

Space Control Concept : A Comparison Between Space Legal Theory and Indonesian Law

Nugraha Pranadita, Imas Rosidawati, Tansah Rahmatullah

Nusantara Islamic University, Indonesia. E-mail: nugpra@yahoo.com

Nusantara Islamic University, Indonesia. E-mail: i_rosida_df@yahoo.co.id

Nusantara Islamic University, Indonesia. E-mail: tansah_rahmatullah@uninus.ac.id

ARTICLE INFO

Keywords:

Indonesian law; legal theory; space control concept

How to cite:

Pranadita, N., et. al. (2019). Space Control Concept : A Comparison Between Space Legal Theory and Indonesian Law. MEDIA HUKUM, +62 274 387656 (Ext. 220)

Article History:

Received: 27-08-2019

Reviewed: 16-09-2019

Revised: 21-12-2019

Accepted: 23-12-2019

ABSTRACT

The purpose of the study is to provide a theoretical basis on the discussion of space by comparing the theory of space law with Indonesian laws related to space. Nowadays, space is no longer empty land, no man's land, but has become an arena of competition for the interests of various countries and international organizations. As space currently has limitless economic and strategic values. To utilize space optimally, an understanding between the parties concerned is necessary. Thus, the existence of the theory of space law becomes a vital issue in bridging the gap between the needs and availability of area in space as not every position in space has the same economic and strategic value. The research was conducted by using the method of doctrinal legal research using the conceptual and legal approach which is explained descriptively by analysis using the deductive method. The results of the study are going to determine the differences in the concept of mastery of space according to the theory of space law and according to Indonesian law.

DOI: 10.18196/jmh.20190134

Copyright © 2019 MEDIA HUKUM. All rights reserved.

1. Introduction

Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia states; "The earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people," in fact do not yet reflect the Indonesian state as a whole. Besides the land and sea parts of Indonesia, the airspace and outer space area have not yet received adequate attention.

Geographically, Indonesia lies between two continents (Asian and Australian continents) and two oceans (Indian oceans and Pacific Ocean), thus naturally Indonesia is a path for the flow of goods and services between the two continents and through these two oceans. The territory of Indonesia is just below the equator, with a land area

of $\pm 2,012,402 \text{ Km}^2$ and a body of water of $\pm 5,877,879 \text{ Km}^2$.¹ "According to computer simulations and analyzes conducted by Scott Tremaine of the Institute for Advanced Study in Princeton, New Jersey and Tomer Yavetz of Princeton University,"² the shape of the earth is not entirely round. Instead, it is flatter at the poles and thicker at the equator. Gravity in the thicker parts of the planet (the equator) keeps the satellite in position. Based on these facts it can be understood that Indonesia's geographical location in the equator is an ideal area for the position of a satellite. In 2013; Our planet is currently covered by more than 1,000 active satellites and thousands of tons of space junk.³ It is reasonable to assume that most of the satellites and space junk are also in the equatorial region, thus the Indonesian territory is at-risk to be the place where satellites and space waste may fall for some reason out of their orbits.

The significance of space for the Indonesian must be enacted immediately in the laws in Indonesia, especially related to the control of space by the Indonesian government. In this research, the author try to elaborate concept of space mastery offered by the theory of space law, initiated with the idea of space mastery contained in Indonesia's positive law. Based on this understanding, the formulation of the concept of space mastery may benefit the Indonesian people yet acceptable by the nations of the world.

This research article will explain the comparison of the concept of mastery of space according to the theory of space law and Indonesia law. With this knowledge, the future laws and regulations related to space relevant to the progress of the times and may protect Indonesia's national interests. Based on the above findings, the research question is how the concept of mastery of space is formed according to the theory of space law related to provision law in Indonesia?

2. Method

The research is normative⁴ legal research or doctrinal⁵ law research. Normative legal research method uses modern legal concepts because the law does not only consist of rules or norms but also a social phenomenon⁶. The characteristics of normative legal research methods include the following⁷: (a) analytical descriptive because it uses a normative juridical approach, (b) uses the library research. According to Soerjono Soekanto and Sri Mamuji normative legal analysis is legal research carried out by examining library materials or secondary data.⁸ (c) the rule of law is used as concepts, perspectives, theories, even research paradigms, (d) rarely presents hypotheses, and (e)

¹ Ramdhan, M. & Arifin, T. (2013). "Aplikasi Sistem Informasi Geografis Dalam Penilaian Proporsi Luas Laut Indonesia", *Jurnal Ilmiah Geomatika*, 19 (2): 141 - 146, Available online from <http://jurnal.big.go.id/index.php/GM/article/viewFile/208/205>. [Accessed April 28, 2017]

² National Geographic Indonesia. (2013). Bentuk Bumi Bantu Satelit Tetap di Posisinya, Available online from <http://nationalgeographic.co.id/berita/2013/11/bentuk-bumi-bantu-satelit-tetap-di-posisinya>. [Accessed April 28, 2017]

³ *Ibid.*

⁴ Salim, H. S. & Nurbani, E. S. (2013). *Penerapan Teori Hukum Pada Penelitian Tesis Dan Disertasi*. Jakarta: RajaGrafindo Persada, p. 11. See also: Sunggono, Bambang. (2013). *Metodologi Penelitian Hukum*. Jakarta: RajaGrafindo Persada, p. 41.

⁵ Soetandyo, W., quoted from Bambang, S., op.cit., p. 42. See also: Salim, H.S. & Nurbani, E. S., op.cit., p. 11.

⁶ Hans Kelsen call it as "realistic legal science" see Kelsen, Hans. (2013). *Penerjemah: Raisul Muttaqien. Teori Umum Tentang Hukum dan Negara*, Bandung: Nusamedia, p. 235.

⁷ Lili, R. (2007). *Menggunakan Teori/Konsep Dalam Analisis di Bidang Ilmu Hukum*. Bandung. p. 6.

uses data analysis qualitatively, does not use data in the form of quantitative figures. Research in the field of law has a different scientific character compared to other sciences, namely⁸; (a) the nature of legal science that is analytical empirical so as to provide exposure and analysis related to the content and structure of applicable law, (b) the symptoms of the analyzed law are then presented and systematized using legal science, (c) law in - interpretation by using jurisprudence, and (d) law is assessed by jurisprudence, and (e) dogmatic jurisprudence is closely related to normative regulation. Conceptual approach and legislation approach are used in normative legal research.

