

RIGHT IN ORBITAL SLOTS: ANALYSIS OF TONGA INCIDENT

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ABSTRACT

For a long time humans have colonized, captured and economized the resources on the earth. But with the advancement in the space law now the space and the celestial bodies are also open for being harnessed as an economic resource. One such incident was of a small Pacific country of “Tonga”. The bone of contention was the Geostationary Orbit Slot (GSO) allocation for the country by International Telecommunication Union in 1988-1990. The debate regarding the issue began when the Pacific island based company auctioned these leased GSO for commercial gains.

This research article highlights violations of Outer Space Treaty of 1967 and the ITU regime. Further, it also discusses the impact of Bogota Declaration as the declaration focused on the sovereign rights to the equatorial states in 1976. ITU regime also lacked specific regulations to check subleasing. So, the current lacuna in law is still to bridge a gap between the utilization of resources and creating a well defined property law to respect the autonomy of the nations.

KEYWORDS: *Economic Resource, Geostationary Orbit Slot, International Telecommunication Union, Outer Space Treaty, Bogota Declaration*

Article History

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INTRODUCTION

Government sponsored company named ‘Tongasat’ in the Pacific rim Kingdom of Tonga was formed to sponsor satellite system over Pacific.¹ The chairman of the company princess, Salote Pilolevu Tuita cited the better need for communication in Pacific and Asia as a reason for such development.² The country registered itself for 16 geostationary orbits (GSO) with International Telecommunication Union (ITU). During 1988-1990, the ITU permitted the country for 9 GSO before a satellite was launched. The company named “Tongasat” leased one of the satellites to Unicom; a Colorado-based company and auctioned the other five at \$2 million each.³ There were complaints filed in a given case for non-compliance of ITU guidelines.

The countries which were a part of ITU were against the leasing of orbital slots as a violation of article 33 of ITU which acknowledges efficient and economic use of the GSO which are natural resources.⁴ The Outer Space Treaty also

¹Edmund L Andrew, 'Tiny Tonga Seeks Satellite Empire in Space' NY Times (1990)

<<https://www.nytimes.com/1990/08/28/business/tiny-tonga-seeks-satellite-empire-in-space.html>> (last visited 16 January 2019).

² Ibid.

³Adrian Copiz, Scarcity in Space: The International Regulation of Satellites

<<https://scholarship.law.edu/cgi/viewcontent.cgi?article=1243&context=commlaw>> (last visited 16 January 2019).

⁴International Telecommunication union, .art. 33.

provides that space is open to the use of all countries without discrimination, is not subject to national appropriation by the sovereignty claim by occupation or any other means.⁵

STATEMENT OF PROBLEM

Article 1 of the Outer Space Treaty of 1967, clearly mandates that “The exploration and the use of Moon and the other celestial bodies, which shall be carried out for the benefit and in the interests of all the countries, irrespective of their degree of economic or scientific development and shall be the province of all mankind.”⁶ The article also states that it shall be free for exploitation and usage by all the states without any discrimination, implying that the principle of equality in accordance with international law shall be foremost. Article II of the Outer Space Treaty states that the outer space, celestial bodies, and moon are not subject to national appropriation by use of occupation or other means.⁷

With reference to the above-mentioned article, there is a specific mention as to the orbit being a province of all mankind. Article 33 paragraph 2 of the International Telecommunication Convention on Space Law 1982 categorizes geostationary orbit as a part of limited natural resources.⁸ While saying so, International Telecommunication Union still provides mechanisms of leasing the orbital slots for a specified period. So, will the right to lease include the ownership of the property for that specified period of time.

Article 1 of the Outer Space Treaty also specifies that there shall be equality with reference to the use of the geostationary orbits. But in practice, a state has to have a satellite and protect the orbit in which it is launched. After following these states also have to register with the International Frequency Registration Board. This creates an imbalance in terms of providing equality towards the bigger and the richer states.⁹

The study in the project is specific to the Tonga incident. The Kingdom of Tonga had leased the geostationary orbital slots and further leased it again to the other profit-making company to fulfil their economic advantage.¹⁰ Here the country had adopted a principle of auctioning to increase their economic benefits. While doing this there had been a violation of the principle of equity which had to be followed according to Article 1 of the Outer Space Treaty.

