

DEVELOPING PUBLIC PRIVATE PARTERSHIP MANAGEMENT SCHEME FOR ROADSIDE STATION

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ABSTRACT

Services by social infrastructure can include health facilities, recreational facilities, security and fire fighting, arts and cultural centers and other public facilities. This research focuses on the study of social infrastructure namely the Roadside Station adopted from Japanese Michinoeki. As for infrastructure financing, this research is aiming to the use of financing scheme involving the private sector, given the limited budget of the central government through the Ministry of Public Works and Housing in providing roadside station services in several locations in Indonesia. On the other hand, the location of the roadside station also sometimes has its own charm for the private sector because it can become a new tourism locus in the area in the future. The types of services provided by Roadside Station are facilities for resting road users, because they are located on national roads. Besides that, Roadside Station are also a place for the surrounding community to sell local products. Currently the Ministry of Public Works and Housing is building Roadside Station in East Java and in Bali. The development of Roadside Station management schemes is intended to ensure continuity in its function as social infrastructure to meet public needs. In addition, with the existence of a management scheme, this further strengthens the position and function of each party in carrying out their rights and obligations in the development of infrastructure using the financing scheme of the Public Private Partnership (PPP). From the institutional scheme produced, it is determined that there are 2 types of Roadside Station management schemes namely, 1) Roadside Station that have been built by the Ministry of Public Works and Housing (PPP – Operation & Maintenance), and 2) Roadside Station to be built by Regional Governments (PPP – Built Operate Transfer).

Keywords: Michinoeki; Public Private Partnership; Roadside Station; Social Infrastructure

INTRODUCTION

According to Frolova, et. al (2016) Social infrastructure is one of the dominant factors, ensuring the satisfaction of basic human needs, as well as the development of the state and its territory. Transportation facilities, housing services, the systems of social protection, health and education are the key positions in the practice of state and municipal administration, which is determined by a number of factors.

Facilities and services provided by social infrastructure are generally used for the local needs of the community in order to establish a sense of ownership of public facilities that are established in a sustainable community perspective. Wang (2007) stated that, for decades the acceleration of the interest of various parties to assess qualitatively and quantitatively how the impact of a social infrastructure on a country's economic development continues to be considered because social infrastructure also plays a role as a community income distribution, which means has commercial value function. On the other hand, infrastructure development projects involve a number of related parties as well as substantial investments. Therefore, a comprehensive feasibility study is needed as a basis for the sustainability policy of infrastructure development.

Since 2015, the Ministry of Public Works and Housing is working on the construction of social infrastructure Roadside Station that was first developed in Japan under the name Michinoeki. Furthermore, this concept was examined by the Road and Bridge Research Center (PUSJATAN), and later given the name of Roadside Station with "Anjungan Cerdas" in Indonesian. In Indonesia, there are already many facilities that have characteristics such as Anjungan Cerdas, but they are only limited to resting places that provide amenities such as parking lots, toilets and restrooms, restaurants and retail shops. Almost all of these locations are owned by individuals or small-scale companies within their respective regions.

Michinoeki means road service platforms, and has been applied in Japan since 1993 (Murakami, 2016). Michinoeki was developed to create safe travel traffic while creating unique and lively spaces to promote the potential of the area around the site of michinoeki. Since then, Michinoeki has been included in the state law, and has been widely developed until 2016, there have been around 1,093 michinoeki facilities spread throughout Japan (Ministry of Land, Infrastructure, Transport and Tourism, 2016).

The Roadside Station developed by the Ministry of Public Works and Housing are located in Tugu, Trenggalek Regency, East Java Province and other in Rambut Siwi, Jembrana Regency, Bali Province. The problem then arises because the Ministry of Public Works and Housing does not yet know who will be manage the Roadside Station that has been built. The problem with this research is that currently the development of roadside station in the 2 locations is being carried out by the Ministry of Public Works and Housing as a pilot project or a model for the development of other roadside stations

in the future. Furthermore, the development of the roadside stations are expected to be carried out independently by the Regional Government. However, due to the high cost required for the development of this infrastructure, not all local governments are able to develop them. Therefore it is necessary to develop a model of the institutional scheme of the parties involved in the development and financing of this infrastructure for conditions where the Regional Government can afford it and in locations where the Regional Government is unable to finance it, and this will be the purpose of this research.