3. Analysis and Results

The international legal instrument related to space is known as *Corpus Juris Spatialis* which consists of five international treaties, namely⁹; (1) 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), (2) Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space 1968 (the Rescue Agreement), (3) Convention on International Liability for Damage Caused by Space Objects, also known as the Space Liability Convention, 1972 (the liability convention), (4) Convention on Registration of Launched Objects into Outer Space 1975 the Registration Convention, dan (5) The Agreement Governing the Activities of States On The Moon and Other Celestial Bodies, 1979 (The Moon Treaty). The existence of *Corpus Juris Spatialis* is solely intended to minimize the potential conflicts that occur between nations internationally related to the use of space for specific interests. One of them is a bridge for human-made satellites that have particular functions. At present there are various types of satellites that have been launched and / or placed in orbit, including satellites: (1) astronomy, (2) communication, (3) earth observers, (4) navigation, (5) spies, (6) power solar, (7) weather, (8) miniatures, and (9) space stations. Of the various types of satellites, some satellites operate commercially, and some work non-commercially, in addition to satellites that operate in secret for the benefit of certain countries (spy satellites).

The international legal instruments do not reflect the existence of spatial justice in which a country because of its geographical position has a privilege compared to other countries, especially related to the use of space. Based on this, the formulation of the theory of space law becomes an urgent matter to be realized.

3.1. The Concept of Space Mastery According to Space Law Theory

3.1.1 Not the Center, But the Focus

The earth is one of the planets contained in a cluster of stars called the Milky Way Galaxy, while the sun lies in the center of the Milky Way galaxy. It is known that all the celestial bodies that belong to the Milky Way galaxy circle the Sun through their

⁸ Meuwissen; Penterjemah: Sidharta, B.A. (2007). *Meuwissen Tentang Pengembangan Hukum, Ilmu Hukum, Teori Hukum, dan Filsafat Hukum*, Bandung: Refika Aditama, p. 55.

⁹ Ruhaeni, N. (2014). "Perkembangan Prinsip Tanggung Jawab (Base of Liability) dalam Hukum Internasional dan Implikasinya Terhadap Kegiatan Keruangkasaan". *Jurnal Hukum Ius Quia Iustum*, 3 (21): 336.

respective orbits. In the universe, there are several star clusters (galaxies) similar to the Milky Way star clusters. The closest to the Milky Way is the Andromeda star cluster.

Based on the above paragraph, the sun is the center of the Milky Way star cluster because of its relatively fixed position and as the center of the orbit of other celestial bodies, both directly and indirectly, which are in the Milky Way star cluster. As an example, the earth circulates the sun while the moon circulates the earth. Thus the moon indirectly circles the sun.

The solar paradigm as the center of the Milky Way galaxy uses thinking that is "from the inside out", namely; we put ourselves in the position of the sun, then we look out and encounter the fact that other celestial bodies circulate us, then we are the center of the orbits of these heavenly bodies. To understand the existence of the Milky Way galaxy alone, the thinking model "from the inside out" can be used, but can not explain the relationship between one galaxy to another. As an example, the connection or role of the sun in the Milky Way galaxy related to the planets and or stars in the Andromeda galaxy.

3.1.2 Legal Linearity between Law on Earth and Legal Space

By using thoughts that are from the inside out, the law on earth comes first compared to the law outside the earth. It certainly will not be in accordance with the beliefs of the adherents of several religions in the world who believe that the first man was Adam who was created by God, not on earth but in Heaven, who then descended to earth with the second man; Eve for breaking God's law. In this perspective, the law on earth is later compared to the law in heaven.

Based on the description above, it can be understood that the enforced law on earth came later after the enforcement of the law in heaven. It can be relatively perceived that heaven exists somewhere on earth. Thus it can also be observed that the law enforced in heaven overflows as intended by Ibn Sina's Emanation Theory so that it reaches the earth.

By using the perception of Ibn Sina's Emanation Theory, the law on earth is a reflection of the law in heaven, which overflows so that it reaches the earth. The law enforced on earth is linear with the source of the law coming from outside the earth. Linearity that occurs between the law on earth with the source of law outside the earth is vertical linearity from top to bottom.

The conception of vertical linearity from top to bottom is compatible with "outside-in" thinking, where the source of everything (including but not limited to the law) comes from the dimensions of space and time outside the current dimension of space and time. Thus the law was created beyond space and time as the law was created in heaven which was then sent down to earth along with the descent of Adam and Eve to earth.

3.1.3 Space According to "From Outside to Inside"

Space permanently refers to the existence of space located in space. The essence of a space is the existence of a three-dimensional volume, which is built by the presence of a measure called finite length, width, and height. The concept of volume cannot use an infinite unit. Such a space conception does not give place to "farther from the farthest".

The concept of "farthest" contains an element of distance that is limited by the ability to observe by placing the earth as the center (initial) measurement. The concept of "farthest" that can be observed is built based on a finite distance, even though it may not be confirmed finite. Thus the idea of "farthest" does not provide space for the concept of "farther from the farthest" because it is outside the limits of observation that can be done by humans. The development of the idea of "farthest" based on thinking that is "from the inside out" is limited by the finite distance.

In order to be able to accept the existence of "farther from the farthest" where most (ample) space is, thoughts that are "from the inside out" must convert to beliefs that are "from the outside in." By using "external" inward thinking, the earth is the focus (end) of measurement. Thus no longer possible position "further from the farthest", because the farthest is the earth. As stated above, the concept of "the farthest" is built based on a finite distance, although it cannot be ascertained. Thought that is "from the outside in" puts the starting point of measurement into an unknown position.

The conception of space according to thoughts that are "from the outside in" is in accordance with the theory of Ibn Sina's emanation, where the starting point is the tenth reason which is then transmitted to and or moves the universe as the focus of the tenth sense emission. Thus it can be understood that the volume of the universe is virtually space extending from the tenth sense to the earth.

Based on Ibn Sina's ontology, the reality is an existence added to essence. Related to the description of space above, the reality of space is the universe (existence) added to the tenth sense (essence). In this case the presence of essence (the tenth mind) is reflected in the existence of the universe itself (reality).

