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Research Article

PROPERTY RIGHTS IN SPACE AND ANALYSIS OF INDIA'S FUTURE SPACE LAW

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Abstract

Ever since humans climbed down from the trees, they have looked up to the stars and the desire of exploration of the heavens above us only ever increased with the advancements in the field of science's. Launch of Artificial Satellite by the name of Sputnik by the USSR in 1957 ignited a space race between two rival superpowers i.e., USSR and United States.

This Space war led to many astonishing inventions and innovations which helped the humanity to put a man on the moon and gave a dream to look further and achieve the sky itself. In modern times, with further more advancements in the technological aspects of means on space travel, such as SpaceX building Starship to travel to mars and Japanese Space Agency extracting a sample from Asteroid, there is nothing which can stop humanity from touching the stars.

The question however in front of us is that when humanity do touch the stars (metaphor for celestial bodies) will it have the rights over it? Will we give them rights of ownership just because they have possession over it? The question is somewhat more complicated than it seems as the countries or companies who are reaching the skies, are investing huge amount of resources to achieve a certain mission but if they don't have any right over the celestial body, how will they carry on with their mission?

This research paper deals with the concept of property rights in space whether a country or company can own a part of it? Along with the legality of property rights in space, this paper also focuses on ethical conundrum that whether a country or company deserves to get rights in space and consequences of same. This paper further focuses on India's proposed Legislation "Space Activities Bill" and how will it help the private activities in the space.

Index Terms: Space, Exploration, Property, Ownership, Possession.

Research Methodology

This research is based on doctrinal approach. Doctrinal research is also known as traditional research. The traditional form of research is divided into different types such as analytical and descriptive method. This

research is based on already available information and authors have analysed those facts to make an evolution of this research. This research involves secondary data.

In this research the researcher mostly used books, articles, journals., etc

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INTRODUCTION

"I don't think the human race will survive the next thousand years, unless we spread into space. There are too many accidents that can befall life on a single planet. But I'm an optimist. We will reach out to the stars."

STEPHEN HAWKING[iii]

A quote from genius mind of Late Stephen Hawking clearly directs his opinion on the future of humanity as according to him, surviving a thousand year on Earth without a backup plan, might not be in the interest of the humanity as there are far too many variables which can trigger the mass extinction if not total extinction, such as Overpopulation, plague, asteroids, nuclear war, volcanic eruptions, global warming etc. Now we can talk about how we can reduce our carbon emission and plant more trees for combating climate change or take protective and preventive measures for tackling the issue of asteroids or comets. But the problem of overpopulation cannot be solved except for mass sterilization or mass genocide at unprecedented level, except for the humanity to become a space faring civilization.

Space exploration can provide resources as just our Moon i.e., 400,000 km away contains huge reserves of Helium-3 which can power our world for centuries[iv]and the space for people to live and thrive. Up until recently only states are considered to be actors in space exploration as the process of rocket launch or setting up space station is very complex, expensive in nature and technological advanced but the game is changing with SpaceX launching its shuttle mission[v] as well as re-usable rocket boosters[vi] which increases the efficiency of a rocket and brings down the cost of a launch.Along with SpaceX many more companies such as Blue Origin or Virgin Galactic are also gearing up to provide space tourism and exploration.

We need private individuals or companies to invest and take pro-active role in space related activities as it would bring in more competition which would lead to innovations as companies will be spending on research & development which in turn also increase the employment. Till now mostly states have been indulged in the activities of the space, but it has been stated that privatization leads to more efficiency as compared to the state run department[vii] and efficiency is the key to run an organization. As without efficiency, no private organization can run as one of the main and biggest motive of the private organizations are to earn profit which efficiency can ensure.

Private entities with efficiency desire stability to set up their business as we can see that instability drives a company or group of companies away from the sector or country itself as for ex, no company will work or invest in war torn country or where there is political instability or put up a huge investment in real estate when there is constant predictions of volcano eruptions or earthquake etc.

