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# PROPERTY RIGHTS ON MOON: THE PRINCIPLE OF NON-APPROPRIATION AND THE EXPLOITATION OF NATURAL RESOURCES OF MOON

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## ABSTRACT

This paper concerns itself with the legal regime governing the rights of use and exploitation of lunar property. Such property can be divided into movable and immovable property, and this broad distinction is kept in mind and the issues dealt with accordingly. While dealing with landed immovable property rights, the main issue that comes up for discussion is the principle of 'non-appropriation' contained in Article II of the Outer Space Treaty. A number of questions follow-What is 'non-appropriation'? Does Article II of Outer Space Treaty envisage individual non-appropriation besides national non-appropriation? What is the legal status of Dennis Hope's Lunar Embassy, or for that matter any private attempt at appropriating the moon and other celestial bodies? All these issues have been highlighted and discussed in Part One of this paper. It also elaborates on the principles of 'Province of All Mankind' and 'Common Heritage of Mankind', concepts which are essential for a proper understanding of non-appropriation principle, and explores their application with regard to the exploitation of lunar resources. Part Two deals with the immovable natural lunar resources. Is the exploitation of natural resources, for whatever purpose, covered under the 'non-appropriation' principle of the Outer Space Treaty? This is an important question that is sought to be addressed. Also, the Moon Agreement of 1979 and its provisions are put into perspective in this paper. How the Common Heritage of Mankind governs the exploitation of lunar resources through the Moon Agreement is a matter that forms a basis of most of our arguments in this regard. With these factors in mind, the paper deals with the issues of legal status of lunar resources extracted from their natural position and whether there is a *de facto* moratorium on the exploitation of resources until the formation of an international regime under Article 11(5) of the Moon Agreement. We also look at the feasibility of reading an implied moratorium in the provisions of the Moon Agreement, even if there is an absence of any such express prohibition on exploitation of resources. Finally, the paper impresses upon the formation of an intergovernmental organization of a global nature that would take care of the use and exploration of lunar properties without appropriation, and would also function as the regime envisaged under the Moon Agreement. An extension of the role of United Nations is proposed in this regard and the benefits thereof presented.

## FULL TEXT

### INTRODUCTION

"If God had not meant for mankind to colonize space, he wouldn't have given us the Moon"[1]

Kraffte Ehricke

Since time immemorial man has been dreaming of colonizing the Moon. The potential resources of the moon notwithstanding, it is the closest satellite we have got, reachable in flight duration of only 3 days from Earth utilizing existing technology. With feasible exploitation and safe transit to Mars still being out our current reach, we have to look at the Moon from a new perspective.

When one asks the question; "What world shall we make our home beyond the Earth?"For many, the natural response would be the Moon.[2]It would seem

[1] Quoted in Robert Zubrin at 79;Also space expert Carl Sagan's prospective

[2] Robert Zubrin ( 2000) at 79

that Moon would be the most practical and rational choice for taking our step in space colonization. Having a surface area equivalent to the size of the African continent, it has been hailed as our eighth continent.[3]The advantage of its proximity also makes Moon the most viable location for establishment of permanent bases[4] including lunar vehicles, structures for human settlement as well as carrying of scientific experiments and deploying machineries for carrying on mining operations. Lunar resources could be utilized to support missions, fuel rockets not to mention the availability of scarce yet invaluable quantities of helium 3 isotope. This means establishment of a "lunar colony with cash export commodity".[5] Moreover, now scientists using the Mini-SAR instrument on board India's Chandrayan I have detected ice deposits in the lunar North Pole.[6] This discovery has changed the course of discussions about the feasibility of missions undertaken in Outer Space. Presence of water on Moon means that prolonged stay on moon is now made possible and is less expensive. Discovery of water on the closest of the extraterrestrial bodies near Earth have also given rise to the hope that there are other worlds in our galaxy that may also be able to sustain human life thus making the dream of space colonization come true.

Any rights related with Outer Space have to be construed in reference to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies 1967 (The Outer Space Treaty or the OST in short). There is an Agreement governing the activities of states on Moon and other celestial bodies 1979 (Moon Agreement) that deals with rights, obligations, and duties of states with respect to the Moon in particular. The entire controversy surrounding property rights in relation to the moon can be discussed under two major heads- those dealing with immovable landed properties and those concerning movable resources that can be extracted from the lunar estate. The first deals with the devolution of landed property rights situated on moon, that is to say, the question of appropriation. The second relates to the utilization of *in situ* resources on the Moon. This paper sets out in detail the various formalities under the principle of non-appropriation and issue of moratorium under Article 11 of the Moon Agreement.

In order to first get a grasp of the principle of non-appropriation in the essence in which it is contained in the Outer Space treaty, this paper sets out briefly the two fundamental principles that distinguishes outer space from r*es nullius* (territory that is open for appropriation).These are the higher equitable principles of 'Province of Mankind' and 'Common Heritage of Mankind' that places outer space in the sphere of *res communis* (territory reserved for common benefit of mankind and therefore appropriable by no one). These principles apart from being significant aspects of customary international law have become pervasive throughout the Outer space treaty and Moon Agreement thus guiding all activities in relation to outer space. The principle of non-appropriation has to be read in light of the above principles. Article II has specifically constrained any attempt of national appropriation of Outer Space including the Moon and other celestial Bodies. In light of this, few issues become prominent. Such issues being the meaning of the term 'national appropriation' as distinct from 'non-national appropriation', whether individual entities can effectively appropriate and whether such appropriation is permissible under the treaty, the connection between sovereignty and property rights and finally the meaning of the term 'appropriation' itself.[7] The paper then presents the case of Lunar Embassy and examines whether the activity it is involved in can be justified in any manner under the current legal regime. Finally, the part concludes with the observation that sovereignty and appropriation is not a necessity in profit making activities of corporate entities and that there is a requirement for the enumeration of an intergovernmental body. This body would be preferably formed by an extension of the role of United Nations that would not only serve as a public trustee of common resources in space, but also present an institutionalized mechanism under which business ventures on moon can be regulated.