While the Tonga incident highlights the violation of the Outer Space Treaty, it also brings up the question that does the commercial use of the orbit violate the Outer Space Treaty because the treaty is for purposeful usage of the outer space by the states.¹¹

There is also a constant debate on the subject of which country should get which spot. While giving these countries the orbital slots how the concept of should efficient usage of these orbits should be taken into consideration. If the states which do not require the required number of orbital slots are given more orbital slots then it would undermine the usage of these slots which are finite resources.¹² This would lead to redundancy in the development of the technology, which will violate the purpose use of orbital slots.

⁵ The Outer Space Treaty 1967, art. II.

⁶ Ibid

⁷ The Outer Space Treaty 1967, art. II.

⁸ International Telecommunication Convention on Space Law 1982, art. 33.

⁹ Adhy Riadhy Arafah, “Sovereign Right Claim On Geo Stationary Orbit (GSO)” 2 *Indon. L. Rev.* 163 (2012).

¹⁰ Harvey J. Levin, “Trading Orbit Spectrum Assignments in the Space Satellite Industry” 81 *The American Economic Review* 3 (1991).

¹¹ Jannat C. Thompson, “Space For Rent: The International Telecommunications Union, Space Law, And Orbit/Spectrum Leasing” 62 *Journal of Air Law and Commerce* 279 (1996).

¹² Ibid.

This also puts the question on the determination of a number of orbital slots in the space. There is also a commercial utilization of the space. There is limited space so the question is how is it determined which satellite has to be weeded out because there is mostly a great demand of these orbits.¹³

The new International Telecommunication regime has stipulated the time for an operator to bring the orbital slots into use. This stipulation has not made the operators penalize for the same. Will the regulation be sufficient enough to weed out the unused orbital slots?¹⁴ With this huge congestion in the space and already pending applications for the orbital slots, is there a need for the development of newer frequencies.¹⁵

RESEARCH QUESTION

- Whether the principle of equality under The Outer Space Treaty 1967 is upheld while the registration of orbit under the International Telecommunication Union (International Frequency Registration Board)?
- Whether equatorial countries are justified in claiming their right to sovereignty over the geostationary orbits under the Bogota Declaration?
- Whether lease to use the orbital slots includes the right to sell?

HYPOTHESIS

Property rights are not affected by the principle of non-appropriation. Also, the right to sublease appears to be justified.

OBJECTIVE

The aim of the researcher is to highlight the importance of the right to orbital slots vis-à-vis the incident of the Kingdom of Tonga. The focus is to identify the problems in the property right in relation to orbital slots. With this, the researcher will also focus on the violation of the outer space treaty.

SCOPE OF STUDY

The researcher will focus on the Tonga incident. The focus will be on the Outer Space Treaty of 1967, the Bogota Declaration and the International Telecommunication Union regulations.

RESEARCH METHODOLOGY

The project is based on the doctrinal method of research. The tools adopted are a combination of descriptive, analytical and critical. The primary data will include international instruments. The secondary data resources will include articles from books, journals, and newspaper and web sources.

The researcher will be following ILI as a standard form of reference.

¹³John Worthy, 'Joint Ventures and Orbital Slots - Finding the Right Solutions - Fieldfisher' (Fieldfisher.com, 2019) <<https://www.fieldfisher.com/publications/2011/05/joint-ventures-and-orbital-slots-finding-the-right-solutions>> (last visited on 19 January 2019).

¹⁴'There's A Parking Crisis in Space - And You Should Be Worried about It' (The Conversation, 2019) <<https://theconversation.com/theres-a-parking-crisis-in-space-and-you-should-be-worried-about-it-83479>> (last visited 17 January 2019).

¹⁵'Hot Orbital Slots: Is There Anything Left? - Via Satellite -' (Via Satellite, 2019) <<https://www.satellitetoday.com/uncategorized/2008/03/01/hot-orbital-slots-is-there-anything-left/>> (last visited 20 January 2019).