By using "external" inward thinking, the reality of space is to the extent that there is "existence" added to "essence." The "existence" here is a physical presence, while "essence" is the control and or control of the physical appearance. With other sentences, the reality of space for a country is to the extent that the country can be present in space where the presence of the state in space must be able to represent the country on earth. The state's representation in space is "proven" by the ability of the state to control and or to control its physical presence in space.

3.1.4 Formulation of Principles of Space Law

The formation of the principles of space law is inseparable from the use of Ibn Sina's philosophical thinking, especially the theory of emanation. Thus the principles of space law are the principles derived from the theory of emancipation and/or other philosophical thoughts of Ibn Sina. The principles referred to are as follows:

a. The Principle Flows Down.

This principle in emanation theory is referred to as " overflow". Something material that is in a place because of its own ability to develop so that it fills its place (overflows) and moves to a lower place (abundant).

Based on these thoughts, the material in question must have an "energy" that continues to grow, so that it can meet its own needs before meeting the needs of others. After the requirements are met, then the material is abundant to the place below it, to something that is at a lower level than where the material originated.

In the process of emanation (overflowing and overflowing), what has the ability (energy) to continue to grow is the "material," not the place. If the one who can "grow" is the place, then (for example) the first intellect is overflowing just once to the second intellect. Then the second intellect (as a place) will carry out a process of growth, which in the end the material derived from the first intellect will overflow to the third intellect. Thus the overflow of the first sense process only applies once, not continuously. The last revelation from Allah was to Prophet Muhammad SAW¹⁰. Thus there is no more revelation by Allah. Islam is indeed a religion that has been perfected¹¹, so there cannot be a better religion. Despite that, God willingly gives guidance to his creatures until now¹². Thus the overflowing and abundant process of the first sense continues over time.

Ibn Sina's philosophical thinking is related to the emanation theory, which uses "overflowing and abundant" reasoning in the opinion of the writer/researcher influenced by natural law thinking. That is because the overflow and overflow processes generally arise due to the influence of the earth's gravitational force. The principle of "overflow" can not be applied in environments without gravity, such as in space vacuum.

In the process of emanation, it overflows and overflows. So that the overflowing and abundant material is not wasted, the place at the bottom must be greater than the place above it, where the emanation process is taking place.

The place here is where religion and science are, in the heart and the human brain. The recognition of faith and knowledge is an acknowledgment of the truth of religion and science. Religion and science require justification from the human heart and mind to find out the compatibility between the two. If the human heart and mind cannot yet accept the truth of religion and science, it is reasonable to assume that the human heart and brain are in problem. Religion and science are universal standard units. In case of the difference between their standards and the universal standards, those people need to adjust theirs.

Based on this principle of flowing downward, thoughts about the theory of space law must place the earth as the focus (goal) of everything that comes from "above." In this research, the writer/researcher calls it using thinking from the outside in. As an example; by using "inside-out thinking" we say that the satellite's orbit is 36,000 Km above the earth; then by using thoughts that are from the outside in (the principle flows down), we will say that the satellite's orbit is 36,000 Km from the earth.

b. The Principle of Similarity.

The principle of similarity comes from the process of emanation (overflow and overflow) itself. Something material that is in place "A," which then overflows and

¹⁰ "Surat Al-Baqarah: 281". See: UKM Birohmah Universitas Lampung, Ayat Al-Qur'an yang Terakhir Diturunkan, Al-Maidah Ayat 3?? Bener ga sih??, Available online from: <http://birohmah.unila.ac.id/ayat-al-quran-yang-terakhir-diturunkan-al-maidah-ayat-3-bener-ga-sih/>. [Accessed Mei 15, 2018].

¹¹ "Surat Al-Maaidah: 3", Ibid.

¹² "Allah Subhanahu wa Ta'ala said : "Indeed, [Muhammad], you do not guide whom you like, but Allah guides whom He wills. And He is most knowing of the [rightly] guided". [Al Qashash/28 : 56], Available online from: <https://almanhaj.or.id/2921-hidayah-hanya-milik-allah-subhanahu-wa-taala.html>. [Accessed Mei 15, 2018].

overflows into place "B," then the material that is in place "A" will be the same as material in place "B." It is true that material in the place of "A" on its own ability to be able to grow, even so the result of the growth of the material in question is still that material.

c. The Principle of Perfect Shadow.

By using thoughts that are "from top to bottom," it can be said that the material in the lower layer will be the same as the material in the upper layer. What might distinguish between the two is the size or volume alone.

Assuming that the earth is the focus of the universe, it can be assumed that the space above the earth will be larger in size or volume.

d. The Principle of Real Presence.

Explanations regarding this matter have been conveyed in the previous section as follows:

"By using external inward thinking, the reality of space is to the extent that there is existence added to the essence. The existence here is a physical presence, while essence is the control and or control of the physical presence. With other sentences, the reality of space for a country is to the extent that the country can be present in space where the presence of the state in space must be able to represent the country on earth. The state's representation in space is proven by the ability of the state to control and or to control its physical presence in space".

e. Principles of the National Territory.

The principle of concordance applies to the national territory of the country and the 1982 United Nations Convention on the Law of the Sea which was later enforced in space. The principle of the national area can only be used if the party claiming it has implemented the principle of real presence.

If the presence of a country in space is represented by the operation of a satellite, the territorial area that can be claimed by that country is an area (radius) of 8 miles from the intended satellite. The size of 8 miles originates from the territorial sea of a country that is generally recognized today. Thus the size of 8 miles is the size of the world. If the claimed space area is 36,000 Km from the earth, the size of the 8 miles is proportionally adjusted. It means that if the world diameter is now considered A, the "territorial sea" region will be obtained as far as 8 miles. If the diameter of the world changes to A + 36,000 Km, the area of "territorial space" is as far as 8 miles X ... (calculated mathematically).

f. Principle Comes First Master First.

The first claim to the space region is based primarily on the principle of real presence. Any party that is present in space can immediately claim the space area as much as it can be controlled by the party concerned. It is not only limited to space area as meant by the principle of perfect shadow but includes other space areas that have not been claimed by other parties.

The duration of the claim/power based on the principle of first come first mastering is as long as its presence (based on the principle of real presence) can be maintained with no additional effort (technically) to extend the time. As an

example; if the principle of the real presence of a country is represented by the presence (operation) of a satellite, then as long as the satellite is operating, during that time also the intended state power, provided there is no effort whatsoever to increase the age of the intended satellite.