The second part of the paper is concerned with the legal regime governing the exploitation and use of movable property on the moon and other celestial bodies, mainly lunar soil samples, minerals etc. In

[3] W. Mendell, "Lunar Bases and Space Activities of the 1st Cenmry,"Lunar and Planetary Institure, Houston, Texas, 1995 as cited in Robert Zubrin (2000) at 79

[4] See supra n 2 at 80

[5]Ibid

[6]Nancy Atkinson, Water Ice Found on Moon's North Pole, available online at http://www.universetoday.com/2010/03/01/water-ice-found-on-moons-north-pole/ last accessed on 18.05.2010

[7]S.Gorove(1969) at 349

this regard we first look at the exploitation of such natural resources in the outer space as envisaged under the Outer Space Treaty, 1967. We weigh the conflicting opinions about whether or not the OST permits such exploitation of movable space resources with reference to the 'non-appropriation' clause to be discussed in the first part of this paper. Next we shift our attention to the exploitation of such movable resources through the lens of the provisions of the Moon Agreement, 1979. Though this instrument has not been widely accepted, its provisions are still very important tools for framing arguments in Space Law. We look at the important provisions of this Agreement to address two very contentious issues. These are the debates about the legal status of movable resources once removed from the surface of the moon and whether there is any moratorium, express or implied, on the exploitation of such movable lunar resources until the formation of an international regime as envisaged by Article 11(5) of the Moon Agreement.

We look at the opinions of various scholars and set forward our own in this regard, and ultimately argue for the formation of an international regime on an urgent basis. Such international regime can consist of the same intergovernmental organization, which can be an extension of the role of the United Nations which we proposed to discuss in Part One. The various legal and procedural issues regarding the formation of such an intergovernmental body cannot be extensively discussed in the scope of this paper (as we only seek to propose the idea of such a body and do not seek to enumerate all its functions and obligations), though some of them will be briefly addressed by us.

## PART 1

## THE PRINCIPLE OF APPROPRIATION IN OUTER SPACE INCLUDING THE MOON AND OTHER CELESTIAL BODIES

### 1.1 Principles of 'Province of All Mankind' and 'Common Heritage of Mankind'

Any discussion on the aspects of Outer Space Treaty 1967 must start with an analysis of Article I because it is the fundamental premise governing the relationship of all actors involved in the exploration, use and exploitation of space. All the other provisions related to space activities have to be construed and interpreted in light of the ideals that this article seeks in its essence to fulfil. It goes as follows:

*"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".*

Article 4 of the Moon Agreement 1979 is worded similarly but also incorporates an additional safeguard by ensuring that due regard is paid to the interests of present and future generations while undertaking any activity on the moon.

Considering the above provisions, it becomes imperative to understand what is meant by 'province of all mankind' and differentiate it with the principle of 'Common Heritage of Mankind'. FabioTronchetti (2009:23-24)defines the former as meaning "Only mankind acting collectively, by way of international cooperation, has the right to enjoy the benefits derived from space activities and to establish how to share them among nations". According to Carl Q Christol, 'province of mankind was the starting point for legal reasoning'. In fact, it was an improvement over the previous concept of '*Res Communis*' which has been extensively applied to cover common resources of mankind such as Oceans and high Sea beds. 'Province of mankind' goes far ahead by providing that the benefits derived from such activities must serve the whole of mankind. It takes into account the fact that countries with virtually no means to pursue scientific explorations would also want to participate and secure for itself a share in the common pie.[8]

The response of the international community over the enumeration of the principle had been mixed. While the developing states viewed such a principle as a positive application of the objectives sought to be achieved by the treaty, the industrialized nations were naturally more sceptical. The US Senate declared that "it was the understanding of the committee on foreign relations that nothing in Article I paragraph I [of the treaty] diminishes or alters the right of US to determine how...it shares the benefits and results of its space activities". The Soviet Union took a stricter stand and stated that the mankind provisions of the treaty, including Article 1 have "no precise significance" and that "the character and degree of participation of states in International space projects [such as the sharing of benefits] depend ultimately on their will. While conflicting opinions persisted in the

[8] For a detailed description of the Province of mankind principle, refer to Chapter IV of Ogunsola O. Ogunbanwo, *International law and outer space activities*, Hague, 1975

coming into being of the principle, it is now clear that the 'province of all mankind' has pervaded the entire space law jurisprudence, especially with respect to determining rights of property in Outer Space.

Article 11 of the Moon Agreement starts with "the moon and its natural resources are the common heritage of mankind".[9]Carl Q Christol has emphasized that the principle of 'Common Heritage of Mankind' (CHM) has significantly advanced the concepts which are central to the 'province of mankind'. Finding its roots in the 1982 Law of the Sea convention, this principle now finds express stipulation in the Moon Agreement in regard to extraction and utilization of lunar resources and in fact supplements Article 4 which is concerned with 'exploration and use'. The broad interpretation gives the concept a truly revolutionary character. Accordingly, the principle implicitly rejects freedom of access to areas and resources beyond the limits of national jurisdiction.[10]

The main feature of CHM which sets it apart from the 'province of mankind' is that it demands the elaboration of an international regime in the management and exploitation of the common heritage. While the two may overlap, nevertheless certain key distinctions are maintained in the context of their applications. 'Province of mankind' has a rather jurisdictional sense. 'Province' say scholars, is connected with territory and the responsibilities and obligations over that territory. While 'heritage' on the other hand denote property and the benefits and resources derived from such property. The former concept heralds significant choices of policy and deals with the management of space operations while the latter focuses on economic interests and concludes that there shall be no national appropriation.[11]

The foundation on which CHM is pretty straight forward- Common property requires common management which must lead to the creation of an institutionalized mechanism endowed with the exclusive rights to engage in exploitative activities over the resources. The benefits thus obtained have to be shared equitably among all states.[12]Arvid Pardo has described that CHM has changed the structural relationship between rich and poor countries.[13] The objectives of CHM are therefore threefold in its application under the Moon Agreement:

1. Prevention of exploitation of the common resources derived from the Moon from being monopolized by the industrially superior nations.
2. Allowing the developing states to participate in such exploitation.
3. Distribution of the derived benefits equitably among all nations giving special preference to the developing and under developed countries.

While CHM also envisages the creation of an international regime in relation to *in situ* resource utilization on Moon (will be dealt with later), all that remains to be said now is that the sad state of ratification of the Agreement has left the principle without its teeth.

## 1.2 Article II of the OST and the Principle of Non Appropriation

*"States are barred from extending to and exercising within the moon and other celestial bodies, those rights which constitute attributes of territorial sovereignty"*

Manfred Lachs

Article II of the Outer Space Treaty has to be guided in its application with regard to principles mentioned above. It contains one of the most fundamental and universally recognized concept that has now become part and parcel of customary international law through general consensus.[14] Hence, *'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'*.[15]

Article II at first glance raises a number of questions; whether national appropriation includes individual appropriation thus stultifying any effort by private, non-Governmental entities or corporations in making

[9]Scholars have argued that heritage denotes devolution of ancestral property rights, which calls for the question whether our ancestors had any rights over the common resources in the first place. Since the validity of the principle is not in question here, such arguments have to be deemed beyond the scope of this paper.