THE CASE OF TONGA INCIDENT

The Kingdom of Tonga in the year 1987 ventured into the satellite communication by the name of Friendly Islands Communication “Tongastat”.¹⁶ This initiative of launching the kingdom in communication field was made by Matt C. Nilson who was eventually made the managing director of the company with 20% stakes by convincing King Taufa’ahau Tupou IV, with the objective of reaching from Hawaii to the Middle East.¹⁷ The company filed for 16 slots with the International Telecommunication Union.¹⁸

Tongastat’s officials contended that the company had only six employees. To this, the princess Salote Pilolevu Tuita who was chairman on the company remarked “Countries in Asia and the Pacific region have a need for better communications. They make it sound as if we are only interested in financial gain.”¹⁹

This registration of the 16 orbital slots had outraged the international community as it did not possess a genuine need for it.²⁰ Due to overlapping of three orbital slots between Britain and Tonga the Kingdom had received only 13 of these slots.²¹

Mr. Nilson in one of his interviews stated that the slots would be open for investments for 2 million dollars per slot which would increase the budget of the country by 20%.²² He agreed that the company did not plan on selling the slots but on leasing them.²³ Eventually, the company leased one of its orbital slots to Unicom, a Colorado-based company for 2 million dollars each.²⁴

Pursuant to this INTELSAT which is the world’s largest satellite operating consortium claimed that the company Tongastat was engaging in financial speculation which is a violation of International Telecommunication Union regulations. Columbia Communication filed a petition with Federal Communication Commission requesting to deny “landing rights” to the companies which were using the orbital slots leased by the Tongastat company.²⁵ They also claimed that Tonga was violating the fundamental principles which state “no entity or nation may lay claim to the orbit/ spectrum resource as a commodity that can be warehoused or traded.”²⁶ In reply to this Rimsat Ltd., this had leased one of Tongastat’s accused INTELSAT and Columbia Communications of adopting anticompetitive practices.²⁷ Rimsat claimed that the USA was “warehousing” satellite.²⁸

¹⁶Edmund Andrews, “Tiny Tonga Seeks Satellite Empire in Space” (Nytimes.com, 1990)

<<https://www.nytimes.com/1990/08/28/business/tiny-tonga-seeks-satellite-empire-in-space.html>> (last visited 1 February 2019).

¹⁷Christy Collins, “The Geostationary Orbit: A Critical Legal Geography of Space’s Most Valuable Real Estate” 57 Sage Journal 46 (2009).

¹⁸Albert N. Delzeit and Robert F. Beal, “The Vulnerability of The Pacific Rim Orbital Spectrum Under International Space Law” 69 NY International Law Review. (1996)

¹⁹Michael T. Kaufman, “King Taufa’ Ahau Tupou IV, Ruler of Tonga”, Dies At 88’ NY times (2006).

²⁰ Supra note 18.

²¹ Supra note 16.

²² Supra note 16.

²³Columbia Asks FCC To Deny U.S. Markets to Users of Tonga’s Orbital Slots Satellite WK (1993).

²⁴Jannat C. Thompson, “Space for Rent: The International Telecommunications Union, Space Law, And Orbit/Spectrum Leasing” 62 Journal of Air Law and Commerce 279 (1996).

²⁵.Supra note 23.

²⁶Satellite News, “Rimsat Responds To Attacks on Its Use of Tonga Orbit Slots” Satellite News. Oct. 25, 1993.

²⁷ Ibid.

²⁸ L. Manuta, “Orbital Contention: International Telecommunications Union Assigns Orbital Slots Rules for Geosynchronous Satellites” 18 Satellite Communications 32 (1994).

This created a stir in the international community so 10 out of 13 slots were taken away; the country was left with only 3 orbital slots.²⁹ The Outer Space Treaty of 1967 became applicable on the Kingdom of Tonga because the kingdom was a part of British Colony, so they became a part of the treaty in succession.

EFFECT OF OUTER SPACE TREATY

The Outer Space Treaty of 1967 supports scientific and human quest.³⁰ Article 1 of the Outer Space Treaty 1967 provides the freedom of outer space which is manifested in the freedom of space explorations. It provides that outer space which includes Moon and other celestial bodies shall be free for use and exploration without any discrimination on the principle of equality with reference to international law for all the nations. The Article I also provide for scientific development of mankind, free access, and scientific investigation. It also defines the outer space as a 'province of mankind'.³¹

