

Indonesia's First Spaceport Plan in Biak Island: A View from International Relations

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Abstrak

Artikel ini mengkaji secara kritis rencana pembangunan bandar antariksa pertama Indonesia di Pulau Biak untuk memperkuat posisi Indonesia sebagai kekuatan regional di Asia Tenggara. Melalui kerangka analisis yang diperkenalkan oleh Destradi (*empire, hegemony, dan leadership*), artikel ini berpendapat bahwa pembangunan bandar antariksa Biak dapat merepresentasikan perluasan kontrol dan dominasi politik Indonesia di Asia Tenggara. Jika dibangun, bandar antariksa tersebut dapat menjadi awal dari dominasi Indonesia di kawasan dalam konteks keantariksaan. Dengan menjalin kemitraan internasional dengan aktor-aktor yang tertarik dalam penggunaan bandar antariksa di Asia Tenggara dan di luar kawasan, Indonesia dapat memperoleh kekuasaan lunak dan dilihat sebagai hegemoni yang baik hati. Indonesia sebelumnya telah menunjukkan rekam jejak keberhasilan dengan diluncurkannya satelit PALAPA sebagai instrumen pertama yang digunakan oleh seluruh negara ASEAN pada tahun 1976. Dengan demikian, pembangunan bandar antariksa Biak memungkinkan untuk menghidupkan kembali kepemimpinan Indonesia di Asia Tenggara. Kata Kunci: Asia Tenggara, Biak, bandar antariksa, Indonesia, Papua, hubungan internasional

Abstract

This study critically examined Indonesia's first spaceport plan in Biak Island against the Indonesian Government's underlying objective of bolstering the country's position to become the regional power in Southeast Asia. By using three analytical frameworks proposed by Destradi (*empire, hegemony, and leadership*), this study claimed that the building of the Biak spaceport could represent the extension of Indonesia's political control and domination in Southeast Asia. If built, the spaceport would also be the beginning of an empire in spaceport use. By forging international partnerships with those interested in spaceport services in Southeast Asia and outside the region, Indonesia could gain soft power and be seen as a benevolent hegemony. Indonesia has previously demonstrated a proven track record of success in the launch of the PALAPA satellite, which became the first instrument employed by all ASEAN countries in 1976. Thus, constructing the Biak spaceport could possibly revive Indonesia's leadership in Southeast Asia.

Keywords: Southeast Asia, Biak, spaceport, Indonesia, Papua, international relations

INTRODUCTION

Despite the fact that much has been written about Indonesia's first spaceport plan in Biak Island (see Perwitasari & Susanti, 2019; Pradana & Permatasari,

2021; Nugraha et al., 2022), little has examined the implications from an international relations perspective. This aspect is crucial because the spaceport plan might provide insights into Indonesia's ambitions to accelerate

its trajectory as an emerging regional power (Acharya, 2015; Shekhar, 2017). A spaceport not only can act as an orbital launch site in a practical sense, but it can also play a pivotal role in fostering a country, both economically and in terms of power wielded. An evaluation of several location options throughout Indonesia, including Morotai, Enggano, and Nias, resulted in Biak being selected as the most suitable location for the spaceport (Perwitasari, 2019).

A selection of Biak was made due to its existing infrastructure, which includes an airport, seaport, good roads, and an electricity grid, not to mention an existing space tracking station owned by LAPAN (CNN Indonesia, 2022). Nevertheless, beyond all these considerations, Biak was selected due to its strategic position, being the closest of the three shortlisted places to the equator, at only 1° below it. A well-known fact in aeronautics is that launching satellites from the equator is far more affordable than any other point on earth, as virtually no maneuvers are required to adjust its orbit, hence requiring less fuel (Ashish, 2019). So far, there are only two equatorial spaceports in the world: Europe's Guiana Space Center in French Guiana—about 5° above the equator, and Brazil's Alcantara Space Center—about 2° below it; they are both located in South America (Dzulfikar, 2019).

It is worth noting that Indonesia has possessed a launch site operating in Garut, West Java. However, this site cannot launch a large rocket, nor is the launch site adjacent to the equator. The Biak spaceport is, therefore, expected to provide capacity for larger-scale rockets. In this sense, if Indonesia successfully constructs a spaceport in Biak, it would become the spaceport located closest to the equator globally. It would be a unique comparative advantage given that the Indonesian Government has also stated that the spaceport would be established for non-military purposes (Dzulfikar, 2019).

