Talent Development & Excellence
Vol.12, No.1s, 2020, 241-251

Funding Scheme of Spaceport Development in Indonesia

Shinta Rahma Diana
Center for Aerospace Policy Studies of LAPAN, Indonesia

Nandan Limakrisna
Universitas Persada Indonesia YAI, Jakarta, Indonesia
E-mail: shinta.rahmadiana@gmail.com

ABSTRACT

To discover how the funding scheme of Spaceport develoment in Indonesia with the minimum allocated budget that is less than 1% of the GDP for research funds, this aerospace activity can still be achieved, especially activity that needs major investment like Spaceport development. This study used qualitative research method. Hollis (1994) put it, the qualitative approach seeks to understand phenomena. Type of data used in this study is secondary data that is collected using literary review. In developing Spaceport, Institution can only cooperate with Indonesian legal entity and then the legal entity may involve foreign party as sub-contractor. Foreign legal entity may carry out commercial activity once the Spaceport is built. Investment of foreign capital in the spaceport development needs to be observed in capital investment, that shall not be more than or equal to 50%. This is because National party is in control, where regulation and monitoring of Spaceport operation are carried out by the Government. Cooperation model that can be used is the PPP model, which includes the private sector or outside the government in its funding mechanism.

Key Words : Environmental Funding, Development, Spaceport, Investment
JEL Classifications: E44, M14, Q56

1. INTRODUCTION

1.1. Background of the Study

Review on ecnomic aspect of space technology is a part of space technology development strategy besides another aspect. According to other countries experience, economic issue is usually related to the needs of funding (budgets). In some countries, it is even mentioned that ideally, the development of aerospace development needs at least 1% funding from the GDP.

Meanwhile, recent condition in Indonesia is still far from the ideal 1% funding of the GDP, considering the funding for overall research and science nationally is far below 1% of GDP. When the government approved the funding commitment, then argumentation of how much return that will be received from development of a technology is necessary. Expenditure of funds for mastery and production of an aerospace technology product is a form of long-term investment. Where this funding must be spent from the beginning and then bring benefits once the product is finished. One of the advantages or benefits can be in a form of foreign exchange savings.

Regarding the allocated budget to fund the activity of mastery and aerospace activity operation, where the data shows a lack amount of overall research allocation budget,

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

especially for aerospace funding which have a low percentage from the small amount of allocation of the research funding. Moreover, if this data is to be compared with other countries space allocation funds, for example other Countries GDP. Then, it is necessary to see other funding opportunities, or other schemes in achieving an aerospace program.

Aerospace activity as stated in Article 7 Law of Republic of Indonesia Number 21 Year 2013, needs a huge amount of funding for achievement of its mastery and operation. Especially for mandate realization regarding one infrastructure of a Spaceport in the territory of Republic of Indonesia. The construction needs a very large amount of funds for the realization of the construction of the infrastructure.

Achievement of aerospace program on the development of AeroSpaceport is in line with the Masterplan of Acceleration and Expansion of Indonesian Economic Development (hereinafter referred to as MP3EI) which has a period from 2011-2025. MP3EI own an economic multiplier in a form of a working document consisting directives for developing the main economic activities that is more specific, completed with infrastructure needs and recommendation for changes/modification on laws and regulations that deemed necessary or formation of new laws and regulations needed to encourage investment acceleration and expansion.

This implied that MP3EI encourage major investments for the development of an infrastructure. Politics and economics reformations that is fairly combined with major investments in infrastructure may boost up the growth. Therefore, development of Spaceport is in line with the acceleration program.

With the constraints of low funding to realize the achievement of aerospace program, one of which is Spaceport development, then to implement MP3EI, the most appropriate scheme to be implemented for Spaceport development will be written in this study in order to achieve aerospace program in Indonesia.

1.2. Research Objectives

To discover how the funding scheme of Spaceport develoment in Indonesia with the minimum allocated budget that is less than 1% of the GDP for research funds, this aerospace activity can still be achieved, especially activity that needs major investment like Spaceport development.

1.3. Research Methods

This study used qualitative research method. Hollis (1994) put it, the qualitative approach seeks to understand phenomena. Type of data used in this study is secondary data that is collected using literary review.