As an illustration, satellites that operate with geostationary orbit will continuously be in the same place so that these satellites can operate at any time. Naturally, the satellite's position will shift little by little. After reaching a certain shift distance that is allowed so that the spacecraft can operate optimally (has reached its tolerance limit of shifting), the satellite must be pushed back to its proper position by using the rocket contained within. The rocket fuel is undoubtedly limited. If the rocket fuel runs out so that the satellite cannot return to its proper position, the satellite in question cannot be controlled anymore and cannot function properly. Thus the age of the satellite is determined by the availability of rocket fuel.

The electronic equipment contained in the satellite referred to generally obtain electrical power to operate it from the solar panels carried (contained) on the outside of the satellite in question.

If a party, based on the principle of first coming first, controls the territory that is above the other national territory, then when the national authority (in the world) has the capability and intends to control the space area that has been claimed by the other party, then the jurisdiction of the national territory must wait and give the opportunity to other parties who previously controlled the area to complete their task first. Only then the transition (transfer of) power is possible.

g. Priority Principle.

This priority principle is a principle when there will be a transition of power in space based on the principle of first come first. The first mastery priority for controlling territorial space is those who have national territory on earth, below the intended space area. If the party who has the priority right has not yet mastered the said space area, the control over the space area will turn into the second priority right. What is meant by the party who has the second priority right here is the first party to control the space area based on the principle of first come first.

If the party that has the priority right and the second priority right does not intend to control the space area, then the party who has the priority right can surrender his rights (based on an agreement) to other parties who intend to replace the priority right to control the territory space in question.

h. The Principle of Substitution.

The principle of substitution is the process of delivering the first priority right to another party (based on an agreement) to control the intended space area.

3.2. The Theory of Space Law

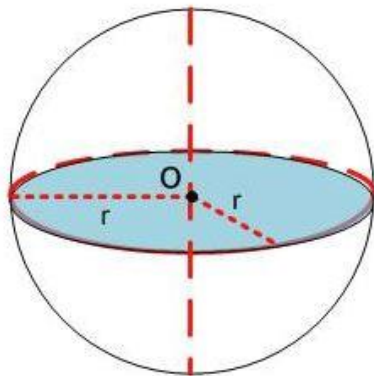
The theory of space law is not a theory that has only one concept but is built from several ideas that become a unified whole. The theory of space law is a dynamic theory of law, which can be developed from time to time following the development of science and technology. It is inseparable from the fact that mastery of space is an effort that requires knowledge of high technology and large-capitalization of capital so that

mastery of space is a form of long-term investment. The concepts of the theory of space law are as follows:

3.2.1 Potential Space Areas

Space Potential Area is the potential of a country's territory in space with precisely the same boundaries as those internationally recognized territorial borders. The Space Potential Region is potential because if the country cannot control it, the Space Potential Area is still a free territory. Even though the status is a free territory, the Potential Space Areas cannot be controlled and or permanently claimed by other countries (parties), except for a limited period of time before the relevant country can actually control them, and or are governed by an agreement with the state which controls the Potential Space Area.

The area of the potential space is the same as the area of the country concerned at the height of the claim. Thus the Space Potential Region is declaratory. By using the sphere area formula, the Space Potential Area calculation can be performed as follows:



Surface Area of Sphere Equation :

$$L = 4 \times \pi \times r^2$$

Where :

L = Surface Area of Sphere

r = radius of sphere

$\pi = 22/7$ or 3,14

Table 1. Indonesian Area Space Potential Calculation Table

No.	Altitude (Km.)	d Earth (Km.)	r Earth (Km.)	r ² Earth (Km.)	4 π	Surface Area of Earth (Km ² .)	%	Surface Area of Indonesia (Km ² .)	% Surface Area of Indonesia
1		12.742	6.371	40.589.641	12,56	509.805.891	100,00	5.180.053	1,01608339
2	1		6.372	40.602.384	12,56	509.965.943	100,03	5.181.679	1,01608339
3	2		6.373	40.615.129	12,56	510.126.020	100,06	5.183.306	1,01608339
4	10		6.381	40.717.161	12,56	511.407.542	100,31	5.196.327	1,01608339
5	100		6.471	41.873.841	12,56	525.935.443	103,16	5.343.943	1,01608339
6	1.000		7.371	54.331.641	12,56	682.405.411	133,86	6.933.808	1,01608339
7	10.000		16.371	268.009.641	12,56	3.366.201.091	660,29	34.203.410	1,01608339
8	36.000		42.371	1.795.301.641	12,56	22.548.988.611	4.423,05	229.116.529	1,01608339

Note:

- Assuming the diameter (d) of the earth is 12,742 Km.
- The assumed area of Indonesia is 5,180,053 Km².

Based on the table above can be described as follows:

- a. In reality, the shape of the earth is not perfectly round like a ball. But for the sake of calculation, the shape of the earth is considered as a ball (perfectly round).

- b. By using (assuming) the earth's diameter is 12,742 Km, it can be seen that the surface area of the earth is 509,805,891 Km².
- c. By using (assuming) the area of land (land and sea) of Indonesia is 5,180,053 Km², it can be seen that the total area of Indonesia is 1.01608339% of the total surface area of the earth.
- d. The earth's surface area of 509,805,891 Km² is 100%.
- e. The surface area of the earth at an altitude of 1 km above the surface of the earth is 100.03% wider. That is because the radius (r) of the earth increased by 1 Km so that it increased the overall surface area of the earth.
- f. The surface area of the earth at an altitude of 2 km above the earth's surface is 100.06% wider. It is due to the radius (r) of the earth increased by 2 Km so that it increases the overall surface area of the earth.
- g. The surface area of the earth at an altitude of 10 km above the surface of the earth is 100.31% wider. That is because the radius (r) of the earth has increased by 10 Km, thus increasing the overall surface area of the earth.
- h. The surface area of the earth at an altitude of 36,000 km above the earth's surface is 4,423.05% wider. That is because the radius (r) of the earth increased by 36,000 Km, thereby increasing the overall surface area of the earth.
- i. The potential area of Indonesia Space at an altitude of 1 km above the surface of the earth is 100.03% wider to 5,181,679 Km².
- j. The potential area of Indonesia Space at an altitude of 36,000 km above the earth's surface is 4,423.05% wider to 229,116,529 Km².

