



## What, if any, relevance does the Moon Agreement have to activities in space today?

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### Introduction

The “Agreement Governing the Activities of States on the Moon and Other Celestial Bodies” was adopted by consensus by the UN General Assembly in its Resolution 34/68 of 5 December 1979, opened for signature on 18 December 1979 and entered into force on 11 July 1984.<sup>1</sup> As of today (2021) it has only 18 state parties and four more signatories.<sup>2</sup> In contrast to the other four UN treaties on outer space<sup>3</sup> none of the important space faring nations, such as the United States, Russia, China, Japan, or India, has ratified the Moon Agreement. Therefore, it is certainly an interesting question, what, if any, relevance this treaty has to activities in outer space today.

### Contents of the Moon Agreement – Controversial and Uncontroversial Provisions

Despite the general perception, the Moon Agreement contains numerous provisions that are uncontroversial. Many articles restate principles already contained in the Outer Space Treaty, such as the carrying out of space activities in accordance with international law (Article 2)<sup>4</sup> and the space law-specific rules on responsibility and liability (see Article 14).<sup>5</sup> Some provisions are more detailed than in the Outer Space Treaty and add clarity to relevant concepts, such as “peaceful purposes” (Article 3 – prohibiting “any threat or use of force or any other hostile act or threat of hostile act”) or the term “astronaut” (Article 10 – including “any person on the Moon”).

However, the most prominent and maybe the only controversial provision is Article 11 of the Moon Agreement, which stipulates:

1. The Moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.
2. [...]
3. 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. [...]
4. [...]
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. [...]
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. [...]

The drafters of the Moon Agreement did not consider that activities related to the exploitation of natural resources represented a matter of immediate urgency.<sup>6</sup> Therefore, Article 11 paragraph 5 of the Moon Agreement provides that an international regime should be established in the future, namely when “such exploitation is about to become feasible”.

In view of recent initiatives by private companies and space agencies aiming at the exploitation of space resources it appears that the time has come to establish such an international regime. However, the Moon Agreement does not seem to be the vehicle of choice. This has to do with political perceptions and widespread views on the historical background of the concept of the “common heritage of mankind” which are not always accurate as will be briefly explained in the following.

### Historical and political background of the “common heritage of

### mankind” concept

The concept of “common heritage of mankind” has been developed in connection with codification activities concerning the progressive development of international law within the framework of the United Nations (more recent terminology speaks of “humankind” instead of “mankind”).<sup>7</sup> The term was formally introduced by Malta during negotiations on the law of the sea, in a note verbale of 18 August 1967, requesting the introduction of an agenda item on the deep seabed and the ocean floor and the use of their resources in the interest of mankind.<sup>8</sup> In the negotiations on the Moon Agreement it was formally introduced by Argentina, in 1970, in its proposal for a “Draft Agreement on the Principles Governing Activities in the Use of the Natural Resources of the Moon and other Celestial Bodies”.<sup>9</sup>

Differing from what one can often read, the United States supported this idea from the beginning.<sup>10</sup> It included it in its own Working Paper 12 of 1972, which contained a draft provision that “the natural resources of the moon and other celestial bodies shall be the common heritage of mankind”.<sup>11</sup> Developing countries also maintained this position, most prominently Egypt and India, which submitted a joint Working Paper, also in 1972, specifying that the natural resources of the Moon and other celestial bodies “shall be the common heritage of mankind”.<sup>12</sup>

In contrast, the Soviet Union originally was against the inclusion of the common heritage principle.<sup>13</sup> Only towards the end of the negotiations, in 1979, it gave up its opposition, when Brazil proposed a more specific wording of the respective

provision, namely that “[t]he moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement and in particular in paragraph 5 of this article.”<sup>14</sup> This paved the way for the acceptance of the final text of the Moon Agreement – including its Article 11 containing the “common heritage of mankind” concept – by consensus in the Legal Subcommittee of the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) as well as its adoption by consensus in the UN General Assembly.<sup>15</sup>

However, in the 1980s the “common heritage of mankind” entered into a kind of crisis.<sup>16</sup> The main reason was the impossibility to reach an agreement between developed and developing countries on the way of applying the concept in practical terms. It was therefore not before 1994, when an Implementation Agreement of Part XI of the United Nations Convention on the Law of the Sea – establishing rules and procedures governing the exploitation of deep seabed resources – had been successfully concluded,<sup>17</sup> that a sufficient number of states ratified the United Nations Convention on the Law of the Sea so that it could enter into force.<sup>18</sup> The uncertainty about the controversial issues connected to the “common heritage of mankind” concept, most importantly the sharing of benefits and the question of technology transfer, had also negative consequences on the ratification process of the Moon Agreement. In contrast to the previous four UN treaties on outer space, the Moon Agreement was only ratified by a small number of countries, not including any of the important space faring nations.