Eleven countries have successfully launched satellites into orbit thus far from their spaceport (dates in brackets indicate first satellite launching): USSR/Russia (1957), USA (1958), France (1965), Japan (1970), China (1970), UK (1971), European Space Agency (1979), India (1980), Israel (1988), Iran (2009), and North Korea (2012)

(China Power Team, 2020). None of these countries are from the ASEAN group; thus, Indonesia is likely to be the first Southeast Asian nation to demonstrate independent orbital launch capabilities. As LAPAN has been able to construct a satellite, the subsequent step would be to establish an Indonesian spaceport, enabling the country to launch its satellites.

This article critically examines Indonesia's first spaceport plan in Biak Island against the Indonesian Government's underlying objective of bolstering the country's position to become the regional power in Southeast Asia. From an international relations perspective, this article insists that Indonesia's proposed spaceport in Biak Island has the potential to bolster its empire, hegemony, and leadership in Southeast Asia for three reasons. First, it would enable Indonesia to extend its political control to the regional level, leading to the establishment of an empire through the utilization of a spaceport. Second, given that the construction of a spaceport would encourage Indonesia to pursue international partnerships and offer public goods and services to Southeast Asia (or internationally), it is likely that Indonesia's hegemony would be strengthened as well. Third, the construction of a spaceport would revive Indonesia's leadership position in the region, as Indonesia has historically provided the PALAPA satellite, which became the first instrument employed by all ASEAN countries in 1976 (Ibrahim, 2004). This article begins with a discussion of the theoretical framework for the study.

THEORETICAL FRAMEWORK

To begin with, Nolte (2010, pp.883-4) asserted that multiple approaches to international relations (IR) should be utilized to conceptualize regional powers. They include the internal power base (liberal), available power resources and their application (realist), role definitions and strategies (constructivist), and interaction patterns in the region with a special emphasis on the role of regional institutions. Even so, scholars find it difficult to agree on defining characteristics of a regional power, although the concept has been frequently applied in a wide range of IR literature. Nolte (2010, p.883) also acknowledged that no analytical instruments have been created to distinguish

between regional powers from great and middle powers. A case in point: if a question is asked, which countries can be classified as regional powers, the discourse would highlight China, India, Brazil, South Africa, Mexico, Nigeria, Egypt, Iran, and Indonesia. However, some of these countries are also categorized as a middle power and even great-power status.

The approach of Destradi (2010) is slightly different from that of Nolte (2010). Destradi (2010, p. 903) contended that a regional power can expand its foreign policy beyond the region, as well as acting as a 'regional leading power' with a benevolent attitude toward its neighbors. She then proposed three ideal-typical regional strategies: empire, hegemony, and leadership. For a start, the empire strategy illustrates a state that entirely dominates material power resources, thereby capable of creating security for itself and pursuing its national interest in an anarchical international system. Furthermore, hegemony is a position of power that relies more on implicit strategies and is different from the means deployed by imperial powers. Destradi built her argument on the assumptions proposed by several scholars, including Gramsci, who asserted that hegemony is a form of dominance even though force is no longer applied. Lastly, leadership is a circumstance in which the hegemon attempts to lead a group of countries to realize their common purposes (Destradi, 2010, pp. 909-921).

Another scholar, Nel (2010, p. 954), adopted two analytical tools to better understand and explain what emerging regional powers wish for: redistribution and recognition. In doing so, Nel conducted case studies from three different countries considered emerging regional powers: India, Brazil, and South Africa. These countries not only utilized a preponderance of material, ideational resources, and institutional capacities to ensure their interests and achieve values at the global level, but they also delivered more public goods to their respective regions. In short, redistribution refers to who gets what, when, and how. Recognition, on the other hand, is rather about how people are treated. It depicts a means of communication in the international community where states tend to recognize the status and social esteem of other states.

Following the explanations, Destradi's approach is the most relevant to the objective of this study, given the emphasis it places on the existing concepts in international relations (empire, hegemony, and leadership). Although the works of Nolte and Nel also fall within international relations, Destradi's approach is more focused on a broader conceptualization of regional powers. Destradi presented empire, hegemony, and leadership as ideal-typical regional strategies highly relevant to the characteristics of this study and excluded in either of the other two works. Nolte's argument for combining several approaches in IR to grasp the idea of regional powers can be useful in liberal, realist, and constructivist lenses of viewing this spaceport development, yet it is again too broad for this study's purpose, which calls for a more specific and focused approach. Likewise, Nel's work does not quite match the objective of this study, as it is too broad by emphasizing a material structural conflict between North and South (redistribution and recognition) and the use of global political economies for understanding regional power dynamics. This study is intended to explore the more focused and specific frameworks required for understanding the characteristics of the case study, as well as the possibility of Indonesia emerging as a regional power. Therefore, Destradi's approach has been determined as the most appropriate one.