[10]Danilenko (1988) at 249

[11] See supra n. 8

[12] Ibid

[13]A. Pardo, Ocean Space and Mankind as cited in Danilenko (1988) at 250

[14]F.Tronchetti (2009) at 27

[15] Article II OST 1967

any part of the Moon their own, the relationship between sovereignty and property rights, the meaning of the concept of non-appropriation[16], and whether some degree of sovereign authority is still permissible irrespective of the prohibition of Article II[17]. As to what constitutes 'appropriation', Gorove states that "the term appropriation is used most frequently to denote the taking of property for one's exclusive use with a sense of permanence".[18]A particular confusion that arises is that Article II does not prohibit sovereignty *per se* but only in relation to National appropriation. Is the prohibition inclusive of both National appropriation and claim of sovereignty or only the former through means of the latter? In this context, the distinction between appropriation and sovereignty becomes imminent. Logic would dictate that if a state is allowed to claim sovereignty, it would eventually lead to National appropriation and is hence proscribed. The Moon Agreement is much clearer in its ambit. Article 11 (2) explicitly states that the moon is not subject to national appropriation *'by any claim of sovereignty'*. However as already mentioned earlier, the Moon Agreement suffers from its lack of acceptance and therefore we have to go back to the Outer Space Treaty to understand the scope of the non-appropriation principle.

What the principle has successfully achieved is that it has brought Outer Space including the Moon and other celestial bodies out of the realm of *terra nullius* and inside the domain of *res communis* thereby obviating assertion of sovereignty on Moon by any nation state.[19]The main intention towards its enumeration can be gathered from the preamble to the Moon Agreement which incorporates that every member state 'must desire to prevent the Moon from becoming an area of International conflict'. If states are allowed to freely establish and demarcate areas for themselves on Moon, armed international conflict and war would be just around the corner.[20]It would seem that the only way to preserve and maintain the lunar environment is through a strict application of the non-appropriation principle.[21]However, Robert Zubrin has gone on to suggest that it was mostly the result of an effort between the US and former Soviet Union in attempting to curtail the Space race during the Cold War and use the funds elsewhere in the economy.[22]

The debate regarding national appropriation came to the fore during September 1959 after the hard landing of Luna 2 on the Moon which carried the Soviet flag and the subsequent US Apollo spacecraft's successful landing on the Moon. N.S.Kruschev declared "we regard the launching of a space rocket...as our achievement. And when we say 'our', we imply all the countries of the world, that is, we imply that it is also your achievement and the achievement of all the people living on Earth." USSR was vehement in its stand that no state could claim sovereignty and freedom of exploration.[23] Section 8 of the Law on the implantation of the US Flag states 'the flag of the United states, and no other flag shall be implanted...on the surface of the Moon, by the members of the crew of any spacecraft...the funds of which are provided by the Government of United States. This act is intended as a symbolic gesture of national pride in achievement and is not to be construed as a declaration of national appropriation by claim of sovereignty."[24] Therefore, it is clear that the *opinion juris* regarding the non-appropriation principle goes before the enumeration of the Outer Space treaty itself. Neither the USSR nor US obtained prior consent before the launch and no other state protested. In fact, every nation viewed their endeavors with admiration as an accomplishment of mankind.

Coming to the question whether private appropriation is permissible under the Outer Space Treaty, it is not surprising to find that the scholars are divided in their opinions and every one of them cites voluminous literature in support of their contentions. It is indubitable that the International law regarding individual appropriation in Outer Space is silent and is in urgent need of clarification. This has to be done as soon as possible in order to prevent people from being subject to fraudulent transactions pertaining to sell of land on Moon as well as to safeguard future bona fide interests of the potential investors who would want protection under the law. Sovereignty as distinct from property is subjected to jurisdiction. Sovereignty is a concept of political or public law

[16]S.Gorove (1969) at 349
[17] Ibid
[18]Gorove(1969) at 352
[19]F.Tronchetti(2009) 27;V.Pop (2008) at 60
[20]V.Pop (2008) at 61
[21]F.Tronchetti at 28

[22]R.Zubrin(2000) at 11,13 as cited in V. Pop (2008) at 61
[23] U.N Doc. A/AC.105/C.2/SR.7 21st August 1962
[24] Anne M platoff, Where No Flag Has Gone Before: Political and Technical Aspects of Placing a Flag on the Moon, available online at http://history.nasa.gov/alsj/alsj-usflag.html last accessed on 18.05.2010

and property belongs to civil and private law.[25]However, with respect to the legal regime governing outer space, both are intrinsically related. As will be shown later, prohibition of sovereignty comprises an automatic ban on acquiring title to property in outer space.[26] During the negotiations of the Outer space treaty, the Belgian delegate "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."[27] Individuals obviously are not able to assert sovereignty but the question is whether they can be excluded from appropriation of immovable landed properties on the Moon and other celestial bodies through use or occupation or by any other means.

As already mentioned, Outer Space Treaty fails to explicitly forbid individual appropriation. Many authors claim that the treaty makers knowingly rejected the application of non-appropriation principle in case of private concerns, but they fail to take note of the fact that private space entrepreneurship was literally unheard of in those days. During the time of the making of the treaty, the role of private players only extended to the status of contractors or suppliers of the Government.[28] It is only in the present decade that we witness private operators entering the field. Corporations like Richard Branson's Virgin Galactic, Space X, Galactic suite (which is building a space hotel that would revolve around the earth) are allowing the visions of space enthusiasts to come to fruition. Therefore, it can be safely concluded that the drafters did not even consider it necessary to recognize prohibition of appropriation by private operators. [29]