This research will then elaborate further regarding Roadside Station's operation management schemes which are the assets of the Ministry of Public Works and Housing (Central Government) and then will be implemented after the development of the two Roadside Station was completed and other Roadside Station will be built in various regions in Indonesia in the future. The Roadside Station operation management scheme that will be developed is divided based on funding sources that can be used for the management of Roadside Station assets, whether using funding sources from government, private, or joint financing between the government and private.

Social Infrastructure

International recognition that investment in human resources (HR) and civil assets are very important for economic prosperity and social welfare, this is reflected in social inclusion in the UK, Europe, Canada, which is locally adapted by the South East Queensland region, Australia. Social infrastructure is always synonymous with construction owned by the government with the aim of serving the community with certain needs such as education institutions, health and safety institutions, sports and recreational facilities (Gabdrakmanov, 2014). Investment in social infrastructure supports strengthening in the health, welfare and economic prosperity sectors of the community. This plays an important role in developing social capital, maintaining quality of life, and developing community skills and resilience. Each agency has a set of planning processes for customized services and programs. Program services and planning thus complex and dynamic systems, should be explored in collaboration with relevant agencies in planning appropriate facilities.

Roadside Station

The Roadside Station are special facility that are built as a form of concern to improve road user safety supported by the development of local communities and information centers. The concept of Roadside Station was adapted from the concept of Michinoeki, Japan, which was founded in 1993 and until now has succeeded in overcoming the number of accidents as well as boosting the economy of local communities through the application of community-driven development (CDD). By applying the one stop rest area concept, which is an area that provides all facilities needed by users (resting place, information center, security, recreational facilities, buying and selling facilities, environmental facilities). Roadside Station development aims to attract travelers and tourists

from outside the region who will buy local products; revitalizing local communities by encouraging groups of farmers (farmers, etc.) to be key actors in regional development, and supporting the development of subsistence areas by creating synergies between visitor purchasing power and local community activities. According to Andreas, et.al (2019) roadside station in Indonesia is meant to function like Michinoeki in Japan.

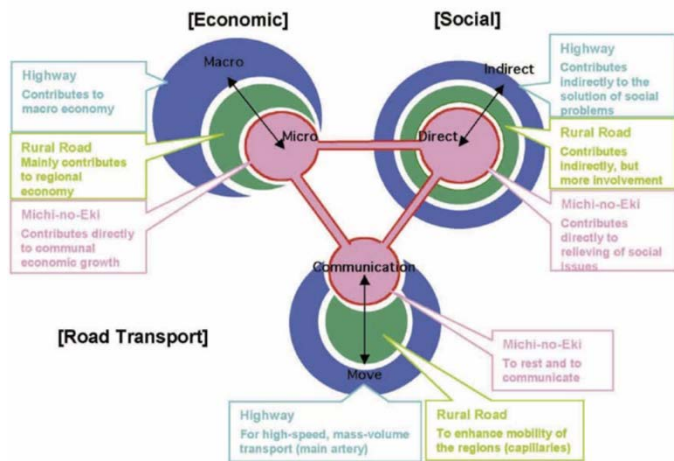


Figure 1. Michinoeki Benefit

The concept of Roadside Station that is applied is to form a resting place around a strategic national road (rest area) with various public facilities such as parking lots, toilets, restaurants and minimarkets managed by local communities and selling agricultural products, processed food and local community art products and travel information center.