Destradi's three analytical frameworks of empire, hegemony, and leadership play a crucial role in understanding and predicting the probability of Indonesia becoming a regional power through the establishment of its spaceport. Indeed, Destradi (2010, p. 928) asserted that the collaboration of these three frameworks can help describe a spectrum of strategies employed by states with a great deal of regional power. Not only do these frameworks enable the classification of observed behavior, but they also consider the interaction of the regional power with its neighbors in the region, including possible changes in their normative orientation and the extent to which they confer legitimacy to the regional power (Destradi, 2010, p. 928). Accordingly, each of these three frameworks was utilized in the analysis by synthesizing them in the context of the Biak spaceport

and ASEAN to make some arguments and predictions. These three frameworks also complement one another, as discussed in the analysis accordingly.

RESEARCH METHOD

This study adopted a qualitative method to shed light on the nexus between Indonesia's first spaceport plan in Biak Island and its likelihood of becoming a regional power. Using Destradi's analytical framework (empire, hegemony, and leadership), the case study was analyzed within the context of international relations. Data for this study were primarily collected from secondary sources, providing an overview of recent developments, stories, news, reports, and dynamics regarding Indonesia's first spaceport project plan. In view of the fact that there has been little research on this topic in academic journals, this study collected some videos published on YouTube containing online seminars, testimonies, and stories regarding Indonesia's plan for a spaceport in Biak.

RESULT AND ANALYSIS

BACKGROUND TO INDONESIA'S FIRST SPACEPORT PLAN

The idea of advancing Indonesia in the field of space dates back to the establishment of the country. The first President of Indonesia, Soekarno, once addressed the National Conference for Peace in Bandung by presenting the five stages of the world revolution: religious, commercial, industrial, atomic, and outer space (Humas, 2022). In an effort to realize the space revolution, the National Aeronautics and Space Institute (LAPAN) was established on November 27th, 1963 (Supancana, 2022). A milestone in LAPAN's history was the launch of Indonesia's first satellite, the Palapa Satellite, from NASA's Kennedy Space Center on July 8th, 1976 (Ibrahim, 2021). Upon the successful launch of the Palapa Satellite, Indonesia became the first Asian country and the third country in the world after the United States and Canada to operate a domestic satellite communication system (Humas, 2022).

The establishment of LAPAN has also accommodated the plan to construct a spaceport in Indonesia following the publication of the Feasibility Study of Equator Biak

Spaceport in 1999 by the institute (Pradana & Permatasari, 2021). Despite being dormant for quite some time, the plan was discussed again following the passing of Law Number 21 of 2013, mandating the construction and operation of a spaceport by LAPAN (Pradana & Permatasari, 2021). Section 7(1)e of the act provides for the commercialization of space activities, and this aspect of the project has been the subject of much discussion. As a follow-up to the introduction of the legislation, the Indonesian Government issued Presidential Regulation Number 45 of 2017 concerning the space master plan 2016-2040, and as a consequence, LAPAN has proposed two scenarios for the Biak spaceport for consideration (Amindoni, 2021).

The first scenario is a small-scale spaceport, the purpose of which is to test multi-stage rockets developed by LAPAN. The space institute has conducted a directed study in Uchinaura, Japan, which has a model of a small spaceport within an area of 70 hectares. In this regard, LAPAN has owned 100 hectares of land at Saukobyne Village, North Biak, raising the institution's optimism about the plan to build a small-scale spaceport before 2024. The second scenario is a large-scale spaceport or international spaceport. Although this scenario is still waiting for confirmation and assessment from international partners, Biak remains a top priority among other islands because it is near the equator. LAPAN also conducted a review to uncover consortium partners' likely perceptions of value and interest in the project, allowing the institute to have an overview of a large-scale spaceport development in Biak (Fauzi, 2019). Nevertheless, LAPAN no longer exists since it was merged into the National Research and Innovation Agency (BRIN) in September 2021 along with other institutions.¹