Just like mentioned above, there is lots of instability in the sector of space itself such as according to Outer Space Treaty[viii], which clearly stated that;

1) Outer Space
2) Moon
3) All other Celestial Bodies

Cannot be claimed by any nation as its sovereignty. As there were no private actors in the field of space back then, this treaty failed to mention the scope of this treaty non-state actors. But this treaty further bounds the state to be responsible for the actions of its non-governmental organizations and that such activities to be monitored closely by state authority[ix].This provision put private entity tightly under the scrutiny of governmental authorities as they need to get their mission verified from the state and they can be buried under bureaucracy.

1) RELEVANCY OF INTERNATIONAL TREATIES IN PROPERTY RIGHTS OVER SPACE

To regulate space laws at international level, we have many multi-lateral treaties and United Nations' conventions such as;

1) Outer Space Treaty 1968[x]
2) Astronaut Rescue Agreement 1967[xi]
3) The Liability Convention 1967[xii]
4) Registration Convention 1974[xiii]
5) The Moon agreement 1979[xiv]

As discussed above, Art 6[xv] of Outer Space Treaty prohibits any nation from owning a part of space or claiming sovereignty over it but it also leaves quite a loophole for private actors as it takes into consideration; the owning of property or claiming of sovereignty to state and leave the private actor's activities up to the responsibility of the state. There is nothing stopping a private company or individual to set up its base on moon or any celestial body as long as the company has support of the state.

International Treaties which formed the basis of Space law was Antarctica Treaty[xvi], as it was the law governing the space before the scope of Outer Space Treaty[xvii] as it was meant merely for prohibiting the states to use the Antarctic or Space for the purpose of militarization. That is the reason why the scope of private person owning a property was never discussed in any of the international treaties relating to space.

Even if we consider that private entities can still not own a celestial body or claim over it, but private actors are still free to build their space stations and cohabit in them and transport themselves far from reach of human societies and out of jurisdiction of national or international courts.

2) ECONOMIC IMPACT OF PROPERTY RIGHT IN SPACE

Property rights in economic growth criteria can be defined as the right of owner to use his asset for further production purposes or dispose of the asset or prohibit the use of such asset by any second person. Here economic aspect of impact of whether grant of property right should be given in space and what good it'll bring to the market, will be discussed. As Private Market are led by private people, it is basically run by two important factors such as: Risk&Profit, Both the factors are inter related to each other as higher the risk, higher is the profit but that is applicable only in certain areas and also limited to certain rare instances. Mostly businessmen or huge investment companies seek "certainty" before they invest their money in a project, as no one like to lose their money and it is very clear that International Space law is anything but Certain in this regard. As a situation like where a private entity are investing billions of dollars in a certain project, will likely ensure that there project won't be scraped off by some technical issue or loophole. As there are four main risks associated with non-granting of property rights in space.

First risk is that insecure property rights can demotivate the investor as they are not generally fruitful and they not always worth the risk or effort. Secondly insecure property rights can also bring along the costs to defend their property which will make the project more expensive and risky[xviii]. Third risk being that with

insecure property rights, there is lack of infrastructure in space which will increased the cost of transport of products from one place to another and such development cannot take place while insecure property rights exists. These all risks associated might bring a halt to space exploration by private entities.

3) ETHICAL CONUNDRUM

As discussed in previous arena, the insecure property rights tend to have negative effects on the economy of the state and that they demotivate the private entities to invest in the same sector. Now the question is just for the sake of private entities' investment and for them to play their part in space exploration, should we allow them to possess and claim space or celestial bodies which are deemed to be belongings of "humankind". There are however many factors which need to be taken into consideration such as for good of humanity as if any circumstances happened such as mass extinction or prediction of mass extinction and only way to save humanity is through allowing a private company to transport few humans and establish a base on a celestial body. Other factor being that private companies are investing their hard earned money on research & development and pushing the limits of science in pursuit of space exploration, but unlike government they need profits and incentives to run and it cannot happen safely without secure property rights, as they are investing their money then they might deserve secure property rights.

Others factors might be taken into consideration the type of raw material required in construction of such property. As if the raw material was taken from earth to space to build a certain space station or a base, then certainly the state of origin might claim jurisdiction over it but the question is if the raw material was extracted from outer space and then a base or station was built, then who'll enjoy jurisdiction over it and will the private entity enjoy secure property rights over it. It is however ethical to pronounce that secured right would be given to whoever put efforts into the structure as he is the deserving.