Gorove (1969) holds the view that Article II in its present form does not appear to contain any prohibition regarding individual appropriation or acquisition by a private association or an international organization.[30] He takes account of the possibility of such a preclusion in the future through further development in Space law.[31] The treaty remains unchanged till today; does that mean in the absence of an express prohibition, individual acts of appropriation are permissible? Many scholars are opposed to this and justify that prohibition of National appropriation implicitly rejects the possibility of individual appropriation.[32]In order to better appreciate the viability of this proposition, one needs to first understand the devolution of property and ownership rights under the Common law and the Civil law systems. Under common law, all property rights have to be derived directly from the king or sovereign.[33]The state has the ultimate right over all territory and it confers such right to individuals. In civil law, it is based on the "natural law" principle of *pedis possessio* or "use and occupation"- the individual has to develop a territory by putting in labor and the Government recognizes such right. Therefore, the property right is created independent of the Government.[34] Therefore, when a state itself is prohibited from acquiring any territory, Common law system debars individuals from doing the same. Then, under the Civil law system, for the individual to develop any portion of outer space, it has to be *res nullius*. However, as already discussed, Outer Space is in the domain of *res communis,* in fact it features an even higher principle of equity-'province of mankind'- and is thus not subjected to any form of appropriation.[35] Further, under the doctrine of *eminent domain,* a state has been conferred with the power to confiscate land belonging to private individuals. But, as is evident, the state is not entitled to acquire land 'by any means' in outer space.[36] The question therefore, is, can a private entity own a territory that is not amenable to national appropriation? The answer has to be in the negative. U/a 6 of the OST, states are also responsible for the activities carried on by non-governmental entities. In order to regularize private activities, states have to authorize or permit such actions through issuing of licenses. Hence, it logically follows that if a state itself lacks the power to appropriate outer space, it cannot authorize any non-governmental entity to do the same.[37]

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[25] Morris Cohen as cited in V.Pop(2008) at 59

[26]F.Tronchetti(2009) at 199

[27]*Traveauxpréparatoires* of the outer space treaty as cited in V.Pop at 643

[28]F. Tronchetti (2009) at 29

[29] Ibid

[30]S.Gorove (1968) at 351

[31] Ibid

[32]F.Tronchetti (2009) at 30;Also see V.Pop(2008) at 64

[33] Alan Wesser and Douglas Jobes(2008) at 5

[34] Ibid

[35]F.Tronchetti (2009) at 199

[36]V.Pop (2008) at 65

[37]P.M. Sterns & L.I. Tennen, *Privateering and Profiteering on the Moon and Other Celestial Bodies: Debunking the Myth of Property Rights in Space*, in Proceeding of the Forty-Fifth Colloquium on the Law of Outer Space (2002), p. 60 as cited in F.Tronchetti at 30, 200-201 and V.Pop at 64

Another argument that crops up is whether non-appropriation extends to the natural resources on the moon. These are movable properties and can be brought back to earth unlike landed immovable property rights in outer space. Firstly, it is amply clear that prohibition would cover acquisition of any part of the moon and not the moon as a whole because any contrary explanation would negate the purpose of the non-appropriation provision.[38] This would entail that even the movable resources can come under the ambit of Article II of OST and Article 4 of the Moon Agreement. Distinction has been drawn between appropriation of exhaustible resources and non-exhaustible resources, non-exhaustive resources being subjected to appropriation as there is no point in stifling its utilization.[39] At the same time, the treaty does not seem to acknowledge national acquisition of exhaustible spatial resources unless it is required for scientific investigation.[40] Also, giving effect to acquisition of such resources would be contrary to the principle of freedom of exploration and use mentioned earlier. In general, the treaty does not make any distinction between outer space and the natural resources contained in it.[41] Hence the application of the 'non-appropriation' principle has to be understood both in respect to the Moon as a whole and any portion thereof, whether movable or immovable.

It is fully recognized that landed property rights need state endorsement. Property rights in absence of sovereignty cannot subsist. A *de facto* appropriation may occur but in order to infuse it with legal validity, a superior authority has to enforce or recognize the existence of such a right.[42] Short of any measure to abrogate Article II, individual appropriation of outer space including properties on the Moon is illegal and without merit. In light of this, it would be prudent to consider a few claims by individuals on extraterrestrial properties.

### 1.3 The Man Who Sold the Moon

On July 20, 1969 the Apollo 11 mission landed on the Moon. After forty years, the Moon seems to have been claimed by a Nevada entrepreneur who says he is also the interim president of the World's first galactic Government. Dennis Hope registered his claim in 1980 and since nobody responded he deems his interests as secured.[43]He then decided to divide the visible side of the moon in parcels and started selling them. As a founder of the website *lunarembassy.com*, he has currently sold title deeds of property on the Moon to over 3 million people. Buoyed by its success, he has also initiated the selling of landed properties on Mars, Jupiter and other celestial bodies.[44]The natural question that arises is-*is this valid?* It is simply not. Hope just does not have any legal backing over his claims and unless steps are taken to stop his enterprise now, it would be too late to make amends later.

Firstly, contrary to Dennis Hope's assertions, he is not the first person to lay a claim on the Moon. It goes back centuries ago, when Fredrick II gave a German man's ancestors the title to the Moon in exchange for some assistance.[45] Secondly, Hope bases his contentions on the 'loophole theory' that stipulates the absence of direct prohibition of individual appropriation under Article 2 OST. The Moon Agreement covers this aspect more comprehensively. While Article 11 (2) simply restates the text of Article II of the Outer Space Treaty, Article 11 (3) goes much further by stating that neither the surface nor the subsurface of the Moon, nor any part thereof or natural resources in place, shall become property of any subject, both of public and private nature.[46]It is beyond doubt that Moon Agreement precludes any hint of private ownership. However, Hope has taken refuge of the often cited weakness of the Moon Agreement-*in its lack of enforceability.* But this should not lead one to believe that Article II does not in any way prohibit non-national appropriation. As has been expansively discussed before, through a variety of cogent legal reasoning, it can be definitively stated that National appropriation u/a II OST also includes individual

[38] S.Gorove (1969) at 350

[39] Ibid at 351

[40] Article I of OST and Article 6 of Moon Agreement both state "*There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies,...* "

[41] F.Tronchetti(2009) at 32

[42] V.Pop(2008) at 66; Also see F.Tronchetti(2009) at 199

[43] Victoria Jaggard, *APOLLO 11 AT 40: Who Owns the Moon?* Available online at http://news.nationalgeographic.com/news/2009/07/090720-apollo-11-who-owns-moon.html last accessed on 18.05.2010

[44] Ibid; also see F.Tronchetti(2009) at 204

[45] Ed Vogel, *Property sales out of this world,* available online at http://www.mindfully.org/Reform/2003/Dennis-Hope-Lunar29sep03.htm last accessed on 18.05.2010

[46] See Article 11(2) & 11 (3) of the Moon Agreement

appropriation. Thus Hope's claims falter on the steps of the Outer Space Treaty itself and there is no need for justification under the Moon Agreement.