During the 1990s, some of the ideas of the “common heritage of mankind” were taken up in the negotiations on the enhancement of international cooperation in outer space within the UNCOPUS Legal Subcommittee.<sup>19</sup> The resulting resolution by the UN General Assembly of 1996, the so-called “Space Benefits Declaration”,<sup>20</sup> highlights the need of further strengthening international cooperation to reach efficient collaboration, considering in particular the interests of developing countries. However, the resolution also reflected the position of developed countries and emphasized the freedom of states to determine all aspects in their participation in international cooperation on an equitable and mutually acceptable basis<sup>21</sup> and the need for international cooperation to be conducted in the modes that are considered most effective and appropriate by the countries concerned.<sup>22</sup>

From the beginning of the 21st century, the role of commercial actors and commercial activities in outer space has increased. With respect to the natural resources of the Moon and other celestial bodies, the United States,<sup>23</sup> Luxembourg,<sup>24</sup> and to a certain extent also the United Arab Emirates,<sup>25</sup> adopted national laws to address legal questions related to their exploration and exploitation to provide a legal framework to enable such activities by private operators. In the United States, based on the 2020 US National Space Policy, which had highlighted that the commercial space sector was foundational to national strategic objectives,<sup>26</sup> an Executive Order pointed out that the United States “does not consider the Moon Agreement to be an effective or necessary instrument to guide

nation states regarding the promotion of commercial participation in the long-term exploration, scientific discovery, and use of the Moon, Mars, or other celestial bodies.”<sup>27</sup>

It follows from the above that political views about the “common heritage of mankind” concept have changed. The Moon Agreement is currently not supported by a sufficiently high number of countries to effectively govern the exploitation of natural resources on the Moon and other celestial bodies, despite the intensified interest in such activities. In order to meet the needs of private operators and their own strategic objectives, states have preferred to look for alternative instruments in order to regulate space resource activities, both at the national and the international levels.

### Alternative Instruments and Ideas for a Legal Regime Governing Space Resource Activities – The “Building Blocks” of The Hague International Space Resources Governance Working Group

In order to address legal questions related to space resource activities, alternative international initiatives have been launched to develop a framework for the exploration and exploitation of natural resources of the Moon and other celestial bodies. One prominent example is “The Hague International Space Resources Governance Working Group”, which consisted in a multi-stakeholder dialogue, including governments and space agencies as well as private industry and experts.<sup>28</sup> In November 2019, it presented 20 “Building Blocks” as a “groundwork for international discussions on the potential development of an international

framework.”<sup>29</sup> A Commentary, designed to clarify the content of each of the Building Blocks and to provide additional observations to illustrate their purpose, was published in 2020.<sup>30</sup>

While many of the Hague Building Blocks are uncontroversial and merely confirm the existing legal framework of outer space activities, some ideas are new and may seem to contradict the Moon Agreement. These include:

The possibility to register “priority rights” for a maximum period of time in an international registry – to be established – and the international recognition of such priority rights (BB 7);

- The possibility to “lawfully acquire” resource rights over materials extracted from space resources, as well as products derived therefrom, “through domestic legislation, bilateral agreements and/or multilateral agreements” (BB 8);
- The avoidance of potentially harmful impacts, including to “designated and internationally endorsed outer space natural or cultural heritage sites” or “outer space sites of scientific interest” (BB 10).
- The establishment of “safety zones”, or other area-based safety measures, around an area identified for a space activity (BB 11).
- The “sharing of benefits” of space resource activities at the exclusion of “compulsory monetary benefit sharing”. Yet, the “establishment of an international fund” could be one of the possible means of benefit sharing (BB 13).