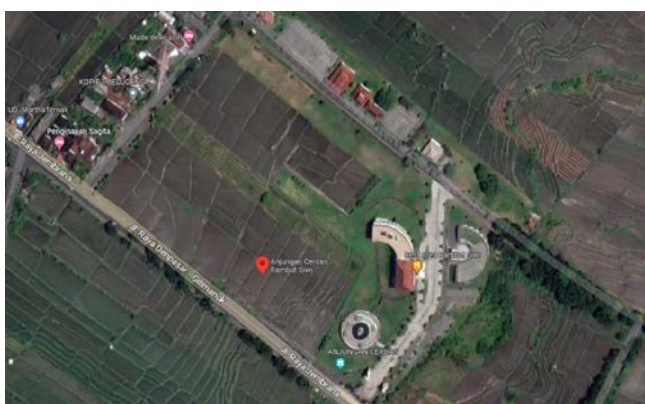


Figure 2. Rambut Siwi Roadside Station Design in Bali

According to Kumano et al (2017), Michinoeki roadside rest station for those driving car and/or truck to delivery is a special case as a successful model of innovative ecosystem. These stations are developed under the support of residents, farms, and local government. They locate along national highways and provide free parking space, restrooms, and regional and tourist information for car drivers and travelers. Therefore, Michinoeki is a specific area with three functions: providing rest space for visitors, spreading information, and alliance with regional society. According to Kumano et al (2017), Michinoeki roadside rest station for those driving car and/or truck to delivery is a special case as a successful model of innovative ecosystem. These stations are developed under the support of residents, farms, and local government.



Figure 3. Tugu Roadside Station Design in East Java

With the existence of a Roadside Station, road users feel a new sensation in rest, that is, being able to enjoy handicrafts and agricultural products and processed foods typical of local communities and on the other hand local people benefit from the sale of products and services. As for in the economic context, Roadside Station aside from being a place to rest, also provide other components to move the economy in the surrounding area as can be seen in Table 1 below.

Table 1. The Roadside Station Components

	Main Component		Supporting Component
1	Near infrastructure information facility	1	Operational management office
2	Information and	2	Toilet and bathroom

	communication technology facilities		
3	Product introduction and local potential facilities	3	Worship facilities
4	Tourist facilities and infrastructure observation	4	Food court and restaurant
5	Exhibition and local cultural attractions facilities	5	Nursing room
6	Rest and parking facilities	6	Security facility
		7	Health care facility
		8	Open space
		9	Water installation
		10	Waste treatment plant
		11	Sewage treatment plant
		12	Electrical and energy installation

	Additional Component		Limited additional components
1	Children's play facilities	1	Fuel station
2	Bank facility	2	Other facilities
3	Multipurpose room		
4	International standar rental space		
5	Workshop		

Therefore, the main function of the Roadside Station is to provide a place of rest that can improve regional economic development and increase the use value of road infrastructure. In addition to being functioned as a resting place, the Roadside Station also provides alternative destinations that will increase the value of road infrastructure by utilizing locations, sights, diversity of local products, arts (products and performances), and infrastructure technology. The Roadside Station provides the following functions:

1. Smart information center with the provision of WIFI, traffic information, Government infrastructure information
2. Government infrastructure information center, especially around the location
3. Information center on various products and potential areas around the location
4. View Substance on various high-aesthetic infrastructure and the beauty of the surrounding physical environment
5. Means of introduction and marketing of various local production and culture to national road users
6. The incubation area for new tourist destinations independently or as part of the main destination
7. Resting place to improve the safety of national road users equipped with various service facilities

Among the benefits of the Roadside Station that are adapted from Michinoeki in Japan, are not limited to handling traffic problems but also to expanding economic benefits in the regional context of reducing the gap between cities and villages where there are gaps in terms

of health services, opportunities for education basis, as well as opportunities for increasing community income.

Public Private Partnership

The involvement of the private sector in the provision of facilities and public services is increasingly popular in both developing and developed countries (Takim, Abdul-Rahman, Ismail, & Egbu, 2009). According to Presidential Decree #38 of 2015, the Public Private Partnership (PPP) is defined as cooperation between the government and Private in the Provision of Infrastructure for the public interest by referring to specifications that have been previously set by the Minister/ Head of Institution/ Regional Head/ State-Owned Enterprise/ Owned Business Entity Regions, which partially or wholly use Business Entity resources by taking into account risk sharing among the parties.

Another definition of PPP is a long-term contract between the government and the private sector to carry out the planning, construction, financing and operation of public infrastructure by the private sector (Yescombe, 2007). PPPs provide a triple win scenario that accommodates the government, the consortium of private entities and public interests.

PPP is an innovative approach to describing the long-term relationship between the government and private sectors in establishing public infrastructure as a solution to the tight budget that the government has. These benefits include competition between investors and utilization of efficiency and better innovation from the private sector. PPPs have 4 characteristics including (Alfen, et al., 2009):

1. Long-term contract,
2. Private investment where the project life cycle is important for the private sector,
3. Innovation in the provision of services carried out by the private sector and;
4. The benefits obtained from both the private sector and the government.