The uses of a potential space area for a country are:

- a. As a possible natural resource that can be utilized with priority rights. As an example; if a country's National Space Potential is actually going to be used by that country in 2025, then that country's Space Potential Area can still be used by other countries (in the presence of another country's presence) until 2025 (before it is used by countries that have The Space Potential Area), even though the mark of the presence of the other state has not yet expired.
- b. The Space Potential Area is transformed into a Territorial Space Territory after there is a sign of the presence of a country that has the Space Potential Area. Thus it is possible in one Potential Space Area that there is more than one Territorial Space Territory.
- c. If a Space Potential Territory has several Territorial Territories, within a certain number and distance, then the principles of an archipelagic country as referred to in the international sea law convention. With the implementation of the policies of the archipelagic state, it is possible to have a Space Territory with a specific size that is quite large, or the Potential Space Area may change into a Territorial Space Region.
- d. The Space Potential Area provides obstacles to private parties from other countries to create a country in space in ways that have the potential to harm the owner of the Space Potential Area.

- e. The Space Potential Area can be used by private companies registered in the owner of the Space Potential Area for productive economic activities.

3.2.2 Real Space Region

Real Space Area is a region on the surface of the earth, a part of the potential Space Region of a country, which is controlled by that country. The real control is if the country's law can be enforced in the Real Space Region by using the power held by the said country. As an example:

- a. The maximum height of a fighter, along with the weaponry it carries determines the height of the Real Space Region. If the plane can air at an altitude of 10 Km and the weapons it carries can reach an altitude of 3 Km, then the country's Real Space Region reaches a height of 13 Km.
- b. The maximum range of land-to-air missiles a country has can reach an altitude of 20 Km. Thus the country's Real Space Region reaches an altitude of 20 Km.

The maximum range of radars owned by a country is that it can detect (monitor) moving objects at an altitude of 30 Km. The country's real space area cannot be determined by its radar capability (altitude of 30 Km), because radar cannot enforce law enforcement as the capabilities of a fighter aircraft with its weapons, or the skills possessed by land-to-air missiles.

3.2.3 Territorial Space

A country's territorial space is a part of the country's potential space outside the real area, which is marked by the presence of the country in various tangible forms. For example, the presence of the country at an altitude of 36,000 Km is indicated by the presence of the country's satellites. Ownership of such satellites can be 100% state-owned, or 100% owned by private companies registered in the country, or jointly owned where 51% or more is controlled by the state or private companies registered in the country.

The width of the Space Territory is horizontal and is divided into 2 (two) zones, namely; (1) exclusive zone, and (2) economic zone. An exclusive zone of 8 Nautical miles (1 Nm is equivalent to 1,852 Km) or 14,816 Km horizontally from the position mark of a country's presence (for example, satellite). While the economic zone is 200 Nm wide, equivalent to 370.4 Km. In exclusive zones, no sign of the presence of other countries is permitted, whereas in economic zones it is permissible (possible) for signs of the presence of other countries within a specific time period based on an agreement. The existence of another country's presence in the economic zone of a state gives the right to that presence to have its exclusive zone, but cannot be used for expansion purposes. The existence of an exclusive area aims to; (1) security reasons for the mark of the presence of a country, and (2) providing space for expansion (expansion of territory) within a country's Space Potential Area. As for vertically, both up and down, the width of the Space Territory is the same as the Real Space Region.

3.3. The Concept of Space Mastery According to Indonesian Law

According to the hierarchy of statutory regulations in Indonesia, the highest legal standing in Indonesia is the 1945 Constitution of the Republic of Indonesia¹³. The fact is that in the constitution, there are no regulations relating to space issues. Arrangements related to space issues are contained separately in several different laws. Among them are found in the Law of the Republic of Indonesia Number 5 of 1960 concerning Basic Regulations on Agrarian Principles and the Law of the Republic of Indonesia Number 21 of 2013 concerning Space. In this case, what is meant by space is equated with space. According to the meaning of the word, agrarian can be interpreted as¹⁴; "Matters of agriculture or agricultural land," or "matters of land ownership." Based on the meaning of the word, the placement of space issues in a law related to land is unusual. Nevertheless the law of Indonesia referred to in this study will be limited to covering only these two laws only. The description is as follows:

3.3.1 Law of the Republic of Indonesia Number 5 of 1960 concerning Basic Regulations on Agrarian Principles, also known as Agrarian Law

- a. Article 1 number (2): "The entire earth, water, and space, including the natural wealth contained therein in the territory of the Republic of Indonesia as a gift from God Almighty is the earth, water, and space of the Indonesian people and is a national treasure."
- b. Article 1 number (3): "The relationship between the Indonesian people and the earth, water and space meant in paragraph 2 of this article is an eternal relationship".
- c. Article 1 number (6): "What is meant by space is space above the earth and water paragraphs 4 and 5 of this article".
- d. Article 2 paragraph (1): "On the basis of the provisions in article 33 paragraph 3 of the Basic Law and matters referred to in article 1, water and space earth, including the natural resources contained therein are at the highest level controlled by The state, as an organization of power for all people ". The formation of power organizations according to Sugeng Istanto can be through; the proclamation of independence, international treaties or plebiscites¹⁵.
- e. Article 2 paragraph (2): "The controlling right of the State referred to in paragraph 1 of this article authorizes:"
 - 1) Letter a: "regulates and carries out the designation, use, supply and maintenance of the earth, water and space;"
 - 2) Letter b: "determine and regulate legal relations between people and the earth, water and space;"
 - 3) Letter c: "determine and regulate legal relations between people and legal actions concerning the earth, water, and space."

¹³ Law Number 12 of 2011 Concerning Pembentukan Peraturan Perundang-undangan, Article 7 paragraph (1) letter a.

¹⁴ KBBI Daring, *Agraria*, Available online from <https://kbbi.kemdikbud.go.id/entri/agraria>. [Accessed April 11, 2019].

¹⁵ Wulandari, R. (2015). "Kapasitas Organisasi Internasional (PBB) dalam Menentukan Suatu Entitas (Palestina) Sebagai Negara". *Jurnal Khatulistiwa*, 5 (1): 44.