Thirdly, Dennis Hope has registered his claim alongwith a lunar constitution in the US Governmental office for claim registers, San Francisco county seat.[47]He also copyrighted his work with the US copyright registry office. His contention was based on the fact that since Americans were the first to successfully walk on the Moon, USA had legitimate ownership rights over it and he has therefore acquired a valid authority to exercise his rights through the process of registration.[48] This contention can be simply ignored because as discussed earlier, Moon falls in the domain of *res communis* and not *res nullis*. No country including USA could have established ownership rights on the moon. Then, it is clear from *opinion juris* that US never intended to appropriate any part of the Moon through its lunar mission.[49]

Fourthly, a mere claim does not confer ownership right. The intention to possess or *animus possidendi* has to be accompanied by an act of physical nature giving effect to the intention to take the thing or *corpus possidendi*.[50] However, Dennis Hope in a bid to never give up is considering a space craft project in the future to transfer the Official Lunar Property Registry Archival Disk to the lunar surface for storage.[51] Doing this, he would be able to establish the element of *corpus possidendi*, but other illegalities would kick in mainly the non-appropriation principle u/a II OST. Fifthly, Hope relies on the silence of the authorities-the United Nations, the Russian and US governments-as tacit acceptance of his claim. However, the absence of a protest would be relevant in the formation of a title only when such protest is expected to be forthcoming.[52] Here, neither authorities were obligated to respond to such claim 'simply because such claim had no foundation in law' being prohibited by Art II of the OST.[53] Sixthly, it has to be noted that Lunar Embassy is on its way to form its own autonomous lunar government.[54] The downside of this is that now he gets to claim ownership rights not as an individual but as a state. Since this new state is neither part of UN or the OST, it is not obligated to follow the mandates of international law or respect the provisions of OST even when such provision has acquired the dimensions of customary international law. In this respect, Lauterpacht says "If the individual or corporation which has made the acquisition requires protection, he or it must either declare a new State to be in existence and ask for its recognition by the Powers or must ask an existing State to acknowledge the acquisition as having been made on its behalf".[55] Hence for Hope's government to have any chance at undertaking all such activities it wishes to indulge in, such a government has to be either recognized by the major space faring nations or the United Nations.

Finally, Hope also relies on the fact that the effected registration has been undertaken as per US national laws and consequently, such claim cannot be vitiated by applying international laws. Few things need to be mentioned here. The prohibition of national appropriation excludes any attempt at justifying such an appropriation through National laws. The rationale is simple-if every country is allowed to circumvent an internationally accepted norm through application of its domestic legislations, Article II would be rendered

[47]Carol Lloyd, *Lunafornia Dreamin*, Spaced out available online at http://www.flatrock.org.nz/topics/flying/solar_sail.htm last accessed on 18.05.2010; Also see F.Tronchetti(2009) at 204

[48] V.Pop, Lunar real estate: Buyer Beware!, available online at http://www.spacefuture.com/archive/lunar_real_estate_buyer_beware.shtml last accessed on 18.052010

[49] Sec 8 of the Law on the implantation of US clearly contradicts Hope's claims by stating that the act of planting the flag on Moon must not be construed as an act of appropriation. *supra*

[50]See supra n.44 at 205; It is pertinent to note that a claim was made by the Masai tribe that they own all the cows in the world by divine command. Obviously, an intention in itself cannot be the ground to possess something. Therefore, Hope cannot get a right over the moon just because he intends to, he has to undertake activities towards effecting the possession.

[51] Ibid

[52] Y.Z. Blum, *Historic titles in international law*, The Hague, (1965), pp. 99–100, 130–31 as cited in F.Troncheti (2009) at 206

[53]F.Tronchetti(2009) at 206

[54] He has sent notices on behalf of his Government to other nations asking their government to respect the territorial rights of his government on the Moon. He is also trying to negotiate with the IMF to give recognition to his Governments currency, Delta; Victoria Jaggard, *APOLLO 11 AT 40: Who Owns the Moon?* Supra n 43

[55]Lauterpacht, (1955)pp. 544–54 cited in V.Pop (2008) at 65

redundant. The statement by the Board of Directors of the IISL,2004 is relevant in this regard:

*"The prohibition of national appropriation includes appropriation by non-governmental entities, since that would be a national activity. The prohibition of national appropriation also precludes the application of any national legislation on a territorial basis to validate a 'private' claim. Hence, it is not sufficient for sellers of lunar deeds to point to national law, or silence of the national authorities to justify their ostensible claims. The sellers of such deeds are unable to acquire legal title to their claims. Accordingly, the deeds they sell have no legal value or significance, and convey no recognized rights whatsoever..."*[56]

The statement also provides that in order to comply with their obligations under Articles II and VI of the OST, state parties are duty bound to ensure that any legal transaction regarding claims to property rights on Moon and other celestial bodies is devoid of any legal significance under their municipal laws and when such instances of contravention crop up, the states will have to take action under their municipal laws.[57] This standing has elaborately covered the implications of such acts as carried on by Lunar Embassy. Therefore, The US government is under an obligation to prevent any such activity in order to protect potential buyers from fraud and also to secure the interests of private entrepreneurs interested in lunar exploitation in the future.[58] If no such action is taken now, investors would be shy of doling out money for future ventures on Moon for fear of lawsuits by territorial claimants.

**1.4 Establishment of an Inter-Governmental Body**

Absence of sovereign rights in space must not deter the private entrepreneurs who wish to be part of projects in Outer space and the Moon. In fact, sufficient protocols exist under the current regime that gives governments and individuals sufficient power of jurisdiction to make sure that the activity ultimately churns out profit. "Lack of sovereignty will not deter future investments and space ventures that are likely to be carried out"[59]. There is a limited set of property rights in space that confers control over the space objects and facilities to the concerned parties as provided by the treaties. Article VIII of the Outer Space treaty recognizes the rights of the state on whose registry the space object is registered, of jurisdiction and control over all the aspects of such object as well as the personnel on board and in the vicinity of such object. Thus Article VIII grants a quasi-territorial jurisdiction that pertains to ownership rights on "objects landed or constructed on a celestial body, and of their component parts, [and such ownership] is not affected by their presence in outer space or on a celestial body or by their return to the Earth".[60] Also Article 9 of the Moon Agreement upholds the right of states to establish manned or unmanned space stations on Moon and Article 12 gives them the right of ownership over space vehicles, facilities, installations etc. Thus, it is clear that the rights over such artificial structures constructed by state or private individuals are secured even though there may not be a right on the land over which such facilities are constructed. A corporation or an individual involves itself in any activity for one and one motive only-*profit.*[61] The kind of business they would associate with on the moon-be it mining, extraction of water or any other profit motivated venture- will not be affected even slightly due to the absence of sovereignty rights when a proper institutionalized mechanism is present that regulates the activities of such actors and coordinates with Governments to remove all hindrances in exploitation of lunar resources. It is only natural that once access and exploitation on the moon becomes feasible, Governments and corporations will come to an understanding and find a way to secure the interests of all parties. Arguments for vested interests in lunar property are proposed only with respect to businesses dealing with allocation of landed ownership rights, that dupe unsuspecting people into buying deeds devoid of legal validity.[62]