The PPP scheme aims to increase effectiveness and efficiency in its implementation, improve the quality of products and public services, by bearing together in terms of capital, risk, science, human resources (Spiering & Dewulf, 2006). Another goal to be achieved is to get value for money compared to the procurement of traditional projects, reduce Life Cycle Costing, better risk allocation, accelerate development and improve service quality (Spiering & Dewulf, 2006). Cooperation between the government and private sector can be carried out in several forms.

This collaboration is categorized based on the proportion of risk allocation between the public sector and business entities. The form of collaboration when looking at the following picture is very large in number which shows how much the involvement of the private sector in a collaborative project.

Getting to the left, the role of the private sector gets smaller, the form of cooperation can be in the form of Design Build and Operation & Maintenance. While the

more right-hand role of the private sector is getting bigger, for example in the form of Build Own Operate and Concession cooperation.

METHODS

The Roadside Station project in Rambut Siwi (Bali Province) and Tugu (East Java Province) is a pilot project for the Roadside Station development carried out by the Ministry of Public Works and Housing. In the future, this pilot project can be a reference or example for the development of Roadside Station in other locations. Another Roadside Station development is expected to be carried out by the local government where the Roadside Station is located. This study uses a qualitative approach and participatory approach. The participatory approach is an approach involving stakeholders (in this case the regional government and the central government) with infrastructure evaluation, including site visits to relevant agencies and case studies conducted.

Respondents of this research who were experts both from central government and regional government stakeholder included the following: Deputy Regent of Trenggalek Regency (at time); Head of Region II Infrastructure Development, Regional Infrastructure Development Agency under Ministry of Public Works and Housing; Representatives of the Public Works and Spatial Planning Regional Government Agencies for Trenggalek and Jembrana Regencies; and Representatives of Tourism Regional Government Agencies for Trenggalek Regency and Jembrana Regency. The selection of respondents was carried out according to the criteria of mastery of knowledge related to the condition of the area in their location from various aspects such as regional development plans, geography, infrastructure accessibility, regional economy, social and community culture, as well as tourism and construction techniques.

The following is a flow chart for conducting research to produce Roadside Station management recommendations:

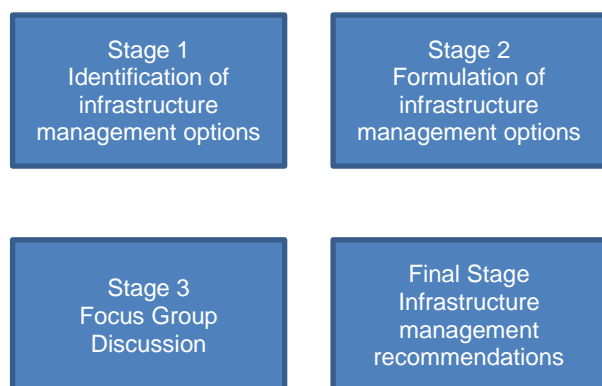


Figure 4. Research Stages

The following are the stages of conducting research to get an output in the form of a proposed Roadside Station management scheme:

1. Stage 1 – including determination of research problem and research purpose, literature review from latest publication regarding about social infrastructure, roadside station and michinoeki operation benchmark, and also infrastructure management. This will help to clarify the research scope and identify management options for roadside station infrastructure that uses modalities from the Government or from Non-Government. Next is the identification and analyzing the role of the stakeholders involved.
2. Stage 2 – including carry out further analysis regarding the determination of road side station infrastructure management schemes (financing and constructing) using modalities from central government and regional government mixing it with private sector funding to become PPP results from literature review in previous stage. The data needed for this research such as regional development plan data, regional statistical data (regional income, population, agricultural products) tourism location data, local wisdom data, community sales product data, data on the number of regional business entities, data on land asset ownership, and issues related to regional socio-culture (primary data).
3. Stage 3 – start with research data collecting. To collect the required data, institutional visits to discuss with the stakeholder and focus group discussions, also site visits observations were used as a data collection method in May 2018 at Trenggalek Regencies and June 2018 at Jembrana Regencies. The FGD began with the presentation of plans for the development of smart platforms by the Ministry of Public Works and Housing in 2 locations, followed by the formulation of a research problem where an institutional framework for financing, construction and operation of Roadside Station was needed involving the private sector, and finally continued with receiving input and responses from research respondents related to this issue.
4. Stage 4 – begin with processing and analyzing the data collected from previous stage. Primary data resulting from discussions collected from institutional visits and FGDs were processed using a content analysis approach to obtain institutional recommendations from various parties for the development of Roadside Station in the future. while site visits and observations will support and validate secondary data that has been collected from stakeholders.