Some phenomena cannot be measured numerically, statistically or using random sampling and it limits the chance to discover unique aspects of a phenomenon (Allwood, 2012). Qualitative research as defined by Creswell (2012, p. 626) is: An inquiry approach useful for exploring and understanding a central phenomenon. To learn about this phenomenon, the inquirer asks participants broad, general questions, collects the detailed views of participants in the form of words or images, and analyzes the information for description and themes. From this data, the researcher interprets the meaning of the information, drawing on personal reflections and past research. The final structure of the final report is flexible, and it displays the researcher's biases and thoughts.

It focuses on understanding opinions, experiences, and words rather than numbers (so therefore cannot be quantified to the same extent as the previous methodology) and uses open-ended rather than closed-ended questions (Creswell, 2014). It is largely inductive rather

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

than deductive (Williams, 2007; Cropley, 2015). This study use exploratory research, a qualitative content analysis method appears to be the most appropriate choice for research design (Mayring, 2014).

2. Infrastructure Requirement of Spaceport

Needs related to several fundings that must be invested in developing a Spaceport cannot be separated from any infrastructure needs in developing Spaceport. The following are the infrastructure needs in Spaceport construction (LPEM, 2013):

Runway

Horizontal runway is necessary for horizontal take off as well as spacecraft landing. Cecil alredy own two runways. Cecil manages one main runway and one backup runway. The main runway is Runway 18L-36R, with 12.500 feet long and act as main activity for horizontal take-off. The second runway is runway 9R-27L that is 8.000 feet long and appropriate for backup landing of suborbital spacecraft.

Fuel / Oxidizer Loading Requirements

Space shuttle needs not only fuel for the launch but also oxidizer for fuel combustion. Meanwhile, other transportations only need fuel, because the Oxygen for combustion has already available in the atmospher. Loading facility at Cecil is an area of 381 square meters. Since the data specifiaction of this facility for SSI Vandenberg is not complete, then it is assumed that the size of this facility on SSI Vandenberg is equal to Cecil's. Price per-unit for this facility is US$58,32. Therefore, funding projection to build this facility is US$220.339.92.

Fuel / Oxidizer Storage

This facility is function to store fuel or oxidizer that will be used by space shuttle. From the budget estimation, an estimate of the total costs required for this facility at each airport is obtained as follows: (i) Cecil Spaceport, has storage capacity of 138.345 kg, with total estimation of cost requirement US$ 4.537.716; (ii) Kodiak Launch Facility, has storage capacity of 102.058 kg, with total estimation of cost requirement US$ 3.347.502,4; (iii) MARS, has storage capacity of 110.756,13 kg, with total estimation of cost requirement US$ 3.632.800,9; (iv) SSI Vandenberg, has storage capacity of 138.474,15 kg, with total estimation of cost requirement US$ 4.541.952,12; (v) Kennedy Space Center, has storage capacity of 338.067,13 kg, with total estimation of cost requirement US$ 11.088.601,7.

Launch Pad

This facility, basically is a main place for launching. This facility includes a pillar stand or rocket stand before launching. This facility also plays role in maintaining the position of the rocket when it is launched. Kodiak launch pad needs US $ 5.008.694,4, MARS US$ 3.599.999, Vandenberg US$ 2.624.347,17, and Kennedy US$ 6.406.954,92.

Launch Vehicle

Reusable Launch Vehicle (RLV), or is known as launch vehicle (LV), or spacecraft, is a tool or vehicle used in the process of launching as astronaut or satellite carrier that will be placed in the orbit. Spaceport development in Indonesia does not take this into account.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

Onsite Training

This facility does not have specification data or estimated cost of manufacturing. Basically, this facility is function as a place for crew or astronaut training who will launch to the orbit using RLV so they will be familiar with the outer space situation.

Payload Processing

Payload processing is a facility used as a place to prepare the load that will be carried by the rocket. Cecil Spaceport payload procesing facility have approximately more than 1 acre with estimated cost of US$ 53.783,76.

Engine Testing

Engine Testing is a facility for rocket engine testing, so when it is launched there is no error happened or engine failure. The estimated cost for constructing an engine testing facility is US $ 743,871.20.

Mission Control

This facility organize rocket launches or space flights. So, rocket or RLV could launch well to the target orbit and then return back to earth safely. For Kennedy spaceport with the mission control facility area of 6356.2 square meters has an estimated cost of US $ 3,675,917.58, while for Cecil, Vandenberg and Kodiak, it is assumed to have the same mission control facility. With an estimated construction cost of US $ 80,322.86.