Even as Article 11(2) prohibits national appropriation and we have conclusively discussed that such prohibition also includes individual appropriation, V.Pop mentions that nowhere does it prohibit appropriation by an international Government. Even Dembling (1997:35) considers "some form of international administration over celestial bodies

[56]See the statement by the Board of Directors, available online at http://www.iislweb.org/docs/IISL_Outer_Space_Treaty_Statement.pdf last accessed on 18.05.2010

[57]Ibid

[58]F.Tronchetti (2009) at 202,203

[59] F.G Von der Dank (2005) at 1

[60] See Article VIII OST

[61] F.G. Von der Dunk(2005) at 7; he argues that corporations exist for the sole purpose of making profits. No company would need outright ownership of space territory or of the lnad on the moon for pursuing business in the near future.

[62] Van der Dunk (2005) at 1,2, 6-9

might be adopted"[63]. Wilfred Jenks (1965:201) believes that territory "might be appropriated by the United Nations acting on behalf of the world community as a whole", and that such appropriation is the only type not forbidden by the 1963 Declaration.[64] However, Article 11 (3) of the Moon Agreement explicitly alludes to International intergovernmental organizations as not having ownership rights over the surface, subsurface or any part of the Moon. In such case, even the UN is devoid of any right to possess any part of the Moon. But, the concluding portion of 11(3) also states that the 'foregoing provisions are without prejudice to the International regime' envisaged under the Article. Therefore, the restriction under article 11 can be circumvented once it is established that creation of such an inter-governmental organization and vesting in it the rights over the landed properties and lunar resources would be actually beneficial and would further the purpose for which the establishment of the regime is visualized.[65] The role of such an inter-governmental organization could be played by the United Nations, as a body that acts as the trustee of public property in Outer Space and also manages the exploitation of *in situ* lunar resources. Such a global body will obviously have more rights than what the present United Nations holds; it will be able to allocate and manage landed properties for use, exploration and extraction of resources, it will have the power to oversee activities conducted in extraterrestrial realms and stipulate the rights and liabilities of parties conducting such activities, and taking into account the "active character of the trust could privatize such extraterrestrial realms to prevent appropriation"[66]. Such an inter-governmental body could in fact serve the functioning and hold the duties and obligations of the regime under Article 11 (5) of the Moon Agreement. The endowment of obligations of such magnanimous proportions will necessitate drastic modifications of the UN charter in order to transform it into a sort of World Government.[67]

The only hurdle in realizing such an extended role of the UN is that the Moon Agreement makes it obligatory on only the state parties to the Agreement to elaborate such a regime[68] and considering the number of ratifications to the Agreement, the UN will have no authority to form such a body. There will however, be no such issue under the OST and the intergovernmental body will be free to regulate property rights u/a II. Therefore, it is proposed that an amendment to the Moon Agreement be carried out to give such powers to the UN. This would inculcate in the Agreement the much needed predictability with respect to governing property rights on Moon.

## PART 2

## EXPLOITATION AND USE OF MOVABLE RESOURCES ON THE MOON

### 2.1 Resource exploitation and use under the Outer Space Treaty

The Outer Space Treaty of 1967 does not contain any express provision regarding the exploitation of resources on the moon and other celestial bodies. So we need to see whether there are any such implicit provisions.

A group of scholars like Stephen Gorove[69] and Aldo Armando Cocca[70] maintain that the 'non-appropriation' principle in the Outer Space Treaty discussed earlier in this paper also applies to the exploitation of natural resources on the moon and other celestial bodies. But there are another group of scholars who hold a contrasting position. They say that as the freedom of exploration and use of the high seas entitle the use of the natural resources in it, so too should be the case for the moon and other celestial bodies. Prominent authors in this regard are Bin Cheng[71] and Goedhuis[72].

The opinions of the second group of authors are found by us to be stronger in this regard. While it is true that the moon and other celestial bodies are not subject to claims of appropriation by nations or private operators, it is similarly true that it is open to freedom and exploration by all. From this it can be concluded that the States are entitled to use and exploit resources from outer space, moon and other celestial bodies as long as that does not amount to permanent claims of appropriation or exercise of

[63] As cited in V Pop(2008) at 71
[64] Ibid at 71
[65] Ibid
[66] Ibid at 72
[67] See V.Pop (2008) at 72
[68] Article 11(5) of the Moon Agreement starts with "States Parties to this Agreement hereby undertake to establish an international regime..."

[69] S. Gorove (1977) at p. 69.
[70] *Report of the 54th Conference of the International Law Association* (1970) at p. 434.
[71] B. Cheng (1996) at p. 233-34.
[72] D. Goedhius (1981) at p. 219.

sovereignty upon the areas from which such resources are exploited. Let us draw an analogy to the freedom of exploration of the high seas in this regard. It is considered as *res communis* but that does not prevent anybody from going out and exploiting its natural resources, such as the fish, as long as he does not preclude others from exercising similar rights of freedom and exploration. Thus a complete prohibition of use and exploitation of natural resources under the 1967 Treaty can be ruled out.

The next question that can be analysed is that whether such exploitation is limited to scientific use only or does it also extend to non-scientific use. The collecting of lunar samples and rocks as part of the 'freedom of scientific investigation of the outer space' as envisaged by the Outer Space Treaty has been the cause of some debate. However, if such samples are used for a strictly scientific purpose, there can be no cause for much disagreement that it is legally allowed under the Outer Space Treaty. The international community has not objected when space missions has collected and brought back samples from outer space and the moon[73]. However, we tend to disagree with the view that such exploitation of natural resources in the space, moon or other celestial bodies can be allowed for non-scientific purposes as well. The scheme of the Outer Space Treaty is not consistent with such non-scientific use of outer space resources. This is evident from principles laid down in Articles I (requiring States to carry out the exploration and use of outer space for the benefit and in the interests of all countries), III (to carry on their space activities in accordance with international law) and IX of the Outer Space Treaty (to avoid potentially harmful interference with the activities of other States.

To understand the debate in this regard, we must now look to the provisions of the Moon Agreement as it addresses the issue of exploitation of resources on the moon much more clearly.