THE CHALLENGES AND PROGRESS OF THE DEVELOPMENT OF THE BIAK SPACEPORT IN INDONESIA

As far as LAPAN or BRIN is concerned, the most difficult targets are those related to mastering space technology and the ability to launch spacecraft, given that these two targets are high-tech, high-cost, and high-risk (Humas, 2022). A budget commitment to space

development is also necessary to demonstrate the government's political will (Pradana & Permatasari, 2021). The Head of BRIN had once stated that the construction of a spaceport in Indonesia required a budget of IDR 1-10 trillion depending on the type of spaceport to be constructed, while the allocation of funds for LAPAN through BRIN could be considered relatively small, with 840.3 billion in 2021 and 848 billion in 2022 (Humas, 2022). The participation of the private sector, both domestic and foreign, is therefore vital to supporting the government's efforts to build a spaceport (Humas, 2022; Ardes et al., 2021).

Institutional change is also an area of concern. It remains unclear whether the joining of LAPAN to BRIN would result in a positive impact on its pursuit of the spaceport or vice versa. Of course, the inclusion of LAPAN in BRIN is expected not to diminish the nation's aspirations for the development of Biak spaceport. At the local level, the development of the Biak spaceport has also seen opposition related to questions of land acquisition and possible negative effects of the spaceport on the selected site. To begin with, it is valuable to reflect on past events related to the process of the transfer of ownership of 100 hectares of land to LAPAN in Saukoby Village, North Biak. Some people considered the process had violated the indigenous people's land rights at that time. As argued by Apollos Sroyer, the leader of the customary community council representing nine customary areas in Biak (Manfun Kawasa), there was an act of violence perpetrated by the military in 1980 in which indigenous people who owned customary rights were threatened and forced to sign a release letter to LAPAN; if not, they would be labeled as separatists (CEO Indonesia TV, 2021). Markus Abrauw, one of the indigenous landowners at Saukoby Village, also asserted that about 40 years ago, his parents handed over an area of 25 hectares to LAPAN with compensation of only IDR 25 million, which, if adjusted to today's prices, would these days be far less than the market value (Amindoni, 2021). Abrauw has also expressed concerns that the spaceport plan would result in him and his wider family being forcibly expelled from their land (Amindoni, 2021).

Moreover, the rejection of other arguments also occurred within the community, considering the possible negative impacts after the development of the Biak spaceport, such as deforestation, conflicts between clans, increasing military presence, the need for relocation of residents, loss of livelihoods, people being excluded from customary areas, and the project threatening the survival of the island (James, 2021). Nevertheless, Perwitasari and Susanti (2019), in their study entitled 'Vulnerability of Spaceport Construction in Biak Island' discovered that the biggest challenge in the construction of the Biak spaceport from social, economic, infrastructure, and ecological aspects was most likely to be the community's refusal, in the context of land acquisition previously explained, to meet the proposed 2 km radius safe range (exclusion zone). The following section seeks to derive lessons learned from the existing spaceports near the equator.

EXISTING SPACEPORTS: LESSONS LEARNED

The plan to construct a spaceport in Biak indicates Indonesia's commitment to advancing its space technology. This section compares existing spaceports located near the equator: Europe's Guiana Space Center in French Guiana and Brazil's Alcantara Space Center. From this comparison, lessons can be learned about the establishment of Indonesia's first spaceport in Biak.

Europe's Guiana Space Center was the first ever spaceport to be located near the equator. In 1964, French Prime Minister Georges Pompidou officially selected the Kourou District to be the site of the Guiana Space Center. The location was determined due to considerations of its proximity to the equator, low population density, easy access to the Atlantic Ocean, favorable climate, and several existing infrastructures that could be extended to a future spaceport (Howell, 2016). The Guiana spaceport first launched the French liquid-propellant Véronique sounding rocket in April 1968, followed by the Diamant B launch vehicle in 1970 and the European Europa launcher in 1971. In terms of funding the Guiana Space Center, the French Government proposed to share costs with the European Space Agency (ESA) when the agency was formed in 1975. ESA finally agreed to finance two-thirds of the

spaceport's annual budget related to operating costs and the investment required to maintain the quality of the services provided by the Guiana Space Center. ESA has also funded several new facilities for new launchers, including the Vega-C and Ariane 6 (Europe's Spaceport, 2023; Howell, 2016). The performance of Europe's Guiana Space Center has been well-known worldwide in terms of high levels of efficiency, safety, and reliability, employed by Canada, the United States, Brazil, Japan, and India (Teffer, 2018; Europe's Spaceport, 2023).