- f. Article 5: "The agrarian law applicable to the earth, water and space is customary law, as long as it does not conflict with national and state interests, based on national unity, with Indonesian socialism and with the regulations contained in this Act and with other laws and regulations, everything in accordance with the elements that rely on religious law ". Adat or adat law in force in Indonesia are different, this is a characteristic of the Indonesian people namely; Unity in Diversity, which means different, but still one¹⁶. Adat law is applied in an adat court which is a forum that implements adat norms¹⁷. Adat law can also be enforced through a customary institution as a legal entity tasked with upholding the values of local customs, in the form of the good luck and favors of indigenous peoples in certain customary law areas¹⁸.
- g. Article 8: "Based on the State's right to control as referred to in article 2, the taking of natural resources contained in the earth, water and space" is regulated. Natural wealth is God's gift to the Indonesian people¹⁹.
- h. Article 9 paragraph (1): "Only Indonesian citizens can have a full relationship with the earth, water, and space, within the limits of the provisions of articles 1 and 2". Aristotle argued that the concept of citizenship was often confused and caused debate because there was no general agreement on who was called a citizen²⁰.
- i. Article 11: "The legal relationship between persons, including legal entities, with the earth, water, and space and the authorities derived from the legal relationship will be regulated, in order to achieve the objectives referred to in article 2 paragraph 3 and prevented mastery over life and work over other people who exceed the limits ". What is meant by a legal entity here is the same as humans, namely supporters of rights and obligations, so that it has legal authority²¹.
- j. Article 14 paragraph (1): "Bearing in mind the provisions in article 2 paragraph 2 and 3, article 9 paragraph 2 and article 10 paragraph 1 and 2 of the Government in the framework of Indonesian socialism, make a general plan regarding the supply, allocation and use of the earth, water, and space and the natural wealth contained therein: ". Socialism originated from the tradition of western political thought (European nation), which developed in the 19th century due to inequality, poverty and exploitation of individuals²².
- k. Article 14 paragraph (2): "Based on the general plan referred to in paragraph 1 and in view of the relevant regulations, the Regional Government regulates the supply, allocation and use of the earth, water and space for the region, in accordance with

¹⁶ Susylawati, E. (2009). "Eksistensi Hukum Adat dalam Sistem Hukum Di Indonesia". *Jurnal Al-Ihkam*, IV (1): 126.

¹⁷ Sulastriono. (2014). "Penyelesaian Konflik Pengelolaan Sumber Daya Alam Berbasis Pranata Adat". *Media Hukum*, 21 (2): 214.

¹⁸ Bachtiar, M. & Fitriani, R. (2017). "Perlindungan Hukum terhadap Hak-Hak Masyarakat Adat di Kabupaten Pelalawan terkait dengan Penerbitan Ijin Lahan". *Media Hukum*, 24 (1): 75.

¹⁹ Suhartono, S. (2013). "Desentralisasi Pengelolaan Sumber Daya Alam Untuk Mewujudkan Kesejahteraan Masyarakat". *Jurnal Ilmu Hukum*, 9 (18): 110.

²⁰ Narmoatmojo, W. (2012). "Pemikiran Aristoteles Tentang Kewarganegaraan dan Konstitusi". *Jurnal Ketahanan Nasional*, XVIII (3): 25.

²¹ Prananingrum, D. H. (2014). "Telaah Terhadap Esensi Subjek Hukum: Manusia dan Badan Hukum". *Jurnal Refleksi Hukum*, 8 (1): 75.

²² Manan, F. (2016). "Sosialisme Islam: Perspektif Pemikiran Politik H.O.S Tjokroaminoto". *Jurnal Wacana Politik*, 1 (1): 63.

the conditions of their respective areas. The authority of the regional government to make these arrangements is because the local government is closer to the people, and knows the demands and desires of the community²³.

- l. Article 16 paragraph (2): "The rights to water and space as referred to in article 4 paragraph 3 are:". Letter c: "right to use space". There are four types of tenure rights in the law in the field of natural resources, namely; the rights of the nation, the right to control the state, individual rights and customary rights²⁴.
- m. Article 48 paragraph (1): "The right to use space gives authority to use energy and elements in space for efforts to maintain and develop the fertility of the earth, water, and natural resources contained therein and other matters related to that".
- n. Article 48 paragraph (2): "Space use rights are regulated by Government Regulation".

3.3.2 Law of the Republic of Indonesia Number 21 Year 2013 on Space

Regulations related to space issues in the two laws can be compared to the substance as follows:

- a. According to the Basic Agrarian Law, space is defined as a space that is above the earth and water. Thus the boundary of space is in contact with the limits of soil and water. Meanwhile, according to the Kentariksaan Act, between land and sea and space, there is air space.
- b. In the Basic Agrarian Law, the existence of air space is not recognized, but in the Space Act the presence of air space is recognized.
- c. The concept of space ownership developed in the Basic Agrarian Law is to place space as a gift from God to the people of Indonesia so that it is Indonesia's national wealth. Whereas in the Space Act, space ownership is conceptualized as the joint property of the nations of the world so that the countries of the world have the freedom to use space without discrimination.
- d. The relationship between the Indonesian people and space according to the Basic Agrarian Law is eternal, thus there is no time limit when the link will change or end. The opposite is in the Space Act where the relationship between the Indonesian people and space is not eternal because it is limited or regulated by international law or treaties that at any time (based on the agreement of the parties) may change.
- e. The state fully controls the space according to the Basic Agrarian Law as an organization of power for all people. Thus it can be said that the ultimate control of space is in the hands of the people of Indonesia. Meanwhile according to the Space Act, mastery of space must comply with international treaties. In the case of international treaties it becomes a mean to distribute power to the countries in the world in order to utilize space for the benefit of their respective countries.
- f. According to the Basic Agrarian Law, the state has the right to control everything related to space fully, meanwhile according to the Space Act the rights of the state

²³ Nadir, S. (2013). "Otonomi Daerah dan Sentralisasi Desa: Menuju Pemberdayaan Masyarakat Desa". *Jurnal Politik Profetik*, 1 (1).