## 2.2 Resource exploitation and use under the Moon Agreement

The Moon Agreement, 1979, has been ratified by only thirteen nations till date[74] and is thus not a widely accepted treaty. However, that does not render its provisions to be a major point of reference while framing our arguments on the exploitation of lunar resources. As we have seen before, the Moon Agreement is governed by the principle of Common Heritage of Mankind (CHM) {See Article 11 (1)}, and how the CHM principle is to be applied to the moon is contained in the provisions of the treaty itself and must not be construed from other sources[75], including the United Nations Convention on Law of the Sea (UNCLOS), 1982, which has its own similarities and dissimilarities to the Moon Agreement in this regard.

The Moon Agreement has much more wider provisions addressing the issue of exploration of the moon and exploitation of resources thereon in comparison to the Outer Space Treaty.

Article 6 gives the State parties the right to remove minerals and other samples from the surface and keep the same at their own disposal for 'scientific purposes'. Thus removal of these samples for non-scientific purposes is incompatible with Article 6 as well as the principle of CHM, as the lunar resources represent the 'common property of all mankind'.

Article 8 states that subject to the provisions of the Agreement the State parties in pursuance of their freedom of exploration and use of the moon, may land their space objects on the Moon and place their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the Moon, as long as such does not interfere with the other State parties' rights of freedom of exploration and use of the moon.

Article 9 states that State parties may establish manned and unmanned stations on any part of the surface of the moon as long as that does not impede any of the other State parties' valid rights. The station must not take up more area than is needed for its purposes and shall immediately inform the Secretary-General of the United Nations about the setting up of such lunar stations.

This can be further clarified by Article 11(3) of the Moon Agreement which says that no part of surface or subsurface or natural resources thereof of the moon shall become property of any State, intergovernmental or nongovernmental organization or any natural person. The placement of equipment or

[73]F.Tronchetti (2009) at p. 224.

[74]These countries are Australia, Austria, Belgium, Chile, Kazakhstan, Lebanon, Mexico, Morocco, Netherlands, Pakistan, Peru, Philippines, and Uruguay, have ratified it. France, Guatemala, India and Romania have signed but have not ratified it.

[75]See Article 11 (1) of Moon Agreement, 1979.

personnel or structures connected to surface or the subsurface of the moon shall not create any such right of appropriation in the nature of property rights.

Thus we can safely conclude that the State parties are free to pursue scientific investigation of the moon and its natural resources in furtherance of their right of freedom of exploration and use of the moon unless such exercise impedes the similar right of any other State party or amounts to a claim of property rights or sovereignty over any part of the moon. This is in concurrence with the CHM regime envisaged by the Moon Agreement in Article 11, with particular emphasis on Article 11(5), a detailed discussion of which will come later.

However, there are two very bothering questions about which a debate still rages. These are -1) What is the legal status of resources that have been removed from the surface of the moon? 2) Is there a moratorium on the exploitation of lunar resources until and unless an international regime envisaged by Article 11 is established? We will now analyse these questions.

**2.3 Legal Status of Resources Removed from the Surface of the Moon**

The source of the argument regarding this are the words 'in place' in Article 11 (3) of the Moon Agreement, which is reproduced below-

'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*'. (Emphasis ours).

Some scholars, including eminent ones like Carl Q. Christol have opined[76] that this term seeks to legalize the removal of minerals and other natural resources from the surface of the moon as they are not subject to property rights as long as they are 'in place', i.e., situated on the surface of the moon and thus once removed they become the property of the remover.

We are, however, unable to agree with this opinion as it completely defeats the purpose of the CHM regime as envisaged in Article 11(5) and which shall be read to be not in conflict with Article 11(3) as is clear from the part we have emphasized. It is not consistent with the principle of CHM if lunar resources, which are the 'property of all mankind' and should be used for the 'benefit of all mankind'[77], can become private property only if they are removed from the surface or subsurface of the moon. Such interpretation will favour the developed nations and private commercial organizations who have the capability to remove the resources from the moon for their own private interests, while completely excluding the developing nations from the benefits of usage of the natural lunar resources. Thus it is totally inconsistent with the principle of CHM which is slated to govern the moon and the exploitation of its resources[78].

Also, Article 11(5) obligates the states that they should together form an 'international regime' which will govern the exploitation of such resources as '*they are about to become feasible*'. So, has such exploitation of natural lunar resources become feasible? As the answer still seems to be 'no', most developed nations hold the viewpoint that the international regime cannot be established unless such feasibility is achieved widely[79], and as a result the principles of CHM to be implemented by the regime does not come into play till then. However, such an interpretation completely defeats the purpose of CHM and Article 11 as it will allow uninhibited exploitation and appropriation of natural resources for private benefits of the very few states which have very advanced technology while completely excluding the interests of the developing nations without such technology. This could not have been the intention of the drafters of the Agreement. Thus we are led to disagree with the opinion that private property rights can be asserted over natural lunar resources once they are removed.

This debate, however, stresses the need for establishment of an international regime as quickly as possible to settle the dust and to govern the exploitation of natural resources with adherence to the principles of CHM. The United Nations can act as an international regulatory body in this purpose with such amendments in its Charter or a 'international government' can be formed to address these issues as we have discussed earlier in this paper with regard to the principle of non-appropriation in the Outer Space

[76] C.Q. Christol (1982) at p. 262-63.

[77] See Article 4 of the Moon Agreement.

[78] See Article 11 of the Moon Agreement.

[79] H.L. Van Traa-Engelman (1996) at p. 38.

Treaty, or the states themselves can opt for some other mechanism of forming such international regime. Whatever is done, needs to be done quickly in this regard.

This brings us to our second question, i.e., whether there is a de facto moratorium on the exploitation of lunar resources under Article 11 of the Moon Agreement until such an international regime is established.

## 2.4 The issue of the moratorium on exploitation of lunar resources

This issue also stems from different interpretations of Article 11(5) of the Moon Agreement that we have seen earlier[80]. It has been a subject of contention whether Article 11, especially Clause 5 of the same, puts a de facto moratorium on the exploitation of natural lunar resources unless the proposed international legal regime is established. Some scholars like Peter Haanappel and Milton. L. Smith have propounded that such a moratorium is not present in the Moon Agreement. According to Haanappel, exploitation of resources can take place both before and after the establishment of the international regime-only, in the latter case it would be governed by an international legal regime[81]. His words are echoed by Milton L. Smith[82].