The subsequent principles which have developed may apply to the satellite communications. The 'Freedom' here implies that any entity which derives any benefits from the outer space does not have to take the permission from any other government instead they can explore and find for themselves whether the use of that part of outer space is possible or not. The language of the article is broad when it states the term 'exploration'. The term exploration generally includes the launch of satellites, experiments, broadcasting rights, production of space data etc.³² Paragraph 3 of the article I refers to the concept of 'province of mankind'. Thus, the concept means that all nations have vested rights in common resources and should be shared equitably. This implies that all countries shall benefit out of the activity.³³

Article II of the Outer Space Treaty 1967 which developed from the United Nations General Assembly resolution adopted in 1962 is a specific 'non appropriation' clause. It specifies that moon and other celestial bodies are not subject to national appropriation by means of the claim of sovereignty, use or occupation or other means.³⁴ This implies that the outer space including the celestial bodies and the moon will not be subjected to ownership or claims of sovereignty by anyone.³⁵ The space-faring states had accepted that the outer space was to be regarded as *res communis omnium*.³⁶

By prohibiting the claim of sovereignty and ownership it has served protected the outer space from national/exclusive colonization by the states.³⁷ Under the principles of international law, a long and peaceful effective control by the state can provide them with a claim of ownership for being *terra nullius* nature.³⁸ This right has been granted under the international law of prescription which is not applicable with the *res communis* nature of outer space.³⁹

So, this raised a question in the US Senate "Whether a communication satellite launched by the United States become useful for all mankind?"⁴⁰ To this, the reply of a senate member stated the article VIII of the Outer Space Treaty 1967.

²⁹ Supra note 24.

³⁰ The Outer Space Treaty 1967.

³¹ The Outer Space Treaty 1967, art. 1.

³² Stephan Hobe and others, "Cologne Commentary on Space Law" 45 Carl Heymanns Verla (2013).

³³ R Jakhu, "Legal Issues Relating to The Global Public Interest In Outer Space" 31 Journal of Space Law 129-137 (2006)

³⁴ The Outer Space Treaty 1967, art. II.

³⁵ Treaty on Principles Governing The Activities Of States In The Exploration And Use Of Outer Space, Including The Moon And Other Celestial Bodies: Analysis And Background Data', Committee on Aeronautical and Space Sciences, United States Senate (1967).

³⁶ A Cassese, "International Law" (Oxford, 2ndedn. 2005).

³⁷ Supra note 17.

³⁸ Island of Palmas (Netherlands v United States of America) (1928) 2 RIAA.

³⁹ Supra note 17.

⁴⁰ Korolev and Freedom of Space' (<https://history.nasa.gov/monograph10/korspace.html>, 1955) <<https://history.nasa.gov/monograph10/korspace.html>> (last visited on 1 March 2019).

The Article VIII states that a state party shall retain the jurisdiction or control over the object launched while in outer space or on celestial bodies. Ownership of such objects which are launched into outer space their presence in the outer space or return to the Earth does not affect the ownership.⁴¹

So, the objective of having such a clause inserted was to put a check on any collision and track the space objects.⁴² In this clause, the state of registry means the launching state.⁴³ The launching state includes the state which launched or procures the launching of the space object or a state from whose territory or facility a space object is launched. Under Article VIII launching state implies only the state launching the space object.

The right of exploitation in the geostationary orbit is governed by the International Telecommunication Union, which is an agency of the United States of America.⁴⁴ The International Telecommunication Union has an extensive process in place to have an equitable allocation of orbital positioning.

So, if the Tonga sub leases the orbital slots it will be exercising its freedom to use. But the article I also states that the outer space is a province of mankind. Therefore, according to article VIII of the Outer Space Treaty the satellite will be registered and the orbit will be a part of the outer space. So, if the orbital slot becomes a part of the outer space then sub-leasing would amount to an appropriation of the orbit. This would account for violation of article II of the outer space treaty. According to an Article I of the Outer Space Treaty the geostationary orbit is already a province of mankind.

