GLUC-2010.4.4.1

THE APPROPRIATENESS OF THE MOON AGREEMENT FOR LUNAR EXPLORATION AND USE*

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ABSTRACT: As the race back to the Moon heats up, the search for an appropriate legal regime for this celestial body is becoming critical. Suitable legal principles and rules are imperative not only to avoid international conflict, but also to attract the substantial financial investments required for lunar exploration and use. This paper establishes that, at this stage and contrary to general belief, there is no need to seek out any other international treaty, since the existing 1979 Moon Agreement is readily available for all States. The paper analyzes the key provisions of this 30 years old Agreement with a view to demonstrating that it creates a suitable interim legal regime to govern and guide the orderly initial exploration of the Moon and the use of the lunar natural resources by States and their respective private entities.

I Introduction

After decades of virtual silence, there is now emerging a serious discussion about the 1979 Moon Agreement (Moon Agreement).[1] It is well known that this instrument has so far received only 13 ratifications and 4 signatures during the more than 30 years since its formal adoption.[2] Compared to other space-related agreements, the ratifications of which range between 35 and 100, this number is notably low. Thus, the Moon Agreement may possibly not be considered as a success.[3]

However, there are several reasons for such a low level of formal acceptance.[4] Perhaps the most logically valid reason is that, at least for the last 35 years, there has been no Moon-related activity and thus, there was no pressing need for a legal regime specifically governing this celestial body. States simply do not become parties to international agreements unless they believe that ratification is necessary for the protection and enhancement of their respective interests in current or future activities. No Moon activity, no need for ratification to the Moon Agreement: it is as simple as that.

It is important to recall that, during the 1960s and 1970s, the race to the Moon was almost exclusively motivated by the goal of securing politico-strategic hegemony between the then super and space powers, the U.S. and the Soviet Union. The U.S. determination to 'beat' the Russians [5] reached a high point when the Apollo 11 crew landed on the Moon on 20 July 1969. With that achievement, the determination vanished and, consequently, the 'race' to the Moon ended as well. At that time, the exploration and use (and eventual exploitation) of the natural resources of the Moon was not the main factor or driving force for such unprecedented haste and the expense for going to the Moon.

The race to the Moon today is of a completely different nature and scope. There is no highly visible 'enemy' today for any nation, which must be won over politically. The current race is more for the purpose of exploring the natural resources of the Moon, as earthly resources are fast depleting, although some politico-strategic reasons cannot be totally ruled out. As a consequence, confirmation of the existence of water on the Moon [6] and the presence of Helium-3 represent major incentives.

Therefore, those aiming for the Moon are no more only two visibly antagonistic developed and powerful nations, but also several other countries (including large developing counties like China and India), as well as several private companies that aspire to reap potentially significant economic benefits from the natural resources of the Moon. With a multiplicity of actors having a variety of motives, the possibility exists of conflicts similar to those of the 14th and 15th centuries, within and outside Europe, involving the

colonization of foreign lands at a huge human cost and the brutal economic exploitation of natural resources. It is within that context that the search for appropriate legal principles and rules for the Moon is imperative, not only to avoid international conflict but also to attract substantial financial investments required for lunar exploration and use at this stage, and for their eventual exploitation at a later stage, when it would become feasible.

Secondly, in our view, most of the criticism against the ratification of the Moon Agreement is not justified. It is almost exclusively directed at the Common Heritage of Mankind (CHM) principle, as contained in Article 11 of the Moon Agreement, and the apparent property rights over the natural resources of the Moon. Such criticism is usually based on an ignorance of the historical context and rationale for the Moon Agreement's conclusion; an improper interpretation of its provisions; fiction rather than facts; and false propaganda for the enhancement of the exclusive interests only of a few nations and/or a very small number of their private entities.

With this in mind, this paper analyzes the most important provisions of the Moon Agreement (particularly CHM) with a view to demonstrating that it still creates an appropriate interim legal regime to specifically govern and guide the orderly initial exploration of the Moon and the use of the lunar natural resources by States and their respective private entities.