The Hague Building Blocks are still quite vague and leave room for interpretation. It is not yet clear how they are going to be implemented in practice. However, to a certain extent this is on purpose, as the Working Group considered that space resource activities should be incrementally addressed over time, reflecting contemporary technologies and practices. The so-called “principle of adaptive governance” led the Working Group during the formulation of the Hague Building Blocks and should allow the natural evolution of governance mechanisms.<sup>31</sup>

### Another Alternative Instrument for a Legal Regime Governing Space Resource Activities – The “Artemis Accords”

The “Artemis Accords” were concluded between NASA and other space agencies to join the United States in its efforts to return humans to the Moon by 2024 and to further expand space exploration in the future.<sup>32</sup> In October 2020, representatives of the space agencies of Australia, Canada, Italy, Japan, Luxemburg and United Arab Emirates signed the Accords, while others, such as Ukraine, South Korea, New Zealand and Brazil, followed suit a little later.<sup>33</sup> The Accords represent a political commitment and contain a set of principles, guidelines, and best practices to increase the safety of operations, reduce uncertainty, and promote the sustainable and beneficial use of outer space.<sup>34</sup>

The Accords are intended to apply to space activities on the Moon, Mars, comets, and asteroids.<sup>35</sup> In this respect, they also address, in Section 10, the issue of “Space Resources.” The signatories “note that the utilization of space

resources can benefit humankind by providing critical support for safe and sustainable operations” and that “the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty, and that contracts and other legal instruments relating to space resources should be consistent with that Treaty.”<sup>36</sup> In addition, Section 9 calls for a preservation of “outer space heritage,” including historically significant human or robotic landing sites, artifacts, spacecraft, and other evidence of activity on celestial bodies.<sup>37</sup>

It shall briefly be analyzed to what extent these new ideas are in fact contradicting the Moon Agreement or whether, by contrast, they are already contained in the Moon Agreement or other international treaties. This is particularly interesting for partners of the Artemis Accords which have ratified the Moon Agreement, such as Australia, or for other countries which have signed it, such as France, and which may be prospective partners.

### Comparison of the New Ideas Contained in the Alternative Instruments with the Moon Agreement

The two instruments mentioned above have two main goals in common: (1) to enable the appropriation – or, as it is also called “utilization” – of natural resources of the Moon and other celestial bodies by commercial – i.e. private/non-governmental – actors, and (2) to ensure that space resource activities are carried out in accordance with international law, enhanced by some more specific principles, to avoid disputes and to provide legal certainty for operators. While (1) is allegedly not allowed under

the Moon Agreement, (2) is necessary to ensure that interested states do not violate existing international obligations when they enable space resource activities, because they are bound by treaties which they have ratified, most importantly the Outer Space Treaty. Consequently, the assumption is that space resource activities may be in conflict with the Moon Agreement, which only few states have ratified, but that they can be carried out in conformity with the Outer Space Treaty, which is broadly ratified. This assumption will briefly be examined in the following.

The potentially controversial idea to register “priority rights” of an operator to search for and/or recover space resources for a maximum period of time and a maximum area (BB 7 of the Hague Building Blocks) could be read in conjunction with Article 5 Moon Agreement, according to which state 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 their activities concerned with the exploration and use of the Moon. [...] If a State Party becomes aware that another State Party plans to operate simultaneously in the same area [...], it shall promptly inform the other State of the timing of and plans for its own operations.”*

The “duty to inform” is also contained in Article XI Outer Space Treaty, but the Moon Agreement is more specific on the duty to “promptly inform” about operations taking place “simultaneously in the same area”. It does not seem to be problematic to implement the duty to inform, for example, the UN Secretary

General via registration of planned space resource activities in a registry to be established. The same has occurred with respect to space objects for which an international registry was created in 1962,<sup>38</sup> long before the Registration Convention entered into force in 1976 (which explicitly provided for the establishment of such a registry).<sup>39</sup> What would be needed to task the UN Secretary General, and the UN Office for Outer Space Affairs (UNOOSA) acting on its behalf, with the establishment of such a registry is a resolution by the UN General Assembly, thus not necessarily a new international treaty or an amendment of the Moon Agreement. If the registry of space resources rights should be maintained by another international organ or institution than the United Nations, a legal basis would also be necessary. While this will be a decision to be taken by interested states, they may consider that the United Nations has a long-standing experience in dealing with outer space in a holistic way – including scientific and technical matters as well as legal and political aspects – and therefore seems well equipped to carry out this task. The maintenance of such a registry by the United Nations would furthermore enhance the chance that there will be “international recognition” of the “priority rights” so registered as it is suggested in BB 7. In any case, the introduction of such a register would not per se be in contradiction to the Moon Agreement. On the contrary, it could be regarded as one element of the international regime for the future exploitation of the natural resources of the Moon and other celestial bodies in accordance with Article 11.