EFFECT OF BOGOTA DECLARATION

In 1976, equatorial states of Brazil, Zaire, Indonesia, Kenya, Colombia, Congo, Uganda, and Ecuador adopted the Bogota Declaration of 1979.⁴⁵ These states in the first meeting on UNCOPUS considered that the Geostationary Orbit is not a part of the outer space.⁴⁶ The declaration had sovereignty claims over the geostationary orbit passing over their territories. These claims were denied by the international community.⁴⁷

These countries claimed their right over these orbital slots because they claimed that the phenomena of the orbital slot are related to the gravitational pull of the Earth hence it becomes a part of the physical fact.⁴⁸ These states have also tried to achieve judicial recourse. But their efforts have been described as pointless by the international community. Though there is no specific definition given anywhere to define the outer space but this will interfere with the treaty provisions.⁴⁹

Through the acceptance of the claim of sovereignty by these states the claims would be against the principle of equitable access which has been the basis of the arguments advanced by the equatorial states. If ownership rights have been provided to the states then the other states will be devoid of equal access. The devoid states will include both the

⁴¹The Outer Space Treaty 1967, art VIII.

⁴²Supra note 17.

⁴³ Stephan Hobe, "Cologne Commentary on Space Law" 2 Carl Heyman Verlag KG. 447 (2011).

⁴⁴Constitution of International Telecommunication Union 2009.

⁴⁵Hariss A Durrani, 'The Bogotá Declaration: A Case Study on Sovereignty, Empire, And the Commons in Outer Space' Columbia Journal of Transitional Law <<http://jtl.columbia.edu/the-bogota-declaration-a-case-study-on-sovereignty-empire-and-the-commons-in-outer-space/>> (last visited on 1 March 2019).

⁴⁶Adhy Riadhy Arafah, "Sovereign Right Claim On Geo Stationary Orbit (GSO)" 2 Indonesia Law Review (2012).

⁴⁷ Outer Space Treaty 1967, art. II.

⁴⁸Ferdinand Onwe Agama, "Effects Of The Bogota Declaration On The Legal Status Of Geostation Orbit In International Space Law" 24 Journal of International Legal and Jurist (2019).

⁴⁹ Supra note 31.

developing as well as the developed states because the current claim seems more on the basis of the positioning of the countries with respect to the geo stationary orbit. Hence countries such as Tonga would never get an opportunity to claim for the geostationary orbits,

As claimed by the member of the declaration that these rights have been claimed as a part of the rights of the developing nations. The developing, as well as the developed nations both, had a rejected the claim.

If the sovereignty is provided to these equatorial countries then there will be no check over the use of the orbital slots and the allocation will have no objective basis. Hence the ground of the claim by these states which is equality will be shaken.⁵⁰ This will also provide the equatorial states with an opportunity to monetize a natural resource hence providing them with an undue advantage. As there will be no specific organization to check the grant of the right of orbital slots this will create a lack in regulation. It will also not be able to justify the principle of non-appropriation stated under the Outer Space Treaty.⁵¹

To streamline this process the International Telecommunication Union exists. In this, there are two systems of registration of the orbital slots. Prior to 1988 ITU followed a posteriori system now they have two track systems.⁵²

The system of a posteriori is on the basis first in right principle which is in compliance with the *res communis* which is applicable to the high seas.⁵³ This system is used for C- and Ku- bands. The a posteriori system is used more often due to the development in the technology as the service providers are accustomed to using C- and Ku band which are provided pursuant to this system. The first track, an a posteriori system, is used for orbit-spectrum use in the C- and Ku-bands.⁵⁴

A priori resembles the national appropriation. This implies that the country will be given the exclusive right to property for the orbital slots without exploiting the slots.⁵⁵ This system is applicable to fixed satellite service in Ka-band. It is a planned system where the International Telecommunication Union grants a nominal slot with an arc to each member.⁵⁶ In case a country plans to use a nominal slot it has to take permission from the member nation.⁵⁷

The actions of Tonga would be justified under the current priority system wherein the countries are provided with exclusive property rights. But Tonga's actions occurred in the current a posteriori system.⁵⁸

This demand for sovereignty has a nexus with establishing property rights. Prof Van Ballegoyen claims that "We have to come up with a more appropriate regime. Such a regime would include the possibility of acquiring ownership of the territory itself. This is the only way to increase the incentive."⁵⁹

On the other hand, Professor White concludes with the functional property rights that "In the light of the maxim under the common law principles the entity cannot transfer greater right than they already possess. This ownership would

⁵⁰ Supra note 18.

⁵¹ Supra note 32.

⁵² Supra note 24.

⁵³ Adrina Copiz, "Scarcity in Space: The International Regulation of Satellites" 10 *CommLaw Conspectus* 207(2002).

⁵⁴ Supra note 24.