Perimeter Security

Perimeter security is a security facilities to maintain the safety of the launch site and surrounding facilities so that there is no civilian to disrupt the launch or have an accident due to rocket or RLV launch. For data on the costs required to make perimeter security there are no special specifications and clear estimation data.

Hangar

Function of hangar in a spaceport is as an processing area and non-hazardous material storage. The cost per-meter square is US$ 578.32, and then multiplied by the area of 7850 m2 to get a number of US $ 4,539,989.47.

Processing and Assemblying Building

PAB serves as an area for processing and assembling RLV before ready to be taken to the launch facility. The PAB area for Cecil is 4,366.4 m2, Kodiak 4,366.4 m2, MARS is 4,366.4 m2, SSI / Vandenberg 42,457 m2 and Kennedy 42,457 m2. Estimated costs are US $ 2,525,201.24 for Cecil, US $ 2,525,201.24 for Kodiak, US $ 2,525,201.24 for MARS, and US $ 24,553,552,52 for Vandenberg and US $ 24,553,552 52 for Kennedy.

Office and Space Storage

Office and Space Storage (OSS) is an integrated part with Processing and Assemblying Building (PAB). So, sometimes a spaceport does not separate the OSS and PAB. The OSS area needed has been included in the area of PAB. PAB area for Cecil is 4,366.4 m2, Kodiak 4,366.4 m2, MARS is 4,366.4 m2, SSI / Vandenberg 42,457 m2 and Kennedy 42,457 m2. Estimated costs are US $ 2,525,201.24 for Cecil, US $ 2,525,201.24 for Kodiak, US $ 2,525,201.24 for MARS, and US $ 24,553,552,52 for Vandenberg and US $ 24,553,552 52 for Kennedy.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

Visitor Center

Visitor Center (VC) is a facility provided for guests and participants who want to see the arrival or launching of spacecraft. VC are at Cecil is 464.52 m^2. The construction requires funding of US $ 1,664,625.

Ancillary Storage

Ancillary Storage (AS) is a complementary infrastructure storage. Since it is a complementer, this facility generally integrated with Processing and Assemblying Building (PAB). The amount of cost calculation for the OSS construction is the same as PAB.

Communication Data

The communication data such as radio, tracking antenna, or other tools that can be used to contact RLV or rocket when travelling in space or around the orbit. The communication data does not have specific data or estimated cost of manufacturing.

Apron

Apron is a place for launching preparation before being moved to launch pad. Required apron is approximately 3093.7 m^2 for launch vehicle which can reach LEO and 5602.05 m^2 for launch vehicle which can reach GEO.

Taxiways

Taxiways is a connector between runways and apron. Construction for this facility required a cost of US$ 17.796.168 (87.124 m^2).

Weather Observation System

This facility is necessary as an indicator, so the launching process will run well. This facility is required to support spaceport activity and applied the same to other spaceports.

The total cost of building an aerospace port in Indonesia in the LEO orbit (Cecil, Kodiak, MARS), MEO (SSI / Vandenberg), and GEO (Kennedy (Florida)) with no runway is Rp. 1.1 trillion (LEO, MEO); Rp. 2.36 Trillion (GEO) and with a runway of Rp. 2.74 trillion (LEO, MEO); 4.32 trillion (GEO) (data processed from LPEM, 2013).

3. Funding Scheme of Spaceport and Investment and Administration of State Capital on State-Owned Enterprises and Limited Company

3.1. Legal Foundation

Space Law Number 21 Year 2013, other than regulating the mastery and operation of space technology, this Law also regulate regarding relevant articles related on funding, as follows:

- Article 26, (1) In an event of an Institution carry out an establishment, manufacture, and construction of space technology mastery and development, the Institution may involve national company to implement the activity of Space technology mastery and development; (2) In implementing Space technology mastery and development as referred to in section (1), national company may involve Foreign party as a sub-contractor.
- Article 28, (5) The institution may **cooperate** with other Space Administrators, both domestic and Foreign, in Rocket technology mastery and development as referred to in section (1).

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

- Article 37, (1) Space Commercial Activity as referred to in Article 7 section (1) letter e, can be carried out by legal entity established that is in accordance with Indonesia and foreign law.
- Article 44, (1) Institution build and operate Spaceport within the territory of the Republic of Indonesia; (6) **Institution in building Spaceport** as referred to in section (1) **may cooperate with Indonesian legal entity.**
- Article 89, Funding sources for Sapce activity comes from state budget, grant, private institution, and international cooperation.

