.”

Outer Space Treaty Article II

“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.”

“States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. Contractual terms in such cooperative ventures should be fair and reasonable and they should be in full compliance with the legitimate rights and interests of the parties concerned, as, for example, with intellectual property rights.”
(General Assembly Resolution 51/122, Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries, ¶ 2, 4. A/RES/51/122 (4 February 1997)

Vienna Convention on the Law of Treaties Article 31(3)
“There shall be taken into account, together with the context: (a) Any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) Any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;”

One argument advanced by some advocates of private enterprise in space is that Article 2 does not apply to private entities. However, the Outer Space Treaty makes private entities more closely connected to their states than does the default rule in in international law:
"States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty."
(From Outer Space Treaty Article 6)

This is in contrast to other areas of international law. For example, in the South China Sea Arbitration regarding a maritime dispute, the award distinguished between “action by a private party” and acts of China, and indicated that evidence needed to be provided to make private action attributable to the state.
(*In the Matter of the South China Sea Arbitration, Award*, 12 July 2016, Permanent Court of Arbitration. See Footnote 728 on 282, compare to 281-282, 296-297.)

Supporting this interpretation of Article 6: have records from the negotiations which record, of a Belgian delegate, “His delegation had taken note of the interpretation of the term ‘non-appropriation’ advanced by several delegations – apparently without contradiction – as covering both the establishment of sovereignty and the creation of titles to property in private law.”

Manual on Space Law, Volume III, Travaux Préparatoires and Related Documents, Nandasiri Jasentuliyana & Roy S. K. Lee ed. (1981 Oceana Publications Dobbs Ferry, New York), 65

Traditional Rule as per Hugo Grotius “the sea is the common property of all, but that fish are the private property of him who catches them. The sea is certainly common to all persons” however, what fishermen with their own “net and hooks have taken, is absolutely” their own.
(Hugo Grotius, *The Freedom of the Seas, Or, The Right Which Belongs to the Dutch in the East Indian Trade* 29 (Ralph Van Deman Magoffin trans., James Brown Scott Ed., 1916) (1609).)

The International Court of Justice has referenced as a principle of international law that, “freedom of the high seas comprises, *inter alia*, both for coastal and non-coastal States, freedom of navigation and freedom of fishing.”
(Fisheries Jurisdiction (United Kingdom v. Iceland), Merits, Judgment, I.C.J. Reports 1974, 3, 22.)

In an older arbitral case between the United States and Great Britain: “a long line of decisions of international tribunals has established as the measure of damages for such cases [of] loss of use of the vessel, to be measured by the loss of probable catch.” (*Owner of the Horace B. Parker (United States) v. Great Britain* 6 November 1925, Reports of International Arbitral Awards, Volume VI, 153, 154)

By way of contrast look at Antarctica: The Antarctic Treaty, wasn’t enough to ban mining, the Protocol on Environmental Protection to the Antarctic Treaty was needed.
(The Antarctic Treaty, 1 December 1959, 12 UST 794, 402 UNTS 71; Protocol on Environmental Protection to the Antarctic Treaty, art. 7., 3 October 1991, 30 I.L.M. 1455.)

Governmental opposition is not actually consistently held

Back in 2016, at the meeting of the COPOUS Legal Subcommittee, a Russian representative stated:

“. . .to what extent was it ethical and legitimate regarding the respect of international law the choice made by certain states to adopt laws that give the private sector in their countries the right to use and sell the assets of heavenly bodies including asteroids? We have therefore compromised one of the main aspects of international law, the non-national appropriation of outer space including the moon and other heavenly bodies. That has put into danger a balance between public and private interests. . .”
(COPUOS: Legal Subcommittee, 55th session - 05/04/2016. From the English audio translation provided on the website.)

Contrast this to Russia’s own law, which, while it does not address space resource extraction, in some ways is more aggressive in asserting rights in Outer Space than the U.S. law:

“The rights of jurisdiction and control over space objects, as well as of ownership thereof shall not affect the legal status of the area of outer space or the surface or subsoil of a celestial body occupied by it. In direct proximity to a space object of Russian Federation within the zone minimally necessary for ensuring safety of space activity, rules may be established that shall be binding for Russian and foreign organizations and citizens.”
(From *[UNOFFICIAL TRANSLATION] LAW of the RUSSIAN FEDERATION "ABOUT SPACE ACTIVITY" Decree No. 5663-1 of the Russian House of Soviets*, http://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/russian_federation/decree_5663-1_E.html.)