The subsequent spaceport close to the equator is Brazil's Alcantara Space Center, which was founded in 1983. The Alcantara Center, located in the city of the same name, has been considered by technicians to be one of the world's best sites for orbital and suborbital launches. It is due to its location at 2° south of the equator, its proximity to the sea allowing launches in polar and equatorial orbits, being sparsely populated, earthquake- and hurricane-free, and with low air traffic density and a regular climate (Simoes & Labolita, 2020). In the 1990s, numerous sounding rockets were flown through the Alcantara spaceport, and the project subsequently became a major national resource for Brazil (Grush, 2019). However, a rocket purposed for orbit exploded on the site's launch pad during several ground tests in 2003, and the incident killed 21 people nearby and flattened the launch tower of the runway. The crash then stopped Brazil's attempts to launch two planned satellites, and the country's spaceport found it difficult to recover (Grush, 2019). Since the aftermath of the incident, the Brazilian Government has been trying to discover an international partner by inviting two major US companies, Boeing and Lockheed Martin, to come to Alcantara, offering a more affordable option than Europe's Guiana Space Center in French Guiana (Grush, 2019).

Accordingly, three lessons can be learned from the existence and operation of Europe's Guiana Space Center and Brazil's Alcantara Space Center. To start with, space development requires large investments of capital; thus, having an international collaboration becomes indispensable. Europe's Guiana Space Center, for instance, has cooperated with the European Space Agency. Accordingly, Indonesia should collaborate more closely with the space agencies in the region, such as the

Asia-Pacific Regional Space Agency Forum (APRSAF) and the Asia-Pacific Space Cooperation Organization (APSCO). Indonesia should also take an active role in the ASEAN Committee on Science and Technology, particularly under the Subcommittee on Space Technology and Applications (SCOSA), to strengthen collaboration among ASEAN countries in the field of space technology for the Biak spaceport plan.

In addition, while the construction of an Indonesian spaceport in Biak should benefit the country by attracting investment, the risk of a failed launch is real, including the casualties and damage to terrestrial and marine ecosystems. Brazil's Alcantara Space Europe's Guiana Space Center accident in 2003 has proven it, killing 21 people and eventually halting the launch of subsequent satellites. Therefore, in the construction of Indonesia's first spaceport in Biak, security and safety must be the top priority. Careful planning for the development of the spaceport, effective standard operating procedures, and the feasibility of supporting tools are crucial to ensure the safety of Biak's spaceport operations in the future. Adequate funding is also vital to guarantee the safety of the operations at Biak's spaceport plan. It could be an issue if the enthusiasm for the project wanes in the future and funding is cut. The safety and security measures might be wound back with tight budgets, leading to the potential for a disaster. It is a long-term commitment for the government.

Finally, the incident occurring at Brazil's Alcantara Space Europe's Guiana Space Center can also be interpreted in the context of liability. In this sense, any country that has utilized the spaceport for a launch, resulting in loss or damage, is not liable to compensate the victims of a launching state. It is in accordance with Article VII of The Convention on International Liability for Damage Caused by Space Objects, which Indonesia has ratified through Presidential Decree Number 20 of 1996 (Ardes & Nugraha, 2020). The article states, "The provisions of this Convention shall not apply to damage caused by a space object of a launching State to (a) nationals of that launching state; (b) foreign nationals during such time....." (The UN Office for Outer Space Affairs, 1971).

Reflecting on the two lessons learned mentioned, the following part analyzed how Indonesia's first spaceport plan in Biak Island would achieve three strategies: empire, hegemony, and leadership.

THREE INDONESIAN STRATEGIES

Empire

In this regard, Destradi (2010, pp. 909-10) considered an empire as a circumstance in which a country entirely dominates material power resources in an anarchical system (realist perspective) and is capable of ensuring security for itself to pursue its national interests—endorsed by hard power if necessary. Doyle, cited in Destradi (2010, pp. 910), also defined an empire as “relationships of political control imposed by some political societies over the effective sovereignty of other political societies”. This understanding sheds light on how a country with dominant power resources can exert its political control over other countries. In this sense, Indonesia's first spaceport plan in Biak can be a means for the state to dominate space technological development in Southeast Asia while positioning itself as an upcoming regional power. While ownership of a spaceport can contribute to the rise of a nation, more importantly, it can assist that nation in holding onto that position of power.