In developing a Spaceport, Institution, on this matter National Institute of Aeronautics and Space could only cooperate with Indonesian legal entity (Article 44), then national company may involve Foreign party as sub-contractor (article 26). Article 37 stated that commercial activity may be carried out by a legal entity established in accordance to Indonesian and foreign laws. That means Foreign legal entity can only carry out commercial activities after a Sapceport is built.

By looking at funding resources used to fund space activities, it may comes from state budget, grant, private entity and International cooperation, then in context of Spaceport manufacturing, Institution as Government institution may cooperate with Indonesian legal entity by involving foreign party (cooperation), noting that at the time of foreign investment to a project, then the capital investment funding for spaceport development shall be examined, i.e. cannot be more or equal to 50%. Furthermore, this can be seen in law regarding special connection on transactions in business, regulated in: (i) Law of Republic of Indonesia Number 36 Year 2008 regarding Fourth Amendment on Law Number 7 Year 1983 about Income Tax, (ii) Law of Republic of Indonesia Number 42 Year 2009 on Third Amendment to Law Number 8 Year 1983 on Goods and Services Value Added Tax and Sales Tax on Luxury Goods, and (iii) Government Regulation Number 94 Year 2010 regarding Calculation of Taxable Income and Income Tax Payment in the Current year.

Related to company and state-owned enterprises investments, are further arranged in Government Regulations Number 44 Year 2005, regarding procedures for the participation and administration of state capital on state-owned enterprises and limited company. This Government Regulation becomes a fundamental in investment and management of state capital for state-owned enterprises. In view of law no. 21 year 2013 which regulates cooperation in developing Spaceport, if cooperating, then it shall be with domestic legal entity, so the guidance regulation of PP No. 44 year 2005 also needs to be examined other than paying close attention to the Regulations governing how the rules apply in Government.

3.2. Funding Scheme of Spaceport and Investment and Administration of State Capital on State-Owned Enterprises and Limited Company

The need for a spaceport for Indonesia as written in Master Plan 2016 - 2040 is the launching of a micro satellite orbiter rocket into the LEO orbit. Thus, the funds needed are Rp. 1.1 trillion (without runway) and if runway requires funds of Rp. 2.74 trillion. It is very clear from the data that there is a funding gap that must be met so that infrastructure development can be realized.

Alternative funding can use a form of direct investment that is with capital participation (joint ownership in a project) and or lending (Diana, 2018). This mechanism is one form of implementation of the Space Act No. 21 of 2013 articles 26, 28 and 89. Investment is categorized based on its time period, namely short-term investment and long-term investment. Investment posts according to PSAP is Based on Accrual Number 06 on Investments among others: Short-term and long-term investments.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

Long-term investment is an investment with disbursement period of more than 12 months. Long-term investments are divided according to their characteristics, are namely: 1. Non-permanent long-term investment, is intended to be owned in an unsustainable manner or at any time to be sold or withdrawn. 2. Long-term investment which is intended to be sustainably owned or not to be traded or withdrawn. In the Standard Account Chart, investments are classified as follows:

Short-term Investment	Investment in Shares
	Investment in Deposit
	Investment in SUN
	Investment in SBI
	Investment in SPN
	Short-term Investment in BLUD
	Other Short-term Investments
Non-Permananet Long-term Investment	Investment to State-Owned Enterprises
	Investment to Regional-Owned Enterprises
	Investment to Private-Owned Enterprises
	Investment in Bond
	Investment in Development Project
	Revolving Fund
	Long-term Deposit
	Other non-permanent Investments
Permanent Long-term Investment	Capital investment to BUMN
	Capital investment to BUMD
	Capital investment to Private-owned enterprises
	Other Permanent Investments

E.S. Savas (2000) made a simple classification of Privatization which includes 3 classifications of government privatization in carrying out service functions as well as company and assets ownership, namely: (1) Delegation, means the government still have responsibility, but inviting private party in implementing public service Delegation consists of a) cooperative contract, b) outsorcing, c) Private Government Competition, d) Franchise government grants a right to private party (often exclusive rights) to sell service or goods to people. Private party will receive fee, e) PPP which means an arrangement that the government requires capital incentives, infrastructure needs with a lifetime long-term, and combination of financing the required facility between government and private party (most of the cost usually funded by private party); (2) Divestment, means the government relinquish its responsibility by means of selling, fee transfer or liqudation; and (3) Displacement, means private sector grows and takes over government activity.