The results of the FGD were then used as input to the recommendations for the scheme of Roadside Station management that had been built by the Ministry of Public Works and Housing and other that would be built by the Regional Government in the future.

RESULTS AND DISCUSSION

From the results of the FGD, two things can be formulated regarding the management of Roadside Station. The Roadside Station project located in Rambut

Siwi and Tugu is a pilot project carried out by the Ministry of Public Works and Housing. In the future, this pilot project can be a reference or example for the development of intelligent platforms in other locations. The development of other Roadside Station is expected to be carried out by the Regional Government where the cerdas platform is located. Therefore, the PPP scheme for the management of the Roadside Station in this study is divided into 2 based on the party that built the entire roadside station facilities.

The Roadside Station Built by the Ministry of Public Works and Housing

The Roadside Station which is the pilot project of the Ministry of Public Works and Housing, which will later become an asset of the Central Government.

The steps for compiling a schematic drawing of institutional recommendations in Figure 5 are as follows. First, the PPP institutional scheme reference model that applies in general according to the PPP Joint Office in Indonesia is used as a basic reference. Next, add the related stakeholder box along with its scope of works or what they will do to support. Finally, a line of relationship between stakeholders is added which shows 1-way or 2-way coordination. This recommendation only applies to roadside stations built by the Ministry of Public Works and Housing with the scope of work of business entities (below with the terminology Special Purpose Vehicle/ SPV) limited to operating and maintaining roadside stations

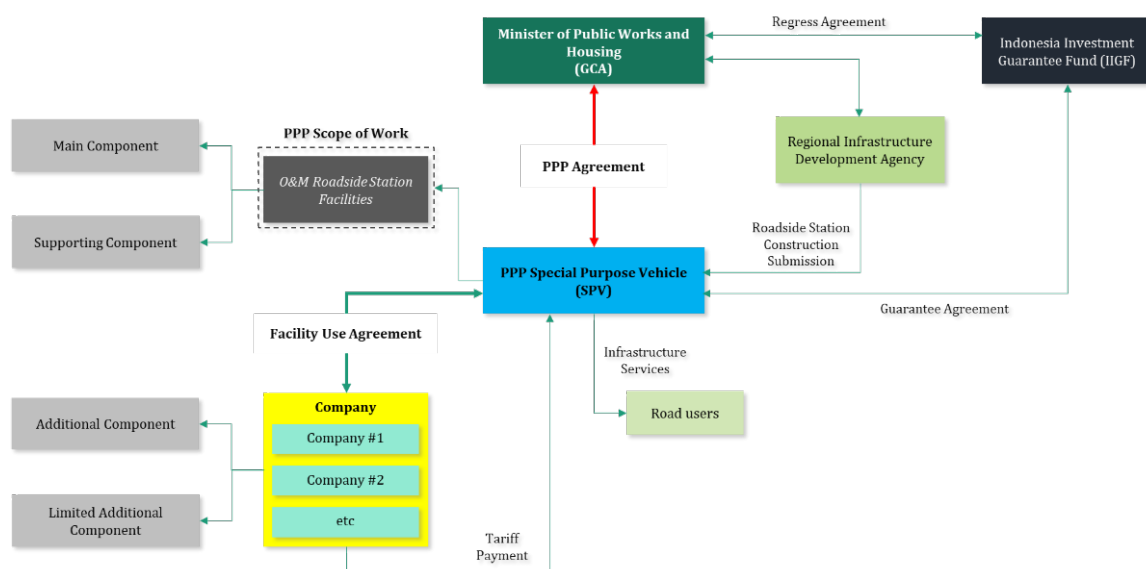


Figure 5. Proposed Roadside Station Management PPP Scheme Built by the Ministry of Public Works and Housing