The possibility to “lawfully acquire” resource rights, as BB 8 of the Hague

Building Block innervates, is not excluded under the Moon Agreement. Article 11 (3) Moon Agreement, however, refers to the need for a future international regime, which may provide for the proposed resource rights. The UNCOPUOS Report to the UN General Assembly of 1979 made it clear that the Moon Agreement did not intend to prohibit the exploitation of space resources.<sup>40</sup> BB 8 refers – with respect to the recognition of property rights – to “domestic legislation, bilateral agreements and/or multilateral agreements.” While the former two would not be sufficient under the Moon Agreement the latter certainly would. Relevant actors most likely would prefer a “multilateral agreement”, too, compared to the other two alternatives, which only can offer comparatively limited protection. Without an international agreement – at least by way of a UN General Assembly resolution – the second goal of the alternative instruments, namely to avoid disputes and to provide legal certainty for operators, can hardly be achieved. Moreover, Article 6 (2) Moon Agreement provides – for scientific missions – that states parties may “use mineral and other substances of the Moon in quantities appropriate for the support of their missions” – which reflects Section 10 of the Artemis Accords.

The protection of “outer space natural or cultural heritage sites” or “outer space sites of scientific interest” (BB 10 of the Hague Building Blocks) can already be achieved by applying Article 7 of the Moon Agreement according to which:

*State Parties shall report to the other State Parties and to the Secretary-General concerning areas of the Moon having special scientific interest in order that [...] consideration may be given to*

*the designation of such areas as international scientific preserves for which special protective arrangements are to be agreed upon in consultation with the competent bodies of the United Nations.*

This corresponds to Section 9 of the Artemis Accords in which the signatories express their intention to preserve outer space heritage, which they consider to comprise historically significant human or robotic landing sites, artifacts, spacecraft, and other evidence of activity on celestial bodies in accordance with mutually developed standards and practices.<sup>41</sup>

The “establishment of safety zones”, as proposed in BB 11.3 of the Hague Building Blocks, is accepted under the United Nations Convention on the Law of the Sea (UNCLOS) to protect installations in the Exclusive Economic Zone<sup>42</sup> and in the Deep Seabed, the “Area”.<sup>43</sup> The safety zones may not exceed 500m,<sup>44</sup> and their configuration and location shall not be such as to form a belt impeding the lawful access of shipping to particular maritime zones or navigation along international sea lanes.<sup>45</sup> Safety zones are therefore not an entirely novel idea. While the inclusion of safety zones into the legal regime under Article 11 (5) Moon Agreement would in principle seem to be rather unproblematic, their exact extent, configuration, and location would have to be clearly identified in order to respect the non-appropriation principle and the right to “free access” to all areas of celestial bodies, as it is set out not only in the Moon Agreement,<sup>46</sup> but also in the Outer Space Treaty.<sup>47</sup>

With respect to the “sharing of benefits” (BB 13 of the Hague Building Blocks) Article 11 (7) Moon Agreement provides for an “equitable sharing” and mentions

some relevant considerations, including “the efforts of those countries which have contributed either directly or indirectly to the exploration of the Moon.” The examples included in BB 13 could potentially all be qualified as “equitable.” “Compulsory monetary benefit sharing,” which is excluded under BB 13, is not contained in the Moon Agreement either.