Related to Spaceport development, it is appropriate to use the first classification that is Delegation of the cooperation contract item or the PPP model. PPP is an alternative funding, a cooperation scheme for the development of private and government involvement. The definition of PPP is cooperation in a broad context between the public and private sectors in the field of infrastructure and other services (ADB, 2008). PPP is a way for the

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

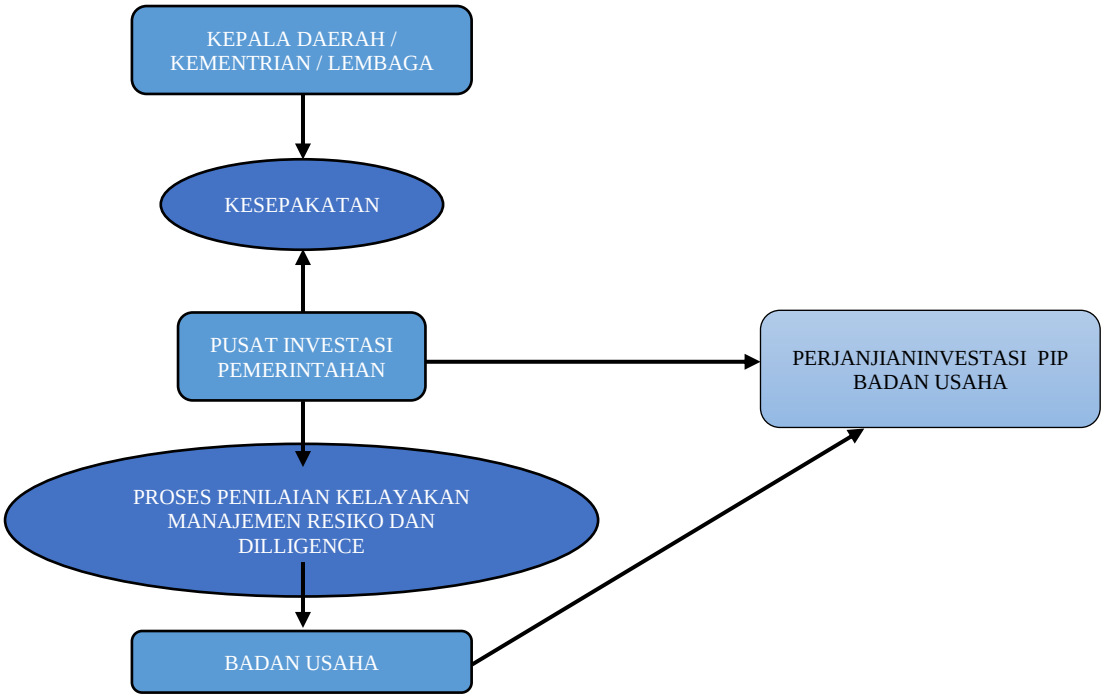
government to replace traditional methods related to public service contracts through competitive tenders (G. A. Hodge & Greve, 2007).

PPP schemes are widely used in infrastructure development patterns in Indonesia (Alfen et al., 2009; Jansen, 2017; Utama, 2010). The main purpose of the PPP scheme is to meet funding needs, increase the role of the private sector in accelerating infrastructure development in Indonesia, and generate value for money (Alfen et al., 2009; Bellier, Michel, & Zhou, 2003; Susantono & Berawi, 2012). The PPP scheme presents innovation, creativity, cost efficiency, getting around budget limitations, risk allocation and strengthening public management (Chan, Lam, Chan, Cheung, & Ke, 2010; European Commission, 2003; G. Hodge, Greve, & Boardman, 2017; Mouraviev, Mouraviev, Kakabadse, & Kakabadse, 2016).

There are six types of PPPs namely service contracts, management contracts, rental contracts, build operate transfers (BOT), concessions and joint ventures (ADB, 2008). The characteristic of this PPPs collaboration is the sharing of capital, risk, responsibility and results. The development of spaceport can use the six patterns, mainly BOT, concessions and Join Venture.