Indonesia's first spaceport plan in Biak can serve as a means of dominating space technological development in Southeast Asia in two significant ways. First, if Indonesia successfully constructs its first spaceport and other ASEAN countries are keen to launch their satellites from it, it implies the likelihood of the extension of Indonesia's political control at the regional level (or perhaps even at an international one). Such political control might naturally lead ASEAN countries to become more dependent on Indonesia, which, in turn, would reaffirm Indonesia's regional power status, leading to the formation of an empire in spaceport use. Although it is possible to consider other options for spaceports outside the region, the Biak spaceport would be particularly advantageous due to its proximity to the equator. The presence of the Biak spaceport would also contribute to the strengthening and advancement of ASEAN's Science

and Technology Committee. As observed by Associate Professor Wolfram Dressler of the University of Melbourne, “the spaceport would bring in a huge amount of political capital for Indonesia, for it to [establish itself] as a strong player in the realm of ASEAN” (Amindoni & Tan, 2021). Over the last three decades, ASEAN countries have launched their satellites from outside the region. For instance, Thailand (1993), Malaysia (1996), Vietnam (2008), and Myanmar (2019) utilized Europe's Guiana Space Center in French Guiana, while others like the Philippines (1997) and Laos (2015) employed the Xichang Europe's Guiana Space Center in China (Huxley, 2008; Leng et al., 2009; Lele, 2013; Nitta, 2020). In the future, Indonesia's spaceport, to be located in Southeast Asia, is expected to be a more cost-effective option than spaceports outside the region since it is extremely close to the equator, resulting in less fuel consumption.

Subsequently, Indonesia can also advance its national interests through the existence of the Biak spaceport. Perwita and Yani (2005) stated that pursuing the national interest of a country includes not only military power but also the level of technology it controls, natural resources, forms of government, and political and ideological leadership. Hence, the Biak spaceport would be proof of the level of Indonesian space technological development and measure the country's progress. Muna (2016) contended that the development of a spaceport is in Indonesia's national interest, noting that from time to time, it is seen as a matter of urgency. For instance, Indonesia, under the leadership of President Joko Widodo, is seeking to become a maritime power, and therefore, ‘eyes in the sky’ (satellites) are required to support global shipping and trading (Rochwulaningsih, 2019). In this regard, having ‘eyes in the sky’ would also ensure Indonesia's security. While the Biak spaceport offers the potential to allow Indonesia to dominate space technological development in Southeast Asia, power strategies to achieve this empire have not yet been identified. It is called hegemony in this context and is crucial for complementing the empire. The next section discusses the importance of hegemony within Indonesia's first spaceport in Biak.

Hegemony

As Destradi (2010, p. 912) claimed, “Hegemony is a form of power exercised through strategies which are more subtle than those employed by states behaving as imperial powers”. To put it differently, a country that intends to pursue hegemony must prioritize soft power strategies rather than hard ones. In this sense, Indonesia is attempting to achieve hegemony through the construction of its equatorial spaceport in more subtle ways. Indeed, Indonesia is seeking to establish an international partnership to ensure that the Biak spaceport is compliant with the standard operating procedures and credibility prior to its construction. It can be seen in a telephone conversation between Indonesian President Joko Widodo and Elon Musk, the founder of SpaceX (a private spaceflight company), on December 11th, 2020, where Joko Widodo suggested that Elon Musk consider Indonesia’s rocket launch site in Biak as a SpaceX launching pad (Rayda, 2020). Given the fact that SpaceX is currently utilizing four US facilities to launch its rockets, it is possible that the Indonesian alternative would be added to the list in the near future due to Biak’s unique location near the equator, and no ASEAN country has a spaceport so far. Prior to merging with BRIN, Djameluddin, the LAPAN chief, stated that:

Aside from SpaceX, we have also offered this large-scale project to Japan, Korea, China, and India as part of an international partnership. We might end up building a consortium because this would be an international launch site that can provide services to multiple countries (Rayda, 2021).²

Indonesia’s first spaceport plan has the potential to achieve hegemony in Southeast Asia through ownership of the spaceport. First, Indonesia is carrying out space diplomacy comprising four spheres of influence (Pradana & Permatasari, 2021). The first is ASEAN, which is strongly considered the main pillar of Indonesia’s foreign policy. From an ASEAN nation’s point of view, the construction of Indonesia’s spaceport in Biak is unique due to its proximity to the equator, thereby having a special privilege in Southeast Asia and providing conditions for commercial activity in the region. The second sphere is ASEAN + 3 (China, Japan, and the

Republic of Korea). In this context, Indonesia seeks to advance knowledge of space technology and enhance its space diplomacy by joining forums, such as the Asia Pacific Regional Space Agency Forum (APRSAF) and the Asia-Pacific Space Cooperation Organization (APSCO). The third sphere is cooperation between Indonesia and like-minded developing countries, aiming to strengthen common goals and reduce the gap between developing and developed countries in the context of space technology. The fourth is Indonesia’s efforts at the international level through the strengthening of UN multilateralism to minimize the militarization of outer space by spacefaring nations that threaten world peace (Pradana & Permatasari, 2021).