Based on Figure 5, for the case of the Roadside Station built by the Ministry of Public Works and Housing, because infrastructure (construction) has been built, the private sector will enter into PPP agreements with the government in order to Operate and Maintain the Roadside Station. Therefore, the type of management scheme is PPP - OM (Operation and Maintenance) with return on investment in the form of tariff payments. Following is the explanation for Figure 5:

1. The Minister of PUPR will act as the Construction Project Responsible Agency (Government Contracting Agency - GCA) of PPP that conducts PPP Agreements with the private sector (PPP Special Purpose Vehicle - SPV) appointed to carry out Operations and Maintenance (Operation & Maintenance) of the Roadside Station facilities such as the Main Components and Supporting Components.
2. The SPV will then accept the construction of the Roadside Station when the construction has been completed and has been handed over from the Regional Infrastructure Development Agency.
3. The SPV will conduct a Facility Use Agreement with several Business Entities (company) to operate

facilities included in the Additional Components and Limited Additional Components of the Roadside Station. As a substitute, the Business Entity will be charged a fee / tariff that will be paid to the SPV.

4. The SPV will conduct a Guarantee Agreement with IGF (Indonesian Infrastructure Guarantee Fund) or PT. Indonesian Infrastructure Guarantee (if government guarantees are needed). IGF will compensate the SPV if the PPP project fails due to one thing or another caused by the government and the GCA.
5. The GCA will conduct a Regress Agreement with IGF (if required guarantees from the government) in which the GCA is willing to compensate costs if the PPP project fails. Compensation must be submitted to IGF as a government guarantee institution.
6. The SPV will provide infrastructure services to road users who utilize the Roadside Station facilities.

The Roadside Station built by the Regional Government

The Roadside Station that will be developed by the Regional Government, which will subsequently become

the assets of the Regional Government. Following is the institutional scheme.

The steps for compiling a schematic drawing of institutional recommendations in Figure 6 are as follows. First, the PPP institutional scheme reference model that applies in general according to the PPP Joint Office in Indonesia is used as a basic reference. Next, add the related stakeholder box along with its scope of works or what they will do to support. Finally, a line of relationship between stakeholders is added which shows 1-way or 2-way coordination. This recommendation only applies to roadside stations built by the Regional Government with the scope of work of business entities starting from building, operating and maintaining roadside stations.

Based on Figure below, for cases of the Roadside Station built by the Regional Government, the Business Entity will enter into a PPP agreement with the government in order to establish, then Operate and Maintain the roadside station. Therefore, the type of management scheme is PPP - BOT (Built - Operate - Transfer) with return on investment in the form of tariff payment. Following is the explanation for Figure 6:

1. The Governor will act as the Government Contracting Agency (GCA) of PPP that conducts PPP Agreements with the private sector (PPP Special Purpose Vehicle – SPV) appointed to carry out the Construction (Built), and Operations and Maintenance (Built, Operating & Maintenance) of the Roadside Station facilities such as the Main Components and Supporting Components.