II Common Heritage of Mankind

Article 11 (1) of the Moon Agreement specifies that: 'The 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.' The principle of the CHM was first proposed by Ambassador A.A. Coca of Argentina in a draft for the Moon Agreement and ultimately was incorporated into this space law instrument. However, it was discussed and elaborated in far greater detail during the negotiations of agreements dealing with the law of the sea. Before we analyze the CHM to fully understand its precise meaning, nature and scope under the Moon Agreement, it is therefore imperative to examine its general context in international law-making, particularly in relation to the law of the sea.

General Historical Context of the CHM

The 1960s and 1970s were particularly characterized by the endeavor of the newly independent developing countries to arrive at a new international economic order. Their viewpoint at that time was simple: since they were generally former colonies that had not attained independence when then prevailing international economic order was established, they sought an equal participation in international economic relations through the establishment of a new international economic order.[7] The economically developed and militarily powerful nations were considered to have economically disadvantaged the weaker developing States for centuries. Therefore, obligations like the mandatory transfer of technology from developed to developing countries and a licensing system for international goods (of the global commons) were at the forefront of those mechanisms they considered as necessary when the exploitation of international areas like the High Seas or the Deep Seabed were under discussion.[8]

The third Law of the Sea Conference from 1974–1982 presented an opportunity and a forum to advocate such ideas. This culminated in the adoption of the Law of the Sea Convention (UNCLOS) in 1982, which established an international administration in the place of freedom of action of States. Under Article 136 (and Part XI of UNCLOS, as well as in Annex 3 thereto) the Deep Seabed was declared to be the 'common heritage of mankind,' and a legal mechanism was created for the purpose of redirecting international relations towards the exploitation of resources such as manganese nodules, which were thought to be at the bottom of the Deep Seabed.

The organizational machinery established in the form of International Seabed Authority, with its own enterprise, was intended to restrict the economically and technologically strong countries and their enterprises from using the resources of the deep seabed to their own exclusive benefit. On the other hand, the International Seabed Authority was empowered and mandated for the distribution of the benefits derived from these resources to all countries, so that they all should derive some advantage from these activities.

However, the introduction of the CHM principle in the UNCLOS led to the opposition of the industrialized developed countries towards this

agreement, thus threatening its effectiveness. If the industrialized countries and their industries, which were supposed to help developing countries, were to abstain from UNCLOS, then the entire machinery would not work. As a result, in 1994 after considerable negotiations under the chairmanship of the then United Nations Secretary-General Xavier Perez de Cuellar, an Amending Agreement[9] was concluded that considerably changed the CHM approach, giving it a much more liberal meaning and scope. Consequently, there was to be no mandatory transfer of technology, no serious insistence on the numerical majority of developing countries in the Council of the International Seabed Authority, and fewer other mandatory obligations imposed on developed States.

From this brief negotiating history of UNCLOS, we can formulate two major conclusions: first, by the beginning of the 1990s, developing countries had agreed to abandon the idea of an international economic order with asymmetric obligations for industrialized States. Rather, the approach of open markets for trade in goods and services would determine international economic relations. Secondly, the new meaning and scope of the concept of the CHM under the 1994 Amendment to UNCLOS has a rather different (weaker and liberal) economic feature, as compared to the 1982 version of this agreement. [10]

An Analysis of the CHM under the Moon Agreement

In parallel with these events, negotiations in the 1970s and 1980s on the legal framework for human activities on the Moon and celestial bodies had begun. Concentrated negotiations in the UN Committee on the Peaceful Uses of Outer Space (COPUOS) had already resulted in the adoption of the Outer Space Treaty in 1967, which had not specifically referred to the CHM. Rather, it mentions that the exploration and use of outer space shall be carried out for the benefit of all countries and is declared to be the 'province of all mankind'. There is no doubt that this 'common province' principle in Article I (1) of the Outer Space Treaty, being more general than the 'common heritage of mankind' provision of the Moon Agreement, does place some general limitations on the freedom of States to act for their own benefit.[11] Article 11 of the Moon Agreement leaves it entirely open as to how the international regime for the exploitation of the resources of the Moon and the celestial bodies might be shaped in the (distant) future. Consequently, the precise meaning and effective application of the CHM is now by no means clear.