Second, Indonesia’s geographical location would enable the operation of the equatorial spaceport as a form of hegemony for Indonesia in Southeast Asia by dominating regional satellite rocket launches. Indonesia would be the only ASEAN country that has a spaceport located near the equator. This geographical position should also make Southeast Asia a strategic area in the geopolitical arena, considering the other two equatorial spaceports are located in South America. With respect to geographical considerations, the Indonesian spaceport is likely to be utilized by other ASEAN countries (or outside the region) to launch their satellites, which, in turn, would boost the Indonesian economy. In other words, the operation of the equatorial spaceport would form a hegemony for Indonesia in Southeast Asia by dominating regional satellite rocket launchings, and notably, hegemony would be achieved without violence. It is in accordance with what was stated by Gramsci, cited in Destradi (2010, p. 913), that “hegemony is and remains a form of dominance, even though it abstains from the use of force”. In addition, in providing public goods and services (the spaceport) to the other states in ASEAN, Indonesia should expect to be considered a benevolent hegemony.

Third, the Biak spaceport plan has the potential to be Indonesia’s soft hegemony because it would become the only non-military spaceport in the Asia Pacific while simultaneously preserving Indonesia’s aims and interests in the region. Destradi (2010, p.918) divided hegemony into three subtypes: hard, intermediate, and soft, based

on the power instruments employed. Hard hegemony can be understood as a system of dominance based on coercion, but more subtly, while intermediate hegemony refers to the provision of material benefits and rewards to subordinate states to ensure their compliance. Meanwhile, soft hegemony describes a strategy closely related to leadership yet keeps the hegemon's ends and interests at the forefront. According to Dzulfikar (2019), the Biak spaceport plan so far indicates only peaceful use, and it is even set to become the only non-military spaceport in the Asia-Pacific located near the equator. Article 8 of Law Number 21 of 2013 on Space Activities clearly implies that the Indonesian spaceport is not allowed to operate nuclear weapons or utilize celestial bodies for military purposes. Destradi further described how "soft hegemony denotes a strategy that strongly resembles leadership". Even so, the notion of hegemony remains different from leadership because the goals and interests remain the top priority, as discussed next.

Leadership

As Destradi (2010, pp. 921-922) contended, the leader must be able to guide a group of states to achieve their purposes and accomplish their common objectives. She further affirmed that leadership should be understood as transformational—"leaders can alter the motives and preferences of followers, but they are in turn influenced". The majority of ASEAN countries have shared common causes based on the desire to achieve ASEAN Community visions and their embrace of the Industrial Revolution 4.0 to advance the development of their space technology (Rafikasari, 2020). In this context, Indonesia is able to become a leader by providing a spaceport to launch its satellites. To begin with, Indonesia has been well-known for having an appetite for the large-scale development of space technology. Back to the history of Indonesian space development, Indonesia has depicted its strong desire by building LAPAN as one of the earliest space agencies on earth in 1967. Moreover, Indonesia became the first country to orbit the PALAPA satellite successfully, which was later shared with four ASEAN countries in 1976 (Ibrahim, 2004). Indonesia's spaceport plan, therefore, represents a 21st-century

innovation that could strengthen its leadership position in Southeast Asia, particularly concerning space technology development.

Prior to LAPAN being merged into BRIN in 2021, Huxley (2020) described how Indonesia, through LAPAN, is well-known for having an appetite for the large-scale development of space technology. Only over half of the Southeast Asian countries have an established national space program³, presenting Indonesia with an opportunity to become a dominant actor (empire) within ASEAN through its spaceport and, in this regard, through peaceful means (hegemony). It is also in accordance with what was stated by Knorr, cited in Destradi (2010, p. 922), that "the essential features of leadership in international relations are represented by the absence of coercion". Moreover, Indonesia's first spaceport in Biak is expected to offer a special contribution to the country's economic growth, which in turn should endorse Indonesia's position to become a regional power. Indeed, the regional powers should not only display comparatively high military and political capacities but also economic capabilities to set their regional security agenda. The Minister of Research and Technology or the Head of the National Innovation Research Agency, Bambang Brodjonegoro, contended that "the Biak spaceport would be the milestone to Indonesia's economic growth" (Suchayo, 2021). He further stated that building a spaceport would be more profitable than just creating a rocket, and the value of the global space economy is projected to increase to more than USD 1 trillion per year by 2040 (Suchayo, 2021).