## Conclusion

The new ideas brought up in the 20 Building Blocks by the Hague Working Group and in the Artemis Accords with respect to space resources as well as to heritage sites are either already contained in the Moon Agreement or could be included in the international regime to be established under Article 11 (5) Moon Agreement. The rejection of the Moon Agreement by the United States and other countries can therefore hardly be explained by legal arguments, but is rather politically motivated. Commentators have described the “common heritage of mankind” as a “socialist concept,” hostile to entrepreneurship and private investment, which is quite remarkable, as, at the time of drafting of the Moon Agreement, the Soviet Union was in opposition to this concept, while the United States supported it. During the negotiations, the rationale of the Moon Agreement was to regulate human activities on the surface of the Moon with the aim to avoid conflict with competitors and to have such activities, taking place in an area beyond national jurisdiction, approved by the international community as a whole. At the time of the Apollo landings on the Moon in the 1970s, this did not appear as futuristic as it seemed afterwards. When the United States are now preparing for the return to the Moon under the Artemis

program, the challenges are similar, namely to avoid conflict and to get approval by the international community. However, the political parameters have changed, most importantly due to the end of the Cold War with its military and ideological confrontations and the increasing role of the commercial sector in outer space. Nevertheless, several of the elements represented in the concept of a future international regime on space resources contained in the Moon Agreement could still provide an appropriate basis for the United States in its endeavors to encourage international support for the recovery and use of outer space resources and to preserve outer space heritage.

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## Endnotes

- 1 1363 UNTS 3 (Moon Agreement).
- 2 United Nations Committee on the Peaceful Uses of Outer Space, Status of International Agreements relating to activities in outer space as at 1 January 2021, UN Doc. A/AC.105/C.2/2021/CRP.10 (31 May 2021). The 18 state parties are Armenia (2018), Australia (1986), Austria (1984), Belgium (2004), Chile (1981), Kazakhstan (2001), Kuwait (2014), Lebanon (2006), Mexico (1991), Morocco (1993), Netherlands (1983), Pakistan (1986), Peru (2005), Philippines (1981), Saudi Arabia (2012), Turkey (2012), Uruguay (1981), and Venezuela (2016). The four signatories are France (1980), Guatemala (1980), India (1982), and Romania (1980).
- 3 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (adopted 19 December 1966, entered into force 10 October 1967) 610 UNTS 205 (Outer Space Treaty) – 111 ratifications; the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (adopted 19 December 1967, entered into force 3 December 1968) 672 UNTS 119 (Rescue and Return Agreement) – 98 ratifications; the Convention on International Liability for Damage Caused by Space Objects (adopted 29 November 1971, entered into force 1 September 1972) 961 UNTS 187 (Liability Convention) – 98 ratifications; the Convention on Registration of Objects Launched into Outer Space (adopted 12 November 1974, entered into force 15 September 1976) 1023 UNTS 15 (Registration Convention) – 70 ratifications.
- 4 See the provisions of Art. III Outer Space Treaty.
- 5 See the provisions of Art. VI and Art. VII Outer Space Treaty.
- 6 Jakhu, Freeland, Hobe, Tronchetti, Article 11 MOON, in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) para 190.
- 7 Wolfrum, 'Common Heritage of Mankind', in Max Planck Encyclopedias of International Law (2009) para 1.
- 8 Malta: Request for Inclusion of a Supplementary Item in the Agenda of the Twenty-Second Session, GAOR 22nd Session Annexes, Agenda Item 92, 1, 18 August 1967. See also Wolfrum, n 3.
- 9 Argentina: Draft Agreement on the Principles Governing Activities in the Use of the Natural Resources of the Moon and other Celestial Bodies, UN Doc. A/AC.105/C.2/L.71 and Corr.1, 23 June 1970.
- 10 See Jakhu, Freeland, Hobe, Tronchetti, Article 11 MOON, in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) paras 176, 184-185.

11 United States of America: Working Paper, UN Doc. A/AC.105/C.2(XI)/WP.12/Rev.1, 17 April 1972, contained in Report of the Legal Sub-Committee on the Work of its Eleventh Session (10 April – 5 May 1972), Annex I, Proposals and other Documents relating to Agenda Item 3 (Questions Relating to the Moon), UN Doc. A/AC.105/101, 11 May 1972.

12 Egypt and India: Working Paper, UN Doc. A/AC.105/C.2(XI)/WP, 14 April 1972, contained in Report of the Legal Sub-Committee on the Work of its Eleventh Session (10 April – 5 May 1972), Annex I, Proposals and other Documents relating to Agenda Item 3 (Questions Relating to the Moon), UN Doc. A/AC.105/101, 11 May 1972.

13 See Jakhu, Freeland, Hobe, Tronchetti, Article 11 MOON, in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) para 185.