We agree with them to the extent that there is no *de facto* moratorium or express moratorium that can be read into in any of the clauses of Article 11. It should be amply clear that the scope of Article 6(2), which lays down the State parties' rights of collecting samples for scientific investigation in furtherance of their right of freedom and exploration, is wide enough not to come under any such moratorium as such activities are expressly authorized by the Moon Agreement[83].

But what about the other activities relating to natural resources, i.e., the appropriation of those resources for non-scientific purposes? Some authors have stressed that there is no moratorium in that regard as well and the Agreement does not preclude the states or other organizations from exploiting those resources as soon as economically feasible[84]. But we disagree in this regard after a careful study of Article 11(7) and Article 11(8).

The scientific use of lunar resources is governed by Article 6(2) of the Moon Agreement as we have seen before. Article 11(8) states that '*all the activities with respect to natural resources of the moon*' is to governed in accordance with the provisions of Article 11(7), which lays down the chief purposes of the international regime envisaged in the Agreement. Thus Article 11(8) is quite widely worded and must be interpreted in that sense, and thus all the activities regarding the exploitation of natural lunar resources is to be in harmony with the purposes of the international legal regime. This is not possible unless an international legal regime is actually established. Hence, it is a natural conclusion that unless for activities expressly authorized by the Agreement, such as collection of samples for scientific purposes under Article 6(2), all other kinds of appropriation and exploitation of natural lunar resources is impliedly prohibited unless there is actually an international legal regime in place.

Bin Cheng also identifies this difficulty in the exploitation of lunar resources in absence of an international legal regime and thus argues for an altogether separate treaty through which the international regime can be quickly established[85]. While that certainly is a good way out of this difficulty, other measures, like the United Nations itself working as an international regulatory body with necessary modifications to its Charter, or the formation of an appropriate 'international government' through negotiations between different states can also be envisaged and we have devoted a fair bit of space in this paper to such measures that urgently need to be adopted to sort out all these contentious issues.

Presence of such an implied moratorium until the formation of the international legal regime is supported by the principles of Common Heritage of Mankind as well. It is the very basic tenet of CHM, which is said to govern the Moon Agreement under Art. 11(1), that all the benefits from exploitation of resources are to be shared between all the countries and such benefit-sharing is to be carried out under supervision of an international authority. We can find this expressed in the following words of Article 4(1) of the Agreement-

[80] See the conflicting interpretations of Art. 11(5) at p. 11 of this paper.
[81] P. Haanappel (1980) at p. 30 as cited in V. Pop (2008) at p. 146.
[82] M.L. Smith (1988) at p. 47 as cited in V. Pop (2008) at p. 146.
[83] Bin Cheng (1996) at p. 376.
[84] Bockstiegel (1980) at p. 214.
[85] B. Cheng (1996) at p. 377.

'The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development'.

It is also clear from Article 11(1) that CHM, which governs this Agreement, finds its particular expression in Article 11(5)[86] which obligates the State parties to undertake to establish an international regime to govern the exploitation of natural resources on moon, including the addressing of all the procedural issues. Thus it is clear that the main governing principle of the Agreement, the CHM, would be defeated if non-scientific appropriation and exploitation of resources is allowed by technologically superior nations and organizations to the total exclusion of the not-so-advanced nations in the absence of such an international regime.

Thus on all these grounds, we can conclude that unless and until there is an international regime in place, there is bound to be an implied moratorium on the exploitation of the lunar resources, at least according to the principles of the Moon Agreement. We quote Hanneke van Traa-Engelman's opinion in the support of our argument here-
"Though there is *no explicit prohibition* to exploit the lunar resources before the establishment of an international regime, yet the *CHM provisions combined with the expressed impossibility to obtain property rights outside an international regime* will

## CONCLUSION

Article II of the OST covers both appropriations by nation states as well as private individuals. Even though the Moon Agreement may suffer from lack of ratification, the OST includes the Moon and other celestial bodies and therefore can be extended in its application on the moon. Considering the type of space activities profit seekers will want to engage in the near future, the prohibition on appropriation by Article II does not obstruct the interests of such entrepreneurs to the extent it has been made to believe. The abrogation of non-appropriation principle will only benefit the businesses that sell out parcels of land on Moon without any authority or legal backing. Since these businesses are not recognized by the present legal regime, there should be no hesitation in viewing them as what they are- fraud. When unsuspecting people are buying extraterrestrial real estate they are putting their own money at risk and also jeopardizing any chance of future exploitation of moon carried on under a functioning international regime. However, neither Article II of OST nor ART 11(2) of the Moon Agreement prevents an international governmental body from appropriating any portion of space including the Moon and holding it as a trust for the people it represents. It would guide all spatial application of property rights and will be empowered to resolve conflicts regarding the same. Such a body, although stifled in its formation under the Moon treaty will nevertheless be able to function under the OST and will instill predictability and clarity regarding the application of laws related to property rights in Outer Space. The same inter-governmental body can function as the international regime envisaged u/a 11(5) of the Moon Agreement, although an amendment to the Article is necessary for that to happen. The entry of United Nations in the playing field couple with the efficiency and effectiveness of such a body would no doubt ensure greater participation to the Agreement.

Coming to the issue of use and exploitation of movable natural resources on the surface and subsurface of the moon, we can safely conclude that neither the OST nor the Moon Agreement precludes such use and exploitation to the extent of scientific investigation as that is in furtherance of the states' rights of freedom of use and exploration. However, so far as the question of removal of such resources for non-scientific purposes is concerned, there are lot of issues and related debates. We have taken the view that such appropriation for non-scientific purposes is not permissible under the Moon Agreement as it is incompatible with both the general principles of CHM as well as the provisions of the Agreement. Article 11(8) provides that all activity relating to exploitation of natural lunar resources should be carried out in accordance with the purposes of the international regime envisaged under Article 11(5), and until that regime is established there is an implied moratorium on such private appropriation of the lunar resources. Also, the removal of lunar resources from the surface or subsurface of the moon does not render them the private property of the remover under Article 11(3) of the Moon Agreement, as such an interpretation is wholly inconsistent with the other provisions of the Agreement and the principle of CHM. Anyway, as we have stressed time and time again, it is of utmost importance that the necessary legal steps and modifications be undertaken to establish such an international regime as quickly as possible to ensure equitable exploitation of lunar resources. Such a step should encourage ratification of the Moon Agreement among the other countries

[86] See Article 11(1) of the Moon Agreement.

and help to remove its widespread unacceptability among most nations, thus ultimately moving towards a uniform and acceptable legal regime governing the use and exploitation of natural resources on moon, movable and immovable.

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