When reading the Moon Agreement, it becomes clear that the drafters did not consider these activities as representing a matter of immediate urgency. Rather, the Moon Agreement contemplates that any concrete drafting of an economic order into the future will only take place when exploitation of natural resources becomes feasible.

In analyzing the contents of the CHM concept as contained in the Moon Agreement, we must start with Article 4 (1), which more or less reiterates the 'common province' clause of Article I (1) of the Outer Space Treaty. It emphasizes, however, in much stronger terms than the Outer Space Treaty the idea of intergenerational equity, in that it couples an environmental element with the idea of the province of all mankind, namely the preservation of the environment for the use of future generations.

More importantly, Article 11 (1) declares the natural resources of the Moon to be the 'common heritage of mankind'. It is important to note that, according to the negotiating history of the Moon Agreement (as well as general international law of treaty interpretation), the meaning of this concept should not be sought outside the Agreement, but exclusively within the provisions of the Agreement, particularly Article 11 (5).[12] That provision calls upon States Parties to establish an international regime for the exploitation of the natural resources of the Moon, but only when such exploitable is about to become feasible. Article 11 (7) of the Moon Agreement then lays down the structure of the main features of this envisioned international regime. This provision contains certain guidelines for the eventual exploitation of the natural resources of the Moon.

The Possible Features of the International Legal Regime in the Future

Article 11 (7) of the Moon Agreement lays down the followings four basic features of the future economic order for the exploitation of space resources to be created under the envisioned international regime, which is yet to be negotiated in the future:

a. Any exploitation of natural resources of the Moon and other celestial bodies shall be carried out in an orderly and safe manner.

b. The natural resources shall be rationally managed. In practical terms, this means that all resource-wasting activities must be avoided. This is, particularly in cases of natural resources, already an explicit directive against any one-sided management of the development of the resources.

c. The third element, the expansion of opportunities in the use of natural resources, may be understood as a general encouragement for States to adapt their technologies to the use of these resources. This is a very far-sighted condition, as it would actually impede States from prematurely using resources without actually knowing what the general environmental effects may be.

d. The most controversial idea is reflected in Article 11 (7) (d), which provides for 'an equitable sharing by all States parties in the benefits derived from those resources...'. The key part of this provision is the notion of 'equitable' sharing. How this equity concept shall be made more concrete is explained in the second half of the sentence, namely that 'the interests and needs of the developing countries, as well as the efforts of those countries who have contributed either directly or indirectly to the exploration of the Moon, shall be given special consideration.'

First of all, it is evident that the interests of all States Parties shall be taken into consideration. It becomes equally clear that, particularly those countries that have made considerable efforts towards the exploration of the Moon shall be protected by this provision. Thus 'equitable' does not mean 'equal', and therefore is not a one-sided approach just for the benefit of developing countries. It seeks a balance for the return of the benefit, a balance between investing (i.e. contributing) and non-investing States. From this latter group, it is particularly the developing countries whose interests shall be taken into consideration.

This may be the only point where the equity concept of Article 11 (7) does in fact deviate from the idea of return on investment. Developing countries have, such is the philosophy of this provision, invested nothing at all or very little, but shall get something in return. This is therefore an asymmetrical benefiting of the underdeveloped States that could give rise to criticism. On the other hand, the interests of the investing States shall be taken into consideration as well.

It is thus simply not true that the Moon Agreement in its Article 11, which outlines the broad and general possible features of the future international legal regime for the exploitation of the resources of the Moon, is one-sided in favor only of developing countries. Their privileged position does exist, however, insofar as they get some compensation (although this is not necessarily financial in nature) for their otherwise underdeveloped situation. This is a kind of compensatory benefiting that is somewhat known as well in the philosophy of 'common but differentiated development'.[13] For the well-being of all (i.e. nature and the environment *per se*), some are required to contribute to help others. In sum, this latter idea, i.e. the benefiting of non-contributing developing countries, is the only degree of inequality that may characterize the future legal regime for the exploitation of lunar resources.