In addition, Indonesia's leadership in the scope of space technology is limited to Southeast Asia only. The first reason is that thus far, none of the ASEAN countries has built or proposed the construction of a spaceport. Not only does Indonesia spend more on the space sector than the other ten ASEAN members, but the country also has an ideal location for a spaceport near the equator that other ASEAN countries do not own. The second reason is that although the development of a spaceport in Biak is near the equator, an advantage that no other Asian country has, Indonesia remains unable to compete with China and Japan in the development of space

technology. Hence, this article asserts that the construction of a spaceport in Biak would bolster Indonesia's position to become the regional power in Southeast Asia only, not in Asia. In the future, if Indonesia wishes to promote its spaceport outside Southeast Asia, it needs to ensure the credibility of the spaceport, its safety and performance, its quality of the services, and its sustainability, especially in terms of funding.

CONCLUSION

This study examined Indonesia's first spaceport plan in Biak Island, enacted in Presidential Regulation Number 45 of 2017 concerning the Space Master Plan 2016-2040. Biak was selected with various considerations, including its location near the equator. Indonesia's first spaceport in Biak would be particularly attractive to potential customers because no other country in the Asia-Pacific region has a spaceport close to the equator (about 1°). The spaceport is expected to play a pivotal role in offering affordable satellite launch services and space exploration to the world, particularly in Southeast Asia.

By using three frameworks offered by Destradi, this study discovered that Indonesia has the potential to become a regional power in Southeast Asia through ownership of the spaceport. To begin with, the Biak spaceport would open up opportunities for ASEAN countries to launch their satellites, as launching there would require less fuel along with the convenience of being positioned in the same region. A spaceport would allow for the extension of Indonesia's political control to the regional level, which, in turn, leads to the formation of an empire in the context of spaceport use. In addition, by seeking an international partnership to get on board in the Biak spaceport development, Indonesia is endeavoring to achieve hegemony in more subtle ways. It is envisaged that the way Indonesia would run the Biak spaceport would also contribute to it being considered a 'benevolent hegemony' as it offers public goods and services to Southeast Asia (or internationally). Furthermore, Indonesia has previously demonstrated a proven track record of success, where the launch of the

PALAPA satellite became the first instrument to reach and be employed by all ASEAN countries in 1976. Thus, through the construction of the Biak spaceport, a revival of Indonesia's leadership in Southeast Asia is a distinct possibility.

Nonetheless, Indonesia has challenges in building the Biak spaceport and still encounters resistance from a few local communities. The construction of a small-scale spaceport can be achieved within the allotted time, yet a large-scale spaceport would depend on the results of the Indonesian government's offer to SpaceX and other countries such as Japan, Korea, China, and India. Funding also remains another challenge, as the construction of a spaceport requires a considerable amount of funds. Therefore, collaboration with the private sector is crucial to enable the project's funding. Last but not least, institutional change should be considered since LAPAN is no longer an independent institution. It is expected that merging with BRIN would strengthen LAPAN's plan to build a spaceport in the near future.

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ENDNOTE

- ¹ As the result of the merger with BRIN, LAPAN has been transformed into the Research Organization for Aeronautics and Space (Indonesian: *Organisasi Riset Penerbangan dan Antariksa*, ORPA) under the umbrella of BRIN. See CNN Indonesia (2022)
- ² It is worth mentioning that India has been cooperating with Indonesia through LAPAN and Indian Space Research Organization (ISRO) since 1997, resulting in the establishment of a Telemetry, Tracking, and Command (TTC) station in Biak to support ISRO's mission (Mampioper, 2021). Thus, India has a strong potential to join the consortium for the Biak spaceport since it has possessed a presence in the region.

³ Five ASEAN countries have an established national space program (Indonesia, Malaysia, the Philippines, Thailand, and Vietnam), four conduct very little or no space activities (Brunei, Cambodia, Laos, and Myanmar), and one with a distinct academic-commercial focus (Singapore). See Verspieren (2023)

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