²⁴ Widowati, D. A. dkk (2019). "Hak Penguasaan atas Sumber Daya Alam dalam Konsepsi dan Penjabarannya dalam Peraturan Perundang-Undangan". *Jurnal Legislasi Indonesia*, 16 (2): 147.

in terms of space control are limited, only related to the implementation of activities related to space.

- g. The legal source of space law according to the Basic Agrarian Law is derived from customary law, positive law, and religious law, while the legitimate source of space law, according to the Space Act comes from international law or agreement.
- h. Because according to the Basic Agrarian Law the state has the right to control space, the country has the power to regulate the taking of space assets. Meanwhile, according to the Space Act, the control of space is positioned as the right of all countries in the world. Thus the state only has limited power in terms of regulating the implementation of space activities.
- i. It is explicitly stated in the Basic Agrarian Law that only Indonesians have a full relationship with space, meanwhile, according to the Space Act, an outside party who has obtained a permit can have the same relationship with space as Indonesians.
- j. According to the Basic Agrarian Law the state can regulate the mastery of space by certain parties so as not to exceed the limits, meanwhile the Law on Space places this arrangement as one of the duties of international law or agreement.
- k. The government can make general plans related to the designation and use of space as one of Indonesia's natural resources as stipulated in the Basic Agrarian Law. Meanwhile, the Space Act puts the ability to make general plans related to the designation and use of space as part of the legal domain or international agreement.
- l. The Basic Agrarian Law provides the ability of regional governments to make arrangements for the use and use of space for the benefit of their regions, while the Space Act puts the Regional Government in a passive position because it is only a user and facilitator of space utilization.
- m. Because the Basic Agrarian Law positions the state as the party that has full control of space, the country has the right to permit the use of space by other parties by issuing Space Use Rights. It is not regulated in the Space Act because the State Space Act is not positioned as a party that controls space in full.

Based on the description above, another found that the Basic Agrarian Law related to space provides regulations that are of the principal but fundamental, while the Space Law provides more technical and practical arrangements. Meanwhile, the position of the Basic Agrarian Law and the Space Law concerning the regulation of space can be examined using general legal principles. The legal principles in question are; (a) the principle of *lex specialis derogat legi generalis* (special statutory provisions) overriding general provisions), (b) the law of *lex superior derogat legi inferior* (statutory provisions) which have a higher degree of priority prior to its use/ the mention of the provisions which have a lower degree), and (c) the principle of *lex post teriori derogat legi priori* (statutory provisions) that only overrides/removes the enactment of the requirements of the old law governing the same legal material).

According to the provisions of Article 7 of the Law of the Republic of Indonesia Number 12 of 2011 concerning the Formation of Regulations of the Law, the Basic Agrarian Law, and the Act of Interest, the position is equal or equivalent because it is the same as the law. Thus to analyze the "legal relationship" between the Basic

Agrarian Law and the Space Act it cannot use the principle of *lex superior derogat legi inferior*.

Compared to the space regulation contained in the Basic Agrarian Law, the space regulation contained in the Space Act is more technical or practical because it can be directly applied in reality. For example, it is directly applied in practical activities related to the use of space by interested parties. Based on this, if the Basic Agrarian Law is a law, the Space Act can be seen as implementing regulations for the Basic Agrarian Law related to space. So the authors argue that the Space Act is more precisely positioned as Government Regulations or Presidential Regulations related to space. With the construction of the law, an analysis using the principle of *lex superior derogat legi inferior* (statutory provisions) can be used which has a higher degree of priority over its use/mention than the arrangements which have lower degrees.

Regarding how the correlation between the Basic Agrarian Law and the Space Act related to space is understood using the *lex specialis derogat legi generalis* principle (statutory provisions), which explicitly overrides general provisions can be described as follows. General provisions cannot be compared to the necessary provisions. According to the meaning of the word, general is²⁵; "Concerning all or all; as a whole, does not involve specific (certain) only ". While the meaning of the main word is; "principle, basis, essence of essence, center (which is the focus of attention and so on); above all; very important." In this case, it can be said that the Basic Agrarian Law regulates essential matters relating to the regulation of space; it cannot be said to control general issues. That is because the rules contained in the Basic Agrarian Law are fundamental. Likewise, the Law on Space cannot be said to be a special regulation because, according to the meaning of the word, special is²⁶; "typical; special; uncommon: ", meanwhile the substance of the Space Act is more technical or practical. Based on this understanding, it can be understood that the *lex specialis derogat legi generalis* principle is not appropriate to be used as a "knife of analysis", which is a way to understand the correlation between the Basic Agrarian Law and the Space Act. That is because the two laws actually have different substances. The substance of the Basic Agrarian Law regulates the main matters relating to space, while the content of the Space Act regulates issues that are technical or practical.

Another legal principle that can be used to analyze the correlation between the Basic Agrarian Law and the Space Law is to use the principle of *lex posterior derogat legi priori* (the provisions of the statutory regulations) that have recently ruled out / removed the validity of the old statutory provisions (the same legal material). Judging from the time of its formation, the Basic Agrarian Law existed earlier than the Space Act, but judging from its substance, the two laws have different substance because the Basic Agrarian Law regulates agrarian (land) issues while the Antarctic Law regulating space problems (space). Even so, it is true that one of the substances contained in the Basic Agrarian Law is related to space issues, but the substance is only part of the substance regulated in the Basic Agrarian Law. It is very different from the Law on Space, which has an element regulating space issues (space). Based on the description, it can be seen that the correlation between the Basic Agrarian Law and the Act of

²⁵ KBBI Daring, *Umum*, Available online from: <https://kbbi.kemdikbud.go.id/entri/Umum>. [Accessed April 11, 2019].

²⁶ KBBI Daring, *Khusus*, Available online from <https://kbbi.kemdikbud.go.id/entri/khusus>. [Accessed April 11, 2019].

Attraction cannot be approached using the principle of *lex post teriori derogat legi priori*.

Understanding the correlation between the Basic Agrarian Law and the Aerospace Law by using the *lex specialis derogat legi generalis* principle, the *lex superior derogat legi inferior* principle, and the *lex post teriori priori legi priori* principle provides an understanding that the Basic Agrarian Law provides basic regulations governing the inferior *legi inferior*, and the *lex post teriori priori legi priori* principle the space law, while the Space Act provides technical or practical arrangements for space law. With this interpretation, the implementation of the Space Act must be within the framework of thought established by the Basic Agrarian Law related to space.