In Moon Agreement Article 6: ". . .In carrying out scientific investigations and in furtherance of the provisions of this Agreement, the States Parties shall have the right to collect on and remove from the moon samples of its mineral and other substances. Such samples shall remain at the disposal of those States Parties which caused them to be collected and may be used by them for scientific purposes. . ."

In Moon Agreement Article 11: "Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the moon, including structures connected with its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any areas thereof. The foregoing provisions are without prejudice to the international regime referred to in paragraph 5 of this article.

4. States Parties have the right to exploration and use of the moon without discrimination of any kind, on a basis of equality and in accordance with international law and the terms of this Agreement.

5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article 18 of this Agreement.

6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.

7. The main purposes of the international regime to be established shall include:

(a) The orderly and safe development of the natural resources of the moon;

(b) The rational management of those resources;

(c) The expansion of opportunities in the use of those resources;

(d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration."

Despite problematic language, it is not clear whether the Moon Agreement requires a Moratorium (there was not agreement at the time it was negotiated):

When the Moon Agreement was being negotiated, an Italian delegate said, "…the United States delegation had set out its point of view and had requested that the reference to natural resources should be removed from the draft treaty and the word 'parts' replaced by the word 'areas'. The Working Group had considered the United States proposals and had recognized that the United States, in accordance with its consistent view, wished to avoid a moratorium on the exploitation of the resources of the moon. Since all felt that there was no need for such a moratorium, perhaps there was hope that a generally acceptable formula could be found."
(*Manual on Space Law, Volume IV, Travaux Préparatoires and Related Documents*, Nandasiri Jasentuliyana & Roy S. K. Lee ed. (Oceana Publications Dobbs Ferry, New York, 1981), 129)

“Sir Kenneth BAILEY (Australia) noted first the present utility of preparing a treaty in this field. The starting point of the two draft treaties before the Sub-Committee was General Assembly resolution 1962 (XVIII), unanimously accepted as a statement of the principles by which States should be guided in the exploration and use of outer space. There were, however, different views as to the place of such a resolution of the General Assembly in the creation and development of international law. Probably no delegation would claim that by virtue of its adoption by the General Assembly a resolution ipso facto became part of international law. Certainly the delegation of Australia did not. The representative of the United States had referred to the well-known statement of his distinguished predecessor Mr. Stevenson to the effect that the United States regarded the Declaration of Legal Principles as a statement of accepted international law by which all had agreed to be bound. But a different view had been expressed even in the Sub-Committee, as for instance by the delegation of France, with regard to the binding character of the principles contained in the Declaration. That being so, and even the pace of contemporary development, it was highly desirable that the terms of resolution (1962) XVIII should now be given binding legal form in an instrument that would automatically become, for the parties, one of the sources of international law.”

(Manual on Space Law, Volume III, Travaux Préparatoires and Related Documents, Nandasiri Jasentuliyana & Roy S. K. Lee ed. (Oceana Publications Dobbs Ferry, New York, 1981) 49-51)

Principles Relevant to the Use of Nuclear Power Sources in Outer Space; Principle 2(1)
"For the purpose of these Principles, the terms "launching State" and "State launching" mean the State which exercises jurisdiction and control over a space object with nuclear power sources on board at a given point in time relevant to the principle concerned."

Principles Relating to Remote Sensing of the Earth from Outer Space; Principle XIV
"In compliance with article VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, States operating remote sensing satellites shall bear international responsibility for their activities and assure that such activities are conducted in accordance with these principles and the norms of international law, irrespective of whether such activities are carried out by governmental or non-governmental entities or through international organizations to which such States are parties. This principle is without prejudice to the applicability of the norms of international law on State responsibility for remote sensing activities."

Outer Space Treaty: Article IX

". . .If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the moon and other celestial bodies, may request consultation concerning the activity or experiment."