⁵⁵ Eric Husby, "Sovereignty and Property Rights in Outer Space" 3 *Journal of International Law and Practice* 359 (1994).

⁵⁶ Supra note 24.

⁵⁷ Charles H. Kennedy and M. Veronica Pastor, *An Introduction to International Telecommunications Law*, 47 (Artech House 1stedn. 1996).

⁵⁸ Supra note 53.

⁵⁹ Van Ballegoyen, *Ownership of The Moon and The Mars*, 37 (*Ad Astra* 3rdedn. 2000).

be defined by the claim of sovereignty. According to Article VIII of the Outer Space Treaty, property right would be functionally defined and limited. This shall be on the principle of traditional rights theory. This would imply control over a certain area by the government. This will be identical to terrestrial property rights.”⁶⁰

The claim of the professor was not well accepted as he failed to take into Article II and Article VI of the Outer Space Treaty. The Article VI specifies for the national responsibility for the outer space whether done by the governmental or nongovernmental organization.⁶¹

In the case of the Tonga incident, the country had sub leased and not transferred the ownership of the property. The concept of sublease does not transfer any rights and obligations which are in the possession of the original tenants. International Telecommunication Union is a mere registering authority to regulate the function and the owner of the geostationary orbit. If sub lease is permitted this will violate the Article VIII of the Outer Space Treaty as the registry will be in the name of some other country and the usage will be done by the other entity. This will create an issue in identifying the responsibility and jurisdiction under Article VI and VIII respectively.

If sub leasing of the orbital slot is allowed, it would result in arbitrarily providing the lease because different countries would have different standards of leasing. The consequence of which would be that the developed nations will get more orbital slots as they would be sound financially. This would eventually lead to a lack of development by the developing and under developed nations in the field of space law as their focus will be to get financial gains from leasing the slots.⁶² The International Telecommunication also regulates these orbital slots with the constitution and various regulations.

The Article 33 of the Nairobi Convention and Article 12 of the ITU constitution define the function and the structure of the where it specifies that the principle of equality cannot be seen separately but has to be ready with efficient use of finite resources. Article 44 of the ITU constitution specifies that the orbits are natural resources which are to be used naturally, efficiently and economically. Although in the 1980's during a World Administrative Radio Conference the countries had received specific orbital positioning but it led to a non-efficient use of finite resources.

So, to regulate these financial gains ITU specifies under the article 33 of its constitution that there shall be equitable access for the radio frequency spectrum and the geostationary orbit to take into consideration the concerns of the developing countries.⁶³ Further the Constitution of International Telecommunication Union of 1979 on space communication, in its resolution 2, decided that registration with ITU does not provide any priority to the nations which have already registered. So, more and more nations are able to develop their space system. For this reason, ITU has made a specific timeline for the lease of the orbital slots.⁶⁴

One of the major issues in the launching of the satellite is the way through which these satellites can be protected against the International Frequency Regulation Control Board of ITU has been vested with the responsibility to protect the interference. Under Article 13 of the Radio regulation, geostationary will be protected indefinitely.⁶⁵ Article 37 of the ITU constitution states that all the member nations shall take the required steps to maintain the secrecy in the orbit.⁶⁶

⁶⁰Wayne N White, *Real Property Rights in Outer Space* (1997).

⁶¹Thomas Gangale, *The Development of Outer Space* 47 (Praeger 1stedn. 2009).

⁶²Glenn H. Reynolds and Robert P. Merges, “Outer Space: Problems of Law And Policy” Madrid Conference (1932).

⁶³Constitution of International Telecommunication Union. Art 33.

⁶⁴Constitution of International Telecommunication Union (1979).

⁶⁵Radio Regulations, art 13.

⁶⁶Constitution of International Telecommunication Union, art. 37.

Now with respect to the given International Telecommunication Union, in case of the Tonga incident, if the country has got individual rights to lease the orbital slots, the efficiency of the orbital slots will also be into question. As these orbital slots are finite resources it is necessary for the allocation to be made in a transparent manner. But in this case, no country shall be answerable to any of the authorities. So, the risk for the sub leasing country would also increase. The International Regulation Frequency Control Board has vested responsibilities but in case of sublease as there will be no knowledge of the orbital slots it will be difficult for the organization to maintain and protect the secrecy. Hence this would not only hamper the secrecy of the country which has sub leased but will also hamper the secrecy of the other nations who have their orbital slots. This would lead to a violation of rights and eventually to a conflict of jurisdiction.

