POLICY GLITCHES IN SPACE LAW FOR NEW-SPACE ACTORS AND WAY AHEAD

Nidhi Dixit, Campus Law Center, University of Delhi

ABSTRACT

The recent launch of Vikram-S rocket by an Indian Space start-up has again raised questions over the unwarranted advent of non-state entities in space in the absence of a proper space law in force. States has been violating the space law to exploit the it by circumventing the provisions of Open Space Treaty which was framed by keeping the space in mind. OST challenges the appropriation of any territory of space but it says nothing about the mining of the space by the private companies which is an alarming issue in the present scenario. Countries including USA and Luxembourg has given a wide power to non-state entities to enter in to the space and own the minerals extracted from the space. MOON agreement is one of the feasible options at this hour by the reason of it ambit covering the non-state entities too but for this very reason its ratification rate is in the bottoms. The provisions of Artemis accords of NASA are equally alarming and violative of OST. The exception provided in Article XI of OST from exposition of the space activities of state, on the grounds of feasibility and practicality has been proved to be a leeway for the states to skip this obligation quite easily. State debris is becoming a huge problem for the space, entry of non-state entities is going to be aggravate this threat. Terms mentioned in OST are too vague to take space debris in its garb. To make the space law relevant the need of the hour is to make certain provisional changes in the OST, so to make it living in the new normal i.e; the entry of new state entities in the space.

With the Launch of Vikram- S rocket by Skyroot Aerospace[1], an India based space start-up, the advent of non-state entities in the space is again in the picture. With the technological advancement this increase in the footfalls of private entities in space which aren't covered by any international laws or treaties leaves us with certain questions.

Space exploration has been a chasing dream for the nations of the world. Keeping the same on view United Nations formulated a treaty to regulate the exploration of the outer space and named it as Outer space treaty[2]. This treaty has been a base for the formulation of international space law. With time the efforts to explore the outer space started pacing with the advancement of technology and with which the inadequacy of the treaty started surfacing.

In the North Sea Continental Shelf Case[3], it was held that legal principles that are incorporated in Treaties, such as the "common interest" principle, become customary international law by virtue of Article 38 of the 1969 Vienna Convention on the Law of Treaties. Article 1(1) of the Outer Space Treaty, which designates that the use of space technology is achieved under the "common interest" principle for the common good of humanity, is *just cogens*. Obligations arising from jus cogens are considered to be applicable *erga omnes* imposing a duty of care to the world at large in the era of such technology, on States using space technology

Violation of International Space law

The exploitation of outer space can take many forms, from selling of plots on the moon to the appropriation of asteroids. To this day, the most realistic and most funded exploitation of outer space comes in the form of mining minerals and collecting of water from asteroids in the asteroid belt or other celestial bodies. The non-state entities have entered the race and there are presently four companies which are taking part in such activities and all four are registered in USA. The entry of non-state entities poses a huge threat to the space environment as these aren't covered by the Outer Space Treaty.

Recently NASA has awarded three private space companies a joint-contract worth $967m to complete a lunar mission by 2024, in what was celebrated as "the last piece that America needs in order to get to the moon" [4]by NASA administrator Jim Brindestine, to resupply for

[1] INDIA LAUNCHES FIRST PRIVATELY MADE ROCKET https://www.livemint.com/technology/tech-news/skyroot-aerospace-successfully-launches-india-s-first-private-rocket-11668755832126.html
[2] THE OUTER STATE TREATY, 1967
[3] ICJ Rep 3, ICGJ 150 (ICJ 1969)
[4] The Telegraph, 2020

international space station, so to exploit the resources on moon. It is an indirect approach by NASA to achieve its goals through private entities as it itself is prohibited by President's policy. This is a step to circumvent the obligation which USA has under OST. Article II of the UN OST declared that: "Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means"[5] This provision clearly lacks the sight when it comes to exploration of space for commercial / financial benefits and property claims by commercial enterprises.

However, Article VI of the UN OST asserts that: "States shall be responsible for national space activities whether carried out by governmental or non-governmental entities"[6] This provision seems a rescue to regulate the private actors which will come under the head of non-governmental entities. In the opinion of the world scholars this provision puts a liability on the state for the acts of its non-governmental actions in space. But to nullify the effect of this very clause US came up with Commercial Space Launch Competitiveness Act, 2015 enabling its citizens and so including its space firms to privately "possess, own, transport, use, and sell the resources" they obtain in outer space, whilst making careful consideration to deny national sovereign claims over such materials, it states "A US citizen engaged in commercial recovery of an asteroid resource or a space resource shall be entitled to any asteroid resource or space resource obtained."[7]

Taking advantage of the loophole present in OST, USA through NASA with private entities appropriate itself the right to own the resources extracted from the space without owning the whole asteroid which is prohibited under OST. Proponents argue that since no sovereign nation is actually asserting rights over an area of outer space, instead, it is only a private unit claiming rights over singular resources, the treaty norm, "national appropriation by claim of sovereignty", is not being violated. [8]This clever step is a cloak of adherence to OST covering the circumvention of its spirit as in the words of renowned space lawyer, Frans von der Dunk, "In terms of the law, yes it's true that no country can claim any part of outer space as national territory — but that doesn't mean private industry can't mine resources."[9]

[5] Article II, OST
[6] Article VI, OST
[7] Sec. 51303 Asteroid resource and space resource rights
[8] If space is 'the province of mankind', who owns its resources? An examination of the potential of space mining and its legal implications.
[9] Statement by Frans von der Dunk to The Inverse, 'Luxembourg's Asteroid Mining is Legal Says Space Law Expert', 1 August 2017

However, USA isn't alone in capitalising this loophole, European country Luxembourg is running parallelly by enacting an analogous law [10]as USA's dealing with space exploration providing rights to private entities to exploit space by keeping the extracts of mining.