The following are the steps that should be carried out using the PPP scheme, namely (i) land acquisition, (ii) land that has already been held then to the next alternative phase for Infrastructure with the pattern proposed by the author is without tender, each of which is as follows:

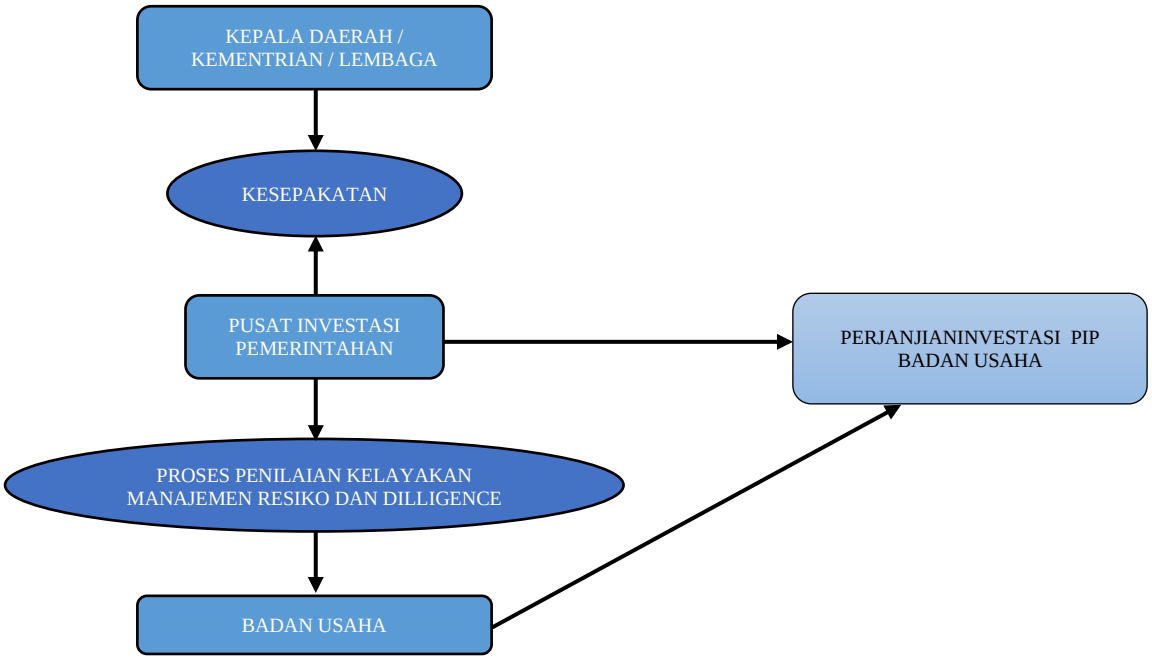
Land Acquisition:



Source: Diana, 2018

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

Infrastructure development:



Source: Diana, 2018

Steps that should be taken by the Government are: (i) coordinating with the Ministry of Finance of the Republic of Indonesia, (ii) preparing feasibility support (viability Gap Fund) for economic and financial feasibility, (iii) carrying out stages in PPP, namely Spaceport development planning, Preparation, Transactions and Implementation, and (iv) coordinating with Indonesian Infrastructure guarantees.

4. Conclusion

In developing Spaceport, Institution can only cooperate with Indonesian legal entity and then the legal entity may involve foreign party as sub-contractor. Foreign legal entity may carry out commercial activity once the Spaceport is built. Investment of foreign capital in the spaceport development needs to be observed in capital investment, that shall not be more than or equal to 50%. This is because National party is in control, where regulation and monitoring of Spaceport operation are carried out by the Government. Cooperation model that can be used is the PPP model, which includes the private sector or outside the government in its funding mechanism.

5. Acknowledgment

We would like to thank the Head of the Center for Aviation and Space Policy Studies, LAPAN and the editorial team who have supported this research so that this KTI can be published.

References

[1]. ADB. (2008). Public-Private Partnership Handbook. Asian Development Bank.
[2]. Allwood, C., 2012. The Distinction Between Qualitative and Quantitative Research Methods is Problematic. Qual Quant, 46, pp. 1417–1429. Doi 10.1007/s11135-011-9455-8.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