It is important to understand that the CHM does not have any meaningful impact on the current exploration and use of the natural resources of the Moon, although it may become important later, but only when the envisioned international regime is to be negotiated. It may take 30 or 40 years for the exploitation of the natural resources of the Moon to become feasible, and additional 10 to 20 years for the envisioned international regime to be negotiated, if at all. Moreover, the proposed international conference of the States Parties to the Moon Agreement would be sovereign unto itself and thus might not adopt the envisioned regime. Even if it does, it might reject the concept of CHM, or give a new and liberal scope to this concept, as we have seen in the case of the amended UNCLOS.

Therefore, in our view, the presence of the CHM principle in the Moon Agreement has no serious restriction on the exploration and use of lunar natural resources and might not be applicable to the eventual exploitation of these resources. It is always important to keep in mind a clear distinction between 'exploration' and 'exploitation'.

If the Moon Agreement is not adhered to by the Moon-faring States, then Moon-related activities, including the exploration and use of its natural resources, will be governed by the provisions of the Outer Space Treaty, to which they are Parties. In this regard, the provisions of Article II of that Treaty will be particularly relevant, prohibiting national appropriation strictly, expansively and extensively.

On the other hand, Article 6 (2) of the Moon Agreement specifically entitles States Parties to collect and remove from the Moon mineral and other substances and to use them for the support of their exploratory missions. This is an improvement to, and shall prevail over, the provisions of Article II of the Outer Space Treaty.

One should not overlook the fact during the negotiations of the Moon Agreement it was understood that this Agreement would not act as a moratorium on economic activities and thus would not prevent exploration and exploitation of natural resources, pending the negotiation for, or in the absence of, the envisioned international legal regime implementing the CHM principle.[14]

Finally, for full understanding of the Moon Agreement, one must not rely on factitious statements. It has been observed by some authors that the Soviet Union, with the support of the developing countries, had introduced the CHM principle into the Moon Agreement to prevent free enterprises with an open market economic philosophy from engaging in lunar exploration, use and subsequent exploitation of lunar resources. However, the negotiating history of the Agreement clearly shows that it was, in fact, the U.S. that strongly supported the developing countries on the retention of the CHM principle, while the Soviet Union was adamantly opposed the CHM principle. The Russian Delegation to the COPUOS only gave up its opposition when, based on a proposal by Brazil, it was agreed that the meaning and scope of CHM principle should be exclusively determined on the basis of the provisions of the Agreement, with no reference to external sources or other precedents. Similarly, refuting the fiction that the 'Soviet Union and the less-developed countries have prepared a treaty that serves only their interests', Carl Christol emphasizes that the Moon Agreement 'obtained the approval of all 47 members of COPUOS before it was adopted by the UN General Assembly. COPUOS [was] composed of all of the principal space-resource states, of many developing countries, geographically distributed over all of the continents and consisting of states pursuing different socio-economic perspectives and ideologies.'[15]

III Non-Militarization and the Non-Use of Force

The non-militarization obligations of Article 3 of the Moon Agreement are more far-reaching than in any other provision of outer space legislation. Article 3 (4) expressly prohibits the establishment of military bases on the Moon and other celestial bodies. More importantly, Article 3 (2) makes illegal any threat or use of force or any other hostile act or threat of hostile act on the Moon. Such threat or act cannot be committed in relation to the Earth, the Moon, spacecraft, the personnel of spacecraft or man-made space objects, including those on the Moon. Such an unequivocal prohibition of threat or use of force on the Moon is not found in the Outer Space Treaty. This establishes the rule of law relating to Moon's exploration and use under an exclusively peaceful and threat-free environment, which is a very important factor (inducement) for attracting the financial investments required for Moon-related activities.

IV Environmental Protection and Sustainable Development

The legal regime for the preservation of the environment of the Moon in Article 7 of the Moon Agreement is more concrete than in any other space law instrument. In particular, it calls for measures to prevent the disruption of the existing balance of the environment of celestial bodies through the introduction of adverse changes or harmful contamination through the introduction of extra-environmental matter or otherwise. There is a concrete obligation of States Parties to take measures to avoid harmfully affecting the environment through the introduction of extra-terrestrial matter or otherwise. The provision is made more concrete in Article 7 (2) through a duty to inform the Secretary-General of the United Nations of the taking place of such measures.