Other countries' space agencies like of China, Russia are following the same path as USA to explore the space which is actually exploiting it. NASA and ESA are in talks to proceed with extraction missions from lunar surface since a long time making a complete mockery of the principle of *res communis* on which the whole OST bases its foundation.

However, the MOON Agreement [11] addresses this "loophole" of the OST "by banning any ownership of any extra-terrestrial property by any organization or private person, unless that organization is international and governmental." But for this very obvious reason it has not been ratified by any of the leading space exploring nation.

ARTEMIS ACCORD BY NASA

For the lunar exploration NASA formulated Artemis accord signing which is a sine que non to participate in its lunar mission. This accord has been highly criticised by the scholars calling it a framework for US monopoly in space. This accord actually stands contradicting OST too specifically by its Section 11[12] i.e; "Deconfliction of Space Activities," according to which the countries subject to the agreements will support the development of safety zones, for example around a moon base or where mining activities occur. As per professor Hobe "Safety zones are specific areas, and it is precisely the acquisition of such areas that is, in fact, banned by the Outer Space Treaty."[13]

Orbital Surveillance

OST has no specific provision regulating the monitoring of space except Article XI[14], which requires states to: "Inform the Secretary-General of the United Nations as well as to the public and international scientific community, to the greatest extent feasible and practical, of the nature, conduct, locations and results of space activities" This provision leaves a huge leeway for the nations to escape this obligation under the cloak of "practicability and feasibility" which

[10] The Government of the Grand Duchy of Luxembourg, "Draft Law on The Exploration and Use of Space Resources", 2017
[11] MOON Agreement, 1979
[12] Section 11, Artemis Accords, 2020
[13] Do NASA's Lunar Exploration Rules Violate Space Law? By Alexander Stirn
https://www.scientificamerican.com/article/do-nasas-lunar-exploration-rules-violate-space-law/
[14] Article XI, OST

is left at the whims of the state. States can withhold vital information about their space activities on the basis that the dissemination of such information is neither 'feasible' nor 'practical' and can hide their intentions.

Space Debris

There are nearly 30,000 pieces of debris in the Earth's orbit [15]. Even being of few millimetres and centimetres the collision between these can be horrendous. The threat of collision doesn't merely pose the environmental hazards due to generation of humongous amount of debris but also geopolitical tensions between countries as already happened between USA and Russia[16] when their satellites collided with each other. With the advent of new state actors in the space increasing the number of satellites in the orbit exacerbates the risk even more. Article IX of the OST asserts that: "States shall pursue activities of outer space in a manner that avoids any harmful contamination or adverse environmental changes on Earth". The terms like "harmful contamination" and "adverse environmental changes" are too vague to take space debris in its ambit and hence giving the state and non-state actors a leeway to wash off their responsibility towards the debris created by their satellites.

Way Ahead

Some amendments and affirmative actions can be taken to make the OST and the international law in whole a living document per se.

Firstly, to survive, OST needs to go through a drastic reform so to take non-state entities under its garb. The present provisions of OST must be framed in a quite detailed manner so to put sufficient obligations and restrictions on the non-state entities in the similar way as has been put on states.

Secondly, to challenge the excessive mining over the resources extracted from space by the non-state entities, it is the need of the hour to do away with the factor of mere sovereignty and replace 'national appropriation by claim of sovereignty' to 'national appropriation by any way' as it'll include appropriation for profit making and for commercial purposes also.

Thirdly, International space summits and conferences like World satellite business can work effectively to discuss possible affirmative actions to challenge the exploitation of space.

[15] Pellegrino & Stang, 2016: 25
[16] Wang, 2010: 87-88

Discussions towards the ratification of the MOON agreement may prove to be successful irrespective of the whims of the nations against it. Something on the same lines has been recently witnessed at COP 27 in Egypt with the acceptance for a loss and damage fund.

Fourthly, there must be an annual ranking of the states, including their participation through non-state entities, to be published and if the rank is above a certain mark, the nation is to be put in a grey list so to cut its exploitative measures and donate certain amount of compensation in the fund which will go towards the development of the space technology in the developing countries to whom exploitation is being proved to be detrimental space being a *res communis*.

Fifthly, Amendments should be made in article XI of OST by removing "feasibility and practicality as exceptions, states are to be made bound to disclose their activities including that of their non-state entities. Exceptions must be given only in exceptional cases like national security or to prevent a harm to community. The state needs to disclose such circumstances and facts before the UN and the whole community before asking such an exception substituting it with evidences.

Sixthly, the state/ non-state actors are to be held accountable for the generation of space debris produced by their satellites. States should adopt a framework for debris management in the lines of U.S. by laying framework such as U.S. Government Orbital Debris Mitigation Standard Practices. Adhering to the guidelines laid down by Inter-Agency Space Debris Coordination Committee [17]for the management of the space debris can be a big help in reducing the same. The technologically advanced economies should proceed in a way to mutually decide the amount of debris to be removed by them within a specific period.

[17] IADC Space Debris Mitigation Guidelines, 2020