But allowing the companies into commercializing space might do to space, what industrial revolution is doing to earth. It would lead to space pollution by causing space debris, it might contaminate potential microbiological life on other celestial bodies and mining "Near Earth Objects" might very well lead in change of trajectory of any asteroid and bring it into collision course with earth.

4) SPACE LAW IN INDIA AND THEIR IMPACT ON SPACE EXPLORATION

Space laws in India should be formulated and allowed to commercialize to boost the economy and which will aim to bring India a technological advancement because India is way behind the western countries in the field of space exploration as if we see in the past, USSR put a man in the orbit in 1961, India yet to do so. USA put a man on the moon in 1969, India yet to do so. International society has built an International Space Station, China will make a Chinese space station till 2022, India yet to do so. This is no news that India is very far behind in the competition, the main reason that could be argued is that there is lack of interest of private sector in space and space laws in the country which regulate the field.As per Article 51[xix] and Article 253[xx] of the Indian Constitution, the state is directed to enact laws to implement or ratify international treaties mentioned above. So in 2017, a draft bill was presented to the stakeholders in the field. The bill most commonly known as "The Space Activities Bill, 2017". Most significant agenda of the bill is to enhance and motivate private corporations or individuals to take part in the space activities and to regulate their usage of space in commercialization. This bill however stayed silent on property right but is a way forward as it motivates private entities to invest in space sector.

5) ANALYSIS OF THE BILL

a) Definitions

The scope of the bill is very broad in nature as the definition of commercial space activity[xxi], as it says that any space activity which generates revenue is a commercial space activity and space object[xxii] as any article or object launched or planned to launch into outer space for the purpose of putting into orbit or Earth or sending it further away. This provision basically covers every object which could be send to space.

b) Regulatory Mechanism

The duty to formulate a regulatory authority which promotes space observation, study and utilize space for technical and scientific development which could also frame the policies which benefits national security as well as for peaceful purposes[xxiii]. The body is also authorised with regulating the procedure for any operations of any space activity by any institution[xxiv].

c) Powers of Regulatory Body

The body will have power to grant or transfer the license to anyone, as well as terminate or suspend the said license[xxv]. Along with granting license, the body will also have the power to ensure[xxvi] that the licensee would comply with the terms and conditions provided would be adhered to. Some more powers of the regulatory body are;

1) To maintain a record or register of every space objects[xxvii].
2) To monitor space activities and conform with the norms of International treaties to which India is a party[xxviii].
3) Supervisory role of Space activity of which license has given[xxix].
4) Investigate any type of accident or incident if it takes place during space activity[xxx]

d) License

License for commercial space activity, could be achieved by making an application to central government by mentioning the details or purpose of such commercial activity[xxxi].The licensee would need to agree to certain terms and conditions[xxxii] as may be prescribed by the government in order to get the license. However there are certain exceptions provided under which the government could refuse to grant license[xxxiii] such as;

1) If the said operation jeopardises public health or safety of any individual or his property
2) If the said activity or operation is in contravention of any international obligating incurred by India
3) If the said operation compromises integrity, security, sovereignty, defence, public order, morality of India as well as if it contravenes friendly relations of India with other states.

e) Punishment

This also provides criminal liability as well as civil for offences or illegal omissions done under this act such as;

1) If any person undertakes any activity related to space without getting license will be punished with imprisonment of 1 to 3 years and with fine not less than 1 crore[xxxiv].
2) If any person produces or furnish false document to get the license, he will be liable for imprisonment up to 1 year or with fine up to 50 thousand[xxxv].
3) Any person who suppress factual information for government or any authority of government, will be liable for imprisonment up to 1 year or a fine which could extend to 50 thousand or both[xxxvi].
4) Any person who causes pollution on earth whether on surface, or atmosphere or even in outer space including the heavenly bodies such as Moon or Mars etc. will be liable for imprisonment of minimum one year to maximum three years and with fine not less than 1 crore[xxxvii].
5) Any person who discloses any restricted document[xxxviii], will be punished with imprisonment of minimum six months to maximum three years or minimum fine of fifty thousand which could extend to one lakh[xxxix].
6) Any person who violates or does not follow any direction provided by the central government will be punished with fine of minimum 1 crore which could extend to 50 crores[xl].
7) Any person who trespassed into prohibited areas[xli] without authority will be punished with imprisonment of minimum six months to maximum three years or minimum fine of fifty thousand which could extend to one lakh[xlii]