V Other Important Provisions of the Moon Agreement

Several provisions partly repeat existing terms from other space legislation; and some go positively beyond those terms. For example, Article 4 of the Moon Agreement reiterates the 'province of all mankind' provision of the Outer Space Treaty, Article 6 of the Moon Agreement repeats the freedom of scientific investigation from Article I (3) of the Outer Space Treaty, Articles 8 and 9 of the Moon Agreement specify new obligations regarding stations on the Moon and other celestial bodies, Article 10

and 13 of the Moon Agreement reiterate the rescue obligations from the Rescue Agreement, and Article 12 of the Moon Agreement reiterates the fundamental provision of Article VIII of the Outer Space Treaty regarding jurisdiction and ownership in outer space and on celestial bodies.

Article 14 of the Moon Agreement refers, as Article VI of the Outer Space Treaty does, (a) to the State responsibility for the activities of non-governmental entities and (b) the need for national authorization and continuing supervision of such entities under national space legislation. Such provisions are necessary to ensure that the concerned States require an appropriate standard of behavior of their respective private entities that would be involved on Moon-related activities. Otherwise, one may end up with environmental disasters, like oil spills of the 1989 Exxon Valdez and the 2010 Gulf of Mexico, where neither the concerned private parties nor their respective States were/are considered accountable, even though these disasters damaged the interests of other States and, in fact, the entire international community. Due to the physical nature of the Moon and outer space, the damage to their environment could be even worse.

VI Conclusion and Final Remarks

The Moon Agreement is an international agreement that does not, on the one hand, disproportionally limit human activities by States and their private companies on the Moon and, moreover, tries to preserve, on the other hand, the existing environment in the universe. From a market economy point of view, this agreement is not too rigid, too stringent or too radical a legal instrument to govern the exploration and use of lunar resources.

The Moon Agreement in general is a very well balanced and forward looking legal instrument, in a number of ways it was ahead of its time. We believe that the time has now come that all States, particularly Moon-faring nations, accept the Moon Agreement as soon as possible since the Agreement establishes an appropriate interim legal regime to govern and guide the orderly initial exploration and use of the lunar natural resources by States and their respective private entities.

When the exploitation of the natural resources of the Moon is about to become feasible, the international community might start the negotiations for elaborating the legal principles of the Moon Agreement and in order 'to establish an international régime, including appropriate procedures, to govern the exploitation of the natural resources of the Moon.' It is clear that the States Parties to the Moon Agreement would have a decisive say as to the shape of such a new international legal regime for any economic space activities on the Moon.

Any attempt to conclude a new agreement, or even to amend the exiting Moon Agreement, would be difficult at present and even in near future. Due to current crisis in international relations, the rule of law as established under the Moon Agreement must be maintained, enhanced and praised wholeheartedly.[16] Undoubtedly, at an appropriate time in the future, the Agreement ought to be taken up for further international discussions, with the aim of strengthening and updating it so as to appropriately govern the economic exploitation of the natural resources of the Moon.

REFERENCES

[1] The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (hereinafter referred to as the "Moon Agreement", adopted by the General Assembly in its resolution 34/68), opened for signature on 18 December 1979, entered into force on 11 July 1984. UNTS 1363, p. 3. As of 30 March 2010, there are 13 ratifications and 4 signatures to this Agreement; United Nations General Assembly Document A/AC.105/C.2/L.279/Add.2 (30 March 2010). The Agreement applies to both the Moon and other celestial bodies. For more detailed analysis of the Agreement, see Ram Jakhu and Maria Buzdugan, "The Role of Private Actors: Commercial Development of the Outer Space Resources, Including those of the Moon and other Celestial Bodies: Economic and Legal Implications," 6 *Astropolitics*, (2008), 201-250. For recent discussions in the Legal Subcommittee of the COPUOS during its 2009 session, see United Nations General Assembly Documents: A/AC.105/C.2/L.274 (3 February 2009). Also see "Joint statement on the benefits of adherence to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies by States parties to the Agreement," United Nations General Assembly Document A/AC.105/C.2/L.272 (3 April 2008).