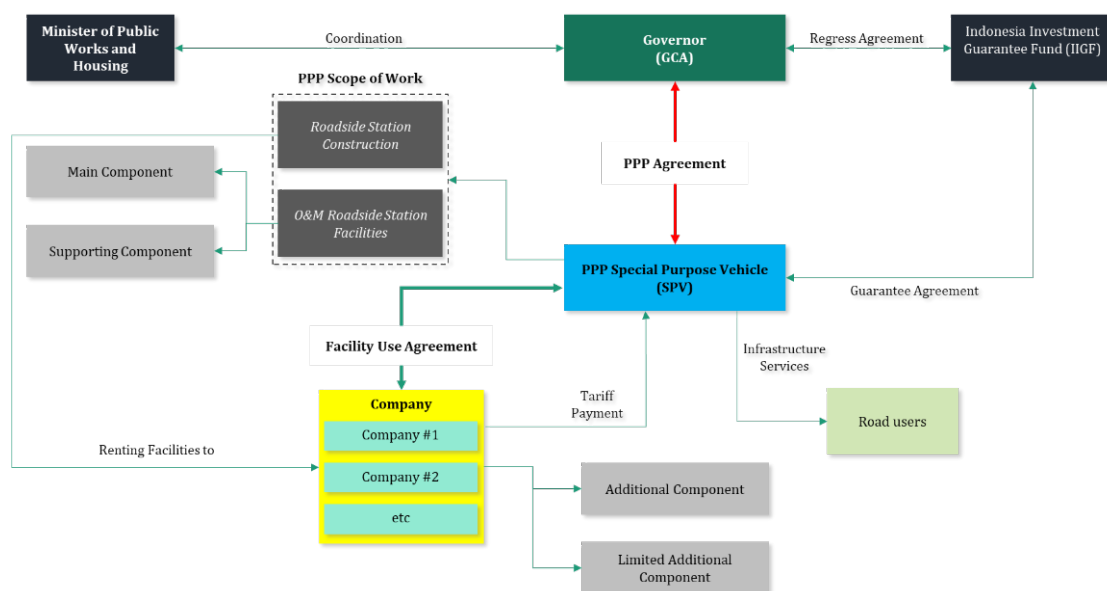


Figure 6. Proposed Roadside Station Management PPP Scheme to be Built by Regional Government

2. The SPV will conduct a Facility Use Cooperation Agreement with several Business Entities (company) to operate facilities included in the Additional Components and Limited Additional Components of the the Roadside Station. As a substitute, the Business Entity will be charged a fee / tariff that will be paid to the SPV.
3. The SPV will conduct a Guarantee Agreement with IIGF (Indonesian Infrastructure Guarantee Fund) or PT. Indonesian Infrastructure Guarantee (if government guarantees are needed). IIGF will compensate the SPV if the PPP project fails due to one thing or another caused by the regional government and the GCA.
4. The GCA will conduct a Regress Agreement with IIGF (if required guarantees from the government) in which the GCA is willing to compensate costs if the PPP project fails. Compensation must be submitted to IIGF as a government guarantee institution.
5. The SPV will provide infrastructure services to road users who utilize the Roadside Station facilities.

Previous research that has been carried out was by Andreas et al (2019), the research was related to

alternative roadside station construction financing options which can be carried out using funds from the Central Government, as well as Regional Governments. The results of the research recommendations on the institutional scheme for the development of this roadside station will support the implementation of previous research.

The Roadside Station Organization Structure Recommendation

From the two types of proposed schemes, recommendations were also developed for the organizational structure for Business Entities that will carry out the PPP agreements. The following is a recommendation for the organizational structure of business entities that will carry out work, both for OM-PPP (business entity scope, namely roadside station operational and maintenance work), and BOT-PPP (business entity scope, namely roadside station construction, operation and maintenance work). This organizational structure chart is a general company organizational structure that applies in Indonesia where there are 2 important divisions, namely the administrative sector and the operational sector accordance with the

needs and scope of work of the business entity. Managers in each sector will be headed by a company

director.