6) CONCLUSION

Space is a mysteriously empty yet filled with curiosity of the humans to conquer the skies one day but the author believes that, for this to happen one day, we must provide the opportunity of exploration to our private industries and should abandon the rules which states that space is only for states to explore, as curiosity can never be appointed nor can it be expected to work through bureaucratic channels.

However, space is a dangerous place with non-existent favourability of life, so the state being the natural guardian has the duty to protect its citizen from the dangers that space travel possesses and ensure rules and guideline for state to work, just as The Space Activities Bill of 2017 provides.

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[iii]Stephen Hawking, *The Daily Telegraph, October 16, 2001*.

[iv]Wisconsin Center for Space Automation and Robotics, *"A REVIEW OF HELIUM-3 RESOURCES AND ACQUISITION FOR USE AS FUSION FUEL"* pp. 2 (1991) .

[v] See at https://www.spacex.com/dragon Retrieved on 26/02/2020

[vi] See at https://www.spacex.com/reusability-key-making-human-life-multi-planetary Retrieved on 26/02/2020

[vii]Juliet D'Souza, William Megginson, Robert Nash "*THE EFFECTS OF CHANGES IN CORPORATE GOVERNANCE AND RESTRUCTURING ON OPERATING PERFORMANCE: EVIDENCE FROM PRIVATIZATIONS"* pp. 3 – 8.

[viii] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1966, art 2.

[ix]Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1966, art 6.

[x] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1966.

[xi]The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space 1967.

[xii]Convention on International Liability for Damage Caused by Space Objects 1967.

[xiii]The Convention on Registration of Objects Launched into Outer Space 1974.

[xiv]he Agreement Governing the Activities of States on the Moon and Other Celestial Bodies 1979.

[xv]Supra Note 7, art 6.

[xvi]Antarctic Treaty System, 1959.

[xvii]Supra Note 8.

[xviii]Tim Besley, Maltreesh Ghatak, "REFORMING PROPERTY RIGHTS", *VOX CEPR Policy Portal*, 22 April 2009, available at https://voxeu.org/article/reforming-property-rights-and-economic-development last visited at 02/03/2020.

[xix]The Constitution of India, 1949, see art 51.

[xx]The Constitution of India, 1949, see art 253.

[xxi]Section 2(a) of The Space Activities Bill, 2017.

[xxii]Section 2(g) of The Space Activities Bill, 2017.

[xxiii]Section 3 (a) (b) of The Space Activities Bill, 2017.

[xxiv]Section 3(g) of The Space Activities Bill, 2017.

[xxv]Section 3(c) of The Space Activities Bill, 2017.

[xxvi]Section 3(d) of The Space Activities Bill, 2017.

[xxvii]Section 3(h) of The Space Activities Bill, 2017.

[xxviii]Section 3(i) of The Space Activities Bill, 2017.

[xxix]Section 3(k) of The Space Activities Bill, 2017.

[xxx]Section 3(m) of The Space Activities Bill, 2017.

[xxxi]Section 7(1) of The Space Activities Bill, 2017.
[xxxii]Section 8 of The Space Activities Bill, 2017.
[xxxiii]Section 7(2) of The Space Activities Bill, 2017.
[xxxiv]Section 13 of The Space Activities Bill, 2017.
[xxxv]Section 14 of The Space Activities Bill, 2017.
[xxxvi]Section 15 of The Space Activities Bill, 2017.
[xxxvii]Section 16 of The Space Activities Bill, 2017.
[xxxviii]Section 17 of The Space Activities Bill, 2017.
[xxxix]Section 18 of The Space Activities Bill, 2017.
[xl]Section 20 of The Space Activities Bill, 2017.
[xli]Section 21 of The Space Activities Bill, 2017.
[xlii]Section 22 of The Space Activities Bill, 2017.