4. Conclusion

The concept of mastery of space, according to the theory of space law is controlled by the state as long as the state can actually enforce the law in the space region. Whereas the concept of mastery of space according to the Law of the Republic of Indonesia Number 5 of 1960 concerning Basic Regulations on Agrarian Principles is controlled by the state. Meanwhile, the concept of mastery of space according to the Law of the Republic of Indonesia Number 21 of 2013 concerning Space is controlled by all the nations of the world together. Based on this, the concept of mastery of space according to the theory of space law is more realistic and balanced compared to the idea of mastery of space according to statutory provisions.

Acknowledgments

Master of Laws Program, Post-Graduate School of Nusantara Islamic University, Bandung, Indonesia. This research is funded by DIPA Kopertis Region IV West Java Banten, Ministry of Research, Technology, and Higher Education, in accordance with Letter of Agreement of Research of Decentralized Grant Research Fiscal Year 2019 Higher Education Research Program of Higher Education.

References

Books:

- Salim, H.S & Nurhani, E.S. (2013). *Penerapan Teori Hukum pada Penelitian Tesis dan Disertasi*. Jakarta: RajaGrafindo Persada.
- Kelsen, H. (2013). Penerjemah: Muttaqien, R. *Teori Umum tentang Hukum dan Negara*. Bandung: Nusamedia.
- Meuwissen; Penerjemah: Sidharta, B.A. (2007). *Meuwissen Tentang Pengembangan Hukum, Ilmu Hukum, Teori Hukum, dan Filsafat Hukum*. Bandung: Refika Aditama.
- Rasjidi, L. (2007). *Menggunakan Teori/Konsep dalam Analisis di Bidang Ilmu Hukum*. Bandung.
- Soekanto, S & Mamudji, S. (1990). *Penelitian Hukum Normatif Suatu Tinjauan Singkat*. Jakarta: Rajawali Pers.

Sunggono, B. (2013). *Metodologi Penelitian Hukum*. Jakarta: RajaGrafindo Persada.

Journal articles:

- Bachtiar, M & Fitriani, R. (2017). "Perlindungan Hukum terhadap Hak-Hak Masyarakat Adat di Kabupaten Pelalawan terkait dengan Penerbitan Ijin Lahan". *Media Hukum*, 24 (1): 75.
- Manan, F. (2016). "Sosialisme Islam: Perspektif Pemikiran Politik H.O.S Tjokroaminoto". *Jurnal Wacana Politik*, 1 (1): 63.
- Nadir, S. (2013). "Otonomi Daerah dan Sentralisasi Desa: Menuju Pemberdayaan Masyarakat Desa". *Jurnal Politik Profetik*, 1 (1).
- Narmoatmojo, W. (2012). "Pemikiran Aristoteles tentang Kewarganegaraan dan Konstitusi". *Jurnal Ketahanan Nasional*, XVIII (3): 25.
- Prananingrum, D.H. (2014). "Telaah terhadap Esensi Subjek Hukum: Manusia dan Badan Hukum". *Jurnal Refleksi Hukum*, 8 (1): 75.
- Ramadhan, M. & Arifin, T. (2013). "Aplikasi Sistem Informasi Geografis dalam Penilaian Proporsi Luas Laut Indonesia". *Jurnal Ilmiah Geomatika*, 19 (2): 141 - 146,
Available online from
<http://jurnal.big.go.id/index.php/GM/article/viewFile/208/205>. [Accessed April 28, 2017]
- Ruhaeni, N. (2014). "Perkembangan Prinsip Tanggung Jawab (Base of Liability) dalam Hukum Internasional dan Implikasinya terhadap Kegiatan Keruangkasaan". *Jurnal Hukum Ius Quia Iustum*, 3 (21): 336.
- Susylawati, E. (2009). "Eksistensi Hukum Adat dalam Sistem Hukum di Indonesia". *Jurnal Al-Ihkam*, IV (1): 126.
- Sulastriono. (2014). "Penyelesaian Konflik Pengelolaan Sumber Daya Alam Berbasis Pranata Adat". *Media Hukum*, 21 (2): 214.
- Suhartono, S. (2013). "Desentralisasi Pengelolaan Sumber Daya Alam untuk Mewujudkan Kesejahteraan Masyarakat". *Jurnal Ilmu Hukum*, 9 (18): 110.
- Widowati, D.A. dkk (2019). "Hak Penguasaan atas Sumber Daya Alam dalam Konsepsi dan Penjabarannya dalam Peraturan Perundang-Undangan". *Jurnal Legislasi Indonesia*, 16 (2): 147.
- Wulandari, R. (2015). "Kapasitas Organisasi Internasional (PBB) dalam Menentukan Suatu Entitas (Palestina) sebagai Negara". *Jurnal Khatulistiwa*, 5 (1): 44.

Internet

- Al Qashash/28 : 56], Available online from: <https://almanhaj.or.id/2921-hidayah-hanya-milik-allah-subhanahu-wa-taala.html>. [Accessed Mei 15, 2018].
- KBBI Daring. *Agraria*, Available online from
<https://kbbi.kemdikbud.go.id/entri/agraria>. [Accessed April 11, 2019].

KBBI Daring. *Khusus*. Available online from
<https://kbbi.kemdikbud.go.id/entri/khusus>. [Accessed April 11, 2019].

KBBI Daring. *Umum*, Available online from:
<https://kbbi.kemdikbud.go.id/entri/Umum>. [Accessed April 11, 2019].

National Geographic Indonesia. (2013). Bentuk Bumi Bantu Satelit Tetap di Posisinya, Available online from
<http://nationalgeographic.co.id/berita/2013/11/bentuk-bumi-bantu-satelit-tetap-di-posisinya>. [Accessed April 28, 2017)

UKM Birohmah Universitas Lampung, Ayat Al-Qur'an yang Terakhir Diturunkan, Al-Maidah Ayat 3?? Bener ga sih??, Available online from:
<http://birohmah.unila.ac.id/ayat-al-quran-yang-terakhir-diturunkan-al-maidah-ayat-3-bener-ga-sih/>. [Accessed Mei 15, 2018].

Regulation:

Law Number 12 of 2011 Concerning Pembentukan Peraturan Perundang-undangan.