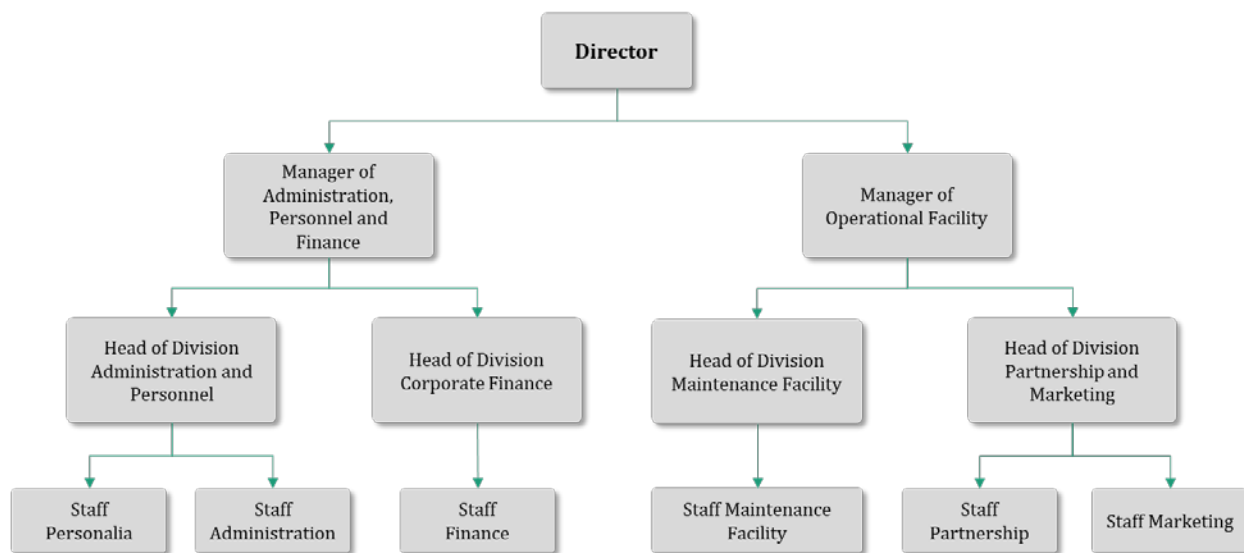


Figure 7. Recommended Organizational Structure of Business Entities

CONCLUSIONS

As a conclusion, from the results of the analysis and discussion that has been carried out, there are 2 types of Roadside Station management such as: The Roadside Station that was built by the Ministry of Public Works and Housing, and The Roadside Station that was built by the Regional Government. Even the management of the PPP scheme has also been recommended. From this, a scheme for OM-PPP management for the Roadside Station was developed by the Ministry of Public Works and Housing and the BOT-PPP management scheme for the Roadside Station built by the Regional Government. The return on investment of the Business Entity will be carried out using the rates charged to Business Entities that will lease locations such as retail, restaurant, workshop, etc. Furthermore, it relates to the concession period between the Business Entity and the Government in accordance with the type of PPP scheme. Where in general, the type of BOT-PPP will require a longer concession period, because the Business Entity is charged with builds the Roadside Station infrastructure first. So that the payback period of the capital will be longer than the type of OM-PPP. The results of this study can be recommended for use as a guideline and basis for decision making by the Ministry of Public Works and Housing as a regulator for the construction of the Roadside Station infrastructure and by the Regional Government.

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REFERENCES

Andreas, A., Rahman, H. Z., Petroceany, J. S., Perwitasari, D. and Sejatiguna, P. M. (2019) "Identification of Options for Financing and Management Scheme of Roadside Station Infrastructure", *Journal of Infrastructure Policy and Management*, 2(1), pp. 17-26. Available at: <https://www.jipm-online.com/index.php/JIPM/article/view/25> (Accessed: 23February2023).

Frolova, E. V., Vinichenko, M. V., Kirilov, A. V., Rogach, O. V., and Kabanova, E. E. (2016), Development of Social Infrastructure in the Management Practices of Local Authorities: Trends and Factors, *International Journal of Environmental & Science Education*, vol 11, no 15, 7421-7430, <https://files.eric.ed.gov/fulltext/EJ1117385.pdf>

Kingombe, C. (2014). *Hard and Soft Infrastructure in Africa*, UNCTAD.

Kumano, M., Ito, T., Ito, T. (2017). A Determinants Analysis of the Michinoeki in Japan, *International Journal of Economics and Management Systems*, Volume 2, 2017, pp. 287-291, <http://www.iaras.org/iaras/journals/ijems>

- Gabdrakmanov, K. N., Rubtsov, A. V.** (2014). *Procedia – Social and Behavioral Sciences*, vol 140, 419-421.
- Ministry of Land, Infrastructure, Transport and Tourism of Japan.** (2015). the 44th Registration of Michinoeki, retrieved from http://www.mlit.go.jp/report/press/road01_hh_000570.html.
- Ministry of Public Works and Housing of Indonesia, Regional Infrastructure Development Agency (BPIW).** (2017). *Sinergi – BPIW Report*, vol 22, October, 3
- Murakami K. H., Oyabu, T.** (2016). *Journal of Global Tourism Research*, vol 1, number 1, 47-54,.
- South East Queensland.** (2007). *Implementation Guideline No. 5: Social infrastructure planning*.
- Takim, R., Abdul-Rahman, R., Ismail, K., & Egbu, C. O.** (2009). The Acceptability Of Private Finance Initiative (PFI) Scheme In Malaysia: A Lesson Learned. *Built Environment*, 6 (1), 44-55.
- Wang, Y.** (2007) *A Theory of Social Infrastructure and Economic Development*. Department of Economics, University of Chicago.
- Yescombe, E. R.** (2007). *Public–Private Partnerships: Principles of Policy and Finance*. Butterworth-Heinemann: Oxford. ISBN: 978-0-7506-8054-7.

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