[2] The 13 States that have ratifies the Moon Agreement are: Australia (1986), Austria (1984), Belgium (2004), Chile (1981), Kazakhstan (2001), Lebanon (2006), Mexico (1991), Morocco (1993), the Netherlands (1983), Pakistan (1986), Peru (2005), Philippines (1981), and Uruguay (1991). The 4 States that have signed the Agreement are: France, Guatemala, India, and Romania.

[3] For some observations concerning this low number of ratifications, see S. Hobe, Historical Background, in: S. Hobe/B. Schmidt-Tedd/K.-U. Schrogl (eds.), *Cologne Commentary on Space Law*, vol. 1, Cologne, 2009, note 50.

[4] For critical remarks concerning law-making in the field of outer space, see S. Hobe, The Importance of the Rule of Law for Outer Space Activities, Colloquium on the Law of Outer Space, Glasgow 2008, Washington 2009, 335 et seq, passim.

[5] Feeling embarrassed by several Russian firsts in space race, U.S. President John F. Kennedy set the American goal of going to the Moon, in his famous speech to a joint session of the U.S. Congress on 25 May 1961, in which he said: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth."

[6] See, for example, Tony Phillips, "LCROSS Finds Water on Moon," Huntsville AL (SPX) Nov 16, 2009, http://www.moondaily.com/reports/LCROSS_Finds_Water_On_Moon_999.html (accessed 17 November 2009).

[7] A typical statement of this time was the one by J. Castaneda, The Undeveloped Nations and the Development of International Law, in: *International Organization* 1961, pp. 41 et seq.

[8] Antarctica, although also a global common, has a different international legal development. See the 1959 Antarctic Treaty (402 U.N.T.S. 71), which had established a treaty system with some privileged States of the so called Antarctic Club, consisting of those States that have claims to Antarctica and those that have proven their interest in Antarctica though financial and scientific contributions. In fact, the States in the Club run the international regulation of the Antarctic region. See inter alia R. Wolfrum, Die Internationalisierung staatsfreier Räume, Heidelberg et al 1983, pp. 30 – 100, with further references.

[9] Agreement on the Implementation of Part XI of the Law of the Sea Convention of 1982, of 28 July 1994, in ILM 33 (1994), 1309; see thereto J. Charney, Entry into Force of the 1982 Convention on the Law of the Sea, Virg J Intl L 1995, 381.

[10] R. Wolfrum, Die Internationalisierung staatsfreier Räume, Heidelberg et al 1983, p. 327.

[11] See, for a thorough interpretation of this provision, S. Hobe, Art. I, in: S. Hobe / B. Schmidt-Tedd / K.-U. Schrogl (eds.), *Cologne Commentary on Space Law*, marginal note 44 et seq.

[12] See, for an analysis of the Common Heritage of Mankind concept, inter alia R. Wolfrum , The principle of the Common Heritage of Mankind, ZaÖRV 1983, 312 et seq.; C. Pinto, Common Heritage of Mankind: From Metaphor to Myth, in: J. Makarczyk (ed.), Liber amicorum Krystof Skubiszewski 1996, pp. 249 et seq,; C. Joyner, Legal Implications of the Concept of Common Heritage of Mankind, ICLQ 35 (1986), pp. 190; S. Hobe, Was bleibt vom gemeinsamen Erbe der Menschheit?, in: Liber amicorum Jost Delbrück, Berlin 2005, 329 et seq.

[13] See inter alia J. Stone, Common but differentiated responsibilities in international law, AJIL 98 (2004), 276; for a comprehensive appraisal of this concept, see B. Kellersmann, die gemeinsame aber differenzierte Verantwortlichkeit von Industriestaaten und Entwicklungsländern für den Schutz der globalen Umwelt, Berlin 2000.

[14] See R. Wolfrum, Die Internationalisierung staatsfreier Räume, Heidelberg et al 1983, pp. 322 et seq.

[15] Carl Q. Christol, "The Moon Treaty: fact and fiction", 2 April 1980, reprinted at http://www.csmonitor.com/1980/0402/040234.html

[16] See Hobe, Historical Background, in: S. Hobe/B. Schmidt-Tedd/K.-U. Schrogl (eds.), *Cologne Commentary on Space Law*, vol. 1, Cologne, 2009, pp. 335 et seq.