[3]. Alfen, H. W., Kalidindi, S. N., Ogunlana, S., Wang, S., Abednego, M. P., Frank-Jungbecker, A., Singh, L. (2009). Public-private partnership in infrastructure development: case studies from Asia and Europe: Weimar: Verlag der Bauhaus-Universität.
[4]. Bellier, Michel, & Zhou, Y. M. (2003). Private Participation in Infrastructure in China: Issues and Recommendations for the Road, Water, and Power Sectors. World Bank Working Paper, 2 (Available: http://info.worldbank.org/etools/docs/library/240079/PRIVAT%7E1.PDF).
[5]. Chan, A., Lam, P., Chan, D., Cheung, E., & Ke, Y. (2010). Critical success factors for PPPs in infrastructure developments: Chinese perspective. Journal Construction Engineering Management, 136, 484-494.
[6]. Coordinating Ministry for Economic Affairs, 2011. Master Plan for Acceleration and Expansion of Indonesia's Economic Development (MP3EI) 2011 - 2025.
[7]. Creswell, J., 2012. Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research. 4th ed. Upper Saddle River: Pearson.
[8]. Creswell, J., 2014. Research Design Qualitative, Quantitative, and Mixed Methods Approaches. Thousand Oaks, California: SAGE Publications, Inc.
[9]. Cropley, A., 2015. Introduction to Qualitative Research Methods. Hamburg: University of Hamburg.
[10]. Diana, SR, 2018, Investment in the Space Sector, In Media.
[11]. European Commission. (2003). Guidelines for Successful Public Private Partnerships. Brussel: Directorate General Regional Policy-European Commission.
[12]. Government Regulation Number 94 of 2010 concerning Calculation of Taxable Income and Payment of Income Tax in the Current Year.
[13]. Government Regulation Number 44 of 2005 concerning procedures for the inclusion and administration of state capital in state-owned enterprises and limited liability companies.
[14]. Hodge, G., Greve, C., & Boardman, A. (2017). Public-Private Partnerships: The Way They Were and What They Can Become. Australian Journal of Public Administration, 76(3), 273-282.
[15]. Hodge, G. A., & Greve, C. (2007). Public–private partnerships: an international performance review. Public Administration Review, 67(3), 545-558.
[16]. Jensen, O. (2017). Public–private partnerships for water in Asia: a review of two decades of experience. International Journal of Water Resources Development, 33(1), 4-30.
[17]. Law of the Republic of Indonesia Number 36 of 2008 concerning the Fourth Amendment to Law Number 7 of 1983 concerning Income Tax.
[18]. Law of the Republic of Indonesia Number 42 of 2009 concerning the Third Amendment to Law Number 8 of 1983 concerning Value Added Tax of Goods and Services and Sales Tax on Luxury Goods.
[19]. Lembaga Penyelidikan Ekonomi dan Masyarakat (LPEM) FE UI, 2013, Laporan Akhir Konsep Pembiayaan dan Pengembangan Bandar Antariksa Nasional.
[20]. Mayring, P., 2014. Qualitative Content Analysis: Theoretical Foundation, Basic Procedures and Software Solution. Available online at: http://nbn-resolving.de/urn:nbn:de:0168-ssoar-395173 [Accessed on Jan.03, 2017].
[21]. Mouraviev, N., Mouraviev, N., Kakabadse, N. K., & Kakabadse, N. K. (2016). Conceptualising public-private partnerships: A critical appraisal of approaches to meanings and forms. Society and Business Review, 11(2), 155-173.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

[22]. Susantono, B., & Berawi, M. A. (2012). Perkembangan Kebijakan Pembiayaan Infrastruktur Transportasi Berbasis Kerja Sama Pemerintah Swasta di Indonesia. Jurnal Transportasi, 12(2), 93-102.
[23]. Presidential Decree Number 45. (2017). Indonesia Space Activities Implementation Master Plan 2016-2040.
[24]. Republic of Indonesia. (2013). Indonesia Legislation Number 21 of Space in 2013. https://lapan.go.id/files_arsip/UU_no.21-2013_keantariksaan_(English-Version).pdf
[25]. Savas. E.S. 2000. Privatization and Public Private Partnerships. New York: CQ Press.
[26]. Utama, D. (2010). Prinsip dan Strategi Penerapan Public Private Partnership Dalam Penyediaan Infrastruktur Transportasi. Jurnal Sains dan Teknologi Indonesia, 12(3), 145-151. Wiwoho, L. H. (2013).
[27]. Williams, C., 2007. Research Methods. Journal of Business & Economic Research, 5(3), pp. 65-71.
[28]. http://keuda.kemendagri.go.id/asset/dataupload/paparan/modul-penerapan-akuntansi-berbasis-akrual/modul2/08.Kebijakan-Akuntansi-Investasi.pdf

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)