14 Hosenball, 'The United Nations Committee on the Peaceful Uses of Outer Space: Past Accomplishments and Future Challenges', 7 Journal of Space Law (1979) p. 95, 100; Hobe, Stubbe, Tronchetti, 'Historical Background and Context MOON', in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) para 36.

15 Hobe, Stubbe, Tronchetti, 'Historical Background and Context MOON', in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) para 37.

16 Tronchetti, The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime (Brill/Nijhoff 2009) p. 104.

17 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, adopted 28 July 1994, entered into force provisionally on 16 November 1994, in accordance with article 7(1) and definitively on 28 July 1996, in accordance with article 6(1), 1836 UNTS 3.

18 United Nation Convention on the Law of the Sea, adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 396 (UNCLOS).

19 Ibid.

20 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, UN General Assembly Resolution 51/122 of 13 December 1996.

21 Ibid, para 2.

22 Ibid, para 4.

23 Commercial Space Launch Competitiveness Act of 25 November 2015, H.R. 2262, Title IV, Space Resource Exploration and Utilization Act.

- 24 Loi sur l'exploration et l'utilisation des ressources de l'espace, 20 July 2017, Official Journal of the Grand Duchy of Luxemburg of 28 July 2017.
- 25 Federal Law No 12 of 2019 on the Regulation of the Space Sector, issued on 19 December 2019, Corresponding to 22 Rabi' Al-Akhar 1441H.
- 26 National Space Policy of the United States of America, 9 December 2020, 20.
- 27 Executive Order 13914 of the President of 6 April 2020.
- 28 See the website of The Hague International Space Resources Governance Working Group, <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-of-air-space-law/the-hague-space-resources-governance-working-group>.
- 29 The Hague International Space Resources Governance Working Group, 'Building Blocks for the Development of an International Framework for the Governance of Space Resource Activities' (November 2019), <https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-publiekrecht/lucht--en-ruimterecht/space-resources/bb-thissrwg--cover.pdf>, p. 1.
- 30 Bittencourt Neto, Hofmann, Masson-Zwaan, Stefoudi (eds), Building Blocks for the Development of an International Framework for the Governance of Space Resource Activities. A Commentary (eleven international publishing 2020) p. 5.
- 31 Ibid., p. 2.
- 32 The Artemis Accords. Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, signed 13 October 2020, <https://www.nasa.gov/specials/artemis-accords/img/Artemis-Accords-signed-13Oct2020.pdf>.
- 33 See NASA Press Release, 13 October 2020, <https://www.nasa.gov/press-release/nasa-international-partners-advance-cooperation-with-first-signings-of-artemis-accords>.
- 34 See Section 1, Purpose and Scope, Artemis Accords.
- 35 Ibid.
- 36 See Section 10, Space Resources, Artemis Accords.
- 37 See Section 9, Preserving Outer Space Heritage, Artemis Accords.
- 38 The register for space objects was established in accordance with resolution 1721 B (XVI) of the United Nations General Assembly of 20 December 1961. This register is still used to disseminate information received from states, which are not party to the Registration Convention. See Hedman, 'The United Nations Register of Objects Launched into Outer Space', presentation made at the UN/Thailand Workshop on Space Law, 16-19 November 2010, Bangkok, Thailand, <https://www.unoosa.org/pdf/pres/2010/SLW2010/02-04.pdf>.
- 39 Art. III of the Registration Convention.

40 Report of the Committee on the Peaceful Uses of Outer Space, General Assembly Official Records, Thirty-Fourth Session, UN Doc. A/34/30 (14 August 1979) Supplement No. 20, para 65. See also See Jakhu, Freeland, Hobe, Tronchetti, Article 11 MOON, in: Hobe, Schmidt-Tedd, Schrogl (eds), Cologne Commentary on Space Law, vol II (Heymanns 2013) para 185.

41 See Section 9 (1), Preserving Outer Space Heritage, Artemis Accords.

42 Art. 60 UNCLOS.

43 Arts. 147 and 260 UNCLOS.

44 See Art. 60 (5) and Art. 260 UNCLOS.

45 Art. 147 (2) (c) UNCLOS.

46 Art. 9 para 2 and Art. 11 para 2 Moon Agreement.

47 Art. I and Art. II Outer Space Treaty.