CONCLUSIONS

The incident of Tonga was an eye-opening experience for the world community. None of the treaty or the regulations of the International Telecommunication Board specify for the concept of the sublease. Currently, ITU regulates the orbital slots but there has been no change in the constitution of the ITU but the incident of Tonga has a precedent value. Instead, the ITU had violated its own regulation as it was not able to check the use of finite resources efficiently. After the incident, ITU developed a Radio communication service which checked the technological capacity of the country. This came into existence because the world community had realized the size and the overall budget of the country of Tonga and ITU was faced with the question that they have granted the orbital slots but how is the country going to manage the satellites because the satellite does not only require registration with the ITU. The satellite also requires launching pad, the protection of the orbital slot and the protection of the satellite itself.

Taking this into account if we observe the regulations being followed when the Tonga incident took place the country did not violate any rules and regulations laid down by the registering authority. Instead, they had made use of the lacuna which existed in the law. They had to eventually return their slots but evidently, this was because Tonga was a small developing nation with less influence. If a country which has developed takes this process of leasing the orbital slots into practice it is difficult to analyze whether the pressure would be the same or not.

With the Tonga incident, the ITU regulations should bring a specific amendment in their constitution so as to specify the mode in which the country can claim for the orbital slots. If that is not done then incidences such as Tonga would continue to follow. The ITU should also clarify its stand on the property rights in the orbital slots because a non-appropriation principle exists in the Outer Space Treaty but in the apriori system of registration for the property rights differ. As the development is leading to further discoveries in the space clarification on property rights have become a need.

REFERENCES

1. Harvey J. Levin, "Trading Orbit Spectrum Assignments in the Space Satellite Industry" 81 *The American Economic Review* 3 (1991).
2. Jannat C. Thompson, "Space For Rent: The International Telecommunications Union, Space Law, And Orbit/Spectrum Leasing" 62 *Journal of Air Law and Commerce* 279 (1996).
3. John Worthy, 'Joint Ventures and Orbital Slots - Finding the Right Solutions - Fieldfisher' (Fieldfisher.com, 2019)

4. Christy Collins, "The Geostationary Orbit: A Critical Legal Geography of Space's Most Valuable Real Estate" *57 Sage Journal* 46 (2009)
5. Albert N. Delzeit and Robert F. Beal, "The Vulnerability of The Pacific Rim Orbital Spectrum Under International Space Law" *69 NY International Law Review*. (1996)
6. Michael T. Kaufman, "King Taufa'Ahau Tupou IV, Ruler of Tonga", *Dies At 88' NY times* (2006)
7. *Columbia Asks FCC To Deny U.S. Markets to Users of Tonga's Orbital Slots Satellite WK* (1993).
8. Jannat C. Thompson, "Space for Rent: The International Telecommunications Union, Space Law, And Orbit/Spectrum Leasing" *62 Journal of Air Law and Commerce* 279 (1996)
9. L. Manuta, "Orbital Contention: International Telecommunications Union Assigns Orbital Slots Rules for Geosynchronous Satellites" *18 Satellite Communications* 32 (1994).
10. Stephan Hobe and others, "Cologne Commentary on Space Law" *45 Carl Heymanns Verla* (2013)
11. 'Treaty on Principles Governing The Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies: Analysis And Background Data', *Committee on Aeronautical and Space Sciences, United States Senate* (1967)
12. Stephan Hobe, "Cologne Commentary on Space Law" *2 Carl Heyman Verlag KG. 447* (2011).
13. Adhy Riadhy Arafah, "Sovereign Right Claim On Geo Stationary Orbit (GSO)" *2 Indonesia Law Review* (2012).
14. Ferdinand Onwe Agama, "Effects of the Bogota Declaration on the Legal Status Of Geostation Orbit In International Space Law" *24 Journal of International Legal and Jurist* (2019).
15. Eric Husby, "Sovereignty and Property Rights in Outer Space" *3 Journal of International Law and Practice* 359 (1994)
16. Glenn H. Reynolds and Robert P. Merges, "Outer Space: Problems of Law and Policy" *Madrid Conference* (1932)